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Alice Brunet

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Doctoral dissertation in English linguistics

Alice BRUNET

**ACQUISITION AND USE OF PAST TENSE-ASPECT MORPHOLOGY
BY FRENCH MONOLINGUAL AND
FRENCH-ENGLISH BILINGUAL CHILDREN**

*A STUDY OF INTERACTIONS BETWEEN PAST MORPHOLOGY AND LEXICAL
ASPECT IN SPONTANEOUS AND NARRATIVE DATA ACROSS LANGUAGES*

Thèse dirigée par / *Dissertation supervised by*
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Abstract

Title: Acquisition and use of past tense-aspect morphology by French monolingual and French-English bilingual children. *A study of interactions between past morphology and lexical aspect in spontaneous and narrative data across languages.*

This dissertation focuses on the acquisition of past verb forms in French and in English by two French monolingual children filmed between 1;06 and 4;05 and two French-English bilingual children filmed between 2;06 and 3;07 in spontaneous interaction with their caretakers. I also analyze the productions of six bilingual children aged from 3;11 to 7;08 and recorded during two family dinners and narrative sessions in French and in English.

This work is set within usage-based theories, which present language acquisition as driven by language exposure and use. I investigate the interactions between past morphology and lexical aspect in the narrative and spontaneous productions of the children and in their input, to test the predictions of the prototype account of the aspect hypothesis. The adults' use of past verb forms in the longitudinal corpora was thus confronted to the children's use of tense-aspect morphology.

The first two parts present the theoretical framework, the method and the corpora used. I then show that the children recorded longitudinally first produced past morphology predominantly with the types of predicates they were used with most frequently in their input. All children used these forms with restricted temporal functions. Language dominance affected the bilingual children's use of past verb forms in narrative and spontaneous discourse, suggesting that their acquisition highly depends on the quantity of input received by children in their two languages. Task-type effects were identified in the children's use of past verb forms in their narrative productions, where they used past morphology to serve less complex functions in the more complex tasks.

Key-words: tense, aspect, lexical aspect, acquisition of French, bilingual acquisition, language dominance, narrative abilities, aspect hypothesis

Résumé

Titre : Acquisition et emploi des formes verbales au passé dans le discours d'enfants monolingues francophones et bilingues français-anglais. *Une étude de l'interaction entre temps et aspect lexical dans le discours spontané et narratif de jeunes enfants en français et en anglais.*

Cette thèse porte sur l'acquisition des formes verbales du passé par deux enfants monolingues francophones filmés entre 1;06 et 4;05 et deux enfants bilingues français-anglais filmés entre 2;06 et 3;07, en interactions naturelles en famille. Nous analysons aussi les productions de six enfants bilingues français-anglais entre 3;11 et 7;08, filmés lors de deux dîners familiaux et de deux sessions narratives. Notre étude s'inscrit dans le cadre des approches basées sur l'usage, qui considèrent l'exposition à la langue comme le principal moteur du développement langagier. Nous cherchons à caractériser les associations entre la morphologie aspectuo-temporelle du passé et l'aspect lexical dans les productions spontanées et narratives des enfants et dans leur input, afin de vérifier les prédictions de l'Hypothèse de l'Aspect dans les productions d'enfants monolingues francophones et bilingues français-anglais.

Les deux premières parties de cette thèse présentent le cadre théorique, la méthode adoptée et les corpus choisis pour notre étude. Les résultats montrent que les enfants filmés en interactions naturelles utilisaient d'abord la morphologie verbale du passé presque exclusivement avec les types de procès les plus fréquemment trouvés au passé dans l'input. Ces formes servaient aussi des fonctions temporelles moins diverses que celles identifiées dans l'input. L'usage des formes verbales du passé est également influencé par la dominance linguistique des enfants bilingues, autant en contextes spontanés que narratifs. Des effets de tâche ont également été identifiés, suggérant que les tâches plus complexes menaient les enfants à utiliser les formes verbales du passé avec des fonctions plus restreintes, en particulier dans leur langue non-dominante.

Mots-clés : temps, aspect, acquisition du français, acquisition bilingue, dominance linguistique, compétences narratives, hypothèse de l'aspect

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Introduction

The first aim of this doctoral dissertation is to increase our understanding of simultaneous bilingual acquisition, in particular by demonstrating the variety of bilingual profiles and the degree to which the children's experience with their two languages impacts their acquisition of past verb forms. It is set within usage-based theories, which present language acquisition as driven by language exposure and use – children are viewed as developing language within the interaction. I also conduct this study with the aim to contribute to the existing body of knowledge on the intricate link between past morphology and inherent temporal properties of predicates in children's early spontaneous and narrative productions. The association between past morphology and specific types of predicates in English monolingual speech has been tied by some linguists to input properties. I suggest that studying them in the speech of French monolingual children and of French-English bilingual children will inform us on the mechanisms underlying language acquisition in monolingual and bilingual children as well as on the differences between the French and the English past tense-aspect systems.

Bilingualism has come to be considered as a widespread phenomenon which concerns more than half of the world's population and can be encountered in virtually every country in the world (Grosjean, 1982). In the last decades, studies on bilingual acquisition have gradually striven to illustrate the specificity and diversity of the bilingual speakers' linguistic profiles (Hagège, 1996; Grosjean, 2008). Much recent work has aimed to characterize the link between the children's patterns of exposure to two languages and their bilingual development, as well as to show how bilingual learners differ from their monolingual peers in their language development (Paradis, 2010; Paradis et al., 2011; Nicoladis and Paradis, 2012). Studies on this theme have yielded conflicting results. In particular, some have identified a possible “bilingual delay” (Cenoz and Genesee, 2001), especially in the rates at which bilingual children acquire complex morphemes and structures, whereas others have identified no significant difference between bilingual and monolingual children's rates of acquisition of complex forms (Nicoladis and Paradis, 2012).

My work is set within **usage-based theories** of acquisition, which have often been used to theorize the bilingual delay (Tomasello, 2009). They consider language acquisition as the result of constant interaction between the children and their environment – it is

analyzed as driven by the children’s exposure to language in different situations, with varied communicative functions and multiple interlocutors. Usage-based theories thus place **input properties** at the center of the language acquisition process. The “bilingual delay” is linked to the observation that children exposed to two languages logically receive less exposure to each.

Moreover, usage-based theories emphasize the role of relative **complexity** of specific forms, or constructions (Goldberg, 2006) in their acquisition by children. Complex constructions are particularly sensitive to input properties and generally take longer to be acquired. The acquisition of grammatical morphology in particular has been identified as a “weak link in the language learning process” (Tomasello, 2009, p. 240). In the case of past verb forms, this is in part explained by the forms’ lack of phonological saliency as well as by the multiple functions they serve in adult speech. This plurifunctionality of past verb forms requires that children map a single form onto different functions, depending on situational and discursive factors (Goldberg, 2006; Tomasello, 2009).

I decided to work on past tense-aspect morphology in particular because its acquisition has been identified as especially challenging for typically developing (TD) bilingual children as well as for children with atypical language development (Paradis and Crago, 2000; Paradis et al., 2003). Studies have suggested that in the early stages of development, TD bilingual children obtained similar results as children with language impairment in elicitation tasks of past morphology in their non-dominant language. Documenting the impact of bilingual acquisition on the ability of TD children to use past tense-aspect morphology is thus essential to avoid cases of misdiagnosis induced by similarities between their language development trends and that of children with atypical language development (Genesee et al., 2004; Dos Santos et al., 2016). In particular, it is theorized that contrary to language impairment, the bilingual delay in the acquisition of complex morphemes will naturally resolve itself as children gradually receive more input in each of their languages (Paradis, 2010; Genesee et al., 2004).

Other studies have suggested **possible facilitating effects** of bilingual acquisition, especially in the field of meta-linguistic abilities. In the domain of narrative development in particular, it has been argued that bilingual children may be able to transfer their abilities from one language to another to produce coherent narratives in both their dominant and non-dominant languages (Fiestas and Peña, 2004). Questions remain about whether transfer may also occur between the bilingual children’s two languages in the linguistic abilities required to produce target-like narratives, including past tense-aspect morphology. It is unclear for instance whether children who use past tense-aspect morphology in their dominant language with the functions it serves in narrative discourse will be able to use such morphology in a target-like way in their other language.

These conflicting results on the effects of bilingual acquisition on the children’s use of tense-aspect morphology in different discursive contexts support two main principles which

form the bedrock of this work. First, they confirm the need to closely document bilingual children's language history, including the age of onset of exposure to two languages as well as the amount of exposure received in each language, and the way children use their two languages on a daily basis. The need to document bilingual children's language history is all the more central to the study of children's acquisition of past tense-aspect morphology, which has been shown to be particularly vulnerable to input variations (Paradis, 2010; Paradis et al., 2011).

Second, studies have often analyzed bilingual children's ability to use past tense-aspect morphology in a target-like way in experimental tasks stripped of all communicative function. Conversely, I argue that it is necessary to consider the children's productions in different discursive contexts to provide a full account of the development of past tense-aspect morphology on the formal and functional levels. In this work, I thus propose to analyze the spontaneous and narrative productions of French-English bilingual children, in order to contribute to the body of research on bilingual acquisition and provide insights into how bilingualism affects the children's ability to use past tense-aspect morphology with diverse communicative functions.

Another objective of this work was to contribute to the debate surrounding the interaction between past tense-aspect morphology and lexical aspect in the early productions of children.

Close analysis of the acquisition of past tense-aspect morphology has identified an uneven distribution of tense-aspect morphemes across lexical aspect categories in young monolingual children's spontaneous productions (Brown, 1973; Bronckart and Sinclair, 1973; Bloom et al., 1980a; Shirai and Andersen, 1995). This was highlighted in the productions of English monolingual children, as well as in other languages including French (Bronckart and Sinclair, 1973; Parrisé et al., 2018). Studies on the productions of English monolingual children have argued that they tended to use past morphology first with a restricted set of predicates to present events as completed, i.e. to build perfective reference. In Romance languages such as French, in which speakers have at their disposal a perfective and an imperfective past tense, studies have argued that children originally restrict the use of these tenses to telic and atelic predicates respectively (Bronckart and Sinclair, 1973; Parrisé et al., 2018).

These preferential associations between tense-aspect morphology and lexical aspect were sometimes described as an "undergeneralization" of tense-aspect morphemes. It was interpreted as a sign that children first used these morphemes to mark aspectual distinctions rather than temporal ones (Brown, 1973; Bronckart and Sinclair, 1973; Bloom et al., 1980b). This theory was labeled the **Aspect Hypothesis**, and has been studied by linguists from different theoretical frameworks. In particular, the Aspect Hypothesis has fed the debate on whether children are born with meta-linguistic awareness of inherent temporal features of predicates or whether that awareness is based on the particular categories

available in adult speech (Bickerton, 1984; Shirai and Andersen, 1995; Bertinetto, 2012).

The **Prototype Account** has aimed to explain children’s early restrictions of tense-aspect morphology to specific types of predicates within the frame of usage-based theories, by suggesting that this awareness develops on the basis of the input received by children (Shirai, 1991; Shirai and Andersen, 1995). Shirai and Andersen (1995) in particular identified a “distributional bias” in child-directed speech (CDS) whereby English monolingual adults used past morphology predominantly with telic predicates and imperfective morphology predominantly with atelic predicates in CDS. The authors proposed that children build prototypical associations on the basis of the input they receive between perfective morphology and telic, punctual predicates, and imperfective morphology and durative and stative predicates, before they later generalize the use of tense-aspect morphology across lexical aspect categories.

In this work, I propose to test the predictions of the Prototype Account against French monolingual and French-English bilingual longitudinal data. Proponents of this account have mostly assessed it against the productions of English monolinguals; the associations between past tense-aspect morphology and lexical aspect were much less extensively studied in French spontaneous data (Pariße et al., 2018). The main difference between the two languages is that, in English, simple past morphology can be used to build both the perfective and imperfective aspects, whereas French has a perfective and an imperfective past tense. It might then be expected that the association between specific lexical aspect categories and different past forms would be stronger in French than in English, both in the children’s input and in their spontaneous productions. I thus propose to investigate whether the findings of the Prototype Account on English hold in French. French monolingual children’s use of past tense-aspect morphology is compared to the ways in which the forms are used in their input, in order to increase our knowledge on the role played by children’s linguistic experience in their acquisition of past tense-aspect morphology. I also borrow from enunciative theories, arguing for the need to analyze language in interaction, and to consider verbal as well as extra-linguistic properties of situations (Culioli, 1999). It is expected that taking situational factors into account in the analysis of the first past verb forms used by French monolingual children will inform us on the way they acquire past tense-aspect morphology.

This study also aims at testing the Aspect Hypothesis (and in particular the Prototype Account) against the productions of French-English bilingual children. This is meant to determine whether a similar link exists between the distribution of past tense-aspect forms in the bilingual children’s input and in their productions as what was observed in English and French monolinguals. Considering that bilingual children often receive less input in each of their languages than children who are only exposed to one language, it might be expected that monolinguals would draw regular patterns and build prototypes from their input more easily than their bilingual peers. This would highlight the mechanisms at play

in the acquisition of past tense-aspect morphology, in particular confirming its reliance on input factors. Bilingual children also rarely receive the same amount of input in each of their languages, which could yield dominance effects on their use of tense-aspect forms in their two languages. The analysis of such effects should contribute to the cross-linguistic description of the past tense-aspect systems of French and English.

Finally, studies on the acquisition of tense-aspect forms have consistently identified discursive factors as playing a role in the children's use of past tense-aspect morphology with predicates belonging to different categories of lexical aspect (Bardovi-Harlig, 1995; Salaberry et al., 2002). Past tense-aspect morphemes serve essential functions in narrative discourse: they allow the narrator to order events temporally along a narrative time-axis as well as to ground events in the narrative. The term grounding refers to a distinction that is often used in studies on children's narrative development between foreground, or main clauses, and background, or evaluative clauses (Bamberg, 2011). Foreground clauses move the narrative forward – they tend to report events that are “actually occurring in the narrative world, as opposed to being merely talked of, expected or hypothesized” (Dry, 1983). On the contrary, background clauses evaluate or elaborate on events reported in foreground clauses (Hopper, 1979). They provide supportive material, rather than relating main events.

Grounding is closely tied to the use of past tense-aspect morphology, in part because backgrounded and foregrounded events have characteristics that make them more or less compatible with perfectivity and imperfectivity. Indeed, backgrounded events have been shown to be more often presented as ongoing whereas foregrounded events tend to be construed as complete wholes (Hopper, 1979; Reinhart, 1984; Bardovi-Harlig, 1995). Additionally, punctual, telic events are more likely to be foregrounded in a narrative, as they naturally lend themselves to be presented as completed and ordered within a sequence of events. The use of past tense-aspect morphology to signal events as foregrounded or backgrounded differs in French and in English – as children's narrative abilities develop, they are expected to use English simple past forms both to build perfective reference in the foreground and imperfective reference in the background, while the French perfective and imperfective past tenses are associated to the foreground and the background respectively more consistently in children's narratives (Bardovi-Harlig, 1995, 1998). I expect that studying bilingual children's ability to use past verb forms with different types of predicates in narrative productions will provide insights into how bilingual children in later stages of development gradually learn to use complex morphology with the functions they serve in their two languages in different discursive contexts.

Particular attention is paid in this work to the patterns of language exposure and use of the bilingual children under study, in order to **assess language dominance effects** on their ability to use past tense-aspect forms with the full range of functions they serve in narrative contexts in French and in English.

To determine the **impact of discursive factors** on the children’s use of tense-aspect morphology, I recruited and video recorded six French-English bilingual children during two family dinners and two narrative sessions set a year apart. They also participated in a vocabulary assessment task used to contribute to the description of their language dominance patterns. The children were recorded in three narrative settings, including two guided narrative tasks based on a wordless picture book and on a short videoclip they were asked to narrate, as well as a spontaneous discussion with the interviewer aimed at eliciting personal narratives. These recordings are subsequently referred to as the *Brunet* corpus. The narrative productions of the children under study were used to investigate possible interactions between their use of past tense-aspect morphology in narrative discourse in their two languages, their bilingual profiles, and task-type effects.

The associations between past tense-aspect morphology and lexical aspect in the input and in the early productions of French monolingual and French-English bilingual children were studied in **longitudinal data** from Anaé and Antoine, **two monolingual children** recorded as part of the *Paris* corpus (Parsisse and Morgenstern, 2012) and of Anne and Sophie, **two French-English bilingual children** recorded as part of the *Hervé* corpus (Hervé et al., 2016). All the children were filmed in interaction with their caregivers during monthly one-hour long sessions.

Anaé and Antoine’s data spans from their birth to their seventh birthday. Marie Leroy-Collombel and Aliyah Morgenstern filmed Anaé, and Christophe Parsisse filmed Antoine; both children were recorded in their homes. This work focuses on around twelve recordings for each child, evenly distributed between their first and fourth birthday. This age-frame was selected because it includes the age at which both children started using French perfective past morphology as well as the first instances of generalization of imperfective past morphology. Anne and Sophie were filmed by Coralie Hervé from a little over two years old to a little over three, during two monthly sessions – one where the children were filmed in interaction with their French caregiver, and one where they were filmed in interaction with their English caregiver.

All corpora are available online; the *Paris* corpus is available on the Ortolang¹ ² and CHILDES databases. The *Hervé* and the *Brunet* corpora are in a Drive folder³ ⁴.

Table 1 summarizes the main characteristics of the corpora on which this work is based. The central aims of this research are also outlined below, with a mention of the corpora used to address each goal.

¹Anaé’s corpus is available by following this link: <https://ct3.ortolang.fr/data/colaje/anae/>

²Antoine’s corpus is available by following this link: <https://ct3.ortolang.fr/data/colaje/antoine/>

³The *Hervé* corpus is available by following this link: https://drive.google.com/drive/folders/1jDUgZeauSATZXOC_pPNKaKouZCYbld0t?usp=sharing

⁴The *Brunet* corpus is available by following this link: <https://drive.google.com/drive/folders/11fBWaYPe5eV6JgqGukLQF7fsYTfUmy9X?usp=sharing>

Members of the jury can access all the folders in the Drive via their email addresses

Corpus Name	Type of data	Type of recording	Setting	Number of children	Children's Age
<i>Paris</i> corpus	Monolingual	Longitudinal, 1-hour sessions approximately every 3 months	Spontaneous interactions with caregivers	2 (Anaé and Antoine)	Between 1;06 and 4;05
<i>Hervé</i> corpus	Bilingual	Longitudinal, 1 hour monthly sessions	Spontaneous interactions with caregivers (one session one language)	2 (Anne and Sophie)	Between 2;06 and 3;07
<i>Brunet</i> corpus	Bilingual	Punctual, recorded twice a year apart	Family dinners and narrative productions recorded twice a year apart	6 (Lucas, Arthur, Oliver, Julian, Emma & Charlotte)	Between 3;11 and 7;08

Table 1: Summary of the main characteristics of the three corpora used in this work

This dissertation is organized around three main goals which are listed below.

1. Contribute to research on **bilingual acquisition of complex, late-acquired constructions** across discursive settings – *Paris*, *Hervé* and *Brunet* corpus
2. Lend support to the **usage-based theories** by analyzing the link between bilingual children's use of past morphology and their input – *Paris* and *Hervé* corpus
3. Investigate the functions served by **the associations between past morphology and inherent temporal features of predicates** in children's spontaneous and narrative productions in French and in English – *Paris*, *Hervé* and *Brunet* corpus

This dissertation is divided into three main parts, in turn divided into chapters.

The **first part** includes three chapters, which are thematically organized and **review the literature** in the main fields of research summoned in this work; the theoretical anchoring of the study is discussed in the core of the chapters. The first chapter reviews the literature on bilingualism and bilingual acquisition. It also presents the implications of usage-based theories and constructionist approaches for bilingual acquisition. The second chapter focuses on how past tense-aspect morphology is used by adult speakers in French and in English. It analyzes the temporal and aspectual functions served by past verb

forms in the adults' productions in the longitudinal corpora used in this dissertation. The third chapter reviews the literature on the acquisition of past tense-aspect morphology by children in French and in English as well as on their use of past verb forms in narrative productions.

The **second part** presents the **methods and corpora** used in this research. The fourth chapter details how and why each corpus was either selected or collected. It also describes how the data was transcribed and coded. The fifth chapter characterizes the three corpora used. It provides quantitative analyses of the children's linguistic development, as well as analyses of the children's bilingual language practices in the *Hervé* and in the *Brunet* corpora. The final section of the chapter in particular describes the language choices made by the participants of the *Brunet* corpus during the two family dinners I recorded, the children's use of their two languages during the narrative sessions and the scores they obtained on the vocabulary assessment tasks. These results are used to assess the children's language dominance patterns.

The **third part** presents and discusses the **results obtained for each corpus** – it is divided into three chapters. Chapter 6 is devoted to the analysis of past verb forms in the spontaneous productions of Anaé, Antoine and the adults in their corpora. It tests the predictions of the Prototype Account against French longitudinal data, in order both to inform us on how children gradually learn to use the past tense forms available in their input and to reflect on the role of situational factors in the acquisition of these forms. Chapter 7 analyzes the past tense-aspect forms used by the adults and the children in the *Hervé* corpus. This chapter aims to determine whether the bilingual children under study were as able as the monolingual children studied in chapter 6 to draw frequent form-function associations from their input, and whether they would follow the same acquisition path of past tense-aspect morphology. It focuses on the link between the children's and the adults' use of past tense-aspect morphology in French and in English; it also addresses cross-linguistic influence on the use of past tense forms. Chapter 8 proposes to go beyond the first stages of acquisition of past tense-aspect morphology, and considers the use of past verb forms by French-English bilingual children in narrative contexts. It questions in particular the link between dominance factors, narrative abilities and task-type effects on the children's later uses of past tense-aspect forms with different types of lexical aspect categories. The analyses suggest that dominance, task-type and narrative development interact differently with the children's use of past morphology to order and ground the events in their narratives. This led to the identification of three different bilingual profiles, presented in the last section of the chapter.

Finally, a **general conclusion** provides a summary of the results obtained on each corpus. It also presents the main limitations of this work, and reflects on future research perspectives.

Part I

Theoretical framework

Chapter 1

Bilingualism: Definition and stakes

Research on bilingualism and bilingual acquisition has considerably expanded in the last three decades (Slobin, 1997; Tucker, 1998; Cenoz and Genesee, 2001; Grosjean, 2008; Grosjean and Li, 2013). Several issues have been central to this research, in particular concerning the developmental path of bilingual children compared to that of monolinguals. The construction of bilingual children’s linguistic system, in particular, has been thoroughly investigated to determine whether bilingual children have one linguistic system or two (Grosjean, 1989; Döpke, 2001; Genesee et al., 2004), i.e. whether bilingual children are able to distinguish between their two languages in the early stages of acquisition. This question is central to my work, which aims at characterizing the way French-English children learn to use past tense-aspect morphology in each of their languages. Most of the research on bilingual acquisition has aimed at determining whether the ability to learn language is challenged by the simultaneous acquisition of two languages. I wish to question also whether bilingual children follow the same path of development as monolingual children with regards to the acquisition of tense-aspect morphology. As shown in the following chapters, this work is particularly interested in questioning the impact of input characteristics on the development of tense-aspect morphology in the speech of French monolingual and French-English bilingual children.

The present chapter offers an extensive review of the literature on the study of bilingualism, with a particular focus on how recent research has contributed to showing that simultaneous, bilingual acquisition from birth does not hinder children’s language development (Cenoz and Genesee, 2001; Genesee et al., 2004; Grosjean, 2008; Paradis et al., 2011). The first issue at stake however, is to determine what the term “bilingualism” encompasses. Indeed, it has often been used to refer to somewhat different linguistic profiles, and it thus needs to be redefined.

1.1 Bilingualism: an ambiguous notion

The Oxford dictionary defines bilingualism as the “fluency or use of two languages”. Two essential notions underlie this definition: that of performance contained in the term “fluency”, and that of frequency suggested by the term “use”. As we will show later on, these notions have been central to defining bilingualism, although they are not sufficient to formulate an exhaustive definition of bilingualism. The definition found in the Merriam-Webster dictionary is a bit more complete as it defines bilingualism as (1) the ability to speak two languages (2) the frequent use (as by a community) of two languages and (3) the political or institutional recognition of two languages. Bilingualism is thus presented as having political, social, and cultural relevance. However as our focus is here on the linguistic manifestations of bilingualism, we will partially set aside the third section of the definition given by the Merriam-Webster, although we shall see later on that the political or institutional recognition of language plays a crucial role in the way in which an individual may become and remain bilingual. Both of these definitions lack precision, which is somewhat representative of a latent ambiguity in the use and understanding of the term “bilingualism”.

A study of the literature on bilingual acquisition reveals evolutions and shifts in the definition of bilingualism. The first studies on bilingualism in the first half of the twentieth century present equal fluency in both languages as a necessary condition for one to be called bilingual (Bloomfield, 1933). As the scientific interest for bilingualism grew throughout the twentieth century, the idea that speakers of two languages could only be called bilinguals if they were equally proficient in both of their languages has been frequently revisited. Macnamara (1967) went as far as stating that a dual language speaker could be called bilingual if they had a minimal competence in one of four language skills in more than one language. Scientific studies have since then contributed to moderating this definition, although the concept of “bilingual continuum” introduced by Macnamara has since then been taken up and developed to account for the complexity of bilingual speakers’ linguistic behaviors. Grosjean, a defender of the view of bilingualism as a continuum, stated that anyone who used and was exposed to two languages on a regular basis could be called bilingual (Grosjean, 1982, 1989, 2008). Both of these attempts at defining bilingualism show that the ideal representation of bilingual speakers reaching the same level of proficiency in both of their languages, prevalent in the first studies on bilingualism, was gradually set aside. Instead, researchers have strived to demonstrate that such proficiency was often unattainable (Genesee et al., 2004; Grosjean, 2008; De Houwer, 2009). This is justified by the intrinsic communicative function of language – language, whether in the case of monolingual or bilingual acquisition, is learned in order for speakers to participate in communicative acts. This functional property of language justifies that bilingual speakers seldom reach the same level of proficiency in both of their languages, as they do not use their languages with the same purposes (Grosjean, 2008), or, for that matter, with

the same interlocutors. However, and quite interestingly, the idea that bilingual speakers should be equally proficient in both of their languages is still widespread within the general population. This conviction is sometimes even shared by bilinguals themselves, who regret being less proficient in the language they use the less. On the contrary, the conception of bilingualism as a changing phenomenon, which will evolve throughout a bilingual speaker's life runs through this work. I argue that bilingualism cannot be adequately defined and analyzed in terms of proficiency in each language taken separately, but rather in terms of language exposure and use as a whole. The bilingual children under study in this work thus have in common that they have been exposed from birth to both French and English. However, they differ in the exposure pattern they have had to both of their languages from birth, which should allow to question the role of exposure on the development of bilingual children's two languages. My aim is to show that bilingualism can hardly be defined as a homogeneous phenomenon, but that on the contrary bilingual children will develop at different rates depending on the characteristics of their input.

The evolution of the definition of bilingualism in the literature, and the inability of researchers to reach a common definition reflects the diversity of bilingual profiles. This diversity is central to the notion of bilingualism. Indeed, bilingual speakers, be they children or adults, often have very different profiles not only in terms of language combinations, but also with regards to their developmental patterns. These patterns may be influenced by several criteria, including the age at which the child was first exposed regularly to both languages. The frequency of exposure to both languages and the frequency with which children use both of their languages and the contexts in which they use them also play a major role. One of the main goals of this work is to understand how bilingual acquisition differs from monolingual acquisition. I wish to argue for the need to study bilingual children while keeping in mind the diversity of bilingual profiles and thus of acquisition rates and patterns. I was especially interested in studying the acquisition of a feature such as tense morphology, whose acquisition has been identified by previous studies as highly dependent on frequent and diverse exposure to the language acquired.

1.1.1 Folk or Elite bilingualism

A factor that may impact bilingual acquisition is the status of both languages in the community in which the child lives, i.e. whether the languages a bilingual child speaks are valued or not within the community – underlining the social dimension of bilingual language acquisition. Elite bilingualism refers to cases where both of the bilingual person's languages are valued within the society. This may be true for instance of French-English bilinguals living in France, where English is still highly valued by the population as a high-status language. French-English bilingual children living in France have languages that are valued enough within the society they live in that they can find opportunities and motivations to learn and speak it. On the contrary, the notion of folk bilingualism refers

to situations where one of the bilingual's languages has no additional value within society (Fishman, 1977), outside of the home or the community in which it is spoken. The terms *minority* and *majority* languages have also been used to refer to this distinction (Cenoz and Genesee, 2001). In this case, the majority language is the language that is valued within the society the bilingual person lives in, and the minority language is the one that has no additional value. By extension, the notions of majority and minority languages have been used to refer to whether a bilingual speaker's languages are frequently used outside of the family and the close community. The majority language is the language used by most, whereas minority languages are languages that are not frequently found outside of specific families or communities. The status of bilingual children's languages has been shown to have a great impact on their ability to efficiently acquire two languages, even only in terms of whether the language is frequently used and known outside the family. Indeed, it influences children's opportunities to experience rich and frequent input in both languages (Cenoz and Genesee, 2001). It is the case for instance with what is referred to as family bilingualism, where a child is exposed at home to a language that is neither valued nor frequently used in the larger community. A child raised in such a context will thus most likely be highly proficient in this minority language in the first years of life, during which they will be mostly, if not only, exposed to the language spoken at home. However, they might significantly lose proficiency in their first language upon entry into a society that neither uses nor values this language – for instance when going to day-care. The notions of elite and folk bilingualism are thus closely related to the classification of bilingualism as either additive or subtractive. If both languages are valued in the society in which the bilingual child lives in (as in cases of elite bilingualism), their bilingualism will more likely be considered additive. This entails that the bilingual child will be able to learn and improve their L2 without fear of losing their first language (Lambert, 1978). Subtractive bilingualism refers to the opposite situation, in which the second-first language is not valued within the society the child grows up in. The main impact of this is usually that occasions to speak and hear this language outside of the home will be scarcer. In these cases, it may be harder for a child to learn the majority language (upon leaving the community), and this acquisition may bring about loss of proficiency in the minority language.

This work was focused on elite bilingualism, where both languages are valued outside of the family. Indeed, the French-English bilingual children whose speech is analyzed in this work lived either in Paris or in London, two multicultural cities where English and French are respectively valued. The children were thus encouraged to use both of their languages outside of their home or community, either because they attended bilingual schools, or because they were enrolled in bilingual extra-curricular activities (see chapter 5 from page 181 on for a characterization of the patterns of language use and exposure of all the children whose productions were analyzed in this work). I chose to work on elite bilingualism because the aim of this study is to show that bilingual children who are

encouraged to use both of their languages on a daily basis in various situations do not necessarily lag behind their monolingual peers, even in the acquisition of late-acquired morphemes such as tense-aspect markers whose acquisition was shown to be sensitive to quality and quantity of input (see chapter 3 for more details).

1.1.2 Simultaneous or sequential bilingualism

Both sequential and simultaneous bilingualism are considered early bilingualism, as opposed to late bilingualism, which refers to a situation in which acquisition of a second language occurs after a “critical period” for language acquisition (Lenneberg, 1967; Scovel, 2000). This critical period is usually set in the pre-adolescent years, after which acquiring a language proves to be a much more difficult process (Hagège, 1996). Late bilinguals are distinguished from early bilinguals by their acquisition patterns: in the case of late bilingualism, the acquisition of the second language is neither simultaneous nor concomitant with the acquisition of the first, but instead occurs after acquisition of the mother tongue is completed. Second language acquisition is likely to be supported and facilitated by the child’s knowledge of their mother tongue, especially in the case of languages whose grammars present similarities (Cenoz and Genesee, 2001; Genesee et al., 2004; Armon-Lotem, 2010).

My research is concerned with childhood bilingualism since the children under study were between 1;06 and 7;08¹ when they were recorded, and thus not yet in the pre-adolescent phase. I will thus set aside the notion of late bilingualism, to focus on early bilingualism. The term childhood bilingualism, here, is not used as part of the theoretical framework where the terms childhood bilingualism and infant bilingualism are used as synonyms for sequential bilingualism and simultaneous bilingualism respectively (Haugen, 1956), but rather to refer to the acquisition of two languages before the critical phase. Two sub-types can be distinguished within early bilingualism. Indeed, researchers have systematically distinguished simultaneous bilingualism from sequential bilingualism. The term simultaneous bilingualism refers to a case of language acquisition in which the child is exposed to two languages from birth or quickly thereafter. This classification implies being able to set an age of onset of exposure after which bilingualism will be considered sequential rather than simultaneous. Researchers are still divided when it comes to defining this age or age frame. De Houwer placed herself at an extreme end of the paradigm, as she considers that for acquisition to be called bilingual first language acquisition (i.e. simultaneous), exposure to two languages should begin within the first week of life (De Houwer, 1995). On the contrary, she wrote at the time that bilingualism with an onset of exposure later than within the first week should be studied as early second language acquisition. However, there was a tendency in the past years to loosen the definition of simultaneous

¹Following the convention generally adopted in the field of language acquisition, ages are presented as follows: YEAR;MONTHS(.DAYS).

bilingualism, even on the part of former advocates of a very early cut-off age (Scovel, 2000; De Houwer, 2009). Simultaneous bilinguals have thus been described as those who acquired two languages before the age of three (Genesee et al., 2004). This cut-off age has sometimes been raised to five years (Meisel, 2001). Nonetheless, the variability in the literature highlights the arbitrary feature of setting an age distinction to define simultaneous and sequential bilingualism. Indeed, such a distinction once again fails to take into account the diversity of profiles we are confronted with when working on language acquisition. Children show great individual variety in their language development, and it would be problematic to set a unique cut-off age for the distinction between simultaneous and sequential bilingualism that could apply for all children. I preferred to distinguish between simultaneous and sequential bilingualism using another criterion than age (although age-related): I use the term sequential bilingualism when referring to situations in which a child learns a second language before school-age years, and after having partially mastered their mother tongue. Children who learn two languages concomitantly before school-age years, like the children under focus in this study, are considered simultaneous bilinguals. The choice to focus on a population of simultaneous bilingual children was a direct consequence of the variability observed in the literature in the definition of sequential bilingualism. Recruiting only children who had been exposed to both of their languages from birth appeared to be the simplest way not to set an arbitrary cut-off age past which children exposed to two languages would no longer be considered bilinguals. Moreover, my main goal in studying the acquisition of tense-aspect morphology by bilingual children is to investigate whether they show the same sensitivity as their monolingual peers to the quality and quantity of their input, and how variations in the quantity or quality of input may impact bilingual development. In other words, I aimed to determine whether children who have received consistent input in two languages from birth should necessarily be expected to lag behind their monolingual peers in the acquisition of tense-aspect morphology. I expect the results of this study to inform the debate on the role of language exposure both in bilingual acquisition and in the acquisition of tense-aspect morphology in different languages.

1.1.3 “Monolingual” views of bilingualism: questioning popular belief

For decades, the general public’s stance on bilingualism has been a mixed one, with attitudes varying between defiance and interest, fed by the ever-growing number of bilingual speakers in the world (Grosjean, 2008). The feeling of defiance towards bilingualism stems from the assumption that bilingual acquisition may put a strain on children’s cognitive abilities and put them at risk in the face of language acquisition (Cenoz and Genesee, 2001; Paradis et al., 2007; Paradis, 2010). Although this has been largely contradicted by recent scientific studies, myths and prejudice still stand strong and have direct consequences on everyday lives of bilingual families. Especially vulnerable are families where a minority

language is spoken, especially if it is not valued in the society, as they are still today often encouraged not to speak their minority language for fear of impeding their child's linguistic development in the majority language. The myths surrounding bilingualism have also sadly led some parents not to try and transmit their minority language to their children, for fear either of straining their children's linguistic development or of stigmatization in the case of minority languages that are not valued outside of the community.

Many studies have pointed to the lack of scientific evidence to support assertions that bilingualism may durably impede children's communicative abilities. Studies have shown for instance that bilingual children reach the same level of linguistic proficiency as their monolingual peers, provided that they are exposed to a sufficient amount of input in both of their languages (Paradis et al., 2003; Thordardottir, 2011). These studies, though supportive of bilingual acquisition, conform to a common bias in the evaluation of bilingualism. Indeed, the linguistic abilities of bilingual children are almost systematically compared to those of monolingual speakers of each of their two languages. Although it is in general understood that bilinguals are not the sum of two monolingual speakers (Grosjean, 1989; Genesee et al., 2004), they are still evaluated in terms of their "performance" or "competence", compared with that of their monolingual peers. Bilingualism is thus in essence presented as a deviation from a monolingual norm, somewhat arbitrarily established (Grosjean, 2008). This is also illustrated in the type of testing used to assess the linguistic abilities of bilingual preschool or primary school children. Indeed, most studies focus on bilingual children's abilities to produce a given morpheme or structure with which it is anticipated that they should experience difficulties. In a study by Paradis and her colleagues, French-English bilingual children were thus tested on their ability to provide the correct past-tense verb form in several obligatory contexts, and with different verb types: regular or irregular in English, first, second or third conjugation in French (Paradis et al., 2007). The child was presented with a past-tense probe from the TEGI² consisting of showing an image of a child doing something followed by an image of the child having completed the activity, described by the interviewer in these terms "*Here the boy is doing Y. Now he is done. Tell me what he did.*" This study is a particularly interesting example as it highlights the importance of taking into account specific characteristics of bilingual speakers before making predictions or observations on the rates at which they accomplish significant milestones. The authors make the hypothesis that reduced input should impact primarily the acquisition of markers with a high token frequency and a low type frequency – also called "inflectional islands", see section 3 of this chapter (Tomasello, 2009). The authors' conclusions as to the validity of usage-based predictions are questionable but they make an interesting comment on their results. Indeed, they note that if children had been tested without paying attention to their patterns of exposure to language or to the notion of "language dominance", if their scores had only been calculated on their production of regular and irregular past-tense verb forms, 39% of the bilingual children would have

²Test of Early Grammatical Impairment (Rice and Wexler, 2001).

scored “below the criterion score for typical language development”. They conclude by saying that it “might be necessary” to adapt normative tests to bilingual children. This necessarily begs the question of the means at the disposal of linguists working on bilingual acquisition to document bilingual families’ language practices, and thus their children’s patterns of exposure to each of their languages. It also interrogates the role of the quantity of input received by bilingual children in each of their languages on their acquisition pattern. This is discussed in section 1.2.1 below.

1.2 Studying bilingualism: documenting language practices

The necessity to document bilingual families’ language practices was highlighted in many studies (De Houwer, 1995, 2009; Grosjean, 2008; Thordardottir, 2011; Thordardottir and Brandeker, 2013). In particular, many researchers have argued for the need to set standards of assessment specific to the language development of bilingual children (Grosjean, 1989; Paradis et al., 2011; Nicoladis and Paradis, 2012). One of the main arguments for the need to evaluate bilingual children as “specific speaker-hearers” (Grosjean, 1985) stems from the observation that the delay experienced by children with Specific Language Impairment (an impairment which targets primarily language development, SLI below) is similar to the punctual one sometimes exhibited by bilingual children in their non-dominant language, or by sequential bilingual children (Genesee et al., 2004). Although the delay experienced by typically developing bilingual children is bound to resolve, at one stage they show similar patterns of development as children with SLI. Late-acquired structures and grammatical morphemes have thus been proved problematic in English for both groups of children when tested at an early age (Cenoz and Genesee, 2001; Genesee et al., 2004). They will most likely also show deficiencies in their narrative abilities, both in terms of narrative structure and in their use of linguistic devices central to narrative productions, including for instance determiners, pronouns, and past tense verb forms (Normand et al., 1993; Tribushinina et al., 2015). Paradis (2010) has addressed the issue of similarities sometimes observed between typical development and specific language impairment, insisting once again on the necessity to document the language history of bilingual children under study. Indeed, the amount of exposure received in each language, the age at which the second language is acquired, or dominance in either language are factors that will influence a bilingual child’s use of their languages. Insufficient inquiry into these factors will most likely result in an inexact assessment of the child’s linguistic proficiency, which may in turn lead to instances of misdiagnoses (Dos Santos et al., 2016).

The present study entirely shares the premise that it is necessary to adapt normative testing to bilingual children whenever possible. Moreover, as it aims at documenting the communicative abilities of bilingual children, the data used in this study includes spontaneous interactions between parents and their bilingual children in a natural setting,

in addition to the productions of children in experimental tasks.

1.2.1 The role of the input

The input, i.e. the language that surrounds a child whether it is language addressed to the child or not, has been identified as having a major impact on the way bilingual children acquire their language (Grosjean, 2008; De Houwer, 2009; Thordardottir, 2011; Thordardottir and Brandeker, 2013; Thordardottir, 2015). As mentioned briefly earlier, some studies have identified punctual delays in fields of vocabulary and morphosyntactic development of bilingual children. Because bilingual speakers have such diverse profiles, it is difficult for researchers to claim that all bilingual children experience a similar delay in the acquisition of language. This has led many studies to question the link between variables which may help distinguish different types of bilingual speakers, more or less subject to delay (Grosjean, 1985, 2008; De Houwer, 2009; Paradis, 2010; Thordardottir, 2011; Thordardottir and Brandeker, 2013; Ågren et al., 2014; Thordardottir, 2015). In particular, recent studies have shown that rates of exposure to language greatly impact lexical development rates in monolingual and bilingual children alike (De Houwer, 2009; Thordardottir and Brandeker, 2013; Thordardottir, 2015). Studies addressing the lexical development of bilingual children showed that the rates of exposure to each language correlated with the rates of lexical development. One study investigating the lexical development of French-English bilingual children from Montreal found that language exposure impacted only the development of expressive vocabulary (Thordardottir and Brandeker, 2013). In that study, the bilingual children scored as high as their monolingual peers on receptive vocabulary tasks. This is interesting because it highlights once more the importance of conducting a multi-dimensional assessment of bilingual speakers – indeed, the study focused on bilingual children who live in a largely bilingual society given the particular status of Quebec as a francophone province of Canada. The authors thus suggest that the high rates of receptive vocabulary observed in their study may be linked to the high status of both French and English in Montreal, which may provide a “favorable learning environment” (Thordardottir and Brandeker, 2013). The relationship between language exposure and grammatical development is less documented than that between lexical development and exposure patterns (Thordardottir, 2015). However, some studies have shown correlations between children’s experience with each of their languages and their rates of morphosyntactic development (Ågren et al., 2014; Thordardottir, 2015). The emergence of simple past tense forms in the speech of anglophone children has been shown to depend on the storage of a critical mass of lexical items, from which regular distribution patterns can be extracted – the next section provides more details on the theoretical framework for this study (Tomasello, 2009; Thordardottir, 2015). Having demonstrated that language exposure influences language development in monolingual and bilingual children, the question remains of how much exposure is necessary for a child to acquire both of her languages.

Recent studies have argued that a significant increase in language exposure leads to a significant increase in the scores obtained by bilingual children on lexical development tasks (Thordardottir, 2011). This increase was however non-linear – the researchers identified a threshold at around fifty percent of exposure to each language, past which “increases in input resulted in smaller increases in performance” (Thordardottir and Brandeker, 2013; Thordardottir, 2015). This is consistent with findings presented by De Houwer (2007), whose study aimed at accounting for the fact that some children will successfully acquire two languages from birth whereas others may lose proficiency in their minority language, or even suffer language attrition. In most cases of bilingual development, one of the child’s languages becomes considerably less present in the child’s linguistic landscape as she leaves the home or community to go to school for instance, and becomes therefore predominantly exposed to the majority language. The results showed that the children who developed both languages at similar rates and who reached similar levels of proficiency and use in both their majority and minority languages came from families where both parents or caretakers spoke the minority language at home (De Houwer, 2007). It is necessary to remember that the balance of a given language environment should be assessed by documenting language practices at home and outside of home. The “one parent-one language” practice, which is often adopted by families in which the parents come from two different linguistic backgrounds should thus not be considered by default to ensure that bilingual children develop both of their languages to a similar level of proficiency and use.

Before turning to the ways in which a researcher may try to tackle input variability, it must be noted that the language development of bilingual children is as much dependent on rates of exposure to both languages as it is on the need experienced by children to speak both languages. Grosjean and Li (2013) thus explained that balanced exposure to each of the bilingual child’s languages must necessarily be accompanied by the creation of as many situations as possible in which the minority language is needed, to ensure that the child acquires and keeps the language.

1.2.2 Tackling input variability: the concept of language dominance

Language dominance is a concept that has been widely used in studies on bilingual language development, mostly to tackle the issue of individual variability between the linguistic backgrounds of the children in the study. This notion is essential to gain a good understanding of the bilingual’s linguistic profile, and to efficiently test the bilingual child’s proficiency in each of their languages (Paradis et al., 2003; De Houwer, 2009). Indeed, perfectly balanced bilinguals are very rare, i.e., bilingual children are seldom equally proficient in both of their languages. In fact, researchers in the last thirty years have striven to debunk the ideal of the perfectly balanced bilingual person, showing that balanced bilingualism should be considered the exception rather than the rule (Grosjean, 2008). Most often, different degrees of exposure to each language and different patterns of use of these

languages lead to bilingual children having an asynchronous language development. One of their languages will tend to develop faster than the other and the bilingual child might thus be more proficient in one of their languages than in the other.

The notion of language dominance is thus especially relevant when a researcher tries to assess bilingual children's language proficiency by testing their rates of correct production of late acquired morphemes. Indeed, language dominance will mostly affect the acquisition of these morphemes and it can greatly impact the children's performance rates on the administered tests. French-English bilingual children non-dominant in English should not be expected to rate as high in both of their languages on production tasks. With this in mind, language dominance can be considered a confounding variable, which needs to be controlled. It is thus necessary to account very carefully for the language development and patterns of exposure and use of the children under study, and to take language dominance into account. To assess language dominance, the researcher first needs to be aware of the linguistic upbringing of the child under study. The following questions thus need to be answered: are the children simultaneous bilinguals? Are both of their languages equally valued within the society they live in? Do they get the same amount of input on average in each of their languages? Is the input they receive as qualitatively diverse in both of their languages? In many cases, if these questions are answered in the negative, it is likely the children will not be perfectly balanced bilinguals, although the idea that children will grow into balanced bilinguals only if they were simultaneously exposed to both their languages is erroneous. Indeed, sequential bilinguals exposed to their second language before the critical period mentioned earlier can theoretically attain the same level of proficiency in both their languages. However, if a child did not get the same amount of input in both their languages, or if one of their languages is considered a minority language, it is to be expected that they will be dominant in the majority language, or in their language of greater exposure. Such questions may be answered quite simply, most often by asking the parents to fill a questionnaire about the language practices of their bilingual child. However, parents are not language specialists, and it is not uncommon to see them misjudge their child's language ability. To overcome this uncertainty, the researcher trying to establish a young child's dominant language may turn to the measurement unit called Mean Length of Utterance (MLU). Researchers can calculate this MLU based on the language production of the child who is being tested. Utterances are here being considered instead of sentences, as children often produce sentences that are not syntactically complete, and often quite short. Indeed, it is not rare for children to use one-word sentences, which would on the whole falsely impact the results by bringing the MLU down. MLU is mostly useful for children in the first stages of language acquisition. Later on, calculating the Number of Different Words (NDW) may also be used to assess lexical diversity, and to complete MLU measures. Both MLU and NDW should first be measured for the language productions of the child in each of their two languages and then compared. The language in which the child has the highest MLU and NDW can be considered their dominant lan-

guage. Several studies have illustrated the impact of language dominance on children's linguistic performances (De Houwer, 2007, 2009; Grosjean, 2008; Paradis, 2010) mainly by showing that if bilingual children performed on the whole worse than their monolingual peers in their non-dominant language, the two groups' language development was much more homogeneous when language dominance was taken into account, i.e., when bilingual children's production in their dominant language was compared to the production of their monolingual peers.

In light of these recent studies, I devoted particular attention to the identification of the dominant language of the children participating in this study. I chose to rely partly on parental questionnaires, which shed light both on language practices inside and outside the home and on language representations as well as parental evaluation of their child's linguistic abilities. MLU and NDW measures were conducted on the longitudinal corpora collected prior to this study. Because these corpora included recordings from very young French-English bilingual children and French monolingual children (up to four years old), MLU was still a useful measure to describe the children's linguistic development throughout the period. Measures of lexical diversity conducted on the longitudinal corpora used in this research focused especially on the use of verb forms by the children throughout the period. This study is also interested in the way bilingual children manage to acquire and use plurifunctional forms in their two languages, in various discursive contexts, depending on their patterns of exposure to each of their languages. I thus collected spontaneous and narrative productions of French-English children aged four to seven and reflected on the way to best determine dominance patterns. Knowing that MLU measures are most useful to assess language development in children younger than four, I chose to rely both on parental questionnaires on language practices and on vocabulary scores to determine the children's dominant language. It also allowed me to contribute to the discussion on the link between vocabulary development and language exposure, on the one hand, and between vocabulary development and grammatical development on the other hand.

1.2.3 The unique profile of the bilingual speaker

The importance of setting new standards for the evaluation and study of bilingual acquisition was met in the literature by the development of new concepts to account for the ways in which the two languages of bilingual speakers coexist and sometimes interact. The concept of language mode was developed to account for how two languages are activated or partially deactivated depending on the context, interlocutor, subject, etc. This concept has received relatively little attention, although researchers have proved sensitive to the reality it covers for several decades (Clyne, 1972; Grosjean, 1985; Beardsmore, 1986).

1.2.3.1 The language mode (Grosjean, 1985, 1989, 2008)

The language mode (or language modality) has been defined as “the state of activation of the bilingual’s languages and language processing mechanisms at any given point in time” (Grosjean, 2008, p. 36). The expression “state of activation” refers to the level of activation of each of the speaker’s language. Grosjean (1997, 2008) states that in every conversation there is a base language (which can change depending on the setting and the interlocutor) that is fully active whichever mode the bilingual speaker is in. The language mode is conceptualized as a continuum, from a completely monolingual mode to a fully bilingual mode. Intermediate positions on the continuum correspond to states in which the base language is fully active, and in which the other language is more or less used, depending on whether the speaker is closest to being in a monolingual or a bilingual mode. The language mode is presented as having a direct impact on language behavior, and particularly on the way bilingual speakers use code-switching in conversations. Grosjean (1997) manipulated the language mode bilingual speakers were in, to show that a bilingual speaker set in a monolingual mode will use fewer instances of code-switching than if they were in the bilingual mode. As I mentioned in passing earlier, several criteria influence language mode selection. First, the interlocutor is central to the speaker’s choice of language mode. Indeed, the speaker will adjust their language mode depending on whom they are talking or listening to. Thus, in a conversation between two French-English bilingual speakers, both should be in a fully bilingual mode. On the contrary, if a bilingual is speaking with a monolingual, they will most likely be in a monolingual mode, and will not let themselves code switch, as they know their interlocutor will probably not be able to understand them if they do. Once again, language mode is thus directly linked to the communicative function of language. However, other criteria enter bilingual speakers’ language mode choice, such as situational criteria for instance. Indeed, factors such as the presence of monolinguals or the degree of formality of the discussion may influence the choice of language mode: if a monolingual is present, bilingual speakers will most likely be in a monolingual language mode. This will also be the case in a formal discussion, as opposed to a discussion set in a more informal context, in which the bilingual speaker might adopt a bilingual mode more readily. The concept of bilingual mode thus highlights the uniqueness of the bilingual profile. Indeed, it illustrates the bilingual speaker’s awareness of their bilingualism, and of the factors that influence which language should be used and in what way. It thus underlines the agency of the bilingual speaker in their use of language: speakers, including children, are not passive in the face of bilingualism. On the contrary, they demonstrate an ability to act on it, by choosing to use or deactivate (at least partially) their other language.

1.2.3.2 The complementarity principle: A bilingual view of bilingualism

The complementarity principle was formulated by Grosjean (2008, 2016) as a way to account for the uniqueness of the bilingual speaker-hearer. It ties back to the claim that the bilingual is not “two monolinguals in one person” (Grosjean, 1985), but rather an “integrated whole who cannot easily be decomposed into two separate parts” (Grosjean, 2010, p. 75).

It is thus necessary to consider the bilingual’s language system as a different system altogether, born of the coexistence and interaction between two languages from birth (Grosjean, 2008). As mentioned earlier, a child’s levels of proficiency in a language depends greatly on the child’s experience with that language – i.e. levels of exposure and degree of need for that language (De Houwer, 2007; Grosjean, 2008). Bilinguals rarely have the same uses for both of their languages, but rather use one language to cover only some domains of life while others are covered by the other language (Grosjean, 2008, 2016). The complementarity principle accounts for this distributed use of the bilingual child’s languages across different domains, and for the fact that bilinguals are seldom perfectly balanced in each of their languages. It explains for instance that bilinguals’ vocabulary in both languages often does not overlap, as lexical development in both languages would tend to be domain-specific (Grosjean, 2008). Finally, the complementarity principle explains why language dominance is not fixed, but rather may shift over time. Indeed, proficiency and fluency in the bilingual’s two languages depend on the situations, domains and interlocutors with whom a given language is used. Changes in these factors involve a restructuring of linguistic needs which may shift language dominance. When bilinguals move from a country where their dominant language is the majority language to one where the majority language is their non-dominant language for instance, then it is likely that the two languages will be reconfigured (Grosjean, 2008, 2016).

1.2.3.3 Strengths and weaknesses of bilingual speaker-hearer

The bilingual child can be considered to have a unique profile with regards to many aspects of their language, social and cultural development. In the realm of bilingual children’s linguistic development, I highlighted earlier the main areas with which this study is concerned, and in which a bilingual delay might be observed for some children, especially in their non-dominant language. Thus, a French-English bilingual child may have difficulties producing the past-tense morpheme in English, or the correct past-tense form in French, as well as using articles and the pronominal system in French, and possibly in English.

The notion of language dominance which was also discussed raises the question of the ties that exist between both languages of a bilingual speaker. I summarize in the

next section the debate between the unitary language system and dual language system hypotheses, and will give tangible evidence to support the latter, according to which a bilingual child's language develop into two distinct systems from the start (Genesee, 1989). However, acknowledging the validity of the dual language system hypothesis does not imply that the bilingual child's two languages do not make contact at some point in their linguistic development. The question of contact between the two languages has gradually been placed at the center of reflections on bilingual development, mostly through the discussion on "cross-linguistic influence" (Lanza, 1997). Before going back to this central notion, I turn to possible positive effects bilingualism might have on the linguistic development of children. The notion of bilingual bootstrapping was coined by Gawlitzek-Maiwald and Tracy (1996) and is used to refer to the influence between the two languages of a bilingual child that benefits their language development. This type of inter-language positive influence has also been referred to as acceleration in the literature (Paradis and Genesee, 1997; Genesee et al., 2004). It has thus been argued that rapid development in one language can ease the development of the other language. Most often, the dominant language may fulfill a booster function for the development of the non-dominant language, especially if the languages share some linguistic-conceptual features (Paradis et al., 2007; Cenoz and Genesee, 2001). This would imply that the bilingual child might use linguistic knowledge from two sources to learn language, even if these sources are stored separately. Some of the studies that have addressed the positive impact of bilingual acquisition on rates of development (Paradis and Genesee, 1996; Gathercole and C, 2007) have shown that the acquisition of shared linguistic features might be easier for bilingual children. It thus seems that a bilingual child exposed to a linguistic feature in one language will in turn be familiar with it when they are exposed to it in their second language, and might thus find it easier to acquire. In addition, it has been hypothesized that bilingual children have better language general abilities (processing mechanisms for example) due to their exposure to two languages (Genesee et al., 2004). If they do not necessarily have better language specific knowledge than monolinguals, they might thus show enhanced meta-linguistic skills. This was illustrated mostly by submitting bilingual children to grammaticality judgment tasks, where they performed better than their monolingual peers. In contrast, the difficulty they seem to encounter in the production of some grammatical morphemes might illustrate the competition between their two linguistic systems (Paradis, 2010).

Research on interdependence in language development, which would explain acceleration or bootstrapping effects, has yielded contradictory results. Indeed, if some studies gave evidence of an interdependent development of the bilingual child's two languages (Serratrice, 2001; Gawlitzek-Maiwald and Tracy, 1996), others have dismissed the idea of interdependence in language development. For lack of evidence supporting an interdependent development, some researchers have turned to the theory of an autonomous development of the bilingual child's languages (Paradis and Genesee, 1996; Paradis, 2010). Systematic interdependence was rejected, as authors found no evidence of "the systemic

influence of the grammar of one language on the grammar of the other during acquisition” (Paradis and Genesee, 1996, p. 3). The ambiguity in the literature relative to interdependence in language development calls for additional research on this issue. Moreover, although grammatical morphology is difficult to acquire regardless of the child’s first language (Paradis, 2010), the acquisition of language-specific features proves in some cases to be positively influenced by specific characteristics of the first language. French-English bilingual children non-dominant in English thus tend to use the auxiliary *Be* sooner than monolingual speakers of English, who omit it during the OI (Optional Infinitive) stage (Paradis et al., 2003). Indeed, the auxiliary *Be* is typically considered a late-acquired morpheme, as are other tense-marking features in English. In French however, auxiliaries are acquired sooner. This seems to benefit the acquisition of English auxiliaries by French-English bilingual children, who produce auxiliaries in English sooner than their monolingual peers (Paradis and Genesee, 1996; Paradis and Crago, 2000; Paradis et al., 2003)³.

1.2.3.4 The grammar of code-switching

One type of cross-linguistic influence in bilingual children’s language development that has been extensively studied is code-switching. It has received a wide amount of attention in the past twenty years, and has recently been refined and qualified leading to the emergence of a new term to characterize the way bilingual speakers use their two languages in alternation.

Code-switching is mostly used to refer to instances of language alternation at the syntactic and morphosyntactic levels (Poplack, 1980; Lanza, 1997). One definition has been widely accepted, which described code-switching as “the use of two or more languages at the word or utterance level and across utterances” (Lanza, 1997, p. 1). My use of the term code-switching will encompass this definition of the notion, or more simply “the alternative use by bilinguals of two or more languages in the same conversation” (Muysken, 1997, p. 7). Terms like language-mixing or code-mixing are more generic, as they are commonly used to refer to any type of contact between languages (Lanza, 1997). They are also more biased, as the term mixing could imply a certain degree of confusion and an absence of differentiation between the two languages of a bilingual speaker.

Throughout the twentieth century, researchers have studied occurrences of code-switching in the speech of bilingual children. Their studies reflect the evolution of the scientific stance on bilingualism. Indeed, instances of code-switching were initially seen as symptoms of a linguistic deficiency in bilingual children (Lanza, 1997). This view can be explained by the fact that monolingual language acquisition was then systematically considered as the norm to which researchers compared bilingual acquisition. As a deviation

³Predictions concerning possible transfer or bootstrapping effects in the acquisition of past tense morphology by French-English bilingual children will be detailed in chapter 3.

from monolingual standards, code-switching was naturally seen as a sign of deficiency. As researchers gradually moved away from this perspective, reconsidering bilinguals not as “two monolinguals in one” (Grosjean, 1989; Genesee et al., 2004), but as unique language learners, their stance on code-switching also evolved. It is now acknowledged that far from signaling a linguistic deficiency, code-switching can serve several communicative functions and is governed by a system of rules that restrict when and how bilingual speakers use their two languages within one conversation or utterance. Bilingual speakers code switch for several purposes, most often to signal a change or create a break in the conversation. Researchers have striven to identify the rules that constrain code-switching and have shown that areas of ambiguity in the child’s two languages favor the use of code-switching, which also tends to occur for structures which are ambiguous (Paradis, 2001). The ability of the bilingual child to juggle with two languages, and to know when to code switch greatly participates in the construction of a unique bilingual profile. Grosjean (2008) thus explained that the bilingual language mode, i.e. the language mode which bilingual participants are in when communicating with other bilinguals is characterized by “maximal code-switching” (Grosjean, 2008, p. 37). This is the perspective I take in this work – code-switching is not considered as highlighting linguistic deficiency but rather as a communicative strategy adopted by bilingual children to get meaning through. This perspective is the most widely adopted in studies on bilingualism which use the term code-switching.

1.3 Studying bilingualism: theoretical framework

1.3.1 One linguistic system or two: from code-switching to translanguaging

As a wealth of research on bilingual acquisition has developed in the past decades, bilingualism has gradually become a scientific object studied for itself and not merely in contrast with monolingual language development. A debate has long divided researchers on bilingual acquisition, particularly regarding the conception of the bilingual child’s linguistic system, namely the question of whether bilingual children have one linguistic system or two. Bilingual children are said to come to consciousness regarding their learning of two languages around three years of age (Genesee et al., 2004). We could thus expect that from then on they represent the language input they hear as two systems (dual system). Researchers have wondered whether children have a single or dual language system before three years old, questioning the extent to which young bilinguals distinguish between their input in both languages and the way in which they process and store new information.

The unitary language system hypothesis was most notably formulated by Volterra and Taeschner (1978). It is described as a language system in which the words and grammat-

ical rules extracted from the input of the bilingual child are combined from the onset into a single language system. As the child's language develops, they operate a differentiation of the lexical systems first, and then of syntax⁴. Several arguments have been used to back up this single language system hypothesis, the most prevalent of which at the time being the observation of language mixing in the speech of bilingual children, i.e. the use of a word or grammatical rule from one of the child's languages within a sentence or an utterance in their other language. It was long thought that instances of code-switching, which often occur at a higher rate in the speech of younger children, illustrated their inability to distinguish between the linguistic systems of their two languages. The unitary language system hypothesis has been questioned and gradually discarded in favor of a dual language system hypothesis (Genesee, 1989), which stipulates the existence of two separate linguistic systems in the mind of the bilingual child from the onset of bilingual acquisition. The hypothesis of a dual language system has been widely supported in the literature. Indeed, studies on several domains of language (speech perception, phonology, vocabulary, morphosyntax) have largely contributed to showing that bilingual children seem able to distinguish their two languages very early on. Evidence of a dual language system is most relevant to our study in the domains of vocabulary and morphosyntax. Volterra and Taeschner (1978) noted the initial absence of translation equivalents in the lexicons of bilingual children and used this to support their claim of a unitary language system. They hypothesized that children learn labels for concepts on a one-to-one basis, and avoid learning words with the same meaning, which would explain the absence of translation equivalents they noted in their longitudinal study of two bilingual children. Studies have since then contradicted the conclusions they reached (Genesee et al., 1996; Nicoladis et al., 2010), showing that children acquire translation equivalents early on. They note that around 30% of a bilingual's child lexicon is not constituted of translation equivalents, which finds justification in Grosjean's complementarity principle Grosjean (2008, 2016). In the field of morphosyntax, Volterra and Taeschner (1978) observed that after the vocabulary system naturally separated into two differentiated systems (one for each language), bilingual children kept storing grammatical rules in a single system which would not divide into two until later on. However, several studies have since then highlighted proofs of early syntactic differentiation by bilingual children. Studies on the use of negative markers by French-English bilinguals for instance have contradicted the unitary language hypothesis. Indeed, negative constructions in French and English differ with regards to the distribution of the negators "pas" and "not". In French, all finite verbs are placed left of the negator "pas", as in "*Le bébé ne pleure pas*". In English, the lexical verb is placed to the right of the negator "not", and the non-lexical verb, inflected for tense and required in negative constructions, appears left of the negator as in: "The baby

⁴"In the first stage the child has one lexical system which includes words from both languages. (...) The language development of the bilingual child seems to be like the language development of the monolingual child. (...) In the second stage the child distinguishes two different lexicons, but applies the same syntactic rules to both languages. In the third stage the child speaks two languages differentiated both in lexicon and syntax." (Volterra and Taeschner, 1978, p. 312).

does not cry”. Paradis et al. (2000) studied 15 French-English bilingual children aged 2;0 to 4;0 years old, and noticed only sporadic errors in the placement of the negative marker, which suggests that children can distinguish early on between their two linguistic systems, including in the field of morphosyntax. A wealth of research has addressed the patterns of acquisition of bilingual children, showing that their morphosyntactic development is globally similar to that of monolinguals, and thus supporting the dual language hypothesis.

However, support for the dual language system hypothesis does not mean that bilinguals should be considered “two monolinguals in one” (Genesee et al., 2004; Grosjean, 2008), or that the unitary language system theory should be discarded as a whole. In recent years, studies on the relationship between bilinguals’ two languages have come back to the idea that bilinguals have a single bilingual linguistic system, which differs from the sum of two monolingual systems and which includes both shared and language-specific grammatical resources. This new stance is highlighted by the appearance of the term “translanguaging” in the field of multilingualism, defined by Otheguy et al. (2015) as “the deployment of a speaker’s full linguistic repertoire without regard for watchful adherence to the socially and politically defined boundaries of named (and usually national and state) languages”. The terminological evolution from code-switching to translanguaging is thus mostly a theoretical shift, which encourages linguists to view languages as “social constructs” rather than psychological ones, i.e. it is meant to encourage linguists working on bilingual acquisition to take the speaker’s perspective on the language or languages they consider. The idea behind this terminological change is that the notion of code-switching implies the existence of two codes, or grammars between which bilinguals alternate, or switch. It is presented as based on an outsider’s perspective on language use, within which particular speakers’ ways of using language are evaluated or considered only in relationship to the linguistic norms identified for that language. Defenders of translanguaging thus criticize the term code-switching because it represents a “theoretical endorsement of the idea that what the bilingual manipulates (...) are two separate linguistic systems” (Otheguy et al., 2015, p. 282). On the contrary, translanguaging considers bilinguals to have a unified collection of linguistic features at their disposal, including shared and language-specific grammatical resources, and to select the appropriate features depending on the communicative situation they are in (García and Wei, 2014; MacSwan, 2017).

1.3.2 Implications of usage-based theories of language acquisition and constructivist approaches in bilingual acquisition

The theoretical framework of this study borrows from usage-based theories of acquisition as well as constructivist approaches to language (Bybee, 1985, 2013; Goldberg, 2006; Tomasello, 2009). The usage-based theory of language acquisition (Tomasello, 2009) is a fairly recent theory used to account for the way young children acquire language, op-

posed to the Chomskian, or formalist approach to language acquisition (Chomsky, 1980). The formalist approaches to language acquisition presupposes the existence of a Universal Grammar common to all languages and inherent to the human mind (Chomsky, 1980). It presents language as being learned thanks to a set of innate principles common to all languages. Specific languages consist of principles as well as parameters to be adjusted to the language in order for a child to acquire specific linguistic structures. In this approach, language is seen as an autonomous cognitive function – as a system composed of sub-systems (morphology, syntax, semantics) and independent from other cognitive functions. The formalist approach has been questioned on several bases, including that of the existence of a Universal Grammar, which would suggest that language is learned mostly thanks to innate abilities rather than through exposure to input. Observations on the acquisition of idiomatic structures in particular contradict the claim of the existence of a Universal Grammar. Indeed, idioms are language specific, idiosyncratic, and cannot be understood without being treated as single lexical items. The meaning of the idiom “sitting on the fence” for instance cannot be unveiled by analyzing its components independently. Their acquisition is not dependent on an innate knowledge of language, but rather on their frequency in the input received. Thus, children learning language will be able to use idioms not because they possess an innate knowledge of an underlying grammar, but because they have been exposed to these items frequently and consistently in the speech of adults surrounding them. Rather than analyzing grammatical knowledge as universal and innate, usage-based theories of acquisition construe grammatical knowledge as based on mechanisms of generalization and complexification, which allow children to draw linguistic features and constructions from the input they receive and exploit it in their own productions (Leroy et al., 2013). In addition to emphasizing the role of the amount of exposure received by the child in the acquisition process, linguists of the usage-based theory state that the relative complexity of the target structure will make it more or less difficult to acquire (Tomasello, 2009; Bybee, 2010). The notion of complexity is linked to the unit of construction, borrowed from the constructionist approach (Bybee, 1985; Goldberg, 2006).

The constructionist approach describes constructions as units of language, which encompass several linguistic features combined to serve a coherent communicative function. The term construction can refer to a word or a group of words, as long as they constitute a grammatical unit (Goldberg, 2006). Moreover, constructions represent associations of forms and functions, and thus play a great role in the form-to-function mapping process, which underlies children’s ability to generalize from the input received. Indeed, children are able to generalize more abstract schemata on the basis of such constructions (Goldberg, 2006; Leroy et al., 2013). Constructions can thus be seen as the basic units of language, with usage being the engine that allows language to develop and evolve (Leroy et al., 2013). A construction is considered more or less complex depending on the number of elements it imbricates, and on the relations between them. Researchers have used

concepts of *type frequency* and of *token frequency* (Paradis et al., 2007; Tomasello, 2009; Nicoladis and Paradis, 2012) to illustrate the impact of relative complexity on generalization mechanisms. The linguistic structures heard and used by children will influence their abilities to build a structured and easily accessible inventory of constructions. A child will be able to access and use a construction more or less easily depending on its distribution in the input. A structure that is substantially provided in the input will be easier to learn, i.e., a structure to which the child is frequently exposed will be easier to acquire than one they have seldom been exposed to. Any linguistic structure has a type frequency and a token frequency that determine its lexical strength, which in turn determines the ability of the child to produce the target structure (Tomasello, 2009; Bybee, 1985, 2013). Token-frequency refers to the frequency of appearance of a given item in the input, treated as a lexical whole by the child and stored as such in their lexicon. Type frequency refers to the frequency of appearance of a given linguistic structure, stored as a [lexical base [morpheme]] (Tomasello, 2009; Paradis et al., 2007; Bybee, 2013). A given linguistic item thus has a type frequency and a token frequency that reflect the way in which it is stored in the child's lexicon. The past-inflected form [walked] for instance may be stored in the lexicon as a lexical whole, with specific semantic characteristics. It will thus be connected to other items in the lexicon through its semantic and phonological features. As a rather frequent verb it is moreover predicted that its token frequency should be higher than that of a less common verb also inflected to mark the past tense such as [challenged] for instance. However, both [walked] and [challenged] can be stored as a similar schema along the lines of [lexical verb[ed]past]. This schema is the same for all English regular verbs inflected for the past tense: [walked] and [challenged] thus have a high type frequency. Children acquire specific items that have high type and token frequencies more easily. Type frequency especially is essential to the child's ability to infer general rules of construction from the input they receive (Tomasello, 2009). A high type frequency can be used to account for certain types of mistakes made by children acquiring language (in particular errors of overgeneralization). Type and token frequencies are essential to the process of language acquisition (Diessel, 2004). As the child stores more and more constructions, their mental representations of schemata will be reinforced, enabling them to break these schemata down and produce their own utterances (Bybee, 1985; Leroy et al., 2013). Input properties (which determine the speaker's ability to hear and store exemplars of a target structure), and the complexity of target constructions are thus central to the usage-based theory of acquisition (Goldberg, 2006).

1.3.3 Bilingual development within usage-based theories

According to the usage-based theory, the amount and quality of input received by children is critical to language acquisition processes (Paradis et al., 2007). This is particularly relevant to bilingual acquisition as it could suggest that bilingual children would lag behind

their monolingual peers. Indeed, bilingual children are exposed to two languages from birth, and thus have “more variability in their input than monolingual children” (Paradis, 2010). On average, it is reasonable to conclude that they receive thus less exposure to each of their languages than monolingual children (Nicoladis et al., 2007). Studies comparing monolingual and bilingual acquisition have established that significant milestones (babbling, first words, first constructions) are nevertheless attained roughly at the same age by both groups of children (Genesee et al., 2004). However, bilingual children have been shown to lag behind their monolingual peers in some specific areas of language, and particularly in their acquisition of some late-acquired features of language (Paradis et al., 2007; Paradis, 2010; Tomasello, 2009; Nicoladis and Paradis, 2012).

This study focuses on the acquisition and production of past tense forms by French-English bilingual children, and some studies indeed argued that French-English bilingual children aged between four and six years old exhibited slightly lower accuracy with verbs in the past tense in both languages than their monolingual peers (Paradis et al., 2011). These observations need to be further tested, in particular against spontaneous language samples. Input quality also plays a major role in language acquisition according to usage-based theories. It has in particular been shown to influence early use of past tense morphemes. Indeed, many studies have highlighted a possible link between the semantic characteristics of verbs and the frequency and accuracy with which monolingual children inflect them for the past tense. Some authors have thus stated that the first verbal forms used by children depend highly on the semantic value of the verbs (Brown, 1973; Bloom et al., 1980a; Meisel, 1994). Tomasello (2009) further stated that children tend to use the past tense most often with change-of-state verbs. Some studies have tied these inflectional patterns to qualitative characteristics of Child-Directed-Speech (CDS), claiming that children in fact reproduce what they hear in CDS (Shirai, 1991; Shirai and Andersen, 1995; Li and Shirai, 2011)⁵.

This study is set within usage-based theories and thus considers language as a communicative tool, acquired in interaction with others. It will thus devote a significant amount of attention to the analysis of parental input, and in particular of CDS characteristics.

⁵See chapter 3 for a more detailed analysis of the early uses of tense and aspect morphology by French-English bilingual children.

This chapter reviewed the literature on bilingualism in order to characterize the bilingual children whose productions are analyzed in this study, and to make sure that the analysis of their linguistic development will take into account their specific bilingual profiles and the diversity that characterizes bilingualism (Meisel, 2001; De Houwer, 2007; Grosjean, 2008). This study is set within the frame of usage-based theories of language acquisition, and thus will devote particular attention to input quantity and quality, as it is expected that constructions may be more easily acquired depending on their frequency and the stability of the schemata in which they appear in the input (Goldberg, 2006; Tomasello, 2009). Studying bilingualism within usage-based theories begs the question of whether children will generalize constructions based on exemplars from the input in the same way as what was observed for monolingual children in the early stages of the acquisition of past tense morphology, despite greater variability in the input of bilingual children (Shirai, 1991; Shirai and Andersen, 1995; Paradis, 2010).

Chapter 2

Aspectuality-Tense-Aspect-Modality: definition and expression in French and English

The focus of this study is the acquisition and use of past tense markers by French-English bilingual children from 1;06 until around seven years old, when these markers begin to be used proficiently with different functions, in various discursive contexts. It is thus essential to study and characterize the way(s) in which bilingual children acquire and use past tense morphology. This has been extensively studied (Paradis and Crago, 2000; Paradis et al., 2003, 2007; Paradis, 2010), although few studies have analyzed the longitudinal acquisition of past tense forms by bilingual children.

Past tense morphology in French and in English is part of the Tense-Aspect-Modality paradigm, sometimes expanded to include Aspectuality (or lexical aspect, see section 3 of this chapter), otherwise known as the Aspectuality-Tense-Aspect-Modality (ATAM) paradigm (Giacalone-Ramat, 2002; Bertinetto, 2012; Bertinetto et al., 2015). Aspectuality, Tense, Aspect and Modality are lumped together in a paradigm because in many languages including, French and English, speakers may choose from the same plurifunctional markers to express either aspectual, modal or temporal distinctions. The present section focuses on the use of these markers by the adults in the corpora we used for this study, which include recordings of family dinner as well as monthly hour-long play sessions with one parent and the child. The notions of aspectuality, tense, and grammatical aspect will be defined in this chapter as well.

One of the main challenges for linguists studying the acquisition and use of ATAM morphology in the speech of young children is to identify what children tend to express when they first use ATAM morphology. This is not an easy task, especially as the categories of Aspectuality, Tense, Aspect and Modality are not discrete (Li and Shirai, 2011)

– because ATAM morphology is often plurifunctional, there may be interactions between the categories of aspect, tense, aspectuality and mood. The English simple past, for instance, may be used to build both temporal and aspectual reference (see section 1.3 for more details), and it is not clear whether children use it in a plurifunctional way from the start. Rather, studies on longitudinal data from English monolingual children have suggested that children may first use ATAM morphology in a restricted fashion with a main function of building aspectual rather than temporal reference (Bronckart and Sinclair, 1973; Brown, 1973; Bloom et al., 1980a). The restricted use of ATAM morphology by young children, which is analyzed in details in chapter three, highlights the intricate ties between tense-aspect-mood markers. It also underlines the importance of the input in the acquisition of such late-acquired morphemes, as studies have suggested that children first restrict their use of past tense morphology to the functions most frequently represented in their input. The aim of this work is thus to interrogate the link between input quality and quantity, supposedly reduced for bilingual children, and patterns and rates of acquisition of tense-aspect morphology.

Discussions on ATAM morphology in the literature have suffered from terminological fuzziness, which often makes it difficult to compare results or reproduce studies (Shirai, 1991). The present chapter aims at clarifying what is encompassed by the notions of Aspectuality (or lexical aspect), Tense, and (grammatical) Aspect in this study. We focus on these categories because they are the categories French and English children start using primarily when they first acquire ATAM morphology.

Finally, before beginning to analyze the categories of Aspectuality, Tense and (grammatical) Aspect extensively in French and in English, it is necessary to mention the relationship between these grammatical categories and the realities in the world that they help express. Indeed, the study of ATAM morphology requires extensive analysis of the semantic properties of utterances. It might lead to compare two utterances describing real-life situations in terms of whether they refer to situations as having duration, or dynamicity for instance. It is thus necessary to state early on that utterances are never perfect representations of situations from the real world (Smith, 2013). Instead, utterances should be considered partial representations of real-world situations – the semantic properties we discuss in this chapter are properties of a situation that speakers choose to make explicit in their utterance, depending on their representation of the world (Klein, 1994).

As I mentioned above, several studies have claimed that young monolingual children first use ATAM morphology with a restricted set of verbs and a restricted function, e.g. to express aspectual distinctions rather than temporal ones. This has been extensively analyzed in monolingual data in various languages, although rarely in French. I aimed to analyze the development of ATAM morphology in the speech of young bilingual children, in order to test the claim according to which children first use tense-aspect morphology in a restricted fashion because they are more sensible to aspectual than temporal distinctions

(Brown, 1973; Bronckart and Sinclair, 1973; Bloom et al., 1980a; Shirai and Andersen, 1995; Shirai, 1991; Li and Shirai, 2011). I was in particular interested in whether young bilingual children are as able as their monolingual peers to use frequent form-function pairings found in their input. This chapter is dedicated to the description of ATAM morphology in French and in English, with a specific focus on past temporal morphology, whose acquisition is highly dependent on input properties. The acquisition of French and English ATAM morphology by young bilingual and monolingual children will be discussed in chapter three.

The present chapter provides both a definition of the notions of tense, (grammatical) aspect and lexical aspect and an overview of the distribution and the functions served by ATAM morphology in the speech of the adults in the corpora used in this study. All examples used are drawn from one of these corpora. Extracts are labeled using the chapter number followed by the main section number, and the particular example number. The corpus they were taken from as well as the age of the target child at this stage are indicated in bold on the first line. Ages are given following the convention in studies on language acquisition, which is explained by a footnote in extract 2.1.1. When necessary, English translation is provided between parentheses, in italics. Several reasons have led me to use extracts from the corpora analyzed in this study rather than made-up utterances. First, it allowed me to use the present chapter to characterize the input received by the children and the way ATAM morphology was used by the adults in the corpora. It also enabled me to show how each form was analyzed as part of the interaction rather than out of context – the interpretation of the temporal or aspectual reference of the form systematically took into account the interactive context in which the form was used.

2.1 Tense

The aim of this section is to give an overview of the different temporal functions served by the tense-aspect forms under focus in the corpora used for this study. The two following subsections are dedicated to a definition of the concept of tense within a three-point approach (Reichenbach, 1947; Klein, 1994). The final subsection reviews past and present forms that were used by the adults in both French and English in our corpora.

At the bedrock of this work lay a number of interrogations on the impact of parental input on the acquisition of tense-aspect forms by monolingual and bilingual children. This work attempts to determine in particular whether forms which serve fewer different temporal functions in adult speech are acquired sooner by children, and whether children tend to use tense forms with the same temporal values as the ones most frequently instantiated in adult speech. Finally, listing the temporal values of the different past-tense forms in French and English allows to analyze the acquisition of forms which serve redundant temporal values in adult speech. French speakers for instance may choose between two

past-tense forms, the *passé composé* or the *imparfait*, which may both serve to refer to the past but differ in terms of grammatical aspect and modal value. It was expected that tenses such as the *imparfait*, which is used less frequently than the *passé composé* by French monolingual adults and whose temporal value is at least in part redundant with another tense form, may not be used in child speech predominantly with a temporal value (Parijsse et al., 2018). In other words, it was expected that children would first acquire forms with their most salient function in adult speech, first mapping one form onto one function unilaterally and avoiding redundancy in the functions served by the forms stored originally, before starting to use different forms to serve the same temporal value.

2.1.1 Tense vs. Time

Contrary to French, English has two words to refer to the grammatical marking of *tense* and to the extra-linguistic notion of chronological *time*. French has only one word to refer to these two concepts, “*temps*”, which may lead to a confusion between linguistic tense and chronological time.

Time is a chronological feature which distinguishes the past from the present and future *times*, with the present always being the time of utterance. On the other hand, tense is a linguistic feature, expressed through linguistic means such as verbal inflection, verbal auxiliaries, periphrastic verbal constructions or adverbials. Tense has often been defined in relation to time, as “a grammaticized expression of location in time” (Comrie, 1985, p. 9), or as “the grammatical expression of the time of the situation described in the proposition relative to some other time” (William, 1992). However, these definitions may be misleading in that they give the impression that there exists a correspondence between linguistic tense and chronological time, or that tense is used exclusively to convey temporal information (Bertinetto et al., 2015). These criticisms were expressed early on. Quirk et al. (1985) identified in the literature on tense morphology a tendency to equate “distinctions of grammatical form with distinctions of meaning”, noting in particular that “the English present tense, for instance, usually, but by no means always signifies present time.” (Quirk et al., 1985, p. 175). Indeed, the present *tense* either in English or in French may be used to refer to another *time* than the present. As Klein (1994) stated: “Tense (...) is not even particularly important for the expression of time. Many languages do not have it at all and in those languages which do have it, it is largely redundant”. In French for instance, one may use a time adverbial in association with the present form of a verb to refer to a future event. The following examples are taken from the longitudinal recordings of two French-English bilingual children used for this study (Hervé et al., 2016). The caretakers of both children used the present tense to refer to the future in almost all sessions in both English and French. In extract 2.1.1, Sophie’s mother uses the present tense to refer to her daughter’s birthday party planned in a few days (the present tense forms coded as building future reference are in bold in the transcription extract).

Extract 2.1.1.

Sophie, 3;00.05^a

MOT: alors qui c'est qui **vient** pour ton anniversaire ? (*so, who is coming on your birthday?*)

CHI: je veux que Coralie vient. (*I want Coralie to come*)

MOT: tu veux que Coralie vienne? (*you want Coralie to come?*)

MOT: est-ce que Coralie **est** là? *will Coralie be there?*

OBS: c'est samedi? (*is it on saturday?*)

OBS: je serai pas là. (*I won't be there*)

^aThe information in bold reads as follows: Sophie is the target child, the child's age at the time of recording is 3 years; 00 months. 05 days.

The adverbial “pour ton anniversaire” (*on your birthday*) locates the time of reference in the future, however the verb is in the present tense. This use of the present tense is eased by the fact that the present situation and the future reference built in the utterance are not fully disconnected from one another: at the time when the utterance was produced, the birthday party was being planned; it is likely that the invitations had been sent out and that the children had already confirmed whether they would come. The mother uses the present tense to build reference to a future time whose outcome is viewed as stable. Similarly, the present *tense* may be used in English to locate an event in future *time*, in a construction that some have called the *futurate*. This construction is used mainly to refer to “recurring events in nature, whose time can be calculated scientifically”, or to refer to events “arranged or scheduled in advance” (Huddleston and Pullum, 2005). These two values of the English futurate are illustrated below (the forms are in bold in the transcription). In extract 2.1.2.a., Anne's nanny used the present tense to build future reference to an event construed as recurring in nature (the growing up of a child). In extract 2.1.2.b., the present tense was used with a future meaning to refer to an event scheduled in advance, the Christmas party organized in the child's playgroup.

Extract 2.1.2.

Anne, 2;07.22

a. NAN: but <a little> [///] when you're little you're called a girl.

NAN: and then you **grow** bigger and you'll become a woman.

b. NAN: tomorrow **is** a Christmas party at the play+group.

OBS: oh.

OBS: so what are you gonna do for the Christmas party?

Moreover, speakers of English and French can sometimes use the present tense to locate events in the past. Linguists from both languages have called this the historical present. Huddleston and Pullum (2005) note that in some types of informal narratives, the present tense may be used instead of the simple past, as in extract 2.1.3 below.

Extract 2.1.3.

Anne, 2;07.22

NAN: we [/] we went to a new play+group at ymca.

NAN: they have a venue with activities for children.

NAN: there **is** a girl at the reception xxx a week and a half ago.

NAN: +< eyes red you know she **can't** even speak you know and she's **working** and I'm **thinking** seriously in your position you shouldn't really go to work you're just **spreading** germs to everyone you **greet** at the reception.

Here, the speaker starts to narrate a past event by using the past tense “we *went* to a new play group”. Once reference to the past is established however, she switches to using the simple present and present progressive to narrate the actual event. Many studies have accounted for this tense alternation in informal narratives, showing that mature speakers of French and English tend to alternate between the past and present tenses to narrate past events (Schiffrin, 1981; Bamberg, 2011). This illustrates a claim that is central to this study, namely that adults speaking French and English treat past and present tenses in discourse as parts of a single system, alternating from one tense to the other not only to build temporal reference but also to serve other discursive purposes. In this example, the use of present and present progressive forms allows the speaker to narrate events as if they were unfolding at the time of utterance, making for a more dramatic narrative. One of the aims of this work is to inform on the way children acquire these forms and their different functions in spontaneous and narrative discourse. I will try to do so first by characterizing how these forms are used in the children’s input.

The fact that both languages under focus express future or past reference without making use of the future or past tenses shows that the expression of chronological time can be independent from tense marking on verbs. Similarly, past tense forms are not only used to refer to past events, but rather may serve many other communicative functions. I am interested in the acquisition and use of past tense forms by young bilingual children, and will thus analyze past tense forms that are used to refer to the past as well as past tense forms used to refer to another time or to build aspectual or modal reference. For instance, the *imparfait* in French – the imperfective past tense form – can be used without

any temporal meaning (Parisse et al., 2018)¹. In English, there are a number of situations in which the simple past may be used other than to build past temporal reference. What Huddleston and Pullum (2005) call the *modal preterite* for instance is used to present information as more or less modally remote, i.e. to encode modal rather than temporal information.

The present section has focused on the difference between time and tense, and has established tense as a linguistic rather than a chronological feature. It also began to outline the challenge faced by linguists who try to document the acquisition of ATAM morphology – the same morphemes may serve to express either tense, modality or aspect and these functions may be difficult to disentangle. It is thus essential not to consider that all past tense forms are used to locate situations in the past but rather to carefully examine each form in context in order to identify the temporal value of an utterance. Chronological time has to do with the localization of a given situation along the time-axis. Tense is deictic, in that it locates situations relative to an anchor point. As Klein (1994) notes, this anchor point cannot be understood by default as the moment of speaking. If it were, the three time points or intervals would always be defined in relation to the time of utterance, and there would be a correspondence between past, present and future tenses and past, present and future times. Only languages with three tense forms each referring either to the past, present, or future could be analyzed within this frame, which cannot account for situations where a given tense form may be used with another function than its basic temporal anchoring (Klein, 1994). I now turn to a three-parameter approach which has been considered the most efficient to represent tense relations (Reichenbach, 1947; Klein, 1994; Smith, 2013).

2.1.2 Tense: three-point relational approaches (Reichenbach, 1947; Klein, 1994)

As stated earlier, tense has to do with deixis, as it helps locate a predicate relative to at least one anchor point. It has often been said that speakers use tense to “indicate a relationship of posteriority, anteriority or simultaneity between the events described and the moment of enunciation” (Bronckart and Sinclair, 1973). However, this view is incomplete as it entails that speakers necessarily locate the time of the events relative to the moment of speech (hereafter referred to as Speech Time or SpT). On the contrary, more recent theories of tense have argued for a three-point approach to the representation of tense relationships with an anchor point which may be different from Speech Time. Reichenbach’s three-points approach revolves around a Speech Time (SpT), an Event Time (ET) and a Point or Time of reference (RefT) (Reichenbach, 1947). SpT corresponds to the moment when the speaker produces an utterance. ET is the time when the event being

¹The different temporal values served by the main French and English past tense forms in the corpora used for this study are detailed at the end of the present section.

talked about is realized. The term “event” is used here as a generic term to refer to the situation described by a verbal predicate, regardless of its temporal constituency². RefT is a time point or interval which may serve as a temporal standpoint either distinct from or confused with SpT. In other words, RefT may be simultaneous with SpT or cover a different time interval (Reichenbach, 1947). This three-point approach proves particularly useful for the analysis of compound tenses (Comrie, 1985). Indeed, it has been argued that although some simple forms may be analyzed within a two-point theory of tense, which locates ET relative to SpT, complex forms require a third anchor point to be analyzed. The English perfect provides a good example of why a third anchor point may be necessary to represent the temporal anchoring of some situations, as illustrated in figure 2.1 below.

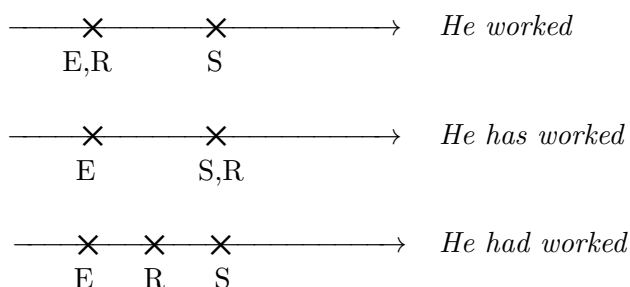


Figure 2.1: Representation of the simple past, present perfect and past perfect in Reichenbach’s three-point multidimensional approach

Figure 2.1 shows that the temporal relationships expressed by the simple past may be represented by a two-point relational approach. It also shows that a two-point approach cannot account for the temporal value of a complex form such as the perfect, contrary to Reichenbach’s three-point dimensional approach. In his approach, when a speaker uses a verbal predicate in the present perfect, RefT and SpT coincide, i.e. the speaker chooses a RefT simultaneous with SpT, and locates an event prior to RefT, signaling this event not as a point but as an interval stretching into SpT (Reichenbach, 1947; Klein, 2008; David, 2015). The past perfect locates ET relative to RefT, which is construed as anterior to SpT. Usually, RefT for the past perfect is the time of another event located in the past, often specified by an adverbial.

Several modifications or additions have been made to this model (Comrie, 1985; Klein, 1994; Smith, 2013). The aim of our work is to study the intricacies and interdependence between tense-aspect morphology in the early stages of their acquisition by French-English bilingual children. The additions made by Klein (1994, 2008) to Reichenbach’s three-point model were thus of particular interest to us. Indeed, Klein’s model allows to use the same simple relations (before, after, simultaneous with) to articulate three time-intervals in order to account both for temporal and aspectual meanings (Klein, 1994, 2008).

²Distinctions between different types of situations (i.e. lexical aspect) are the focus of the final section of this chapter.

Like Reichenbach, one of the time-points or intervals considered by Klein (1994) is the Time of utterance, which corresponds exactly to what we choose to refer to as Speech Time (or SpT). Klein (1994, 2008) replaced Reichenbach’s Event Time with Topic Time. According to Klein (2008), utterances “bring together a lexical content and a Topic Time”, thus providing selective descriptions of situations as occupying a given time span or interval (Klein, 2008). He defines Topic Time as “the time span for which the claim made on a given occasion is confined” (Klein, 2008, p. 3). Finally, Klein (1994) questioned the relevance of the concept of Reference Time as defined by Reichenbach (1947), which he argues is not specified enough. Klein uses the concept of Situation Time instead (hereafter SitT), which he defines as the time frame for which a given situation holds true (Klein, 1994, 2008).

In this work, I borrow from Reichenbach and Klein’s terminology as follows: Speech Time (or SpT) is used to refer to the time of utterance. Topic Time (or TT) refers to the time-interval for which a claim is made. Situation Time (SitT) is used as the third reference-point or interval used to analyze temporal or aspectual reference. It refers to the time for which a situation holds true, regardless of whether it is focused by the utterance or not (Klein, 2008; Smith, 2013). Extract 2.1.4 is used to illustrate how SitT, SpT, and TT may be used to characterize utterances, and in particular those which relate events located in the past. I borrowed mostly from Klein’s terminology, which is more specific, and less ambiguous in the context of a study of the interaction between tense and aspect in the speech of young children and their caretakers. The main issue with Reichenbach’s terminology for linguists interested in the interactions between tense and aspect may be the notion of *Event Time*. Indeed, the term “event” has a specific meaning when used to discuss lexical aspect. To avoid any terminological confusion or fuzziness, we choose to talk of *Topic Time* and to use the term “event” solely to characterize lexical aspect, when referring to predicates which share a set of inherent semantic characteristics.

Tense is thus defined as marking “the relation between the time of utterance and the topic time”, i.e. the relationship between SpT and TT (Klein, 1994, p. 535), rather than between SpT and SitT. When building temporal reference, speakers may choose to locate an event in the past, present or future times by hooking TT to SpT in the ways listed below.

Past reference: $TT < SpT$ (Topic Time **precedes** SpT)

Present reference: $TT \subseteq SpT$ (Topic Time **is included in** SpT)

Future reference: $TT > SpT$ (Topic Time **follows** SpT)

2.1.3 Past tenses and adverbials in French and English spontaneous and narrative discourse

This work is primarily interested in the interactions between tense, grammatical aspect and lexical aspect in children’s early uses of past tense morphology in French and English.

The main difference between the aspectuo-temporal systems of the two languages has to do with grammatical aspect – in Romance languages such as French, speakers express grammatical aspect verbally only in the past tense by choosing between the imperfective or the perfective past tenses – the *imparfait* or the *passé composé*, respectively (Comrie, 1976; Smith, 2013)³. The following description of tenses in French and English is thus restricted to past tense forms, which may be used to mark either tense or aspect. It also includes a description of the present tense in both languages, as it was the most frequent form used by the adults and the children in our corpora. This part describes the temporal values of the main tense-aspect forms in French and in English. As mentioned earlier, this work is focused on the impact of input quantity and quality on the acquisition of tense-aspect morphemes by young monolingual and bilingual children. Rather than providing an abstract description of the temporal-aspectual systems of French and English, this section and the sections on grammatical and lexical aspects below focus on the distribution of forms in the adults' productions in our corpora. The aim of this section is thus twofold; it provides a description of both the temporal systems of French and English and of the way in which mature speakers of French and English used tense-aspect morphology in CDS in the corpora under study. All extracts in the following sections are taken either from the *Hervé* corpus or the *Paris* corpus. Remember that all extracts are numbered as well as contextualized by the information in bold, which gives the name of the child and her age at the time of recording. In extract 2.1.4, the information in bold indicates that the extract is taken from the recording with Sophie when she was 3;01. I discuss the temporal value of the past tenses as well as that of the present tense, for two main reasons. First, the present tense is the most frequent form in CDS and Child Speech (CS) for all participants in the corpora I used, adults and children alike. Not considering present tense forms at all would have implied dismissing a great part of the data collected, depriving this work of relevant information on the children's acquisition patterns of tense forms. Moreover, analyzing uses of the present tense in CS and CDS also allows to reflect on the specificity of past tense forms, and in particular to determine whether the associations between tense-aspect morphology and lexical aspect morphology observed for past tenses are specific to past tense forms, or whether they can also be observed in the present tense in CS and CDS.

2.1.3.1 English past and present tenses

The notion of tenses may be considered less relevant to study the temporal system of English than of French, as English has only two tenses per se (past and non-past), which, combined with auxiliaries and verbal inflections, form conjugations used by speakers in part to locate predicates on a time-axis. However, I argue that the forms resulting from these combinations may be used as frames to analyze the tense-aspect system in English

³See section 2.2 for more details.

and compare it with the French system. The categories identified to classify English tense-aspect markers and to compare them with French are listed below. The principles of the usage-based theory have been central to our choice to describe each tense form with regards to the temporal functions it served in discourse. Indeed, within usage-based theories, children have been said to rely on frequent or salient form-function pairings identified in the input to acquire specific constructions. Forms for which this pairing is unilateral are expected to be acquired earlier. Identifying the temporal functions of such forms in context may thus allow us to predict which forms should be acquired earlier by children.

Simple past. The English simple past may serve to locate predicates in the past i.e. to locate TT before SpT. The simple past may yield different aspectual readings depending on the semantic components of the verb constellation, i.e. depending on the nature of the situation focused⁴. Extract 2.1.4 is analyzed below to illustrate how the simple past may be used primarily to locate situations in the past. In this extract, Sophie and her father were playing shop. As the father waited for Sophie to be ready to start playing, he pretended that he was waiting for the shop to open and discussed shop opening hours in France and in England with the observer (who is French). The observer commented on the fact that all banks tend to have similar opening hours, which led the father to share about his experience with banks in Uganda.

Extract 2.1.4.

Sophie, 3;01.14

FAT: when I was in Uganda they shut the banks when it rained. (*TT < SpT*)

In this utterance, the past tense forms are used to “impose a temporal constraint on the assertion” (Klein, 1994). The first form, *was*, allows to narrow Topic Time, i.e. the particular time frame for which the claim <they shut the banks when it rained> is made. SitT on the other hand corresponds to the time at which the banks were closed, i.e. it is equated with the time of the infinitive <They shut the banks when it rains>. SpT is the time at which the utterance was produced. It is located after TT – in the example above, the past tense is used to locate TT prior to SpT, but makes no claim as to how TT and TSit are hooked.

The simple past in English is not necessarily used to locate a predicate in the past, but may be used to build temporal, aspectual or modal reference. The two former values of

⁴The aspectual value of the simple past are detailed in the next section.

the past tense are our primary focus, but it should be stated that the English simple past may serve to build hypothetical or counter-factual reference, and thus to express modality rather than tense or aspect, as in extract 2.1.5. In this extract, father and child were playing with play dough. The father was making a hedgehog, which led him to ask his daughter if she had ever tried hedgehog before. He went on by explaining how to remove the spikes from a hedgehog before eating it, and why they should be removed.

Extract 2.1.5.

Sophie, 2;07.05

FAT: do you know how you eat a hedgehog Sophie?

CHI: yeah.

FAT: how?

CHI: hum.

FAT: you need to be very careful, don't you because you've got all the spikes.

FAT: you cook it in mud.

CHI: yeah.

FAT: and then when it dries you take it off and all the spikes stick to the mud.

CHI: why is taking it off Daddy?

FAT: +< xxx.

FAT: why are they taking it off?

CHI: yeah.

FAT: taking what off?

CHI: hum the hedgehog.

FAT: if you **ate** the spikes of the hedgehog it **would be** very prickly.

Neither of the past tense forms in bold in extract 2.1.5 above is used to locate TT prior to SpT. They are both used to signal a modal break rather than a temporal one. In our corpora, the simple past was among the most frequent forms used by the adults. In the *Hervé* corpus, the simple past was the third most represented form in the adult data. It was predominantly used to refer to the past time – around 5 percent of the past tense forms produced by the adults in the *Hervé* corpus were used to build atemporal reference.

Perfect. I have already stated why the perfect, either past or present, needs to be analyzed within a three-dimensional approach to tense.

Present perfect. Present perfect forms locate TT before SpT, and present it as included in SitT. The main difference between the present perfect and the simple past is aspectual,

i.e. it has to do with how TT is anchored to SitT rather than with the relationship between TT and SpT (Klein, 1992). The present perfect construes an event as having occurred in the past and extending into the present (into SpT), i.e. it presents a past event as having current relevance.

Past perfect. The past perfect is built with the auxiliary *have* inflected for the past tense and the past participle form of a verb. The past inflection of the auxiliary signals a primary orientation point which locates TT prior to SpT (Smith, 2013). The secondary orientation point is usually specified either by a fronted adverbial or a clause as in the example below (Smith, 2013).

Extract 2.1.6.

Sophie, 2;08.14

MOT: I met the man upstairs.

MOT: not [/] not the one directly <up(stairs)> [//] above us but the one on +/.

FAT: oh you met him.

MOT: yes he's really nice.

MOT: he just asked if we **had settled** properly.

In extract 2.1.6, the mother was relating a conversation she had earlier with the neighbor, more specifically reporting on a question the neighbor asked her about their moving in. The form in bold in extract 2.1.6 articulates three time points or intervals: the time at which the utterance was produced (SpT), the time point located before SpT by the use of the simple past in the main clause “he asked” (TT), and the time of the situation <We settle>, located prior to SpT and to TT by the use of the past perfect. The relationship between SitT and TT entailed by the past and present perfect is analyzed in details in section 2.2.3.

Past Progressive. The past progressive is an aspectual form rather than a temporal one. It is formed by using the auxiliary *be* inflected for the past tense and an [-ing] form of a main verb. The event is thus located in the past, i.e. prior to SpT. The past progressive may also be used to build reference to backgrounded events, construed as happening simultaneously with other, foregrounded events, as is the case in the extract below. In this extract, Sophie, her father and the observer were tidying the room after a play session, while the mother was busy elsewhere in the house. While Sophie was helping with the tidying up, her father thought she was trying to leave the room and asked her to stay. When he realized his mistake, he produced the utterance in extract 2.1.7.

Extract 2.1.7.

Sophie, 3;07.01

FAT: Sophie come here.

FAT: what are you doing?

CHI: xxx.

OBS: bring back the +...

FAT: oh sorry Soph' I thought you went to see what Mummy **was doing**.

In this example, the past progressive was used to present the situation <Mummy do> as backgrounded information, rather than to locate it in the past. The past progressive may thus be used to present information as the primary or secondary focus of the utterance. One of the predictions made in this work is that this tense might be over-represented in specific discursive contexts such as narrative discourse, where the ability to present information as backgrounded or foregrounded is essential⁵.

Present. The present tense in English may be used to refer to events occurring at SpT mostly in specific discursive contexts such as commentaries, demonstrations or performatives (Quirk et al., 1985). Extract 2.1.8 illustrates how the present tense was sometimes used in the *Hervé* corpus to locate predicates at speech time. In this extract, father and child were baking and the father commented on the result of the actions they were performing along with speech – in this case, Sophie was pouring vinegar in a bowl.

Extract 2.1.8.

Sophie, 2;06.07

FAT: do you want to put all of that in there please?

CHI: <that> [/] that make it blow.

FAT: it **makes** it blow.

FAT: it **makes** like a glup+glup sound.

In the *Hervé* corpus, between half and two-thirds of the present forms produced by the two children's caregivers were used to refer to the present time. This may be explained by the contexts in which the sessions were recorded. Indeed, the participants were often recorded while engaging in an activity together, such as playing or baking. These situations

⁵For more in-depth discussions of the aspectual values of the past progressive and its use in backgrounded clauses, see section 2.2.4 and chapter 3.

were likely to be commented on by the participants as they unfolded, using the present tense to refer to present time.

The present tense also served to build atemporal reference in the corpora used in this study. In the *Hervé* corpus, around a third of the present forms in the speech of Sophie's caregivers and almost half of the present forms used by Anne's caregivers allowed to build atemporal reference. The present tense was often produced with a stative value, to refer to eternal truths or to build timeless statements such as illustrated by extract 2.1.9. In this extract, father and child are engaged in a pretend-play activity where Sophie pretends to be the schoolteacher while her father and dolls embody the students. To start the game, the child takes attendance and calls the name of one of her dolls, which is supposed to be a boy. The father finds the doll and the observer and him comment on it looking like a girl, finally producing the generic statement with the simple present tense in bold in 2.1.9. Such utterances were analyzed as building atemporal reference, as they held true regardless of the situation of utterance, i.e. the present tense was not used to make a claim about SpT.

Extract 2.1.9.

Sophie, 3;07.01

OBS: Jacob is sleeping on the bed.

FAT: there he is.

CHI: no <he's> [/] he's a boy.

FAT: yeah he's a boy he just looks a little bit girly.

OBS: he loves pink.

FAT: yeah some boys **like** pink.

Present forms with a habitual value were also quite frequently found in the data. They accounted for much of the present forms used to build atemporal reference. The present tense was used with an habitual value to refer to a sequence of events repeated over a given period of time as in extract 2.1.10. In this extract, father and child were playing doctor, and after suggesting that her father play the nurse, Sophie put a surgical scrub cap on his head, leading her father to ask her whether she knew why such caps are used.

Extract 2.1.10.

Sophie, 2;11.06

CHI: you be the nurse.

FAT: I (wi)ll be the nurse okay.
 CHI: you put the hat.
 FAT: the hat on.
 CHI: yes I (wi)ll put your hat on there.
 CHI: <I (wi)ll put> [/] I (wi)ll put it on you.
 FAT: okay.
 FAT: there you go.
 FAT: do you know why we put the hat on Sophie?
 CHI: I don't know.
 FAT: so you hair **doesn't fall** in the operation.

The present tense was also used by the adults in the corpora to refer to past or future times, although to a much lesser extent. Less than five percent of present tense forms in English were used by the adults to refer to the future or the past in the *Hervé* corpus. There were a few instances of the historic present in the adults' productions, where the present tense was used to describe the past as if it were unfolding at SpT, often to convey a dramatic effect (Quirk et al., 1985; Huddleston and Pullum, 2005).

Extract 2.1.11.

Anne, 2;07.22

NAN: <we> [/] we went to a new play+group at ymca.

NAN: they have a venue with activities for children.

NAN: there is a girl at the reception xxx a week and a half ago.

NAN: +< eyes red you know she **can't** even speak you know and she's **working** and I'm **thinking** seriously in your position you shouldn't really go to work you're just **spreading** germs to everyone you greet at the reception.

Extract 2.1.11 above illustrates how the present tense was sometimes used by the adults in the *Hervé* corpus to narrate past events. This extract began after Anne had asked for a tissue, which led her nanny to tell the observer about an episode from their week when Anne and her nanny went to a playgroup where the receptionist was sick. Anne's nanny started relating this story using the simple past to set the scene, but quickly switched to the present tense as she gets to the actual event she was narrating (present tense forms are in bold in the transcription). This use was not the most frequent, probably because it is found most often in the context of oral narratives, which were not very frequent

discursive contexts in our spontaneous data. Finally, the present tense may also be used in fictional narratives, with the same functions as the historic present even though the narrated events are fictional. Usually, narratives start with a reference to the past which, once it is established, gives way to the present tense. This specific use of the simple present in narrative contexts will be analyzed in more details in chapter 3.

2.1.3.2 French past and present tenses

In French, verbal morphology is used predominantly to express temporal relationships (Bronckart and Sinclair, 1973). In present and future tenses, aspectual variations are often expressed by adverbs and periphrastic verbal forms (Bronckart and Sinclair, 1973; Smith, 2013). French, as most Romance languages, marks aspectual shadings on the verb only in the past tenses, which is why this study focuses on past tense forms. This section focuses on the temporal value of the main French past and present tenses. A detailed analysis of their aspectual functions is provided in the next section.

Passé simple. The *passé simple* (or simple past) is an inflectional past tense form that competes with the *passé composé* in oral French. In the XVIIth century, the *passé simple* was used to express remote past, before it was used to locate punctual, non-recurring events in the past (Morgenstern et al., 2018). The differences between the *passé composé* and the simple past have thus gradually disappeared, leading the latter to be replaced by the former (Jespersen, 1924; Comrie, 1976; Morgenstern et al., 2018). The *passé simple* is gradually only being found in formal discourse or written narratives. It was almost never used by the adults in the data, and will thus only be analyzed punctually and qualitatively, not for its temporal value but rather for the functions it serves in oral and written narratives⁶.

Passé composé. The *passé composé* is a periphrastic past tense form built by using an auxiliary (either *être* or *avoir*) and the past participle form of a verb. The functions of this form have evolved to include functions no longer expressed by the *passé simple*. The *passé composé* used to be considered primarily aspectual, but it has shifted to take on a primarily temporal function (Cienki and Iriskhanova, 2018). It is now used to locate predicates in the past, although it may also carry aspectual shadings which makes it sometimes difficult to determine whether it serves predominantly to locate predicates in the past or to comment on a present result of the action considered (Parisse et al., 2018). This will be further analyzed in the section on grammatical aspect.

Although the form of the *passé composé* resembles that of the present perfect, it shares functional features with both the simple past and the present perfect. Part of our interest for this form lies in its similarities and differences with English past tense forms. In

⁶See chapter 3 for a description of the *passé simple* in narrative contexts.

particular, this work is interested in characterizing the use of the tense system by French-English bilinguals dominant either in French or in English in order to determine whether formal resemblances between the *passé composé* and the present perfect lead to interference phenomena in the speech of bilingual children. Do children English-dominant use the *passé composé* with the same functions and in the same contexts as the present perfect? On the contrary, do French-dominant children extend the use of the present perfect to include functions served by the *passé composé* in French?

The *passé composé* and the *imparfait* are forms frequently used by the adults to build past reference with different aspectual and modal values. As described in section 2.2, the *passé composé* yields a perfective interpretation and the *imparfait* an imperfective one in spontaneous discourse. Moreover, the *imparfait* may serve to build atemporal, fictive reference (see the description of the temporal values of the *imparfait* below). As mentioned before, children tend to acquire more rapidly forms for which form-function pairing is unilateral. Children tend to use forms first with a single function, usually the most salient one in adult speech (Pariisse et al., 2017). One of the aims of this study is thus also to determine whether the children would use these forms simultaneously with the same functions, or whether they would initially restrict the use of each form to specific, distinct functions⁷.

Imparfait. The *imparfait* is a simple, flexional past tense form. It allows speakers to anchor at least part of an event in the past. However, it is also highly aspectual, which has led some authors to consider the *imparfait* as an essentially aspectuo-temporal form (Guillaume, 1929; Gosselin, 2005; Pariisse et al., 2018). The aspectual value of the *imparfait* will be detailed in section 2.2.4. The interpretation of the *imparfait* highly depends on the context where it is used and the other tense forms along with which it is used. Recent studies on the *imparfait* show that it allows to build reference displaced from the situation of utterance (Pariisse et al., 2018). This is illustrated by extracts 2.1.12 and 2.1.13, below.

Extract 2.1.12.

Anaé, 1;06.08

MOT: et si on **jouait** au bébé un petit peu ? (*should we play with the baby for a little while?*)

Extract 2.1.12 started after mother and child had finished reading a book together. In the extract, the mother used the *imparfait* to suggest that she and the child play with the baby. The *imparfait* was used in this extract to signal a modal break from the situation of

⁷See section 2.2 on grammatical aspect for more information on the aspectual shadings expressed by the *passé composé* and the *imparfait* in spontaneous discourse.

utterance rather than a temporal one. Indeed, it is used not to refer to a past event, but rather to build atemporal, fictive reference (Patard, 2007). On the contrary, in extract 2.1.13 below, mother and child were playing with a musicbox which used to belong to Anaé when she was little. The mother used the *imparfait* to locate this stative situation in the past, signalling a temporal break from the situation of utterance.

Extract 2.1.13.

Anaé, 1;06.08

MOT: ça c'**était** quand tu **étais** tout petit bébé ! (*that was when you were a tiny little baby.*)

Previous work on the *imparfait* has argued that it is used first by children with an aspectual rather than a temporal value (Bronckart and Sinclair, 1973). Moreover, the *imparfait* has been studied as a form whose primary function is to express displacement, either temporal, aspectual or modal (Gosselin, 2005). Parisse et al. (2018) review the modal uses of the *imparfait*, and quote studies which have identified a playful (*préludique*) use of the *imparfait* especially frequent in CDS and CS (Patard, 2007; Gosselin, 2005). This corresponds to situations where the *imparfait* is used in pretend-play. The two French monolingual children whose productions were studied in this work started using the *imparfait* predominantly with this modal, playful function. Of particular interest to this study is the question of whether the children originally restricted the use of the *imparfait* to express only one of the functions it serves in adult speech. Moreover, the *imparfait* was identified as a form that is late-acquired by French monolingual children. This was confirmed for the monolingual children under study, as they started to use the *imparfait* productively after the *passé composé*, at around 3;00. This relatively late acquisition compared to that of other tenses with similar frequency in adult speech (Parisse et al., 2018) may be explained by the fact that the form-function pairing of the *imparfait* is not unilateral in the input. I wonder whether this will necessarily imply further acquisition delays of this form by French-English bilingual children, especially those dominant in English.

Plus-que-parfait. The *plus-que-parfait* is a periphrastic past tense built by using the auxiliary *avoir* in the *imparfait* and the past participle form a verb. Its value is always at least partly temporal – the *plus-que-parfait* is always used to express anteriority relative not to SpT but to TT (Smith, 2013). It is generally considered an equivalent to the *past perfect* both in terms of the aspectual and temporal meanings it conveys. The *plus-que-parfait* appears rather late in children's speech. Because it was produced very rarely in our corpora, it will only be marginally and qualitatively analyzed.

Présent. The main functional difference between the present tense in English and in French is that it may be used in French to refer to events occurring at SpT in all discursive contexts. Apart from this, French and English present tenses differ more in terms of the aspectual contrast they allow rather than in terms of their temporal reference⁸.

As in English, the present tense in French was used by the adults in the corpora to refer to eternal truths or timeless statements, as well as to build habitual meaning. It was also used to refer to past and future times – the historical present in French has roughly the same effect as in English. Finally, the present tense was also used in oral narratives in French once past reference had been established (such uses are described in chapter three). As mentioned earlier, the present tense was the most frequent form in adult speech in the three corpora we used in this study. It is included in our analyses despite it not being a past-tense form because it is so frequent in adult and child speech, and because it is the first tense form to be used by the children whose productions were analyzed in this study. Moreover, the present tense was the first tense form used by the children to build reference to a time other than the past. To study how past tense forms gradually come to be used in an adult-like manner by children, it seemed essential to analyze the transition from a stage where the present tense was used predominantly to build temporal reference to a stage where past tense forms emerged and developed in child speech (Pariße et al., 2017)

The present study addresses the early uses of past tenses in spontaneous data by French monolingual and French-English bilingual children and analyzes the way in which French-English bilingual children learn to use their tenses systematically in both spontaneous and narrative contexts. The analyses conducted thus focus on the forms described above, which include the past tense forms which were most frequently used by the adults whose productions were analyzed in this study, as well as present tense forms, which were the forms most frequently used by the adults in the data both in English and in French.

2.1.3.3 Temporal adverbials in French and English

Until now, the focus of this work has been temporal morphology – verbal inflections or verbal constructions which allow in part for the expression of temporal relations. It is essential also to consider adverbials, which may be used to locate predicates relative to SpT both in English and in French. Temporal adverbials in both languages share characteristics and may be classified in the same categories. Moreover, studies on the acquisition of French and English have shown that adverbials are frequent in the speech of children acquiring both languages, and that they are often used by children to build past temporal reference before they start using tense inflections (Smith, 2013; Bertinetto et al., 2015; Pariße et al., 2017). I focus in this work on adverbial types frequently used by

⁸Aspectual values of the present tense in French and English are detailed in 2.2.4.

the adults in the data, and which are central to the expression or interpretation of tense, aspect and aspectuality (Comrie, 1976, 1985; Klein, 1994; Smith, 2013).

Locating adverbials locate a predicate in time by specifying the time for which the situation occurs. They are sometimes called *frame* adverbials (Bennett and Partee, 1978) because “the situation talked about fills all or part of the time frame specified by the adverbial” (Smith, 2013). They include such locutions as *at noon* or *yesterday* – specifying information relative to the localization of predicates in time.

Completive adverbials include locutions such as *in an hour* or *within a day*. Completive adverbials are compatible with predicates which allow completion, i.e. which have an internal, natural endpoint⁹. They allow to specify an interval at which the event occurs and after which the event is completed.

Frequency adverbials state an interval during which recurring events or states occur, i.e. they give the frequency at which a given event occurs. They include locutions such as *every weekend*, *on Mondays*, etc.

Temporal adverbials not only give temporal information on the situation, they also play a role in the interpretation of lexical aspect. In particular, they may shift the interpretation of a predicate from one lexical aspect category to another (Comrie, 1976; Shirai and Andersen, 1995; Smith, 2013). Adverbials are thus central to the main focus of the present study – interactions between tense and aspect marking in CDS and CS. The role adverbials play in the determination of the lexical aspect of a predicate is detailed in section three.

2.2 Grammatical aspect

Speakers of French and English may also use ATAM morphology to build grammatical aspect, also called aspectual viewpoint (Smith, 2013) rather than chronological reference. It has even been argued that young monolingual children tend to use ATAM morphology in French and English first to mark aspect rather than tense (Brown, 1973; Bronckart and Sinclair, 1973; Bloom et al., 1980a). Grammatical aspect, like tense, can be described using the three anchor points or intervals updated by Klein (1994). I mentioned earlier that tense is considered to hook a given TT to SpT. On the other hand, “aspect concerns the situation between TT and TSit – the way, or sometimes ways, in which a situation is hooked up to some TT” (Klein, 1994, p. 6). Remember that SpT is the time at which the utterance considered is produced i.e. the speaker’s present time. TSit is the time at which the situation described is realized, and TT is the time span about which an assertion is made. Klein’s renewed three-parameter approach to tense and aspect is useful in that it allows to represent temporal and aspectual relations using the same relations of anteriority,

⁹Section 3 of this chapter focuses on lexical aspect, detailing in particular the notion of natural endpoint and what it entails.

simultaneity and posteriority (Klein, 1994; Li and Shirai, 2011). The aim of this work is to investigate the acquisition of tense forms by monolingual and bilingual native speakers of French and English, by focusing on the role of the input in their acquisition. In particular, this work proposes to analyze the relationship between tense and aspect morphology in adult speech in French and English, to identify with what functions tense-aspect forms are used in the input. Within a usage-based perspective, it is understood that children first acquire and use forms with the most frequent functions these forms serve in the input; it is thus essential to analyze the expression of grammatical aspect in adult speech in the corpora under study in order to understand the interaction between tense and aspect categories in child speech in the first stages of acquisition.

2.2.1 Definition of grammatical aspect

Aspect, like tense, is a grammatical category which has to do with how the speaker views a given situation, independently of the temporal anchoring of the event described. A speaker may for instance choose to present a given situation as completed or ongoing, by using specific morphology or adverbials (Comrie, 1976; Klein, 1992; Smith, 2013). The next subsection addresses how the notion of grammatical aspect was summoned from Slavic languages by French and English linguists to describe similar (but in no way equivalent) phenomena in the different languages. Before dwelling into the linguistic traditions of the languages under focus in our study, I wish to go back on the degree of fuzziness that surrounds the notion of grammatical aspect in the literature (Klein, 1994). Indeed, grammatical aspect is generally defined as describing the way in which a speaker *views* or *experiences* a given situation (Quirk et al., 1985). It has also famously been described as a way for speakers to express the “temporal contours” of the situation considered (Hockett, 1958; Smith, 1983). However, it is not always clear what is meant specifically by such definitions, which is why Klein (1994) attempted to model the different ways in which TT and TSit may be related. By choosing to hook a given TT to a TSit in a particular way, speakers choose to present “the internal temporal organization of the situation described by the verb” differently (Klein, 2008, p. 8). An essential difference is whether the situation is presented as ongoing or completed, i.e. as imperfective or perfective. Grammatical aspect is thus essentially subjective – speakers may often choose to present a given situation “from a certain point of view, focus or emphasis” or another (Smith, 2013, p. 6). The speaker in particular may choose to adopt a partial, internal perspective on the situation or to give a complete, external view of it, by using dedicated, contrastive morphology (Comrie, 1976; Smith, 2013).

Perfective aspect. The perfective aspect allows a speaker to present a situation as an unanalyzed whole, i.e. to take an external view on the situation being talked about. It includes the initial and terminal endpoints of a situation and entails its completion. In other words, the perfective aspect construes a situation as a bounded whole (Culioli,

1999) – the situation is viewed not as ongoing but as completed. In terms of the temporal relations proposed by Klein (1994), the perfective viewpoint presents TT as including TSit. It is sometimes represented as: $TT \supseteq TSit$ (Li and Shirai, 2011). The form in bold in extract 2.2.1 was analyzed as perfective.

Extract 2.2.1.

Sophie, 2;08.14

FAT: Daddy **broke** the vase and it all went in here. ($TT \supseteq TSit$)

FAT: all the glass went in here and <he cut> [/] he cut his finger, didn't he?

CHI: why?

FAT: because it's sharp remember?

CHI: yeah.

FAT: when we moved in last week end.

Extract 2.2.1 presents the situation <Daddy break a vase> as completed. This example illustrates the composite nature of grammatical aspect. Perfectivity is entailed by several characteristics of this utterance. First, the nature of the predicate is critical here: <to break a vase> has semantic traits which make it highly compatible with a perfective standpoint¹⁰. Indeed, the verb “to break” usually refers to a non-durative situation. Its use with a count object complement (“a vase”) which entails an interpretation of the situation as bounded on the right (i.e. as including its final, natural endpoint). Its inflection for the simple past naturally entails a view of the situation as completed (i.e. as having reached its right boundary before SpT). This is illustrated by the representation of how TT is hooked to TSit. Indeed, TSit is shown as fully included in TT – the time span for which the claim is made includes both endpoints of the situation. This temporal location is confirmed and made explicit by the adverbial clause on the last line of the extract.

Imperfective aspect. The imperfective aspect on the other hand allows a speaker to present a situation from within, i.e. to take an internal view on a situation (Smith, 2013). The imperfective aspect disregards potential internal endpoints of a situation and does not entail its completion. It is thus naturally highly compatible with durative and to some extent frequency adverbials, and may yield shifted interpretations with adverbials expressing completion, for instance. The imperfective aspect presents TT as fully contained in TSit, as illustrated in the extract below. In this extract, father and child were once again engaged in a pretend-play activity, where Sophie pretended to be shopkeeper

¹⁰Semantic characteristics of predicates will be described in the next section.

and her father played the role of a customer. The following interaction took place after the father had thrown a ball to Sophie while she was setting up her pretend-store. Before the start of the extract, she had just handed the ball back to her father,

Extract 2.2.2.

Sophie, 3;01.14

CHI: stop it.

FAT: stop it.

FAT: stop playing the ball into my shop?

OBS: it's a bad customer, isn't it?

CHI: Daddy put it there next to you next to the bag.

FAT: I'm not Daddy I'm just somebody who's **coming** to the shop so +...

($TT \subseteq TSit$)

CHI: Daddy <do you want to do it> [/] do you want to <sit>[/] sit it there in the park?

FAT: no [/] no I'm not playing in the park I'm just a random customer.

In extract 2.2.2, TT is presented as being fully included in TSit, i.e. TT does not focalize any of the endpoints of the situation, which is thus presented from within, as ongoing rather than as a completed whole. The utterance focuses only the interval of the situation to which TT is hooked, disregarding potential endpoints (Klein, 1994; Smith, 2013). Within the imperfective aspect, one may distinguish between the general imperfective, the progressive aspect, and the habitual aspect (Comrie, 1976; Smith, 2013). The imperfective and the progressive aspects are described as sharing a viewpoint value but differing in terms of their defining features (Comrie, 1976, p. 25). Indeed, the progressive, contrary to the general imperfective, has a value of dynamic action-in-progress, and is generally incompatible with stative predicates (Smith, 2013). The habitual aspect presents a situation as repeated over multiple occasions. Most of the analyses presented in this study focus on the general category *imperfective*, although punctual analyses of cross-linguistic differences between the ways in which English and French build the progressive or habitual aspects will be provided – focusing for instance on the fact that, contrary to French, English builds the progressive through specific verbal morphology.

Note finally that the choices available to speakers in terms of viewpoint aspect are not unconstrained – choosing to present a situation in the perfective aspect might commit the speaker to a set of claims on the event (Smith, 2013). For instance, adopting a perfective viewpoint on a situation commits the speaker to the completion of the situation. If one says “*Someone came to the shop*” the entailment is that the person has arrived to the

shop, and may even have gone again. Extract 2.2.2 above does not commit the speaker to the same claim, and thus is the only form available to the father in the situation in which this utterance was produced, i.e. a situation of pretend-play where the child is pretending to be a shopkeeper, and where the father describes his role and puts it into action.

2.2.2 French and English traditions of aspect: applying the imperfective/perfective distinction to non-slavic languages

Before analyzing the means of expressing grammatical aspect in French and English, I wish to clarify the terminology I used in this work to discuss aspectual distinctions. In particular, this vocabulary requires clarification with regards to French and English linguistic traditions of aspectual studies, which have often used different terms to refer to similar concepts. Some linguists have argued that the imperfective/perfective distinction should not have been borrowed from the Slavic tradition to describe languages which do not mark this distinction systematically (Jespersen, 1924). I argue that this distinction can be of use when studying the early uses of past tense morphology by French-English bilingual children, because it may serve to explain the restricted associations children sometimes make between tense-aspect morphology and specific situation types. Of particular importance to this study is thus that grammatical and lexical aspects are clearly defined and distinguished, even more so considering that some major studies of aspect in French and English have too often been shown to equate them (Li and Shirai, 2011; Morgenstern et al., 2018). It is essential to try and define these notions independently before showing how the categories they refer to may sometimes overlap (Comrie, 1976; Smith, 2013).

2.2.2.1 French linguistic traditions of aspect

Many linguists, some of them French, have questioned the relevance of importing the Slavic notion of aspect to the study of Romance languages. The notion of *grammatical aspect* is however very useful in distinguishing between the different verb forms available to French speakers to locate predicates in the past. Contrary to Slavic languages, Romance languages offer means of marking distinctions of grammatical aspect morphologically only in past tenses. As we have mentioned before, the *passé composé*, the *imparfait*, the *passé simple* and the *plus-que-parfait* all serve to locate an event or state in the past (to locate a specific TT prior to SpT). These tenses differ in how they may be used to hook a TT to a given TSit, i.e. in how they allow to build grammatical aspect. This is another example of how tense and aspect categories may be hard to disentangle, as they share functional markers – the same grammatical morphemes may be used to express both temporal and aspectual distinctions. Grammatical aspect is thus a useful notion in French as it enables to distinguish between the different past tense forms available to French speakers. These all serve to locate predicates in the same chronological time, but allow speakers to adopt

different aspectual perspectives on events. The following paragraph is taken up from Morgenstern et al. (2018), where the authors provide an exhaustive review of how studies of the French temporal system have used and adapted the notion of aspect. Considering the major differences between the aspectual systems of Slavic and Romance languages, French linguists have sometimes used the completion/incompletion notional pair in lieu of the perfective/imperfective distinction (Guillaume, 1929; Culioli, 1999; Cienki and Iriskhanova, 2018). Guillaume (1929) also introduced a third aspectual viewpoint which he called the *global* or *auristic* aspect. The global aspect allows speakers to take a global perspective on the event considered, giving an account of the event in its entirety. It is expressed by the *passé simple*. Since the *passé simple* is no longer used in oral French, the global aspect is hard to distinguish from the accomplished aspect, or *aspect accompli* (Guillaume, 1929; Culioli, 1999). Guillaume (1929) describes the latter as focusing resulting states of events. It is expressed primarily by the *passé composé*. The unaccomplished aspect on the other hand, or *aspect inaccompli* presents events or states from an internal perspective and is expressed by the *imparfait* (Guillaume, 1929; Culioli, 1999; Cienki and Iriskhanova, 2018). The distinction between accomplished and unaccomplished aspects echoes a distinction in the characterization of situations as *bounded* or *unbounded* (Culioli, 1999). Indeed, Culioli (1999) described two aspectual oppositions available to speakers depending on the perspective they want to take on a given situation – speakers can either present events as bounded or *bornés* in French, either partially or globally, adopting an accomplished perspective (*aspect accompli*) on the event. They may also present an event as unbounded and uncompleted (adopting an unaccomplished viewpoint on the event, or *aspect inaccompli*). This definition was very influential in French studies of aspect, which largely took up the terminology adopted by Guillaume (1929) and Culioli (1999). However, it has been argued that this terminology might have contributed to a degree of confusion between lexical and grammatical aspects. In particular, French traditions were sometimes criticized for using notions or concepts pertaining to lexical aspect in order to define grammatical aspect. The notions of boundedness and unboundedness for instance have to do with the concept of event-boundaries, which is closely related to lexical aspect – see next section for more details. This is coherent with previous observations that lexical and grammatical aspects are categories that are not discrete and sometimes hard to disentangle. It may also help explain why there exist congruent associations between lexical and grammatical aspects, which I turn to in the next section. Despite the fact that grammatical aspect and lexical aspect are not always clear-cut categories, I believe it essential to try and avoid confusion between these two categories. Extract 2.2.1, previously mentioned and reproduced below, illustrates how grammatical aspect and lexical aspects may both contribute to the meaning of an utterance and be hard to disentangle.

Extract 2.2.1

Sophie, 2;08.14

FAT: Daddy **broke** the vase.

Indeed, as I mentioned in passing earlier, the perfective interpretation of this utterance is entailed in part by the semantic characteristics of the situation referred to by the predicate. Indeed, the situation considered may be described as bounded on the right, i.e. it includes its own, natural endpoint. In this case, the terms “bounded” or “boundary” are used not to refer to grammatical aspect (the way a situation is presented by the speaker), but to refer to lexical aspect (which, as shown in the next section, has to do with the intrinsic semantic characteristics of a situation). To avoid any confusion between components of grammatical and lexical aspect, I chose to use the terminology found in English studies on grammatical aspect by talking of *perfective* and *imperfective* viewpoints, restricting the terms *bounded* and *unbounded* to the analysis of lexical aspect. I hope that this will help avoid confusion between lexical and grammatical aspects, i.e. between the temporal structure of situations and the grammatical means speakers have at their disposal to present a situation in different ways.

2.2.2.2 English linguistic traditions of aspect

English, contrary to French, has means to mark aspectual distinctions in all tenses. This may explain why the terminology used in the study of aspect in Slavic languages was integrated in studies of aspect in English, despite considerable differences between the aspectual systems of these languages. English linguists have adopted the notions of perfectivity and imperfectivity to describe the ways in which speakers may choose to present a situation. Underlying these notions are also concepts that are at least partly semantic – perfectivity for instance entails the completion or termination of the situation at hand. It is thus natural to consider the perfective as highly compatible with bounded situations, i.e. situations which have internal endpoints a speaker may choose to focus on (Smith, 2013). Again, this shows that grammatical and lexical aspects are almost always intertwined. Before turning to the linguistic expression of grammatical aspect in French and English and how the aspectual systems of the two languages differ, it should be noted that, at this stage, the term *event* is used as an umbrella term to refer to any situation expressed by a verbal predicate, regardless of its inherent semantic properties. This terminology will be refined in the next section, dedicated to the study of lexical aspect.

2.2.3 Crosslinguistic differences between the aspectual systems of French and English

We established that grammatical aspect has to do with the way speakers hook a given Topic Time to a given Situation Time. A speaker may use morphological means to distinguish between the different ways TT may be hooked to TSit (Klein, 1994, 2008). The expression of grammatical aspect is language-specific – different languages may encode grammatical aspect differently, through verbal inflections, derivations, auxiliaries or periphrastic constructions (Li and Shirai, 2011). I have already mentioned that the most striking difference between the aspectual systems of French and English is that English has means to express perfectivity or imperfectivity in all tenses, whereas French marks this distinction morphologically only in the past tense. The French *imparfait* is an imperfective past tense whereas the French *passé composé* is a perfective past tense. We will not focus extensively on the other past tense forms in French, the *passé simple* and the *plus-que-parfait*. The former is almost never used in oral French anymore, and the latter was very rarely used by the children whose spontaneous productions were analyzed in this study. The *passé simple* will be analyzed briefly mostly for its use in oral narratives contexts. Because French marks grammatical aspect distinctions morphologically only in the past tense, this study focuses on the production of *past* tense-aspect morphemes in both French and English. I am particularly interested in analyzing possible differences or similarities between form-function mappings in both languages. Indeed, as was mentioned in the previous chapter, cross-linguistic influence between the two grammatical systems of a bilingual child's languages occurs primarily when structures overlap (Paradis and Genesee, 1996; Paradis and Crago, 2000; Paradis et al., 2003). Cross-linguistic influence will be further addressed in chapter three, which focuses on the acquisition of tense-aspect markers by monolingual and bilingual children. Another major difference between the aspectual systems of both languages is the absence of dedicated progressive verbal morphology in French, whereas English has means to mark the progressive aspect on the verb through the use of the [BE + -ing] construction.

Before describing the aspectual systems of French and English in details, it must be stated again that, contrary to Slavic languages, English and French do not have dedicated perfective or imperfective morphology. Although specific forms may be used to express either imperfectivity or perfectivity, no form is restricted to the expression of a specific viewpoint. The [BE + -ing] construction which was mentioned above is a good example of this phenomenon. Indeed, one of its main functions is the expression of the progressive aspect. However, it is not always used to build a progressive viewpoint – for instance when it is used to build future reference, it does not focalize an action-in-progress. It may also be used by the speaker to comment on an action, thus expressing modality rather than aspect. The end of this section is dedicated to a description of how French and English tense-aspect forms were used by the adults in the data. I wished to give an overview

of the different aspectual values the forms took in the spontaneous productions of adult speakers, before turning in the next chapter to how these forms are acquired and used by the children.

2.2.3.1 The English aspectual system

Simple past. The simple past carries both temporal, aspectual and sometimes modal values in English. It may be used to build past temporal reference, by locating a TT prior to SpT. It may also be used to build counter-factual reference. Finally it may contribute to build the aspectual viewpoint of a sentence.

The simple past has often been presented as entailing perfectivity, because it implies the completion or termination of the situation considered (Smith, 2013). However, although the simple past is often used to build the perfective viewpoint, it may also be aspectually indefinite. Contextual cues, as well as properties of the situation itself have to be considered to determine how TT and TSit are anchored, i.e. what aspectual viewpoint is yielded by the use of the simple past (Trevisi, 1996; Klein, 2008). As Trevisi (1996) noted, some predicates inflected for the simple past in English may be interpreted as either imperfective or perfective. Extract 2.2.3 below, for instance, could be translated into French using either the *passé composé* or the *imparfait*, yielding either perfective or imperfective readings, depending on the immediate linguistic context. In this extract, father and child were baking, and the child was asked to pour flour into the bowl. After it was first mentioned by the father, both participants used the anaphoric pronoun “it” to refer to the flour throughout the interaction.

Extract 2.2.3.

Sophie, 2;06.07

CHI: Dad how do you do it?

FAT: if you hold it like that I'll put it in like that and then you just need to hold well.

FAT: like that yeah.

FAT: it gets all the big bits out of it.

FAT: it puts air into it.

CHI: a little bit.

FAT: yeah it makes it into little bits.

FAT: I **worked** in a place once where they make it Sophie.

FAT: it was a really good job.

In this example, a perfective or imperfective reading of the utterance may be triggered depending on the interpretation of the frequency adverbial “once” either as meaning “on one occasion”, or “at some point in the past”. In the first interpretation, the adverbial delimits the event considered and makes its boundaries visible, presenting the event as an unanalyzed whole located in the past. The same utterance could easily be interpreted as imperfective if the adverb were to be analyzed not as a frequency adverbial but as a locative adverbial, used to provide information about the temporal location of the event in the past, but not necessarily including its initial and final boundaries. This interpretation is favored by the following utterance, where the simple past is used to locate a stative situation in the past (<it be a really nice job>) and yields an imperfective reading. Linguists have argued that the English simple past, originally perfective, has now grammaticized into a general, indefinite past tense marker, which explains why it may be used to locate stative predicates in the past, for instance (Smith, 2013). A perfective reading of the example above would entail that TSit is fully included in TT ($TT \supseteq \text{TSit}$), i.e. that the situation <I work in a place where they make it> only obtained at TT (specified by the adverbial <once>). On the contrary, an imperfective reading of this sentence entails that TT is included in TSit ($TT \subseteq \text{TSit}$), i.e. that the situation may have held true before and after TT. When the simple past is used to locate stative situation in the past, it is often the case that TT is included within TSit. Consider extract 2.1.4, presented first in section 2.1.3 and reproduced below.

Extract 2.1.4

Sophie, 3;01.24

FAT: when I was in Uganda they shut the banks when it rained.

Situation time is specified by the non-finite component of the clause, <they shut the banks when it rains>, and although the claim made about this situation is located in the past thanks to the time adverbial <when I was in Uganda>, no information is given as to whether the banks were shut on rainy days before TT or after TT, i.e. TT is presented as included in SitT. Depending on the nature of the predicate inflected for the simple past, it may yield different aspectual interpretations. In particular, with situations that may involve a change-of-state, the simple past may focus part of the post-time of the situation described (Klein, 2008). In extract 2.2.4, Anne’s nanny used the simple past with a punctual, telic predicate (*to fall*), to describe a leaf which had just fallen from the fridge onto the kitchen floor. As this utterance corresponds to the start of the recording, no preceding context is given. In this extract, the simple past form “fell” was analyzed as denoting a change-of-state, as it involves a transition from one state where the leaf was not on the ground, to another state where it is.

Extract 2.2.4.

Anne, 3;02.09

NAN: oh look it just **fell** on the floor.

NAN: there it is.

NAN: oh and they all come off xxx stick xxx.

OBS: thank you wow.

OBS: is it beech leaves?

NAN: oak.

The utterance “it just fell on the floor” focuses part of the situation <It fall on the floor> as well as part of the situation <It be on the floor>. The simple past may thus serve to focalize the present result of a past situation involving a change-of-state, sharing this aspectual value with the *passé composé*.

As the aim of this research is to investigate interactions between tense-aspect morphology in adult and child speech in French monolingual and French-English bilingual data, I am particularly interested in testing previous findings according to which monolingual children acquiring English tend to restrict their uses of tense-aspect morphology, exaggerating frequent tendencies in adult speech. English monolingual children for instance have been said to first use the simple past with a predominantly aspectual value, to focalize the present result of a past situation rather than the past situation itself (Brown, 1973; Shirai, 1991). It was thus necessary for the present study to include a description of the different ways in which the adults used past tense morphology in the data. This work also considers the impact of bilingual acquisition on French-English children’s first uses of past-tense morphology, given the cross-linguistic differences between the simple past and the French imperfective and perfective past tenses.

Perfect. This paragraph addresses the aspectual values of the English perfect, either past or present, except when it is specified that only one form is concerned. When a verb is inflected for the perfect, TT falls completely in the post-time of the situation. Like the simple past, the perfect has to do with the notion of completion – it presents events as completed. Klein (2008) notes that when a predicate is inflected for the past-perfect, it places TT outside of TSit – in other words, the past perfect focuses the post-time of a situation.

Extract 2.2.5.

Sophie, 2;08.14

MOT: I met the man upstairs.
 MOT: not [/] not the one directly <up(stairs)> [//] above us but the one on +/.
 FAT: oh you met him.
 MOT: yeah he's really nice.
 MOT: he just asked if we had settled properly and +...
 FAT: does he have kids?
 MOT: he did not say anything.
 MOT: he just asked if we **had settled** properly and +...

In extract 2.2.5, TT corresponds to the time at which the situation <he ask something> occurred, while TSit corresponds to the time of <we settle properly>. This extract may thus be analyzed as anchoring TT in the post-time of TSit ($TT \supseteq TSit$). The past perfect thus often entails a perfective viewpoint as it describes a situation as an unanalyzed whole with both initial and final endpoints. Note that the past perfect was very seldom used by the adults in the corpora analyzed for this study, and never by the children.

The *present perfect* differs from the simple past in the delimitation of TT it entails. Indeed, the simple past generally presents TT as a punctual moment in the past, which does not extend into SpT. When the simple past presents TT as an interval specified for instance by a duration adverbial, the situation is presented as having ended by the end of TT (it is fully included within TT). On the contrary, the present perfect usually specifies the interval for which a situation holds true, and implies that there is a link between a past event and the situation at SpT. The present perfect focuses a TT which begins in the past and continues into SpT (David, 2015), as exemplified in extract 2.2.6 in which Anne keeps asking for different food while she and her nanny are settling for lunch.

Extract 2.2.6.

Anne, 3;02.09

CHI: I want different food.

NAN: you can have different one for dinner now let's have some of this.

CHI: I want different food now.

NAN: no Anne and you've **been** very naughty today so I'm not listening to you.

Extract 2.2.6 presents the situation <be very naughty> as beginning within the time frame specified by the locative adverbial “today” and continuing into SpT. The present

perfect is analyzed here as expressing current relevance – it describes situations that have begun in the past and expand into SpT. The same verb constellation inflected for the simple past instead would have focused part of the situation and its post-time, implying the completion of the situation <be very naughty today>. The present perfect is usually interpreted as imperfective, as it does not focalize the right-boundary of the situation considered. The same utterance in the past perfect however would have yielded a perfective interpretation.

Past progressive. The progressive is the main imperfective form in English. It was often presented as a form available only for non-stative events (Smith, 2013), which is questionable as we will show below. The progressive is available in the present and past tenses. Given the focus of this work, only the past progressive will be considered, although some of what is said of the past progressive is true also of the present progressive.

Using a progressive verb form allows the speaker to locate TT within SitT. TT thus does not focalize the endpoints of the situation, but rather is construed as being included within it ($TT \subseteq TSit$). The progressive sometimes carries an action-in-progress meaning which explains that it was often analyzed as incompatible with stative predicates, which do not progress. Typical uses of the past progressive rather include utterances such as extract 2.2.7 below, where the mother has just come back from grocery shopping.

Extract 2.2.7.

Sophie, 2;08.14

MOT: Ella est réveillée ? (*is Ella up?*)

OBS: elle faisait que de pleurer. (*she just kept crying.*)

MOT: elle a pas dormi du tout ? (*she hasn't slept at all?*)

SIS: 0 [=! cries]

FAT: Ella [/] Ella.

CHI: Dad?

FAT (*to MOT*): she **was crying** the whole time.

In the utterance above, the past progressive is used along with a time adverbial, used to locate the situation relative to another situation. The father is describing what his daughter did while her mother was away. He uses the past progressive to take an internal perspective on the situation, disregarding the situation's potential endpoints. Contrary to the simple past, the past progressive thus allows the father to describe the situation <she cry the whole time> as having occurred in the past (i.e. during the time-frame when the mother was grocery shopping) without entailing that the situation is fully completed at SpT. The alternative in the simple past (“she cried the whole time”) could have conveyed

a perfective viewpoint on the situation, falsely entailing that the baby was not crying anymore at SpT which we know not to be the case from the extract.

However, the progressive has grammaticized and may be used as a general imperfective marker without this action-in-progress value (Pariße and Morgenstern, 2012). This happened in our corpus predominantly with stative predicates inflected for the present progressive. These uses will be commented upon in the next section but are not central to this work, which focuses on past-tense forms in adult and child speech.

Finally, in extract 2.2.8 the past progressive is used to signal a modal break – the situation is presented as counter-factual rather than located in the past. Rather than conveying an action-in-progress meaning, the progressive allows the speaker to take a modal stance on the situation.

Extract 2.2.8.

Sophie, 3;03.24

MOT: tiens c'est pour le pirate. (*there you go that's for the pirate.*)

FAT (*to MOT*): I thought we **were speaking** English Mum.

MOT: ah c'est vrai. (*right, you're right.*)

The past progressive was used by the adults in our corpora either to convey action-in-progress or with a modal value, to present counter-factual situations as in extract 2.2.8, where the father used the past progressive to remind the mother that she is supposed to speak English after she had just spoken in French.

2.2.3.2 The French aspectual system

A close study of the French aspectual system highlights how past tense forms in French are to be considered and described in interaction. The temporal and aspectual values of the different past tense forms in French have evolved over time. This section focuses on the main aspectual values of the past tense forms used by the adults in the data. I address the values of the *passé simple* in the chapter dedicated to children's narratives, because the *passé simple* was seldom used outside of narrative contexts in the data.

Passé composé. The *passé composé*, rather than being predominantly aspectual, developed a primarily time-referential value. Indeed, it gradually took on the function that used to be expressed by the *passé simple*, while this form gradually disappeared from oral French (Cienki and Iriskhanova, 2018). The *passé composé* was originally used with roughly the same functions as those carried by the *present perfect* in contemporary English

– to refer to the present result of a past event (Paradis et al., 2007). Now, it may convey different aspectual values and can be used to refer to any past event regardless of the semantic content of predicates (Pariisse and Morgenstern, 2012).

Extract 2.2.9.

Anne, 2;04.02

MOT: ah oui c'est ça donc un très vieux qui **appartenait** à [NAME].
(Yes, that's it so it's a really old one which used to belong to [NAME].)

MOT: et qu'il n'**utilisait** pas beaucoup et donc qu'on **a donné** aux enfants et qui **a eu** un certain nombre d'aventures et de mésaventures. (And which he did not use much and so which we gave to the children and which has had a number of fortunate and unfortunate adventures.)

Extract 2.2.9 above illustrates how the French past tense forms are used in interaction with one another, as the speaker alternates between the *passé composé* and the *imparfait* to explain where the ukulele the child has just taken out of her toy box comes from and how it came to belong to the children. Moreover, the *passé composé* is used in this example with two different values. On the one hand, it is used to locate a punctual event in the past (in the utterance “*qu'on a donné aux enfants*” / “*which we gave to the children*”), not unlike the function served by the French *passé simple* in written narratives or by the simple past in English. On the other hand, in the relative clause “*qui a eu un certain nombre d'aventures et de mésaventures*” (“*which has had a number of fortunate and unfortunate adventures*”) the *passé composé* is used to make a global assessment of the situation, which is viewed as an unanalyzed whole, while the result of the situation is focused on (Cienki and Iriskhanova, 2018). The perfective viewpoint is generally triggered by the use of the *passé composé* – TT includes both the initial and final endpoints of the situation when the utterance is in the *passé composé* (TT \supseteq TSit).

Studies on the acquisition of the English simple past by children have suggested that children first use past-tense morphology in English to denote aspectual variations rather than temporal location, exaggerating a distributional bias in their input. One of my research questions was whether the same phenomenon would be observed in French, i.e. whether adults tended to use the *passé composé* predominantly with a specific, aspectual value and whether children exaggerated this frequent form-function association in their first productions of the *passé composé*.

Imparfait. The *imparfait* is the French past tense used to build general imperfective values. It contrasts vividly with the simple past and the *passé composé* which both yield perfective viewpoints. On the contrary, the *imparfait* presents situations as ongoing, with

no focus on their initial or final endpoints (Parisse et al., 2018) – when a verb constellation is used in the *imparfait*, it construes TT as fully included in TSit ($TT \subseteq TSit$). In extract 2.2.9, in which we have just identified two different values of the *passé composé*, the *imparfait* is used with two different types of predicates.

Extract 2.2.9

Anne, 2;04.02

MOT: ah oui c'est ça donc un très vieux qui **appartenait** à [NAME]. (*Yes, that's it so it's a really old one which used to belong to [NAME].*)

MOT: et qu'il n'**utilisait** pas beaucoup et donc qu'on a donné aux enfants et qui a eu un certain nombre d'aventures et de mésaventures. (*And which he did not use much and so which we gave to the children, and which has had a number of fortunate and unfortunate adventures.*)

Indeed, in the second part of the utterance “qu'il n'utilisait pas beaucoup” (“*which he did not use much*”), the *imparfait* is used to refer to an event with some duration. On the contrary, it is used in the first part of the utterance, with a stative predicate (“*qui appartenait à [NAME]*” / “*which belonged to [NAME]*”). In both cases, these observations support the analysis of the *imparfait* by (Morgenstern et al., 2018) as a tense used to qualify the theme – the verb forms inflected for the *imparfait* express properties attributed to the subject (Ducrot, 1979; Morgenstern et al., 2018). This interpretation is supported here by a syntactic analysis of the utterance – both verb forms in the *imparfait* are part of relative clauses used to characterize the theme.

Contrary to English, French expresses the action-in-progress meaning through the lexical idiom *être en train de*, which will not be described in details in this work because it was seldom used by the adults and children in the data. It was used most, although still quite rarely, by Anne's mother during the recording sessions in French. She used the idiom “*en train de*” almost exclusively in clauses in the present tense, and exclusively with non-stative predicates used to refer to durative situations without any natural endpoints such as in extract 2.2.10 below. In this extract, Anne and her mother were looking through a book and the mother was commenting on the pictures as they went through them.

Extract 2.2.10.

Anne, 2;05.06

MOT: et là, regarde, il faut colorier l'assiette de popi. (*And look here, you have to colour in popi's plate.*)

CHI: what?

MOT: qu'est ce qu'il est en train de manger popi ? (*What is popi eating?*)

In this extract, the idiom “*en train de*” is used to qualify the verb “*manger*”, which refers to a durative, unbounded situation in this use. This use is representative of the distribution for the idiom “*en train de*” in the data; it was used only with an action-in-progress meaning, with predicates which were highly compatible with this representation. It was almost never used by the children in spontaneous discourse.

Although the imparfait and the past progressive may both be used to locate durative situations in the past, they differ with regards to the expression of past habitual aspect. The *imparfait* may be used to build past habitual aspect with all types of predicates. This is illustrated in the example below, where the mother tried to get Sophie to speak by asking her questions about her holidays in France. Although the child did not really respond, it led the mother to comment on her children’s linguistic behavior while they were spending time in France.

Extract 2.2.11.

Sophie, 3;02.20

MOT: ce que j'aimais <bien> [//] beaucoup c'est qu'elles **se parlaient** <en anglais> [//] en français. (*what I liked a lot was that they **spoke** French together.*)

MOT: j'étais trop contente. (*I was so happy.*)

MOT: même ce matin elles ont joué ensemble parce-que daddy ne commence qu'à dix heures le matin. (*this morning even they played together since daddy didn't start work until ten am.*)

OBS: d'accord. (*alright.*)

MOT: ah ouais mais par contre là-bas elles **se réveillaient** à neuf heures. (*right but when we were there they **would wake up** at nine.*)

CHI: Maman [/] maman [/] maman. (*mum mum mum.*)

OBS: et ici ? (*and when they're here?*)

MOT: ici six heures quarante cinq. (*when they're here, six forty five am.*)

OBS: bah dis donc y'a une sacré différence. (*indeed that's a big difference.*)

In extract 2.2.11, the *imparfait* is used to build past habitual reference a punctual, telic event (“*se réveiller*” / “*to wake up*”) as well as a durative, atelic one (“*se parler*”

/ “to speak to each other”). In English, past habitual meaning is usually expressed by modal constructions or the simple past.

Plus-que-parfait. The *plus-que-parfait* is the French past tense traditionally used to build both temporal and aspectual reference. Temporally, it serves to locate an event in the past relative to another past event. Aspectually, the *plus-que-parfait* generally yields a perfective interpretation. As mentioned earlier, it shares aspectual features with the *past perfect*, construing SitT as fully included in TT ($TT \supseteq \text{TSit}$). The *plus-que-parfait* was never or very rarely used by the children under study. It will thus not be the focus of this work. Its uses in adult speech may be analyzed punctually in qualitative analyses, for instance when it is used in alternation with other past-tense forms.

2.3 Lexical aspect

Lexical aspect, also called situation type (Smith, 2013), inherent aspect (Clark, 1996), or aspectuality (Bertinetto et al., 2015) refers to the semantic content of verbal predicates (Collins, 2002). Studies on lexical aspect assume that situations in the world have inherent temporal characteristics linked to such features as duration or completion, encoded in the semantic content of verbal predicates. It is necessary to note that I focus in this section on describing the semantic properties of verbal predicates used to depict real-world situations. As shown later on, these verbal predicates sometimes exacerbate the temporal feature they express or focus on. For example, situations that only last a short lapse of time in the world may be described using predicates characterized as being punctual, i.e. as having no duration at all. It is thus important to keep in mind that this section deals with the *linguistic* means speakers of French and English have at their disposal to describe situations; in other words, it describes “how language grasps and encodes reality in lexical content” (Klein, 1994, p. 32). It is thus essential to keep in mind that descriptions of the semantic properties of verbal predicates highlight linguistic properties rather than properties of the real-world situation described. When we say that a predicate is unbounded for instance, it does not necessarily mean that the situation it describes has no natural initial or final endpoints, but rather that these are not focused on by the speaker who produced the utterance under focus. The second thing to remember is that lexical aspect is determined for entire verb constellations, and not simply for verbs alone. This section will thus deal with verbal and adverbial meanings, as well as with the relationship between the countability status of arguments and situation type.

As I mentioned at the beginning of this section, linguists have used a variety of names to refer to the semantic properties of predicates. This may have contributed to the terminological fuzziness that is often mentioned when tackling the notions of lexical and grammatical aspect. Indeed, it has not always been clear that lexical and grammatical aspect were distinct, though undoubtedly related categories. We will come back to this

distinction regularly in the present section. All examples used below are drawn from one of the three corpora used in this study, either from the monolingual or bilingual longitudinal corpora (Parisse and Morgenstern, 2012; Hervé et al., 2016), or from the corpora of family dinners and semi-guided narrative productions that I recorded for this study (Brunet and Morgenstern, 2019). All the children’s names were changed for anonymity purposes. Extracts from the children’s narratives were used exclusively in the first part of the section, to define the temporal features used to determine lexical aspect categories. In the rest of the section, extracts from the longitudinal corpora were used both to define lexical aspect categories and to characterize how they could be used to classify the verb forms used in adult speech in the data.

2.3.1 Vendler’s categories: temporal features and limits

As I have mentioned before, lexical aspect is a linguistic category that allows speakers to focus on the temporal properties of a given situation in an utterance. The most fundamental study on lexical aspect is undoubtedly Vendler’s “time schemata approach” (Vendler, 1957). This study was widely influential, and Vendler’s classification was continually taken up and adapted in the decades that followed its publication, up until today.

Vendler’s article proposes to analyze predicates in terms of their inherent temporal features. Vendler suggested four categories in which verb constellations may fall depending on the temporal features focused by the utterance at hand (Vendler, 1957; Sasse, 2002). The four categories established by Vendler are states, activities, accomplishments and achievements. The first feature used to classify verbs is that of duration, i.e. whether a situation takes place over a period of time or instantly. This feature is what distinguishes the utterances in extracts 2.3.1.a and 2.3.1.b, where the former depicts a punctual event and the latter an event with some duration.

Extract 2.3.1.

Arthur, 5;09.05

a. CHI: And then the dynamite exploded.

b. CHI: The dog swam to the other side of the river.

The second feature is telicity, i.e. whether the situation described by the verb constellation has inherent endpoints and whether the utterance considered focuses on these endpoints. Typically, situations which lead to a change of state are considered telic – they are bounded on the right and utterances may focus on their final endpoint. The verb

constellations <I eat seven chocolate eggs> and <he lick his paw> differ with regards to telicity.

Extract 2.3.2.

Lucas, 6;06.09

- a. CHI: I just ate seven chocolate eggs.
- b. CHI: And he licked his paw.

The predicate in 2.3.2.a is telic because it implies an inherent endpoint (the situation depicted by the verb constellation is bounded on the right – it entails its natural end, the moment when the speaker was done eating seven chocolate eggs). On the contrary, extract 2.3.2.b is atelic – the situation it describes has no inherent endpoints.

The third feature used to distinguish between different lexical aspect categories is dynamicity, i.e. whether a situation requires an input of energy. Dynamicity is what distinguishes the verb constellations in extracts 2.3.3. Indeed, extract 2.3.3.a includes a non-dynamic verb constellation (<The turtle be on the ground>) whereas extract 2.3.3.b depicts a dynamic situation (<The dog fish>).

Extract 2.3.3.

Arthur, 5;09.05

- a. CHI: The turtle is on the ground again with the boy.
- b. CHI: The boy was fishing with the dog and the frog.

These three features are often used to highlight the differences between the lexical aspect categories defined in Vendler (1957). The “time schemata” described by Vendler are often illustrated as in figure 2.2.



Figure 2.2: Vendler’s time schematas (1957)

Predicates fall in one of these categories depending on the temporal characteristics pictured above. The straight line used to depict the internal constituency of states shows

that they include situations which are presented as homogeneous, with no successive stages or endpoints. Activities are depicted as encoding situations consisting of successive phases over time with arbitrary endpoints. The tilde used indicates that activities, contrary to states, are [+ dynamic], i.e. they require an input of energy to be realized. Accomplishments differ from activities in that they include a *natural* inherent endpoint, represented by the (X), i.e. they are [+ telic], or bounded. Finally, achievements consist of no successive phases, but rather only of an endpoint. They encode situations which have no duration, and usually involve a change-of-state. They are conceived as [+ telic] and [- durative]; in other words, achievements have natural initial and final endpoints and are punctual. Note, as mentioned earlier, that the real world situations depicted by the verb class of achievements are not instantaneous, as in reality events never take no time at all. Rather, they are conceived as being punctual because they only take a very short time to obtain. Some authors have also described this characteristic of [- duration] by saying that “the right and the left boundary [of punctual events] collapse” (Klein, 1994, p. 87).

Most of the studies interested in the relationship between tense, grammatical aspect, and lexical aspect have adopted a classification presented in Shirai (1991), which offers a visual representation of Vendler’s categories and their temporal features. Situations have thus been described as either dynamic or stative [+/- dynamic]; if they are dynamic, they may or may not have inherent endpoints ([+/- telic]); if they are [+ telic], they may be either durative or punctual [+/- durative]. Describing the categories established by Vendler in terms of the absence or presence of one of the three defining features of lexical aspect categories presents the advantage of making these features visible (Shirai, 1991; Shirai and Andersen, 1995). This in turn allows for a more transparent classification of predicates, based on clearly stated criteria dependent upon linguistic tests (see next section). It is particularly important as studies on lexical aspect often failed to make their classification of predicates transparent (Shirai, 1991; Shirai and Andersen, 1995; Li and Shirai, 2011). Figure 2.3 offers a visual representation of the inherent temporal features of the four major lexical aspect categories.

	Durative	Telic	Dynamic
States	+	-	-
Activities	+	-	+
Accomplishments	+	+	+
Achievements	-	+	+

Figure 2.3: Temporal features of lexical aspect categories

Lexical aspect in English and French can be described using the same temporal features, although a verb constellation and its translation equivalent may not fall into the same category. Moreover, I mentioned above that lexical aspect is attributed to entire predicates. This entails that a single verb can fall into different categories depending on its arguments or adverbials. In this sense, situation type is said to be compositional –

it is built from the association of a verb, arguments, and adverbs and lexical aspect is attributed not to verbs but to verb constellations (Smith, 2013). Extracts 2.3.4.a-d below each belong to one of the four lexical aspect categories.

Extract 2.3.4.

Oliver, 4;03.19

- a. CHI: They all was friends. (*State*)
- b. CHI: The little boy was fishing fish. (*Activity*)
- c. CHI: And then it sinked (.) all the way down in the water. (*Accomplishment*)
- d. CHI: He felled in the water. (*Achievement*)

Extract 2.3.4.a can be characterized as [- dynamic], because it refers to a stative situation, which does not require an input of energy to be realized and which cannot be described as consisting of successive stages. It is also [+ durative] and [- telic], because it describes a situation that does not include natural endpoints but has some duration. The situation described by the verb constellation <they all be friends> is homogeneous and stable in time. Extract 2.3.4.b on the contrary would be described as [+ dynamic], [+ durative] and [- telic]. Indeed, it refers to a situation which requires an input of energy to be realized, and which can be analyzed as composed of several successive stages. The verb constellation <he fish fish> is presented as having some duration and an internal composition which is highlighted in this example by the use of the present progressive. Extract 2.3.4.c, similarly, refers to a situation that is presented as dynamic and as having some duration. However, it differs from extract 2.3.4.b as it is [+ telic] – it includes a final endpoint, made explicit by the adverbial “all the way down in the water”. Extract 2.3.4.c thus illustrates the importance of considering entire verb constellations to determine lexical aspect – the verb constellation <it sink> could be construed as an activity, as it does not necessarily include a natural final endpoint. However, the verb constellation <it sink all the way down> includes the final endpoint of the situation. When this endpoint is reached, the situation may be described as completed – once something has sunk all the way down it will not sink further. Finally, extract 2.3.4.d is analyzed as [+ dynamic], [+ telic] and [- durative]. Indeed, the situation it refers to includes a final endpoint – it includes a change-of-state from a state where the boy is not in the water to one where he is, after having fallen in. Moreover, this change-of-state is viewed as having no duration. Such predicates are described as “punctual”, i.e. they refer to situations which are realized in an instant rather than over time. This interpretation and representation of the situation by the child is most likely entailed by the way in which this event is illustrated in the

wordless picture book narrated by the child¹¹. The pictures described by this utterance are reproduced below (Mayer and Mayer, 1971, pp. 3-4). The two pictures presented in

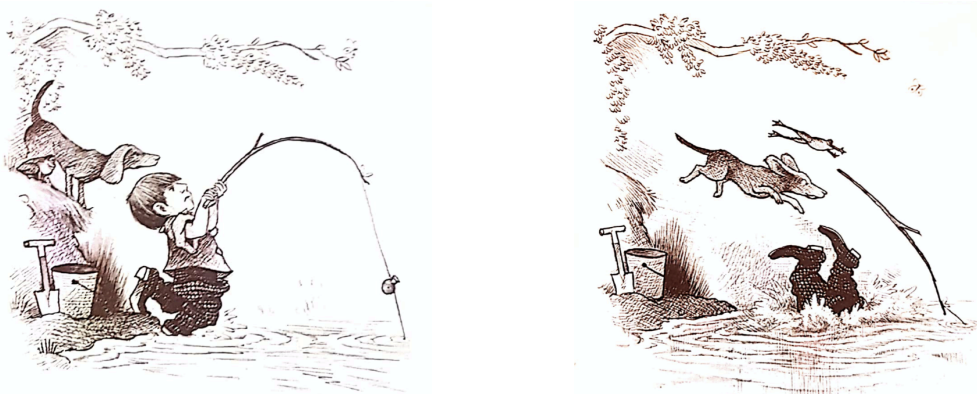


Image 2.1: *A boy, a dog, a frog and a friend*: visual representation of a falling event

image 2.1 shows that the illustrations described by the child do not focus on the fall itself, but rather on its initial and final stages (the boy being out of the water, on the verge of falling in in picture 1, and the boy having fallen in the water in picture 2). The falling event is thus naturally interpreted and described by the child as punctual – so punctual in fact that it is not even represented on the pictures.

Analyzing lexical aspect or situation type by determining the absence or presence of duration, telicity or dynamicity allows for a more specific analysis of how the same verb may belong to one or another lexical aspect category depending on the verb constellation it is used in (Comrie, 1976; Smith, 2013). I used specific linguistic tests to assign a given temporal feature to verb constellations in the data, in order to avoid the fuzziness which surrounds these categories in many studies (Shirai, 1991; Shirai and Andersen, 1995; Smith, 2013). These tests were used in a flexible way, in order to account for prototypical and non-prototypical verb constellations. Indeed, linguistic tests were suggested early on to determine a predicate’s situation type (Vendler, 1957), but were soon shown to yield a very restricted view on lexical aspect (Comrie, 1976; Smith, 1983; Li and Shirai, 2011; Smith, 2013). The notion of “shifted interpretation” which I turn to below was used in order to avoid restricting the analysis of lexical aspect to prototypical associations.

2.3.2 Congruence and shifted interpretations in French and English

A longstanding confusion between lexical and grammatical aspects has been repeatedly noted in the literature (Klein, 1994; Cienki and Iriskhanova, 2018). The fuzziness surrounding the categories’ delimitation may in part be explained by the fact that they sometimes overlap in terms of the temporal features they focus on. Although grammatical and lexical aspects should not be confused, the semantic and functional overlap between

¹¹Mayer, Mercer, and Marianna Mayer. *A Boy, a Dog, a Frog, and a Friend*. Dial Press, 1971.

these categories entails a certain *congruence* – a specific grammatical aspect may be particularly congruent with a certain situation type, because they may focus on the same linguistic or temporal features. Some situation types may thus lend themselves more naturally to a progressive interpretation than others, for instance. The present section reviews the most natural combinations between grammatical aspect morphology and lexical aspect categories, in order to show how non-standard associations may be analyzed in the same systematic manner as standard, highly congruent ones.

2.3.2.1 Congruence between lexical aspect categories and grammatical aspect morphology

A number of studies have highlighted congruent associations between lexical aspect categories and grammatical aspect morphology (Brown, 1973; Bronckart and Sinclair, 1973; Comrie, 1976; Sasse, 2002; Li and Shirai, 2011; Smith, 2013; Cienki and Iriskhanova, 2018). This stems from the observation that there might be “combinatorial constraints on the compatibility between grammatical aspects and certain lexical aspects” (Li and Shirai, 2011, p. 22), because grammatical and lexical aspect categories share some temporal meaning. Consider for instance a telic, punctual verb constellation such as the utterance in extract 2.3.5.

Extract 2.3.5.

Lucas, 6;04.14

CHI: et après le chien a tombé. (*and then the dog fell.*)

CHI: et après il a cassé le jar@s. (*and then he broke the jar.*)

The situation <Il casser le bocal> (<*He break the jar*>), denoted by the verb constellation above is so short in duration that it is likely to have ended by the time it is talked about (Brown, 1973). Such situations are often described using a perfective past tense, to comment on the event having reached its completion (Brown, 1973). This is what Comrie (1976) famously called “the naturalness of combination principle” – the perfective aspect combines naturally with punctual, telic predicates. On the contrary, punctual telic predicates are not naturally compatible with imperfective morphology as the latter highlights the internal structure of a situation, which punctual verbs often lack. Similarly, imperfective morphology implies duration, whereas telic punctual verbs are by definition non-durative. This appears to be true for all languages which mark aspectual distinctions, as Sasse (2002) explained:

“Everything we know so far about aspect systems in the languages of the world points to an intimate relationship (...) between “perfectivity” and “telicity” or “punctuality” on the one hand and “imperfectivity” and “stativity” on the other. The former affinity is often interpreted in terms of a general notion of “boundedness”, while the latter is interpreted in terms of “unboundedness”” (Sasse, 2002, p. 8).

The aim of this work is to determine whether this “intimate relationship” between lexical and grammatical aspects entails a distributional bias of tense-aspect morphology in adult speech in French and English, where a given tense-aspect morpheme would be more likely to be used with a certain situation type. Moreover, the quote above seems to equate “punctuality” with “telicity”, or at least to suggest that both temporal features are equally linked to perfectivity. In the present study, verb constellations were described by making visible the absence or presence of the three temporal features presented above. This was done in part to determine whether the choices available to speakers in the selection of tense-aspect morphology would be more influenced by the presence of one of the temporal features. In particular, this study proposes to analyze whether the features [+ telic] and [- durative] of verb constellations equally impact the speakers’ choice of tense-aspect morphology.

The “intimate relationship” mentioned by Sasse (2002) ties back to what Smith (2013) calls the “two-component theory of aspect”. She considers situation types to be “concepts of idealized situations”, defined by temporal characteristics which are grammaticized into language in part by the imperfective/perfective distinction. Speakers may choose to present a situation using different verb constellations or aspectual morphology, to focus on different parts of this situation (Lyons, 1977). Lexical aspect does not fully constrain the choice of tense-aspect morphology. Rather, speakers may make standard or non-standard choices when selecting grammatical and lexical aspects. A stative verb constellation inflected for the progressive will thus yield a shifted-interpretation of the stative situation, presented as sharing event-like characteristics (Smith, 2013). Such uses were attested, although rare, in the productions of the adults in the corpora, as shown in extract 2.3.6 below.

Extract 2.3.6.

Sophie, 2;11.06

FAT: can you put your bottom on please thank you.

FAT: can you stop being silly please?

FAT: I don’t understand why you’re **being** daft Soph’.

The utterances in extract 2.3.6 presents a stative situation <you be daft> used in

the present progressive, which triggers an event-like interpretation – the situation takes on the characteristics of dynamic events such as dynamicity and temporariness. The most congruent association in English between lexical and grammatical aspects is that between the progressive morphology and non-stative predicates. Vendler (1957) originally claimed that statives were incompatible with the progressive, which was later contradicted. Considering congruent relationships between grammatical and lexical aspect categories allows us to analyze progressive morphology as most naturally compatible with non-stative predicates, and as yielding shifted interpretations of stative predicates. In the same way, the congruence between past perfective morphology and punctual, telic events does not imply that states are never found inflected for the past tense (Lyons, 1977). Indeed, the English simple past is freely used to locate states in the past, with no focus on the endpoints of the situation, since states do not have any. Thus, an utterance such as the one in extract 2.3.7 below does not entail the completion of the situation – at SpT, the doctor is still either a man or a woman.

Extract 2.3.7.

Sophie, 2;08.14

FAT: did you do anything else at the doctor's?

CHI: hum <no> [/] no [/] no it was fine.

FAT: 0 [=! laughs].

FAT: was it a man or a woman, the doctor?

CHI: hum a woman.

In French, congruent associations include the imperfective past tense being particularly compatible with atelic predicates (states and activities, in Vendler's terminology), whereas the perfective past tense – the *passé composé* – is highly compatible with telic, punctual events as it is the preferential tense to express a result as well as to present an event as an unanalyzed whole located in the past (Cienki and Iriskhanova, 2018). However, punctual, telic situations may be found in the *imparfait* with an iterative interpretation as in extract 2.3.8 below. In this extract, mother and child are talking about the child's cousins, whom she saw when the family went to France during the last vacation.

Extract 2.3.8.

Anne, 2;10.07

MOT: aurélie elle est petite comme toi ? (*is Aurelie small like you?*)

CHI: oui. (*yes.*)

MOT: et lili elle est comme thomas ? (*and is lili big like thomas?*)
 CHI: oui. (*yes.*)
 MOT: oui elle est grande comme thomas. (*yes she is.*)
 CHI: oui. (*yes.*)
 MOT: et vous avez joué +//. (*and you played.*)
 MOT: et est-ce qu'elles parlent français ou anglais? (*and do they speak French or English?*)
 CHI: français. (*French.*)
 MOT: français oui. (*yes, French.*)
 CHI: and I talk anglais@f.
 MOT: oui et est-ce que [NAME] elle **comprenait** ce que tu disais quand tu parlais anglais ? (*right and did [NAME] understand everything that you were saying when you were speaking English?*)

The verb “*comprendre*” (*to understand*) is usually construed as describing a situation with the features [+ dynamic], [- durative] and [+ telic]. When it is inflected for the *imparfait*, as in extract 2.3.8 above, it is usually interpreted as iterative, as a multiple-event activity.

2.3.2.2 Congruence between lexical aspect and specific arguments and adverbials

I have already mentioned that lexical aspect is determined for verb constellations rather than verbs alone. It is thus necessary to mention the most important ways in which arguments and adverbials may help build basic or shifted interpretations of situation types (Smith, 2013).

Many authors have identified a relationship between situation type categories and the properties of verbal arguments (Comrie, 1976; Quirk et al., 1985; Smith, 2013). Animacy and countability statuses of arguments in particular play a great role in the interpretation of situation type. Consider the utterances in extract 2.3.9 below.

Extract 2.3.9.
 a. **Sophie, 2;06.07**
 FAT: sophie do you need the loo? [I...F_{Arb}]
 b. **Sophie, 3;04.25**
 FAT: my mum said have they read the bible? [I...F_{Nat}]

Extracts 2.3.9.a and 2.3.9.b show that animate subjects used with non-agentive verbs as in a. usually yield unbounded interpretations, regardless of the countability status of the complement. This is illustrated here by the mention that the situation's initial (I) and final (F) endpoints are arbitrary. On the contrary, animate subjects used with agentive verbs generally yield bounded interpretations (i.e. they entail natural rather than arbitrary endpoints), in particular when the complement is specific and countable. Moreover, inanimate subjects used with agentive verbs may yield a stative reading, as illustrated by extract 2.3.10. In 2.3.10.a, Sophie and her father are about to start baking. After having taken the ingredients out of the cupboards, the father takes a look at the recipe. In 2.3.10.b, Sophie asks her father about the meaning of the word "astounding".

Extract 2.3.10.

a. **Sophie, 2;06.07**

FAT: right shall we see what we got to do it all?

FAT: it **says** put <the vinegar> [///] everything together and then kind of boil it.

b. **Sophie, 2;07.05**

CHI: what's astounding?

FAT: astounding it means like amazing.

CHI: oh.

FAT: like if you **say** something's astounding that is like wow.

In example 2.3.10.a above, the verb constellation <It say put everything together> includes an inanimate subject used with a verb usually interpreted as active, but which yields a stative interpretation in such use – the situation can neither be said to have internal complexity, nor to require an input of energy to be sustained. On the contrary, extract 2.3.10.b shows that the same verb used with an animate subject will be interpreted as depicting a non-stative interpretation.

The countability status of object noun phrases has also been shown to impact situation type (Trevis, 1996; Culioli, 1999). Discrete complements generally yield a telic interpretation when the reference is specific, whereas mass complements generally yield an unbounded interpretation, as exemplified in extract 2.3.11. In 2.3.11.b, father and child are reading a children's book called *The Gruffalo*, after the name of its main character.

Extract 2.3.11.

Sophie, 2;07.05

- a. FAT: has Coralie eaten a hedgehog? [I...F_{Nat}]
- b. FAT: The Gruffalo eats snakes. [I...F_{Arb}]

The situation presented in 2.3.11.a has natural initial and final boundaries – the situation’s final endpoint corresponds to the moment when the hedgehog will have been eaten whole. In extract 2.3.11.a, a discrete predicate is inflected for the present perfect, yielding a perfective interpretation. Because the situation considered includes natural initial and final endpoints, the present perfect focuses both. On the contrary, the complement in 2.3.11.b is a count noun phrase in the plural, with generic reference. The situation <It eat snakes> has arbitrary rather than natural endpoints, i.e. it has the feature [- telic]. The countability status of complements, as well as some fundamental qualities of the subject may thus shift the interpretation of situation type and of grammatical aspect, when the predicate is inflected for tense and aspect.

It is essential to note also that interpretations may almost always be shifted by the choices available to speakers to present a situation. The context in which a given utterance is produced should thus always be considered when trying to interpret an utterance in terms of situation type (Trevis, 1996). Narrative discourse for instance may entail bounded interpretations of unbounded situations, when the narrator presents a sequence of consecutive actions which we construe as chronologically successive (Trevis, 1996)¹².

Finally, adverbials also play an essential role in the interpretation of lexical and grammatical aspects. They are representative of how intricate the categories of tense, grammatical aspect, and lexical aspect are. As I mentioned earlier, adverbials may combine with tense morphology both to specify the temporal location of a situation and to contribute to the aspectual interpretation of the utterance (Trevis, 1996; Smith, 2013). Because this work is concerned with the acquisition of ATAM morphology by French-English bilingual children, analyses were restricted to adverbials which were used most frequently to contribute to the aspectual and temporal meanings of utterances, i.e. locative adverbials, durative adverbials and completive adverbials. All three types of adverbials are congruent with some of the temporal features used to define lexical aspect categories, and may contribute to yielding shifted interpretations of situation types (Comrie, 1976; Smith, 2013). The examples used below were all drawn from the longitudinal bilingual corpora used in this study (Hervé et al., 2016).

Locating adverbials include locutions such as “*at Christmas*” or “*yesterday*”, or “*when you drop it*”, which contribute to specifying either Topic Time or Situation Time. They are

¹²See chapter 3 for more details.

also sometimes called frame adverbials, as they specify a time frame filled entirely or in part by the situation considered. As mentioned before, grammatical aspect has to do with the way in which a speaker hooks a given TT to a TSit (Klein, 1994, 2008). Locating adverbials may contribute in various ways to the aspectual meaning of an utterance, depending on how the information conveyed by the adverbial combines with the grammatical and lexical aspects of the predicate. This is illustrated by extracts 2.3.12 below, in which locating adverbials are signaled in italics.

Extract 2.3.12.

a. **Anne, 2;07.22**

NAN: but it starts *at ten*

b. **Sophie, 2;10.16**

FAT: I'll shake it *at the same time* alright?

c. **Sophie, 2;09.12**

FAT: we were reading you a book *at night*.

If the viewpoint value, lexical aspect and adverbial information combine naturally (i.e. share temporal features such as punctuality, or duration), then the adverbial locates the event and contributes to building viewpoint aspect. This is the case in 2.3.12.a – the adverbial “*at ten*” and the situation <It start> are both punctual. Because their values are highly compatible, the natural interpretation is that the adverbial serves to locate the event. In 2.3.12.b and 2.3.12.c however, the adverbial information contrasts with the temporal features conveyed by the utterance. Indeed, the adverbial in 2.3.12.b is momentary whereas the situation type and viewpoint aspect of the utterance entail some duration – the situation <I shake it> is [+ durative] and [- telic]. The adverbial can thus be interpreted as signaling one of the moments at which the situation <I shake> will be realized. In 2.3.12.c, we are dealing with the opposite case – world knowledge entails that the situation <read a book> is understood as having occurred not during the entire night, but at some point during the specified interval (Smith, 1983, 2013).

Durative adverbials include adverbials such as “*for a few minutes*”, “*for one second*”. They specify an interval during which the event took place. They are highly compatible with durative situation types, and may yield shifted interpretations when associated to punctual predicates (see below for more details).

Completive adverbials include phrases such as “*in an hour*” and “*within an hour*”. They indicate an interval during which an event unfolds, and at the end of which it is completed. They are thus highly congruent with telic situation types, which include final endpoints. They trigger shifted interpretations when used with atelic predicates.

2.3.2.3 Shifted interpretations: principle of internal override (Smith, 2013)

Identifying congruent relationships between lexical aspect, viewpoints, and specific verbal arguments showed that lexical aspect is not a fixed category. This was brushed upon when it was shown that the same verb may belong to different lexical aspect categories depending on its arguments (see extracts 2.3.11 above). Speakers may choose to construe a given predicate in multiple aspectual types (Croft, 2012). There is an ongoing debate as to whether predicates should be analyzed as having basic and shifted aspectual interpretations (Smith, 1983; Klein, 1994; Croft, 2012), but it will not be accounted for in the present study. This work does not aim at identifying which aspectual meanings should be considered basic or shifted, but it may bring empirical evidence to discuss whether we should assume that children and parents in CDS tend to talk about events in a conventional fashion, viewing and categorizing events which share temporal characteristics in similar ways, which might be considered standard. As this is a claim that has been supported in the literature (Brown, 1973; Bronckart and Sinclair, 1973; Smith, 1983, 2013), we expect that the perfective viewpoint may be more naturally combined with situation types that share some of its temporal features – i.e. boundedness, for instance. However, we also assume that speakers may choose to deviate from the more natural combinations, to build non-congruent associations between grammatical aspect, lexical aspect and tense.

Below are descriptions of how lexical aspect, adverbials and viewpoint aspect were used in combination by the adults in the data. The goal is to attempt to draw general principles which may help determine the situation type of verb constellations. Up to now, I have mostly discussed syntactic criteria such as the countability status of pre- and post-verbal arguments, or the type of adverbials used. These criteria are the basis for the linguistic tests that may be used to determine syntactic properties of situation types in French and English, which I detail below. However, I have briefly shown that adult speakers in the corpora used for this study sometimes depart from the conventional associations between lexical aspect, adverbials and viewpoint. This is essential to this study, which rests upon the claim that the associations found in adult speech will guide the ways in which children acquire tense-aspect morphology. Smith (2013) formulated a general principle regarding the shifts triggered by “clashes in temporal features”, which she claims are “predictable by rule” (Smith, 2013, p. 19). She argues for the “principle of external override”, according to which the type of adverbial or argument used in a verb constellation may shift the interpretation of its situation type.

The most central examples of this in the data used for this study have to do with the use of the English progressive. As mentioned above, the properties of stative predicates clash with the values of the progressive. Indeed, the English progressive entails dynamicity as well as internal complexity – to focalize the internal stages of a situation, the situation needs to have such stages. In the following extract, the observer and Sophie’s sister, Ella, are off-camera, while Sophie and her father are drying toys they have just washed in the

bathtub. As Ella tries to join her sister and father in the bathroom, she knocks the camera over for which the observer, Coralie, apologizes.

Extract 2.3.13.

Sophie, 2;07.05

SIS: 0.

OBS: oops.

FAT: Ella.

OBS: sorry Ella.

FAT: Ella **is** Coralie **being** evil?

In extract 2.3.13, the stative constellation <Coralie be evil> is associated with progressive morphology, yielding an action-in-progress reading. Stative progressives such as this example are rare but attested in the speech of the adults in the corpora used for this study. They were interpreted as sharing characteristic features of activities – stative predicates inflected for the progressive are interpreted as dynamic (Smith, 2013). The English progressive also implies duration, and thus is not naturally congruent with achievements, which are [- durative]. In extract 2.3.14, the mother has just come home from grocery shopping and is being told that Ella, the couple’s youngest child, has cried the whole time she was away.

Extract 2.3.14.

Sophie, 2;08.14

MOT: Ella [/] Ella you should have gone with me then.

FAT: oh that would have been a good idea.

MOT: I thought about it but when I left you said she **was falling** asleep.

FAT: yeah I thought she was.

Because achievements denote punctual situations, they have no intervals to focalize and yield shifted interpretations when they are associated with progressive morphology. In extract 2.3.14, the progressive focuses the preliminary stages of the event, i.e. it allows to refer to the interval leading up to the realization of the situation <She fall asleep>.

In French, despite some associations being more congruent than others, all verb constellations may be used in all past forms regardless of their situation type. The *passé*

composé, because it often bears a perfective value in French, was most frequently used in our corpora with telic situation types. However, it was also used sporadically to locate predicates in the past such as in extract 2.3.15.

Extract 2.3.15.

Sophie, 3;02.20

MOT: est-ce qu'il a été triste Sophie pendant qu'on était en vacances Paulin ? (*was Paulin sad when we were on holidays Sophie?*)

Moreover, the *passé composé* was sometimes used in our corpora with an inchoative value, i.e. to focalize the coming about of a stative situation. This is the case in the last utterance of extract 2.3.16, where the stative verb “*croire*” (*to believe*) is inflected for the *passé composé* and associated with the locating adverbial “*toujours*” (*always*).

Extract 2.3.16.

Anne, 2;07.22

MOT: j'ai des enfants qui croient que c'est comme ça qu'on ausculte. (*I have children who believe that's how you examine patients.*)

MOT: parce-que sur mon stéthoscope je fais toujours ça vu que y'a deux côtés. (*because I always do this on my stethoscope since there are two sides.*)

MOT: je fais toujours ça pour vérifier qu'il est du bon côté. (*I always do this to make sure it's on the right side.*)

MOT: donc les enfants **ont toujours cru** que c'était ça [=! laughs]. (*so the children always believed it was the way to do it.*)

The incompatibility between the durative, atelic value of stative situation types and the perfective value of the *passé composé* yields a shifted interpretation. The verb constellation is understood as focusing on the coming about of the believing state, which is presented as continuing into speech time. The alternate use of the present tense (in the first three utterances) and of the *passé composé* confirms that the latter is not used to locate a stative situation in the past. The *passé composé* in this example is used rather to locate the initial endpoint of a stative situation in the past (i.e. prior to speech time), whereas statives are usually categorized as denoting entire situations with no initial or final endpoints.

On the other hand, the *imparfait* is highly compatible with situation types that are atelic and durative, as it does not focus on the endpoints of the situation. Rather, it presents situations as developing in a time interval (Ducrot, 1979; Cienki and Iriskhanova, 2018; Parisse et al., 2018). As mentioned earlier, it may yield a shifted, iterative interpretation when used with punctual, bounded events as in extract 2.2.11, reproduced in part below.

Extract 2.2.11
Sophie, 3;02.20
 MOT: ah ouais mais par contre là bas elles **se réveillaient** à neuf heures.
 (*right but when we were there they would wake up at 9am.*)
 CHI: +< Maman [/] Maman [/] Maman. (*mum mum mum*)
 OBS: et ici ? (*what about here?*)
 MOT: ici six heures quarante cinq. (*here, six forty five AM*)
 OBS: ba dis donc y'a une sacré différence. (*right that makes a big difference*)
 MOT: c'est les volets tout est dans les volets. (*it's because of the blinds, blinds are everything*)

In this extract, the telic and punctual situation <Elles se réveiller à neuf heures> (<they wake up at nine o'clock>) is inflected for the *imparfait*, yielding an iterative interpretation. The punctual, bounded situation <se réveiller à neuf heures> is then construed as a multiple-event activity (Klein, 1994; Smith, 2013).

2.3.3 Lexical aspect: linguistic tests and syntactic properties in French and English

One of the pitfalls of many studies on lexical aspect is a general fuzziness in the way in which the lexical aspect of predicates is identified. This fuzziness is in part due to the complexity of lexical aspect, a linguistic category at the interface between semantics and syntax. Following Smith (2013), the aim of this section is to attempt to establish situation types as linguistic categories with “a distinctive set of semantic and syntactic properties” (Smith, 2013, p. 5). I thus wish to shed light on the way in which predicates were coded for lexical aspect in this work, drawing from the observations made throughout this chapter, and illustrated with examples from the corpora used in this study.

2.3.3.1 Linguistic tests: temporal features

The approach presented here is not new, as numerous tests were originally proposed by Vendler (1957) to distinguish between the four categories of lexical aspect (or *time schemata*, in his terminology). The tests were adapted over the years as the analysis of lexical aspect was refined to take into account the fluidity of the categories. For instance, Vendler originally claimed that a test to identify stative predicates was to check whether the predicate was compatible with progressive morphology, arguing that statives were not. However, as shown earlier, stative predicates may occasionally be found in the progressive with a shifted interpretation. This was the case in the English corpora used in this study, where adults sporadically inflected stative predicates for the progressive (see extract 2.3.13). Vendler also used the “IT took NP Time Interval to ...” construction to distinguish achievements from other lexical aspect categories, because achievements were described as incompatible with the expression of duration. However, we mentioned earlier that expressions of duration may be used with achievements, for instance when such verb constellations are used to focalize the time interval leading up to the event. In extract 2.3.14, the punctual and telic verb constellation <She fall asleep> was used in the present progressive, focusing the preliminary moments building up to the realization of the achievement (Klein, 2008; Smith, 2013). Despite it being punctual, such a verb constellation could be used with a construction specifying the time-interval for its completion as in the utterance *It took her three hours to fall asleep*. It would then yield a shifted interpretation where only the preliminary stages of the situation are focused on.

In this study, syntactic tests were not used to rigidly attribute a lexical aspect category to a given verb constellation. Rather, these tests were used to analyze verb constellations in context, by establishing the presence or absence of the three defining temporal features [+/- dynamicity], [+/- telicity] and [+/- duration], which in turn allowed for the classification of the verb constellations in our data in the four lexical aspect categories established by Vendler (Klein, 1994; Croft, 2012). The feature of dynamicity distinguishes states ([-dynamic], [-telic] and [+durative]) from processes, which are [+dynamic]. Verb constellations were considered to denote dynamic situation types when they could naturally be inflected for the progressive to answer the question *What are you doing?*, as in extract 2.3.17 below.

Extract 2.3.17.

Anne, 2;06.26

NAN: +< okay what are you doing?

CHI: I'm sleeping.

The verb constellation <I sleep> in 2.3.17 naturally lends itself to be used in the progressive because it is dynamic. Stative predicates as in extract 2.3.18 below were analyzed as [- dynamic], as they would not naturally lend themselves to be inflected for the progressive to answer the question *What are you doing?* In the extract below, Sophie and her father are baking. Sophie had to pour two bottles of vinegar in the bowl; once she had poured one, her father encouraged her to go on by commenting on her actions.

Extract 2.3.18.

Sophie, 2;06.07

FAT: here we go and the other one.

FAT: we **need** all of that one as well.

This verb constellation <We need all of that one> does not lend itself naturally to be used with the progressive marker, because it does not have the feature of dynamicity and is thus incongruent with the dynamic value of this aspectual marker. When the progressive was used with a stative predicate, as in extract 2.3.13 above, the predicate took on the event-like characteristic of dynamicity.

Processes are then divided into events and activities – the latter being atelic and the former telic. Telicity, or boundedness, can be made apparent by adding durative and completive adverbials *for X* and *in Y* to a verb constellation, with *X* and *Y* being expressions of duration. As completive adverbials such as *in Y* entail the event's completion, they are highly congruent with telic predicates and may be used to prove that a verb constellation is [+ telic] as in extract 2.3.19 below. Durative adverbials associated with telic predicates focalize the unfolding of the event rather than its initial and final endpoints:

Extract 2.3.19.

Sophie, 3;02.24

CHI: where's my little bag pink?

CHI: <little bag pink> [/] little bag pink.

FAT: where's your little pink bag?

CHI: yeah.

FAT: I don't know.

FAT: am I sitting on it?

FAT: nope.

CHI: no.

FAT: did you leave it in the other room?

CHI: no.
 CHI: I'll find it.
 CHI: no I can't find it anywhere.
 CHI: [-mix] I just have <this> [/] this sac+à+dos@f.
 CHI: [-mix] sac+à+dos@f, that.
 FAT: hey Ella **has found** your pink bag.

To prove that the verb constellation <Ella find your pink bag> is [+ telic], i.e. to prove that it denotes an event rather than a process, it may be shown that this verb constellation is highly congruent with a completive adverbial, but not with a durative adverbial. The clause *Ella has found your pink bag in half-an-hour* is perfectly acceptable, whereas the clause **Ella has found your pink bag for half-an-hour* is ungrammatical.

Finally, events were divided in two categories based on whether they were [+ durative]. Indeed, [+ telic] verb constellations may be either accomplishments or achievements depending on whether they are [+ durative]. A punctual event will be compatible with the question *At what moment did you ...?*, which focuses on a moment rather than on an interval. On the contrary, durative predicates will be easily used in questions related to duration such as *For how long did you ...?*. Such linguistic tests were used to distinguish between utterances in extracts 2.3.20.

Extract 2.3.20.

Anne, 2;06.26

- a. NAN: I'm making banana milk. [+ durative]
- b. NAN: yeah now I stop it. [- durative]

The utterances above were classified as either an accomplishment (extract 2.3.20.a) or an achievement (extract 2.3.20.b, where Anne's nanny was using the blender and Anne asked her to stop because it was too loud). This classification was reached by determining whether they were more naturally compatible with a temporal expressing focusing on a moment or one focusing an interval.

The relevance of the distinction between the categories of achievements and accomplishments has been regularly questioned. We are mostly interested in whether children treat achievements and accomplishments differently when they use them with tense-aspect morphology – we will determine in the next chapter whether this distinction has proven

useful to account for patterns and rates of associations in CS between tense-aspect morphology and lexical aspect categories. In the productions of the adults in the data, achievements and accomplishments were used in the simple past with similar rates in English. In French, predicates belonging to both categories were used predominantly with the *passé composé* by the adults in our corpora. This suggests that the feature of telicity may be more relevant than that of duration to analyze how the semantic characteristics of predicates impact the way in which adults use tense-aspect morphology. Indeed, there was no significant difference in adult speech between the most frequent tenses used with telic predicates, be they durative (i.e. accomplishments) or not (i.e. achievements).

Testing for the presence or absence of temporal features allows not only to make these features visible and thus to be transparent in our categorization of predicates according to lexical aspect types, but also to account for the flexibility of this category. Very little is clear-cut when it comes to analyzing lexical aspect, and I believe it essential to account for this fuzziness. The three levels of testing provided above, combined with a description of the syntactic characteristics of the four types of predicates in English and in French allowed for a systematic, transparent attribution of lexical aspect to verbal predicates.

2.3.3.2 Syntactic characteristics of situation types in French and English

Below is a detailed description of each situation type and its syntactic characteristics in English and French (Smith, 2013). It is construed as a structured summary of what has been established in this section. The guidelines below were the ones used to determine which lexical aspect categories verb constellations in the data belonged to. They are adapted from Smith (2013) and Li and Shirai (2011), and illustrated with examples drawn from adult speech in the corpora used in this study.

Achievements. Achievements include verb constellations described as [+ dynamic], [+ telic] and [- durative]. They are construed as instantaneous change of states.

Syntactic features in English and French. In English, achievements are not congruent with the progressive morphology. Achievements inflected for the progressive focus on the preliminary stages of the event considered, as in extract 2.3.14, first used at the beginning of the present section, and reproduced in part below.

Extract 2.3.14

Sophie, 2;08.14

MOT: I thought about it but when I left you said she was **falling asleep**.

In this example, the verb constellation <she fall asleep> was classified as an achievement – it denotes a change of state with no duration. Inflected for the progressive, it focuses on the preliminary stages leading up to the realization of a situation rather than on the actual change of state. This is particularly visible in this example, as the progressive in no way entails the completion of the situation – on the contrary, the child is presented as not having fallen asleep. Achievements inflected for the *imparfait* in French may yield the same interpretation. They may also be interpreted as multiple-event activities, as mentioned before and exemplified again below.

Extract 2.3.21.

Sophie, 3;02.20

OBS: oui ça doit changer du six heures quarante cinq. (*yes it must be better than six forty five*)

MOT: oh c'était super. (*it was great.*)

MOT: en plus ça nous aurait pas dérangé parce-que mes parents auraient pû les prendre. (*the thing is, we wouldn't have minded them waking up early since my parents could have taken care of them.*)

MOT: mais non c'est nous qui les avons levées chaque jour puisqu'elles se levaient à neuf heures. (*but no, we had to wake them up every day since they would wake up at 9.*)

MOT: alors que là j'aurai voulu avoir quelqu'un pour les prendre à six heures quarante cinq. (*whereas here I would have like to have someone to take care of them at six forty five.*)

OBS: c'est peut-être la mer aussi. (*maybe it's because of the sea as well.*)

MOT: ouais elles étaient nazes elles s'endormaient toute suite. (*yes they were exhausted, they fell asleep at once.*)

MOT: elles s'**endormaient** tout de suite. (*they **fell asleep** right away.*)

Achievements are incongruent with forms of simple duration and compatible with adverbials indicating completion in both French and English, since they include telic predicates which denote situations with no duration. When used with forms of simple duration, achievements will often yield an ingressive interpretation – the interpretation that the change of state entailed by the achievement occurred at the end of the interval focused.

Accomplishments. Verb constellations that are [+ dynamic], [+ durative] and [+ telic] belong to the category of accomplishments. Such verb constellations denote specific, countable events, so they must have at least one countable Noun Phrase argument. Ac-

complishments yield an entailment pattern which allows to infer the existence of a process from the event.

Extract 2.3.22.

Sophie, 3;04.25

FAT: so we went to pick these on saturday.

CHI: Dad <I want to see> [/] I want to see.

FAT: that's what we made the other day.

CHI: Dad <where's> [/] where's the blackberries done?

FAT: **we made blackberry jam** and <that was> [///] that's nice.

The clause in bold in extract 2.3.22 entails that the claim *We were making blackberry jam* is true (but the reverse inference is not). The equivalent inference may be made in French, using the lexical progressive phrase *être en train de*. This entailment pattern was used to distinguish between activities and accomplishments in the corpora used for this study.

Syntactic features in English and French. Accomplishments are incompatible with forms associated with simple duration (*for an hour*), but congruent with forms associated with completion (*to finish, in an hour*). They are also ambiguous when used with the adverb *almost*, which may have scope over the beginning of the process or its outcome. Adding the adverb “almost” to the utterance considered above yields two possible interpretations. The utterance “We almost made blackberry jam” may be taken to mean that they almost began or almost finished making jam. Accomplishments have similar syntactic features in French and in English – they are usually incongruous with adverbials of simple duration such as *pendant une heure (for an hour)*, which are most compatible with atelic situation types. Accomplishments are congruent in French with adverbials which serve to express completion within an interval such as *en une heure (in an hour)*. These levels of congruence were used to decide on the classification of predicates as either accomplishments or activities (telic or atelic predicates).

Activities. Activities are predicates that are [+ dynamic], [+ durative], and [- telic]. Activities are processes, they have no natural endpoints but rather arbitrary ones. In other words “*activities are realized as soon as they begin*” (Smith, 2013, p. 29). This implies that activities inflected for the progressive or general imperfective viewpoints always entail their perfective counterpart.

Extract 2.2.7

Sophie, 2;08.14

FAT: she was crying the whole time.

Extract 2.2.7, reproduced in part above, contains an activity inflected for the past progressive and entails the perfective *She cried the whole time*. In French, this entailment pattern only holds true when the imperfective past tense is used to build past temporal reference. In our corpora, the adults also used activities in the *imparfait* to build atemporal, fictive reference, as in extract 2.3.23 below.

Extract 2.3.23.

Sophie, 2;10.16

MOT: si on chatouillait tous Sophie ? (*what if we all tickled Sophie?*)

In this case, the activity reading may be confirmed by checking whether the utterance is most congruent with an adverbial expressing duration or completion.

Syntactic features in English and French. Verb constellations classified as activities often include verbs which would be construed as telic when associated with countable arguments. This is illustrated by extracts 2.3.24 where the verb constellation 2.3.24.a is classified as an achievement whereas the one in 2.3.24.b is considered an activity.

Extract 2.3.24.

a. **Sophie, 2;07.05**

FAT: do you know how you eat a hedgehog Sophie?

b. **Sophie, 2;09.12**

OBS: you eat chocolate with your fork.

In both utterances, the verb is *to eat*. The utterances differ in terms of the countability status of their object noun phrases. In 2.3.24.a, the direct object of the verb is a countable noun phrase (“*a hedgehog*”). On the contrary, the verb constellation in 2.3.24.b includes a mass object noun phrase. Particular attention was paid to the countability status of object and subject noun phrases in order to classify verb constellations as activities or accomplishments (i.e. as telic or atelic). Finally, activities are generally incompatible with

expressions of completion which focus on the natural endpoint of a situation, as activities do not have any.

States. Stative predicates are construed as [- dynamic], [+ durative], [- telic].

Syntactic features in English and French. Stative predicates have stative syntax – they are incompatible with pseudocleft sentences, they were found in the corpora with adverbials of duration such as “*pendant les vacances*” (*during the holidays*). Statives were used in the present tense in both French and English in our corpora with a specific interpretation rather than to refer to a pattern of habitual situations. In English, statives yield shifted interpretations when they are associated with progressive morphology. Although such uses were quite rare, they were attested in the speech of the adults in the English corpora, as illustrated above. Based on the data, states were thus not considered incompatible with progressive morphology in our study.

As we have detailed in the previous section, verb constellations cannot be automatically assigned a lexical aspect category. Rather, forms should be checked for the syntactic properties listed above *in context* (Treviso, 1996). Moreover, it is essential to remember that lexical aspect categories are fluid – a given predicate may yield shifted interpretations, or share characteristics from more than one lexical aspect category, making it hard to decide how it should be classified.

As stated in Cienki and Iriskhanova (2018), “*the capacity to segment our past, present or future experiences into events and construe them as durative or punctual, complete or incomplete entities, is a fundamental cognitive ability that manifests itself both in language and other modes of communication*” (Cienki and Iriskhanova, 2018, p. 1). This capacity is linked with the linguistic categories of tense, grammatical and lexical aspect. Tense has to do with the location of events in time, whereas grammatical or viewpoint aspect has to do with the way speakers present a situation, either as ongoing or completed. Lexical aspect is at the interface between semantics and syntax in that it has to do with inherent temporal features of verbal predicates, which in turn yield syntactic characteristics. The aim of this chapter was two-fold. First, it aimed at describing how the categories of tense, grammatical aspect and lexical aspect are encoded in French and in English. It also aimed at characterizing the ways in which adults used tense-aspect morphology in the data, in order to determine whether adult patterns of use of such morphology influence its acquisition by monolingual and bilingual children. Tense-aspect morphology is plurifunctional in both French and English – it can be used to mark aspectual, temporal or modal distinctions. It is thus essential to determine which forms are most frequently found with which functions in CDS, in order to determine whether children use frequent form-function pairings to acquire tense-aspect morphology, as is suggested in the literature. The other focus of this work is bilingual acquisition of tense morphology. I wish to compare how French monolingual children and French-English bilingual children are able to build on frequent form-function pairings in their input to acquire such morphology. My aim is both to test the findings of the aspect hypothesis against French monolingual data, and to reflect on bilingual children’s ability to draw on frequent pairings in their input. This chapter highlighted formal similarities and functional differences between the tense-aspect systems of French and English. The *passé composé* and the *imparfait* respectively resemble formally *the present perfect* and the simple past, although their functions vary greatly. This research also aims at determining whether such similarities and differences between the English and French temporal systems would impact the acquisition of tense-aspect morphemes by bilingual children.

Chapter 3

Acquisition and use of past tense-aspect morphology by English and French monolingual and bilingual children in spontaneous and narrative discourse

The previous chapter gave an overview of the past tense-aspect systems in French and in English, as well a description of their use in adult spontaneous data. The present chapter addresses the acquisition of past tense-aspect morphology by French and English monolingual and bilingual children, as documented in the literature. The first section dwells on the implications of the usage-based theory of language acquisition for the acquisition of tense-aspect morphology by monolingual and bilingual children. I then provide an overview of the paths and rates of acquisition of past tense morphology by French and English monolingual and bilingual children. This will lead me to review the Aspect Hypothesis (Shirai, 1991) and how it attempts to explain the preferential associations found in the speech of monolingual children of various languages between tense-aspect morphology and specific situation types (Brown, 1973; Bronckart and Sinclair, 1973). I will also discuss the morphology-sensitive framework (Bertinetto et al., 2015), proposed in order to account for the differences between the predictions of the Aspect Hypothesis and the first uses of tense-aspect morphology by children acquiring a Romance language such as French (Bertinetto et al., 2015; Parisse et al., 2018). Finally, the last section of this chapter focuses on the use of tense-aspect forms in child narratives. Departing from the early stages of acquisition, I turn to the use of tense-aspect morphology in children's

narrative productions to show that the acquisition of tense-aspect morphology is influenced by a number of discursive, distributional and developmental factors, including but not restricted to verb semantics (Bardovi-Harlig, 1994; Morgenstern and Parisse, 2019).

3.1 Implications of the usage-based theory for monolingual and bilingual acquisition of tense-aspect morphology

Important studies have highlighted the role of various factors in the acquisition of verbal morphology, such as the frequency of the form in the input, its functional complexity or discursive salience (Tomasello, 2009; Nicoladis and Paradis, 2012; Parisse and Morgenstern, 2012; Parisse et al., 2018). In particular, forms that can serve different functions within the same linguistic systems (i.e. for which form-to-function mapping is not unilateral) are more difficult to acquire than forms which have a single, unambiguous function (Parisse et al., 2017). Chapter 2 showed that past tense-aspect morphology in French and in English is used by the adults in the data in a plurifunctional way. Past tense morphology may serve different functions depending on the discursive context, as well as on the semantic properties of the verb constellation it is used with.

Children acquiring past tense-aspect morphology in both French and English thus face one of the greatest challenges in language acquisition according to proponents of functionalist approaches: they must “map onto each other sets of linguistic units that have particular formal structural properties and the multiple functions that can be served by these units in communication” (Hickmann, 2002, p. 2). Functionalist theories view speakers as acquiring linguistic devices in order to reach communicative goals, which implies that forms are acquired by children in context, with specific functions (Parisse et al., 2017). This section reviews in details the conceptual grounding of usage-based theories as well as their implications for the study of the acquisition of tense-aspect morphology by French and English bilingual and monolingual children.

3.1.1 Usage-based theories: impact of the frequency and salience of forms in the input

Usage-based theories place input properties at the center of the language acquisition process – children acquire language in part because they are exposed to it. However, these theories do not suggest that developing cognitive abilities play no role at all in language acquisition. On the contrary, it is thanks to innate cognitive skills that children are able to draw frequent form-function associations from their input (Tomasello, 2009). According to usage-based theories, children rely in part on distributional analysis and analogy building skills in order to analyze their input (Bavin and Naigles, 2015). This allows

children to identify linguistic items that behave similarly in their input, either because of the distributional contexts they appear in or because they serve the same functions (Tomasello, 2009). By analogy, children are able to group linguistic items which behave similarly into paradigmatic categories. Usage-based theories consider language acquisition to be supported by a “functionally based distributional analysis”, through which language learners group into categories the linguistic items sharing similar functions in the input (Halliday, 1967; Tomasello, 2009). Usage-based theories of acquisition thus consider that it is the association of innate cognitive abilities and of exposure to language that allows children to map meaning, or functions, onto forms (Hickmann, 2002; Goldberg, 2006). In other words, usage-based theories claim that “language structure emerges from language use” (Tomasello, 2009, p. 5). This does not imply that children use the forms they extract from their input with the same functions they serve in adult speech. On the contrary, children have been shown to use their newly acquired forms only with a restricted set of functions (Parsisse and Morgenstern, 2012; Parsisse et al., 2018). Research has shown that children tend to follow a “one-to-one principle” (Tomasello, 2009) in the mapping of new forms onto functions, i.e. children usually extract forms with the most salient functions they serve in the input. Although innate cognitive abilities contribute to language acquisition, input properties are thus also central to explain why some form-function pairings are accessed earlier by children than others (Tomasello, 2009). Indeed, children rely on several input factors in their mapping of functions onto forms, in particular in the field of morphological acquisition with which this study is concerned. These include the frequency, semantic transparency and distributional consistency of the morphological schema in the input (Tomasello, 2009; Paradis et al., 2011; Bybee, 2013; Parsisse et al., 2018).

The notion of frequency was defined briefly in chapter 1, where I mentioned the central distinction between type and token frequencies. Applied to the study of tense-aspect morphology, token frequency refers to the frequency of a given verb form in the input (such as [walked]) whereas type frequency refers to the frequency of a given schema in the input (in this case, [LexicalVerb + -ED]). Type and token frequencies allow to calculate type/token ratios in the input, which in turn determine the lexical strength of a form (Paradis et al., 2011). In the very first stages of the acquisition of tense-aspect morphology, token frequency is most influential in determining which forms in the input will be used first by the child (Nicoladis et al., 2007; Parsisse et al., 2018). Such forms are acquired by children as unanalyzed wholes (Goldberg, 2006; Tomasello, 2009) and do not give way to generalization and paradigm building. Children thus start using verb tokens inflected for the past tense such as [walked] without having analyzed such forms as the association of a verb stem and the past morpheme [-ED]. It is only once children have been exposed to and have stored a significant number of forms built on the same pattern that they are gradually able to infer inflectional affixation patterns (Paradis, 2010; Bybee, 2013). Usage-based theories argue that children’s ability to extract such inflectional patterns and to generalize them in their productions is more dependent on type frequency than on

token frequency. The argument was most elegantly made when applied to the acquisition of regular and irregular verb forms in French and English (Nicoladis and Paradis, 2012; Blything et al., 2018). Indeed, the notions of type and token frequencies have allowed usage-based theories to explain the acquisition of irregular and regular forms as following the same acquisition route (Nicoladis and Paradis, 2012). High token frequency is essential in that it eases lexical access for particular words or constructions (Jackson-Maldonado and Goldstein, 2012); however type frequency is what allows children to draw regularities from the input (Bybee et al., 1994). Indeed, as children are exposed to more and more different verb types inflected for the past tense, they are able to draw patterns in form-function pairings as well as in morphological and phonological schemas of constructions from the input which in turn allows them to productively use past tense-aspect morphology (Bybee et al., 1994; Bybee, 2013). Forms that follow regular inflectional patterns are connected in the children's lexicons on the basis of semantic, morphological and phonological criteria (Tomasello, 2009; Nicoladis and Paradis, 2012). Such interconnections allow children to analyze and ultimately generalize the inflectional pattern to other verbs. Forms which follow irregular inflectional patterns are also stored in the children's lexicons. In English, irregular forms may have a high token frequency, but their type frequency is lower than that of regular forms (Bybee and Slobin, 1982). Indeed, irregular forms are connected in the input on the basis of semantic criteria, and although some appear within similar phonological and morphological schema, they have a lower type frequency than regular forms and are thus acquired later, i.e. children will productively use regular morphology before they are able to analyze irregular forms as past tense-aspect forms built on a different schema (Tomasello, 2009; Paradis, 2010; Paradis et al., 2011).

Moreover, type and token frequencies account for the differences in the rates of acquisition of regular and irregular forms in French and in English. Regular verb forms in French have both high type and token frequencies whereas irregular forms have token frequencies lower than regular verbs but high type frequency, as they fall into families comprised of a reasonable number of forms. French has three conjugation groups which include verbs that follow similar inflectional patterns. Family resemblance between members of the two first groups is high – there is little variation in the way different tokens of the first or second conjugations are inflected for the past tense (Nicoladis and Paradis, 2012). On the contrary, irregular past verb forms in English have high token frequency but a lower type frequency. The notions of type and token frequencies have thus been used to explain why English irregular past tense-aspect forms are more sensitive to input variations than French irregular forms (Paradis et al., 2011; Nicoladis and Paradis, 2012).

Usage-based theories consider frequency of the form in the input, and more precisely type frequency of a given schema to play a decisive role in children's ability to use verbal morphology productively. This theory was supported by both the monolingual and bilingual longitudinal corpora used in this work. Present tense forms, which were the most frequent forms found in the input, were also the most frequent forms used by the two

French monolingual children whose productions I study in this work. Moreover, token frequency of particular forms was crucial to their acquisition. The three most frequent verbs used in the present tense by Anaé’s caregivers were also the most frequent verbs used by Anaé – the irregular verbs “*être*”, “*avoir*” and “*faire*” accounted for 50% of the present tense forms in the adults’ productions (3895/7772), and over 60% of the forms used by Anaé (1102/1763). These forms were characterized by high token frequency – the form “*c’est*” for instance (formed with the verb “*être*” in the third person preceded by the demonstrative pronoun “*c*”, whose translation equivalent in English would be “it’s”) accounted for 70% of all instances of the verb “*être*” in the present tense in Anaé’s input (1939/2742). Anaé used this form in the same proportions (580/811) as her parents, and before she was able to consistently use subject pronouns – she used the form “*c’est*” once at 1;06, and consistently in the following sessions. This form was thus most likely first acquired by Anaé as an unanalyzed whole because of its high token frequency in the parents’ productions. The same phenomenon was observed in the English longitudinal corpora. In the recordings of Sophie in English, the four most frequent verbs used in the simple present by the adults were also the most frequent verbs Sophie produced in the simple present. This was also true of past tense-aspect forms, where the same three verbs accounted for about 40% of all past tense forms used by Sophie and her parents alike (42% in Sophie’s productions and 44% in the adults’ productions).

However, frequency alone cannot account for the acquisition pattern of ATAM morphology. In French for instance, studies have shown that despite having similar frequency rates, the periphrastic future and the *imparfait* were not acquired at the same time (Parsisse et al., 2018). The periphrastic future was acquired earlier than the *imparfait*, a simple form. This shows not only that frequency alone cannot account for the acquisition of some tense-aspect forms, and that later-acquired forms are not necessarily forms which imbricate a larger number of elements (Parsisse and Morgenstern, 2012; Parsisse et al., 2018). A criterion that appears to contribute to the acquisitional challenge posed by the *imparfait* is rather the lesser degree of semantic, or functional, transparency in the form-to-function mapping required for the form to be acquired (Paradis, 2010; Parsisse et al., 2018). Ambiguous form-to-function mapping hinders the acquisition of a given form by children (Tomasello, 2009). In other words, forms which may serve different functions in different contexts, or forms whose functions overlap will be harder to acquire than forms for which form-to-function mapping is unilateral (Tomasello, 2009; Parsisse et al., 2018). In the case of the *imparfait*, it was shown in the previous chapter that this form is plurifunctional in adult speech, as it may be used either to build past temporal reference or modal, irrealis reference (Parsisse et al., 2018). This plurilateral form-to-function mapping may explain why it is acquired later by children than the periphrastic future, which serves only one function in adult speech.

Finally, studies have also highlighted the role of formal and perceptual salience in the acquisition of morphology (Tomasello, 2009). In English, simple past morphology has a

number of different realizations. First of all, simple past forms may be either regular or irregular, which implies at least two different ways of realizing them. Moreover, the regular inflection [-ED] is not consistently realized phonetically, depending on the ending of the verb stem. The [-ED] morpheme will thus be pronounced /ɪd/ in verbs ending in /d/ or /t/, whereas it will be realized as /d/ in words ending in a voiced consonant other than /d/, and as /t/ in words which end in a voiceless consonant other than /t/. Irregular verbs will be inflected for the simple past either through vocalic changes (*fall / fell*), consonantal alternations (*build / built*) or both (*feel / felt*), when they undergo change at all – some irregular verbs in English have the same simple present and simple past forms (*hit / hit*). On the contrary, French is a highly inflectional language with a rich morphological system. Verbs are marked for tense, person and number in a distinctive and systematic way. In the *passé composé*, verbs of the three conjugation groups take a different inflection (the past participle of first conjugation verbs is formed by adding an [-é] ending to the stem, whereas past participles of second conjugation verbs are formed by adding an /i/ ending to the verb stem). Although past verb forms from the first conjugation groups are sometimes homophonous in French (the *past participle*, infinitive, and to some extent the *imparfait* inflection of the first conjugation verb “*manger*” (*to eat*) are all pronounced /mãʒe/), they are considered more salient than English past verb forms. Past tense forms in French are phonetically realized in full syllabic forms and are usually stressed. As such, they are considered to be more easily accessible to children acquiring language. The relatively higher phonetic salience of French past tense forms compared to the English past tense was used within usage-based theories to explain why past tense morphology appears earlier in the speech of French monolingual children than in that of English monolingual (see next sections for a specific account of the rates of acquisition of the past tense in monolingual children).

In this PhD research, I am interested in showing how tense-aspect morphology is acquired by children, and in particular in explaining the link between input quality and quantity and the use of tense-aspect morphology in the productions of French monolinguals and French-English bilinguals. I aim to show that the acquisition of past tense-aspect morphology depends on the form-function pairings found in the input, as usage-based theories predict children will extract semantic, phonetic and functional regularities from their input and model their use of tense-aspect morphology on that of their parents.

3.1.2 Constructionist approaches

Usage-based theories are often associated with constructionist frameworks, which also consider language to be acquired thanks to input factors as well as innate, cognitive mechanisms. Constructionist accounts propose a framework within which to qualify the basic linguistic units of a language. Constructionists define basic syntactic structures as *constructions*, i.e. linguistic units which combine a form and a meaning (Goldberg, 2006;

Tomasello, 2009; Hoffmann and Trousdale, 2013). In her influential book, (Goldberg, 2006, p. 5) states that constructions include “any linguistic pattern (...) as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist”, as well as “patterns [that] are fully predictable as long as they occur with sufficient frequency”. The second half of this definition entails that past tense-aspect forms can be treated as constructions, despite some aspects of their form and function being predictable from their component parts. I treat past tense-aspect forms as word-level constructions, associating one form (for instance [VERB + ED]) to a given function (for instance, VERB<*irrealis*> or VERB<*past*>). Examples from the corpus will be given in the next section.

I aim at characterizing the relationship between the way adults use tense-aspect morphology and the way it is acquired by children. As shown earlier, past verb forms may serve more or less different functions in discourse – the French *imparfait* for instance may be used to build either past or atemporal, fictive reference. The same form with two distinct functions amounts to two constructions. One construction would be [VERB + Imparfait]=verb<*imperfective past*> while the other may be described as [VERB + Imparfait]=verb<*irrealis*>. Not unlike choices available to the speaker in terms of aspectual viewpoint, constructions have often been described as lenses available to speakers in order to trigger certain construals of a situation (Langacker, 2008; Tomasello, 2009). Not all speakers use the same constructions at the same rates. Because I consider, in line with usage-based theories, that children model their first use of constructions on the input they receive, studying the acquisition of past tense-aspect constructions by French monolingual and French-English bilingual children requires detailed characterization of how such constructions are represented in the children’s input.

Constructions are the basis of the generalization process underlying language acquisition. Children acquire language because they are exposed to large amounts of linguistic data from which they are able to extract frequent form-function pairings (Diessel, 2004; Goldberg, 2006; Bybee, 2010). The most frequent and salient form-function pairings in the input will be the first to be internalized and used productively by children (Halliday, 1967; Tomasello, 2009). Much research has been devoted to how children acquire and generalize constructions. It has been argued that children first acquire fixed, unanalyzed forms, before they receive a sufficient amount of input to be able to generalize constructions and use them productively. The first constructions acquired by children are called “constructional islands”, and are defined as constructions with fixed slots, with little variability in the words used to fill open slots (Tomasello, 2009). Such constructions have also been called “pivot schemas”, and are considered transitory systems in the child’s construction of language (Goldberg, 2006). As children grow up, they tend to use constructions in a more productive way, independently of particular lexical items (Hoffmann and Trousdale, 2013). The observation that “children are very conservative in their early argument structure productions” (Goldberg, 2006, p. 55) was made consistently across

studies, which showed that children tend to use first particular lexical items which they have heard used with particular verbs (Goldberg, 2006; Tomasello, 2009). Similar claims were made on the early stages of development of tense morphology – children have been shown to use verb inflections first in the most common verb frames in which they appear in adult speech. Section 3 of the present chapter addresses these preferential associations in the speech of children between particular verbs and inflections, and what they tell us about the acquisition of tense-aspect morphology in French and in English.

The main focus of this work is on the acquisition of past tense-aspect constructions by French monolingual and French-English bilingual children. In particular, I wish to question the impact of the lexical strength of a construction on the way it is acquired by children. Following claims made in numerous studies (see section 3 of this chapter), one of my research questions is whether the acquisition of past tense-aspect morphology by both monolingual and bilingual children is primarily influenced by the distribution of the form in the input. If so, strong variations could be observed in the way monolingual and bilingual children acquire tense-aspect morphology, as bilingual children often receive a mixed input at home and are thus usually less exposed to each of their languages than their monolingual peers. I also wish to question the influence of situational factors in the acquisition of past tense constructions in English and in French. Indeed, differences between adult and child uses of past verb forms may be tied back to the roles children and adults usually take in interaction and to the functions forms serve in specific contexts. Studies on narrative discourse in French and in English have highlighted the role played by past tense-aspect forms in such contexts (Bardovi-Harlig, 1998). In French for instance, the *imparfait* is a form frequently used in narratives to signal events or states as backgrounded. Because adults more frequently take the role of story-teller in child-parent interactions in the first years of life, they may also use more *imparfait* forms with such backgrounding functions. Such pragmatic features linked to discursive factors and to the role taken up by children and adults in interaction may thus explain the different proportions in which they use past tense-aspect forms. This is explored by analyzing the productions of the bilingual children who were filmed in spontaneous and narrative contexts for this study (*Brunet* corpus, described in chapters 4 and 5).

3.1.3 Implication for bilingual acquisition

Because usage-based theories and constructionist frameworks place input properties at the center of the acquisition process, it is possible to expect that bilingual acquisition would differ somewhat from monolingual acquisition. However, this work also borrows from the Piagetian theory on children's cognitive development, which states that children follow similar stages in their cognitive development. This in turns triggers some degree of universality in the language acquisition process, which is closely tied to the development of children's cognitive abilities. In line with previous studies on bilingual acquisition, I

do not expect bilingual children to follow entirely different paths of acquisition from their monolingual peers. However, differences in input quantity and quality may yield individual differences in the rates of acquisition of tense-aspect morphology.

Usage-based theories and constructionist accounts alike tie language acquisition to language exposure. Thanks to innate cognitive abilities, young children are able to internalize and analyze the language they hear, drawing semantic and distributional regularities which will provide a basis for generalization. Monolingual and bilingual children acquire language following the same process, however it may be expected that bilingual children receive a less stable input than monolingual children. Indeed, bilingual children may not be exposed as often and as consistently to both of their languages, especially when one of the child's languages is less known or valued outside of the bilingual child's home or community. In such cases, the minority language may be spoken only by one of the child's parents for instance, with limited opportunity for the child to be exposed to the language outside of home, or to use the language in different contexts, with different interlocutors. Such lack of variety in the situations in which language is acquired has been predicted to negatively impact language development in young children (Grosjean, 2010, 2016). Within usage-based theories, it is predicted that reduced input will lead to delays in the acquisition of the constructions whose acquisition depends most on input properties (Cenoz and Genesee, 2001; Paradis et al., 2007). Conflicted findings have emerged in the literature on the role of language exposure on the acquisition of morphosyntax in general, and of past tense-aspect morphology in particular. Some studies have argued that bilingual children did not lag behind their monolingual peers in the production of past tense morphology (Paradis and Genesee, 1996; Lu, 2016) whereas others found that bilingual children scored lower than their monolingual peers in the language in which they had had less exposure (Gathercole and C, 2007; Nicoladis et al., 2007; Paradis et al., 2007, 2011). Such differences may be linked to the profile of the bilingual children selected for these studies. Indeed Paradis and Genesee (1996) selected children whose parents had adopted the "one parent-one language" strategy, which could entail that all the children under study had received sufficient input in each of their languages to acquire and use past tense morphology with the same accuracy rates as monolinguals. This claim ties back to recent research which has aimed at identifying a threshold amount of input past which variations in input quantity would not result in variations in acquisition rates (Thordardottir, 2011; Thordardottir and Brandeker, 2013; Thordardottir, 2015). Results suggest that "children having spent at least 50 percent of their time with speakers of a given language did not perform significantly differently than monolingual peers of that language group" (Thordardottir, 2015). Moreover, this study suggested that this threshold effect applied to both vocabulary and grammatical development (Thordardottir, 2011, 2015). This work will closely consider differences in the children's input and language dominance patterns in order to study their acquisition of past tense-aspect morphology, and to further the discussion on possible delays in this field of linguistic development. Twice during the study, the children

I recorded as part of the *Brunet* corpus participated in receptive and expressive vocabulary tests in both of their languages and the parents filled in parental questionnaires detailing the family's language practices.

Usage-based theories also predict that some morphemes will be acquired more easily by children than others. Grammatical morphology, and especially tense morphology, has been identified as a potentially difficult field of acquisition (Paradis et al., 2003; Paradis, 2010). Complexity in form-function mapping may account for the challenge their acquisition represents for children in general, and for bilingual children in particular. Indeed, I have already highlighted that plurifunctional morphemes may be acquired later by children. In other words, constructions for which form-function mapping is not unilateral will take more time to be used productively by children. This is the case for tense-aspect morphology – children acquiring tense-aspect morphemes must learn the different functions they serve in context, which may be especially difficult for bilingual children receiving insufficiently stable input (Tomasello, 2009). This explains why the French *imparfait*, which is a plurifunctional form in CDS, was acquired later by French monolingual children than the periphrastic future, despite both forms being used as frequently in the children's input (Pariße et al., 2018). Given what was stated above, it may be expected that late-acquired morphemes may be acquired even later by bilingual children who do not receive sufficient input in their non-dominant language.

Usage-based theories also make different predictions on the acquisition of regular and irregular forms in French and English. Indeed, studies have shown that French-English bilinguals tended to score lower than monolinguals on the production of irregular verbs in English regardless of language dominance. I have stated above that irregular English verbs may have a high token frequency but often have a low type frequency – they appear in constructions which are not frequent in the input and on the basis of which children are thus less likely to be able to generalize. For instance, the irregular verb “to think” was used with a relatively high token frequency in Sophie's input, as it accounted for around 2% of the verbs Sophie's parents used in the simple past. However, its type frequency was lower than that of regular verbs, as only two other verbs were used in the same simple past schema (“to buy” and “to bring”) in Sophie's input, i.e. only three verbs in the adults' productions were inflected for the simple past following the same schema. Consequently, it was never used by Sophie over the period. On the contrary, the simple past form of the regular verb “to play” accounted for less than 1% of all simple past forms used by Sophie's caregivers, but was much more frequently inflected for the simple past by Sophie herself (it accounted for around 2% of the simple past forms she used over the period). This may be explained by the form's higher type frequency, as it follows the regular pattern of past tense inflection in English. Paradis et al. (2007) analyzed the productions of French-English bilinguals aged around 4;5 and showed that although English-dominant children scored similarly as monolinguals on the production of regular past verb forms in English, they scored significantly lower than their monolingual peers

on the production of English irregular forms. No such difference was found in French between the productions of monolingual and bilingual children, regardless of language dominance. These findings have two important implications. First, morphemes with low type frequency appear particularly vulnerable to input factors (Bybee, 1995; Paradis, 2001; Nicoladis et al., 2007). Then, language acquisition in bilingual children appears to follow language-specific paths – bilingual children face the same acquisitional challenges as their monolingual peers, and follow the same stages in development.

Finally, usage-based theories predict that bilingual acquisition of tense-aspect morphology may also be influenced by the combination of languages learned by the bilingual children. Indeed, previous research on bilingual development has shown that, although they follow the same developmental path, learners from different language backgrounds may exhibit evidence from L1 influence (Collins, 2002; Lu, 2016). In particular, studies have argued that bilingual learners may benefit from facilitating mechanisms when their languages share functional characteristics (Gathercole and C, 2007; Paradis et al., 2011; Lu, 2016). Similarities and differences between French and English past tense-aspect forms may yield different predictions with regards to their acquisition by bilingual children. In particular, both French and English build past tense-aspect forms through the use of inflectional morphology. However, French past tense-aspect marking is more salient than in English, as the [-ED] morpheme may have different phonetic realizations, and is often unstressed. This could lead both to facilitating or complexifying effects – French-dominant children acquiring English may expect inflectional morphology to be used to build past tense forms, contrary to English-dominant bilinguals, less exposed to salient inflectional morphology. French-dominant children may thus be expected to be more commission errors, when English-dominant children could be expected to omit past tense-aspect morphology more frequently (Paradis, 2010; Nicoladis and Paradis, 2012). Moreover, I have shown in chapter 2 that French and English past tense forms sometimes overlap both functionally and formally. For instance, the French *passé composé* and the English perfect share formal similarities but differ with regards to the functions they serve in discourse. On the contrary the simple past in English and the *passé composé* differ formally (the former is a simple tense whereas the other is a periphrastic tense) but may be used with similar functions – for instance, both are the most common tense forms used to locate predicates in the past whereas the simple past may more readily be used to build atemporal reference as well, signaling a modal rather than a temporal break. Such interactions at the formal level may lead to cross-linguistic influence in the acquisition of past tense-aspect morphology.

Studying bilingual acquisition within usage-based theories and constructionist frameworks thus requires that dominance effects are documented, as input factors are central to the acquisition of tense-aspect morphology. As mentioned earlier, I thus decided to use both language questionnaires and vocabulary tests in order to gather as much information as possible on the children's language history and development (Thordardottir, 2011;

Hoff et al., 2012). This was even more important as there are still relatively few studies which explicitly take input quantity and quality into account. Consequently, it is still unclear how much the input has to vary for there to be a clear effect on morphosyntactic acquisition (Paradis, 2010; Thordardottir, 2015).

3.2 Monolingual and bilingual acquisition of past tense morphology in French and English

My main goal in documenting the acquisition of past tense-aspect morphology by French monolingual and French-English bilingual children is to determine whether bilingual children are as able as their monolingual peers first to extract the most frequent form-function pairings from their input, and then to generalize the use of such morphology to include less frequent and salient constructions. I am also interested in documenting later uses of tense-aspect morphology, in particular in narrative contexts where past tense-aspect morphemes may serve yet other functions than the ones found in spontaneous discourse (Bardovi-Harlig, 1995).

3.2.1 Rates of acquisition: when do French and English monolingual children start using past tense-aspect morphology?

The rates of development of past tense morphology in the productions of French and English monolingual children confirm the influence of type and token frequencies on the acquisition of verbal morphology. Indeed, because irregular and regular past tense-aspect forms in English are not constructed following the same schema (Paradis, 2010), they have lower type frequency than other aspectual constructions such as the English progressive. Moreover, form-to-function mapping for progressive morphology in English is considered more unilateral than for past tense-aspect morphology. Consequently, past tense-aspect forms appear later in the speech of monolingual children (Tomasello, 2009; Paradis, 2010; Nicoladis and Paradis, 2012). Similarly, the forms which are mastered first by French monolingual children are the forms which are most frequent and most salient in their input (Parsisse and Morgenstern, 2012; Parsisse et al., 2018). Indeed, as mentioned earlier, attempts to account for the acquisition rate for the French imperfective past tense cannot be based solely on frequency of the form in the input, but rather must take into account the complexity in the form-to-function pairing. Indeed, it was as frequently used in the adult data as the periphrastic future, which appeared much earlier in the speech of children than the *imparfait* (Parsisse and Morgenstern, 2012; Parsisse et al., 2018).

The earliest past tense-aspect forms which appear in the speech of French and English monolingual children are past participles and simple past tense forms respectively. Children start using past tense-aspect morphology in English around 2;0, after having started

to use adverbials to refer to the past and future relative to SpT (Clark, 1996; Tomasello, 2009). It has been argued in both French and English that children use their first tense-aspect forms to comment on the present result of an event realized in the immediate past (Brown, 1973; Parisse and Morgenstern, 2012; Parisse et al., 2018). In both languages, the first past tense-aspect forms do not build reference displaced from SpT, but rather comment on past events insofar as their results are observable in the situation of utterance (Brown, 1973; Parisse et al., 2018). This is illustrated by extract 3.2.1, in which mother and child comment on the fact that the child’s doll has just fallen to the ground after the child tried to sit it on the edge of the table.

Extract 3.2.1.

Anaé, 1;09.04

MOT : il est encore tombé ! (*it fell again.*)

MOT: tu le ramasses ? (*do you want to pick it up?*)

CHI: tombé ! (*fall-PP.*)

In extract 3.2.1, Anaé was 1;09.04. At this stage, she produced a few bare past participle forms, and started to use full-fledged *passé composé*. She used past tense forms in a creative way to comment on visible results of events. In this example, she used a past participle form of the verb “*tomber*” (*to fall*) to comment on the present result of an event located in the immediate past relative to SpT – the doll she was playing with has fallen on the ground (and is on the ground when the utterance is produced, as shown in image 3.1).

Later on, French and English monolingual children start using tense-aspect morphology to locate events relative exclusively to SpT (Tomasello, 2009; Parisse and Morgenstern, 2012; Parisse et al., 2018). Only from 3;00 onward do French and English monolingual children start talking about the past and future relative to a second anchor point, first by using adverbials. In the third year of life, English monolingual children reach high accuracy rate in the production of regular past tense forms and start producing irregular forms more accurately (Brown, 1973; Rice and Wexler, 2001; Tomasello, 2009). In French, children start using the *imparfait* around 3;00. The first verbs inflected for the *imparfait* in the productions of the two French monolingual children studied in this work were the most frequent tokens in the input. Around the end of the third year, both children generalized the *imparfait* to different types of verbs, and used it to locate events relative to an anchor-point other than SpT in their fourth year. This is illustrated in extract 3.2.2, where Anaé is playing with toy figurines and talking to her mother.



Image 3.1: Screenshot from video recording of Anaé at 1;09.04

Extract 3.2.2.

Anaé, 4;00.13

CHI: et un autre cochon. (*and another pig.*)

CHI: il a mal hein. (*he's hurt you know.*)

MOT: pourquoi ? (*why?*)

CHI: **parce-que quand j'ai joué à ça bah il avait un petit bobo.**
(*because when I played this game he had a small owie.*)

MOT: à ça quoi ? (*what game?*)

MOT: quand tu as joué à quoi ? (*when you played what game?*)

CHI: à le dentiste des animaux. (*the animal dentist.*)

MOT: pas le dentiste, le [/] le docteur. (*not the dentist, the doctor.*)

In this example, Anaé used both tense morphology and an adverbial clause to locate the situation <*il avoir un petit bobo*> (<he have a small owie>) relative to an anchor-point located prior to speech time (the time-frame specified by the verb in the adverbial clause “*quand j'ai joué à ça*” / “when I played this game”). Such productive and systematic use of the French past tenses is characteristic of later stages in the acquisition process.

The goal of this study is to determine whether the acquisition of past tense-aspect forms is as influenced by the quantity and quality of the input for French monolingual and French-English bilingual children as it has been reported to be for English monolinguals. In particular, this work addresses the restricted use of past tense-aspect morphology by

French and English monolingual children, and questions whether such restricted uses can be explained by input factors.

3.2.2 Paths of acquisition: how do children use past tense-aspect morphology?

Usage-based theories argue for a single-route model in the acquisition of past tense morphology to account for the acquisition path of regular and irregular morphology by monolingual children (Nicoladis et al., 2007; Nicoladis and Paradis, 2012). Results have suggested that all past tense-aspect forms (irregular or regular) were acquired by monolingual and bilingual children based on the same underlying processes as the ones identified by usage-based theories. Token frequency is central to the acquisition of a given form, as individual forms are first stored by children as wholes in the lexicon (Bybee, 1995). A multimorphemic form with high token frequency will be more easily retrievable by children acquiring language, but it will not necessarily allow for productive use of the morpheme (Tomasello, 2009). Children's accuracy rates in the production of past tense-aspect forms rise as they are exposed to more and more new verbs in recurring phonological schemas (Bybee, 1995, 2013; Paradis et al., 2007; Tomasello, 2009). Single-route models make different claims as to the type of deviations from standard French and English monolinguals will make in the production of past tense forms. It predicts in particular that children will be less accurate with English regular verbs than with French regular verbs, as the latter have higher type frequency (Nicoladis et al., 2007) and will thus be generalized sooner by children. Moreover, irregular verbs in French also fall within conjugation groups more frequently than their English counterparts. This was shown to have an impact on the most frequent deviations from standard identified in the speech of children acquiring French and English. In English, overregularizations are most likely to be used – children tend to overextend regular morphology to irregular stems. On the contrary, French children are expected to make more irregularizations, where they erroneously extend the conjugation pattern of a given conjugation group to a verb which shares phonological characteristics with other members of the group. In the longitudinal bilingual data used in this study, the type of deviation from adult standards was coded, in order to determine whether the bilingual children under study confirmed these expectations. Even though it is not the main focus of this work, analyzing the types of mistakes made by French monolingual and French-English bilingual children at different ages may inform us on the way all children learn past tense-aspect morphology.

One of the questions often asked in the literature is whether children use past tense-aspect morphology to build past reference, or whether the first uses of such morphology are closely tied to SpT. The ability to segment experience and to build past or future reference was not always considered to be available to children. Indeed, children's first verbal productions have been described as essentially grounded in the here and now (Bronckart

and Sinclair, 1973; Parisse and Morgenstern, 2012; Parisse et al., 2018). Children have been said to use language first in a deictic way, to speak “predominantly in the present tense and about present objects, people and activities” (Parisse and Morgenstern, 2012, p. 97). In this perspective, the first past tense forms used by children in both French and English were said to build aspectual distinctions rather than temporal reference. The claim that young children use tense-aspect morphology first to mark aspect rather than tense is the focus of the next section. Suffice it to say for now that the first uses of past morphology by children have been described as deictic – children first use past tense morphemes to talk about perceptible, present results of past events. English monolingual children for instance have been said to use past tense forms first with a restricted set of verbs “which name events of such brief duration that the event is almost certain to have ended before one can speak.” (Brown, 1973, p. 334). A number of studies on the early uses of tense-aspect morphology by English monolingual children have made similar observations (Brown, 1973; Bloom et al., 1980a; Clark, 1996; Tomasello, 2009). Such uses of tense-aspect morphology have sometimes been considered to refer to the present rather than to the past, as the reference cannot be described as fully disconnected from the situation of utterance (Bronckart and Sinclair, 1973). However, I claim that such forms can be analyzed as allowing to locate change-of-state predicates in the immediate past, and to focus the resulting state of such past, punctual event. Studies on young children’s ability to refer to a time other than speech time have yielded conflicting results. Several authors have identified references to the past in the speech of children as young as 1;06, questioning the idea that children are originally incapable of referring to a time other than the present because of developing cognitive abilities (Halliday, 1975; Bauer and Mandler, 1989). These studies paint a different picture of the development of references to the past, showing that young children have some notion of pastness – Halliday (1975) noted that his son attempted to narrate events in the past at 1;08 without using dedicated verbal morphology. This implies that children may develop the cognitive abilities to displace their productions from SpT (by referring to the past or future for instance) before they have developed the linguistic means adult speakers use to do so (Parisse and Morgenstern, 2012; Parisse et al., 2018). The claim that children are able to break from the situation of utterance before they have linguistic means to instantiate such breaks temporally was also made in studies on the children’s developing narrative abilities from a very early age. Morgenstern and Parisse (2012) studied the productions of Leonard, a French monolingual child, and showed that he used perfective past tense morphology to relate events that happened to him earlier on the same day as early as 1;08. In such narrative instances, the child proved his ability to refer to past events, although these were not considered fully disconnected from the situation of utterance – the child’s first narrative of past events were triggered by similarities between the event narrated and the situation at speech time. One of my research questions is whether the restricted uses of tense-aspect morphology observed in the first stages of acquisition support the claim that children do not originally use tense-aspect morphology to build temporal reference. I also wish to determine whether the way

children use past tense-aspect morphology to build temporal or aspectual reference may be explained by input properties. It was thus essential for this work to include an analysis of the temporal reference built by the use of tense-aspect morphology by the adults and the children in the data. Indeed, usage-based theories may again be used to explain the restricted uses of tense-aspect morphology by monolingual speakers of French and English. Proponents of the usage-based theory have argued that the anchoring of child speech in speech time is not entirely due to children's developing cognitive abilities, but may also be explained by input properties. Tomasello (2009) argued that reference to time, people or objects distinct from speech time is not very frequent in child-directed speech, and thus that the restrictive use children make of tense-aspect morphology in particular may be explained by analyzing input properties. This was supported in French by studies which have shown that children first use the verb forms most frequently represented in their input, namely the present tense, past participles with an adjectival value and infinitive forms (Parisse and Morgenstern, 2012). The link between children's first, restricted uses of tense-aspect morphology and characteristics of their input will be tackled in more details in the next section, dedicated to the Aspect Hypothesis. It builds on the claims made by usage-based theories, i.e. that children first use inflected verb forms as unanalyzed wholes before noticing the forms' salient features in the input and generalizing on the basis of such features (Li and Shirai, 2011; Tomasello, 2009). Before turning to the predictions of the Aspect Hypothesis, I review remaining interrogations regarding bilingual acquisition of past tense-aspect morphemes in the following paragraphs.

3.2.3 Implications and remaining interrogations concerning bilingual acquisition of past tense morphology

I have already discussed the central role of language exposure in bilingual acquisition (Tomasello, 2009; Paradis et al., 2007, 2011). It has been frequently shown that dominance effects or cross-linguistic differences may impact language acquisition. Recent studies have in particular shown that vocabulary and grammatical development are indexed to the amount of input received (Thordardottir, 2011, 2015). In particular, Thordardottir (2015) suggests that it may be possible to identify a threshold level of exposure, past which variations in input quantity had no impact on acquisition rates. On the contrary, children who received less than 50 percent of exposure in one of their languages were likely to show different rates of grammatical development. These results are essential, as they may explain why conflicting conclusions have been reached on the question of whether French-English bilingual children lagged behind their monolingual peers on the production of past tense-aspect forms (Cenoz and Genesee, 2001; Nicoladis et al., 2007; Paradis, 2010; Nicoladis and Paradis, 2012). Indeed, some studies which found a difference between monolingual and bilingual children's rates of production of past tense morphemes may have lacked sufficient insight into the children's level of exposure in each of their

languages (Nicoladis et al., 2007).

Another central factor in the acquisition of past tense-aspect morphology by bilingual children has to do with cross-linguistic influence between the children's two languages. Such effects may explain the similar rates of development observed for monolingual and bilingual children with a balanced input (Hoff et al., 2012; Thordardottir, 2015). It may be expected that in such cases, additional factors such as functional or formal overlap between the two languages of the bilingual children may facilitate their morphosyntactic acquisition. For instance, functional similarities between the English simple past and the *passé composé*, such as their readiness to be used to locate punctual, telic events prior to SpT in oral French and English may lead to cross-linguistic effects. Indeed, bilingual children may be able to build on functional similarities between forms in their two languages to ease their acquisition in their non-dominant language (Izquierdo and Collins, 2008). As mentioned at the end of section 3.1, the question of whether bilingual children's acquisition of their non-dominant language may be eased by their knowledge of their dominant language has been widely asked and has yielded conflicting results.

In the field of morphosyntax, recent studies claimed that bilingual children “follow language specific-patterns [which suggest] very clearly that the grammatical development of each language of the same bilingual child is dependent on experience in that language specifically, rather than on total language experience or chronological age.” (Thordardottir, 2015). Several studies have tracked evidence of crosslinguistic transfer in the productions of French-English bilinguals in the field of morphosyntax (Genesee et al., 1996; Cenoz and Genesee, 2001; Gathercole and C, 2007; Nicoladis et al., 2007; Nicoladis and Paradis, 2012). However, no such effect has been documented in the acquisition of inflectional morphology in French and English. This was explained by the fact that crosslinguistic transfer is likely to occur when surface structures of two languages overlap. Past tense-aspect morphology is on the contrary considered too language-specific for crosslinguistic transfer to occur (Gathercole and C, 2007; Nicoladis et al., 2007). However, other areas of language acquisition might be impacted by bilingual acquisition. In the field of narrative development, several studies have argued that bilingual children may build on their narrative competence (rather than linguistic abilities) in their dominant language when producing a narrative in their non-dominant one (Pearson, 2002). The final chapter of this work questions the use of tense-aspect morphology by French-English bilingual children in narrative discourse, in order to determine whether bilingual children were able to use past tense-aspect forms in both of their languages in narrative discourse, with the specific discursive functions these forms serve in such contexts.

3.3 Aspect hypothesis

I mentioned earlier that children tend to use past tense-aspect morphology first with a restricted set of verbs, which share semantic characteristics such as telicity, or punctuality (Brown, 1973; Bloom et al., 1980a,b; Shirai and Andersen, 1995). This semantic bias in the first tokens used with past tense-aspect morphology by children was identified in several languages in both first and second language acquisition (Bronckart and Sinclair, 1973; Bloom et al., 1980a,b; Bardovi-Harlig, 1994, 1998; Li and Shirai, 2011; Parisse et al., 2018). Studies have thus highlighted the intricate ties between tense-aspect-mood markers, often concluding that children first use ATAM morphology only with restricted functions, to build aspectual rather than temporal reference (Bronckart and Sinclair, 1973; Brown, 1973; Bloom et al., 1980a,b).

The aim of this section is twofold. First, I present the findings of the Aspect Hypothesis in French and English, focusing both on the very first stages of acquisition of past tense-aspect morphology as well as on ulterior stages. This will allow to account for both the strong and weak versions of the Aspect Hypothesis, and to discuss the predictions both versions make with regards to the acquisition of tense-aspect morphology in French and English. Second, this section will review two justifications for the preferential associations found in the speech of monolingual children of various languages – the Prototype Account (Shirai, 1991; Shirai and Andersen, 1995) and the Morphology-Sensitive Framework (Bertinetto, 2012; Bertinetto et al., 2015).

3.3.1 Aspect before tense? Findings from crosslinguistic studies

Several studies have observed preferential associations in children’s productions between past morphology and telic verb constellations (in Vendler’s terminology, accomplishment and achievement predicates, as detailed below), and between imperfective morphology and atelic predicates (activities and states). Before turning in the next sections to explanations that have been put forth to account for such preferential associations (Shirai and Andersen, 1995; Bertinetto et al., 2015), I describe below how these preferential associations have been analyzed and interpreted by researchers in the second half of the twentieth century.

Most research on preferential associations between tense-aspect morphology and lexical aspect categories was conducted on the productions of English monolingual children (Bloom et al., 1980b; Shirai and Andersen, 1995; Bardovi-Harlig, 1995; Li and Shirai, 2011; Bardovi-Harlig, 1998; Collins, 2002; Tomasello, 2009), before similar associations were identified in the productions of children in other languages. The interaction between grammatical and lexical aspects was famously studied in French in an experimental setting where the authors elicited productions from French monolingual children aged 2;11 to 8;7 (Bronckart and Sinclair, 1973). The authors found that the children under six years old

used the *passé composé* mostly with non-durative, telic events (i.e. achievement verbs). The children under six in the study did not use any *imparfait* forms, but rather used the present tense with durative events. Such preferential associations in the speech of French monolingual children were highlighted, although not analyzed in detail, in a more recent longitudinal study which focused on the acquisition of the *imparfait* (Parisse et al., 2018).

These preferential associations between tense morphology and lexical aspect have been described as an “undergeneralization” of tense-aspect morphemes – children were considered to undergeneralize their use to highly compatible lexical aspects – past tense-aspect morphology in English was thus associated with predicates denoting brief, telic events likely to have ended at SpT. These observations led many linguists to hypothesize that children first use tense-aspect morphology to mark aspectual distinctions rather than temporal ones (Brown, 1973; Bronckart and Sinclair, 1973; Bloom et al., 1980a). Wagner (1998) formulated the “Aspect First Hypothesis”, which was also taken up in the literature as the Aspect Hypothesis, as follows:

“Children initially use tense and grammatical aspect morphology to mark lexical aspect. In particular, children initially use present and/or imperfective morphology to mark atelicity and use past tense and/or perfective morphology to mark telicity.” (Wagner, 1998, p. 86).

The Aspect Hypothesis thus claimed that children use past tense morphology more often with telic verbs, and the present or imperfective tenses most often with atelic predicates. In French, the *passé composé* is most often used to denote perfectivity and the *imparfait* imperfectivity. The Aspect Hypothesis predicts that children will use the perfective past earlier than the imperfective past (Collins, 2002). It also hypothesizes that the imperfective and perfective past tenses will be inversely restricted to lexical aspect categories: the perfective past tense will be used first with achievements, before being gradually extended to the aspectual classes of accomplishments, activities and finally stative predicates. On the contrary, the imperfective past tense will be predominantly used with states and activities in the first stages of acquisition, before it is generalized by children to telic predicates (accomplishments and achievements) (Shirai, 1991; Shirai and Andersen, 1995). Telicity was described as having a significant effect on the distribution of simple past forms with regards to lexical aspect (Collins, 2002). The impact of duration has also been widely studied, although it has yielded more contradictory results. In particular, several recent studies have claimed that achievements (predicates with the features of [+ telic] and [- durative]) were not inflected for the past tense more frequently than accomplishments (predicates with the features of [+ telic] and [+ durative]) by the children (Collins, 2002). One of the questions this research aims to answer is whether findings made for English monolinguals allow to predict the development of past tense-aspect morphology in monolinguals of other languages, especially when these differ in how they

mark aspectuo-temporal distinctions. Indeed, proponents of the “aspect first” or “aspect before tense” hypothesis often claim that children build on salient characteristics of situations (telicity or duration, for instance) in order to develop ATAM morphology. However as I show in the following sections, it has also been hypothesized that children are more or less sensitive to implicit temporal features of predicates depending on how salient this property is in their language (Bertinetto et al., 2015). This would imply that children acquiring French and English do not necessarily follow the same acquisition path, given the differences in the aspectuo-temporal systems of the two languages (see below for more details).

I propose to test the findings of the Aspect Hypothesis first against the productions of French monolingual children, whose spontaneous productions have seldom been studied with regards to the development of tense-aspect morphology. Analyzing the productions of French monolinguals will thus allow to determine whether the claims made by defenders of the Aspect Hypothesis hold in French as well. Then, I wish to analyze the productions of French-English bilingual children in order to determine whether crosslinguistic differences between the aspectual systems of French and English and differences in the quantity of input received by the children impact the distributional bias of past tense forms in favor of telic or punctual predicates. I expect that this will feed the debate on whether children follow a universal path of acquisition for tense-aspect morphology, guided by lexical aspect features, regardless of the language considered. In other words, the results of this study will further the discussion on whether children are born with meta-linguistic awareness of inherent temporal features such as telicity or duration, or whether that awareness is based on the particular categories available in adult speech (Bickerton, 1984; Shirai and Andersen, 1995; Bertinetto, 2012).

Two versions of the Aspect Hypothesis have been developed over the years. The strong version stipulates a qualitative difference between children and adults – young children would never use the past tense other than to signal distinctions in lexical aspect. On the contrary, the weak version of the Aspect Hypothesis argues that children merely exaggerate a tendency represented in adult speech. The difference between adult and child uses of tense-aspect morphology would thus be quantitative rather than qualitative – the weak version of the aspect first hypothesis predicts that children will associate tense-aspect morphology with specific lexical aspect categories significantly more than adults (Collins, 2002; Hickmann, 2002). Usage-based theories usually assume that children are not born with innate meta-linguistic awareness, but rather that this awareness develops on the basis of the language surrounding the child (Bertinetto, 2012; Bertinetto et al., 2015). This assumption underlies this study, which is set within usage-based theories.

Finally, it is still unclear how long these preferential associations last in the speech of children. Indeed, results have varied greatly in both English and French. An experimental study on French monolingual children showed that the children restricted the use of tense

morphology to highly compatible lexical aspects up to a late age: below six, the children used the *passé composé* almost exclusively with telic verb constellations, and the present tense with atelic predicates (Bronckart and Sinclair, 1973). The authors thus concluded that tense was defective in the speech of French monolingual children up to a late age. This was contradicted by other studies on both French and English, which argued that the strong association between tense-aspect morphology and lexical aspect categories only held in the very first stages of development (Shirai and Andersen, 1995; Hickmann, 2002). This research adopts a developmental perspective on the Aspect Hypothesis – the bilingual and monolingual longitudinal corpora used in this study, as well as the corpus of narrative productions I elicited from older bilingual children were used to characterize the development of tense-aspect forms in the speech of French monolinguals and French-English bilinguals, in part to determine if and how children generalize the use of tense-aspect morphology across lexical aspect categories in various discursive contexts, up to six years old.

3.3.2 The prototype account

I mentioned earlier that usage-based theories of language acquisition assume that children are not born with an initial innate meta-linguistic competence, but rather that their meta-linguistic knowledge develops on the basis of the language they are exposed to (Shirai, 1991; Bertinetto et al., 2015). Scholars within usage-based frameworks have thus attempted to explain English monolingual children’s initial use of tense-aspect morphology by analyzing parental input (Shirai, 1991; Shirai and Andersen, 1995; Li and Shirai, 2011). Shirai and Andersen (1995) identified a “distributional bias” in child-directed speech (CDS): they noticed that in around 60 percent of cases, adults used the perfective past tense with telic events in CDS. They concluded that children’s restricted uses of tense-aspect morphology could be traced back to a skewed distribution of tense-aspect morphemes in their input (Andersen and Shirai, 1994; Shirai and Andersen, 1995). Children were described as building prototypical associations from their input, exaggerating the frequent associations found in adult speech between past morphology and telic and punctual situation types and between imperfective morphology and atelic, durative situation types. Only later do children generalize the use of tense-aspect morphology across lexical aspect categories, gradually mirroring the adult system. Subsequent mentions of the Aspect Hypothesis in this work refer specifically to this usage-based perspective on the preferential associations between tense-aspect morphology and lexical aspect categories in the speech of children (Shirai, 1991; Shirai and Andersen, 1995).

The notion of “prototype” was borrowed from cognitive linguistics where it is frequently used to account for the acquisition of lexical items (Wulff et al., 2009). Prototype theories in the field of lexical acquisition stipulate that lexical items are included in semantic categories based on the characteristic features they share with other members of

the category. The most prototypical exemplars are those which share the most characteristic features with other members, whereas non-prototypical examples share fewer features (Shirai, 1991). This prototype theory was applied to past tense-aspect acquisition to stipulate that children first acquire the most prototypical instances before moving to more peripheral ones (Sachs and Nelson, 1983). Shirai (1991) argued that children identify prototypical uses in their input, where around sixty percent of the verb constellations inflected for the simple past were telic. The prototype account thus builds on the claim that “a verb constellation conveys the concept of a situation, just as a noun, *apple* for instance, conveys the concept apple” (Smith, 2013, p. 17). The skewed distribution of tense-aspect morphology across situation types in adult speech is thus presented as deriving from a higher degree of congruence between for instance past morphology and telic, punctual situation types. Adult speakers do not only use congruent associations between situation types and tense-aspect morphology, but such associations were over represented in the input (Andersen and Shirai, 1994; Shirai and Andersen, 1995). Within usage-based theories, language learners are said to follow a “one-to-one principle” in form-to-function mapping – they usually use one form with one meaning (Andersen, 1984). The prototype account thus claims that children originally build semantic representations of tense-aspect morphology, and restrict ATAM morphology to the most frequent situation types it is used with in the input, before generalizing its use to build other, less congruent associations. Contrary to nativist approaches, which explain early uses of tense-aspect morphology by relying on the children’s alleged innate meta-linguistic awareness (Bickerton, 1984), the Aspect Hypothesis thus relies on findings from functionalist, usage-based theories, as English monolingual children were said to draw on regular patterns in their input to build prototypical associations between tense-aspect morphology and lexical aspect categories. This has two important implications for this study.

First of all, an attempt to test the Aspect Hypothesis against French-English bilingual data requires first an analysis of the development of tense-aspect morphology in French longitudinal data. Indeed, the influential study which first identified preferential associations between tense-aspect morphology and lexical aspect in the speech of French monolingual children offered no insight as to whether the children could be said to draw statistical regularities from their input (Bronckart and Sinclair, 1973). Part of this work thus analyzes the link between the development of past tense-aspect morphology in the spontaneous longitudinal productions of French monolingual adults and their children, in order to determine whether it follows the trend predicted by the Aspect Hypothesis. Testing the Aspect Hypothesis and its predictions against French data will allow us to reflect on how children gradually learn to use past tenses in French, and to inform us on the role played by the children’s specific linguistic experience in their acquisition of tense-aspect morphology. I am particularly interested in weighing out different factors which have been identified as central to the development of tense in the speech of young French monolingual children (Morgenstern et al., 2018; Parrisé et al., 2018). In particular,

I wish to reflect both on the role of the input and on the role of situational factors, which have been shown to influence the acquisition of tense-aspect morphology. For instance, studies have shown that monolingual French children tend to start using specific past tense forms first to comment on the observable result of a past event (Parisse et al., 2018). This could help explain the preferential associations in the speech of young children between verb types (telic, punctual) and past perfective morphology. Indeed, if a child uses the perfective past tense first to comment on the present results of events which occurred in the past, then it is likely that the verb inflected for the past tense will be telic – to refer to its present result, the situation has to be bounded at least on the right.

Second of all, tying English monolingual children’s acquisition and early uses of past morphology back to characteristics of CDS emphasizes the role of input quality and quantity in the children’s acquisition of tense-aspect morphology in English. It may be expected that monolinguals would be able to draw regular patterns and build prototypical associations from their input more easily than their bilingual peers, who are often significantly less exposed to each of their languages. Studying the acquisition of past tense-aspect morphology by bilingual children may thus further two ongoing discussions regarding the acquisition of such morphemes. First, it should inform their acquisition by addressing the impact of input variations on the children’s ability to extract, use and generalize frequent form-function pairings in their input. In this perspective, I expect this work to contribute to the characterization of the acquisition of aspectuo-temporal morphology by bilingual children. Second, cross-linguistic differences between the temporal systems of French and English may also entail different acquisition patterns for bilingual children. This would at least in part contradict the Aspect Hypothesis and further the reflection on the acquisition of past tense forms by monolingual children of different languages, yielding support to the morphology-sensitive framework. This explanation was put forth in recent years as an alternative to the prototype account to explain early uses of tense-aspect morphology by children of different languages (Bertinetto, 2012; Bertinetto et al., 2015).

3.3.3 Morphology-sensitive framework

I have mentioned earlier that the Aspect Hypothesis focused mainly on English to claim that children extract prototypical associations between lexical aspect categories and tense-aspect morphology from their input, which they use predominantly in the initial stages of acquisition before generalizing the use of tense-aspect morphemes to other verb constellations. The Aspect Hypothesis thus identified a universal route of acquisition for tense-aspect morphology guided by lexical aspect categories – children would first use atelic predicates with present tense-aspect morphology to build imperfective reference, and telic predicates with past tense-aspect morphology to build perfective reference (Bronckart and Sinclair, 1973; Shirai, 1991; Shirai and Andersen, 1995). The acquisition model put forth by the Aspect Hypothesis fits the English system well, since English has means to mark

perfective/imperfective distinctions in all tenses. More recent work on the acquisition of ATAM morphology has wondered whether children acquiring Romance languages, where two past tenses are available to children would follow the acquisition path predicted by the Aspect Hypothesis (Bertinetto et al., 2015).

Several observations on the speech of young children acquiring Italian question the universality of the findings of the Aspect Hypothesis (Bertinetto et al., 2015). First of all, Bertinetto et al. (2015) suggest that if children developed specific ATAM morphology along the lines of telicity then states and activities should behave similarly as both categories include atelic predicates. However, a distinct analysis of the two categories by the authors showed that children do not treat them together (Bertinetto et al., 2015). Similar findings were made on the *imparfait*, which was reportedly predominantly used with stative predicates by children, and only later generalized to activities (Pariße et al., 2018). Bertinetto et al. (2015) also cast doubt on the prototype account of the Aspect Hypothesis, by showing that the Italian and Austrian monolingual children recorded longitudinally from 1;07 to 3;03 did not significantly differ in their behavior from the adult model. On the contrary, the children were highly influenced by the input they received, and input characteristics were used to account for individual differences between the development of ATAM morphology in the speech of both children (Bertinetto et al., 2015). The authors supported a typology-oriented approach, assuming that morphological salience triggers acquisition of tense-aspect forms, rather than an innate sensibility to the category of lexical aspect, which is not marked in English and French. This would imply that morphological differences in the expression of ATAM in French and English would lead to different acquisition paths. French has overt marking of temporal relations, although I mentioned earlier that there is no one-to-one correspondence between grammatical tenses and chronological time. In English, temporal marking is less clear-cut – English has little morphology, and when it does it is seldom salient (see the first section of this chapter). It could thus be expected that children acquiring English do not use tense-aspect morphology predominantly to mark temporal relations because such relations are not clearly marked in their input. Moreover, lexical aspect often impacts the interpretation of simple past forms in English. Indeed, the simple past in English may be used in a target system to build either perfective or imperfective reference, depending both on the aspectuality of the verb constellation considered and on contextual cues (Trevis, 1996). English monolingual children could thus be expected to be more sensitive to lexical aspect categories than French monolingual children. Conversely, because French has two past tenses which are strongly associated with perfectivity and imperfectivity respectively, lexical aspect is less critical in triggering specific viewpoints on situations.

Finally, the Aspect Hypothesis also justified the late appearance of the imperfective past tense in the speech of children by claiming that they first use past tense forms exclusively with telic predicates to build perfective reference. However, it could also be argued that the imperfective past appears later in the speech of children because it does

not exploit SpT as anchor-point, but rather “typically needs (...) a reference time in the past” (Bertinetto et al., 2015). Children have been shown first to locate events in the past exclusively relative to SpT, which could explain that children do not originally make use of the imperfective past in spontaneous productions with a temporal value (Bertinetto et al., 2015). In this perspective, it may be expected that children will build reference to the past by using perfective past tense-aspect forms before they start using imperfective past tense-aspect forms.

3.4 Beyond the first stages of acquisition: past tense-aspect morphemes in narrative discourse

As stated earlier, this work is set within functionalist, usage-based theories of language acquisition. As such, language is viewed as a means to reach communicative goals and language acquisition is understood as a process by which children acquire linguistic forms as means to reach these goals. In other words, children do not acquire forms for their own sake, but because they serve functions in various communicative settings (Hickmann, 2002). The aim of my work is thus to explore not only how French-English bilingual children acquire past tense-aspect morphology, but also how they learn to use it in various discursive contexts, in particular contexts where the functions of past tense-aspect forms differ from the ones they serve in spontaneous speech. I am in particular interested in whether some forms may be first acquired with the functions they serve in narrative discursive contexts, which may be less cognitively complex to master. I also wish to identify possible facilitating or complexifying effects of bilingual acquisition on the children’s narrative development.

3.4.1 What does the study of children’s narrative productions teach us about the acquisition of past tense-aspect forms?

Spontaneous language samples have long been described as ensuring rich and faithful data collection in order to study the development of verb forms in the speech of young children (Tomasello, 2009; Heilmann et al., 2010; Morgenstern, 2012). Contrary to standardized elicitation tasks, spontaneous language collection consists in recording children in naturalistic contexts, often in interaction with their caretaker. Recording children’s spontaneous language productions could thus be a way for researchers to assess their real communicative abilities, rather than to analyze their ability to provide a given morpheme during an elicitation task. Considering that the main function of language is a communicative function, it seems artificial to test children on their proficiency with specific morphemes in tasks stripped of all communicative context. When interlocutors engage in a conversation, they must be able to use specific linguistic features to get their meaning through,

but they also need to understand each other's communicative intentions. Spontaneous language samples are thus essential to understand children's linguistic abilities in context; several studies have indeed noted that children perform better in spontaneous language tasks than in standardized language tasks (Rice and Oetting, 1993; Thordardottir and Namazi, 2007). Spontaneous language tasks allow children to rely on their interlocutor's productions to construct their own utterances. Children's greater proficiency in spontaneous language production could also be explained by the fact that standardized language tasks place children in a very unfamiliar context, which might intimidate them and influence their production (Prigent et al., 2015). However, although spontaneous language sampling has been shown to reflect children's real language performance more adequately, it also has important limitations (Bamberg, 2011; Prigent et al., 2015). First, collecting, transcribing and analyzing children's spontaneous speech samples is extremely time consuming (MacWhinney, 2000). Considering that the productions of French monolingual children and of French-English bilingual children have been extensively studied over the years, longitudinal recordings with their transcriptions were relatively easy to access. It thus seemed more relevant for the present study to use previously recorded spontaneous longitudinal data than to record new data. Another issue with spontaneous language tasks is the researchers' lack of control over the child's production. This might be problematic for studies which aim at analyzing children's ability to supply a specific marker or feature in obligatory contexts, especially if the marker or feature under study is considered complex. In French, the *imparfait* in particular has been shown to appear late in the spontaneous productions of children (Pariße and Morgenstern, 2012). I wished to determine whether the acquisition of such forms could be analyzed as triggered by lexical aspect, or whether typological or discourse factors also impact their acquisition. The analysis of children's narrative data was meant to inform on the impact of discursive factors on the acquisition of past tense-aspect forms with the wide range of functions they serve.

Studies have also highlighted that children's language abilities were sensitive to task-type, i.e. that children will produce complex structures and morphemes more or less adequately depending on the task they are presented with. It has been highlighted that both preschoolers and school-age children produce complex features and structures more frequently during a narrative task than during play sessions or conversational tasks (Wagner et al., 2000). Narratives thus provide a context in which children's ability to use complex morphosyntactic structures can be studied, because they rely on a large set of linguistic and cognitive skills (Bamberg, 2011; Berman and Slobin, 2013; Bamberg and Reilly, 2014). A narrative is made up of a series of temporally related clauses, which form a sequence of events and most of the time include both a referential and an evaluative aspect (Labov and Waletzky, 1967). The referential aspect of narratives refers to the information narratives convey about characters, events, and the place and time at which they take place. The evaluative aspect of narratives points to the fact that narratives are told from the point of view of a narrator, sometimes incorporating comments or evaluations on the story (see

the next section for more details). Children are often familiar with the genre, as it is very widespread in societies around the world, although cultural variations may be identified (Fiestas and Peña, 2004). Narratives also make up a great part of children’s speech acts and of child-parent interactions, at dinnertime or bedtime for instance (Applebee, 1978). However, narrative production remains a complex task, which is dependent upon a certain level of cognitive development. Of particular interest to this study is the fact that constructing a narrative is often dependent on the child’s ability to produce utterances displaced from the situation of utterance. The notion of “displacement” refers to the ability to refer linguistically to abstract concepts or notions. The term “abstract” is used here to refer to elements that are not concrete at SpT – displacement is thus understood as the ability to refer to times, places and objects which are not tangible at SpT (Veneziano, 2001; Parisse et al., 2021). Examples of displaced speech include first instances of explanations or justifications in children’s speech, of references to absent objects or persons, as well as to the first instances of references to a time other than SpT (Veneziano and Sinclair, 1995). Narrative abilities are linked to an essential milestone in children’s linguistic development – the ability to refer beyond the “here and now” and to use language to talk about a displaced time and space (Brown, 1973, p. 9). Narrative discourse calls for instances of displacement, as speakers have to fill the role of the narrator and tell the story of characters (fictive or not) that may not be present at the time of utterance. The story, be it fictive or a narration of past events, is usually necessarily set in a different time than “now” and in a different space than “here”; this is illustrated by the phrase often used in fairy-tales: “once upon a time, in a land far far away (...)”.

The set of linguistic skills required to produce an efficient narrative suggests that narrative tasks will be more likely to yield complex structures in children’s speech than other spontaneous language tasks such as play sessions, or conversational tasks. Moreover, children may use past tense-aspect forms in narrative productions with different functions than the ones served by the same forms in spontaneous contexts. I show in the next section that past tense-aspect forms are used with discourse grounding functions in narratives as well as to order events sequentially, rather than to locate events prior to SpT.

3.4.2 Children’s narratives as a discursive genre

Before turning to the use of tense-aspect morphology in narrative discourse, I wish to qualify the notion of “child narrative”, and to introduce several concepts central to the analysis of children’s narrative productions. The term “narrative” is understood to include both personal narratives – generally first-person narrations of past events construed as having occurred prior to SpT – and fictive story-telling in the third person. Children’s personal narratives have been described as “any verbal description of one or more past event” (Bamberg, 2011), whereas third-person story-telling involves cultural norms in terms of narrative structure or of the number and types of narrative episodes it includes.

The production of a narrative is a complex linguistic task, which is not accessible to all. The acquisition of the narrative genre is a slow process, which begins in pre-school years and goes well into adolescence (Berman and Slobin, 2013). Narrative skills are in turn central to the linguistic development of young children as they participate in their communicative competence, and are also central components of most school curricula (Miller et al., 2006). A wealth of research has addressed the issue of typically developing children's early narrative competence (Peterson and McCabe, 1983; Bamberg, 2011; Berman and Slobin, 2013; Bamberg and Reilly, 2014), often pointing to the differences between child narratives and adult narratives.

Child narratives are usually analyzed with regards to how they fit into the story-grammar (Berman and Slobin, 2013) or story-schema (Bamberg, 2011). These notions refer to the shared underlying structural components of narratives, which generally include a setting, a combination of several episodes among which an initiating event or problem, a reaction from the characters, their attempts at solving the initial event, a conclusion and a resolution. Much research has focused on children's ability to follow a story-schema at different ages, showing that children aged 3;00 to 4;00 have some notions of a globally coherent story-grammar, although they may not be able to use it systematically in their own narrative productions (Peterson and McCabe, 1983; Bamberg, 2011; Berman and Slobin, 2013). Children's ability to follow an identifiable story-grammar is dependent on whether they are able to integrate events into units, or episodes, which in turn constitute the backbone of the narrative. The ability to sequence information is highly dependent on tense-aspect morphology, which allows narrators to establish and shift reference as well as to hook events to each other in a narrative (Bardovi-Harlig, 1995; Botting, 2002). However, the relevance of comparing children's command of the story-schema to that of adults is questionable. It is indeed predictable that children will produce less complex narratives than adults, as the linguistic means at their disposal are more restricted. Moreover, children's ability to include the necessary episodes in their narrative production depends on them having taken part in enough interactive situations in which stories are told. In keeping with the usage-based theory, a child will be more likely to adequately reproduce and use a story-schema as they hear more and more stories. It is thus not surprising that when children begin to produce narratives, they will not meet the same standards as adults. Typically developing monolingual children have been said to start producing narratives that follow adult-like schema around five years old. This evolution seems to reflect children's patterns of language acquisition: from age five, typically developing children have been shown to use the tense-aspect system more and more adequately, which in turn enables them to produce efficient narratives (Paradis, 2010; Nicoladis and Paradis, 2012). I am mostly interested in the stages building up to this – from the first instances of narration in children around 3;00 to later stages where their production tends to resemble the adult target, how does the use of tense-aspect morphology evolve?

To answer this question, I used the narrative stages identified by Applebee (1978),

based on observations on narratives of children from 2;00 onward, often taken up in recent studies (Bamberg, 2011; Berman and Slobin, 2013) and reproduced in table 3.1. Ages are given as indicators, but as the selected extracts below will show, there is great individual variation in when children reach a given stage.

Stage	Age	Description
1: Heaps	[2;00–3;00]	Description of actions or events, no apparent organization. Frequent topic/perspective switches.
2: Sequence	[3;00–4;00]	Labeling of events, connected to a central character or theme somewhat arbitrarily. No plot.
3: Primitive narratives	[4;00–4;06]	Appearance of three story grammar episodes (initial event, action, consequence). No clear ending.
4-5: Focused and unfocused chains	[4;06–5;00]	Emergence of cause/effect relationships and additional reliance temporal relationships although plot is weak (poor cohesion, ending difficult to understand). Frequent focus shifts in stage 4, resolved in stage 5 (clear focus on character or central theme).
6: True narratives	[5;00–7;00]	Include five story grammar elements, clear ending. Logical sequencing of events according to temporal organization, clear plot and motivations.

Table 3.1: Applebees' Narrative stages (1978)

Below are extracts to illustrate Applebee's narrative stages. All the extracts were taken from the corpus of child narratives recorded for this study (*Brunet* corpus). Among the children who produced a narrative, two were in the first stage of narrative development.

Extract 3.4.1.

Stage 1: Heaps

Emma; 3;11

CHI: un pot. (*a bucket.*)

CHI: elle est où sa grenouille ? (*where's his frog?*)

INT: quand même elle est où sa grenouille ? (*right where's his frog?*)

INT: et alors ? (*and so?*)

CHI: grenouille ! (*frog!*)

INT: ben oui et là tu as vu ? (*right, and have you seen that?*)

CHI: et là il est pas là. textit(there he's not there.)

INT: ben non. textit(it's not.)

CHI: pic poc aïe. (*peck peck ouch.*)

INT: ben oui et donc là ? (*right and so there?*)

CHI: il shout@s sa maman. (*he shouts for his mum.*)

Extract 3.4.1 is taken from the first narrative production elicited from Emma, in French which was her dominant language at the time. It illustrates the first stage of narrative development identified by Applebee – heaps consist of descriptions of events and labels disconnected from one another, without any central theme. They do not include either a setting or initiating event, and rely on simple, declarative sentences. Heaps include frequent perspective shifts which make it hard to identify a central character or plot. This is illustrated by extract 3.4.2, taken from the session organized a year later.

Extract 3.4.2.

Stage 1: Heaps

Emma; 4;11

CHI: <the dog> [/] the dog sleeping like that.

%sit: CHI falls to the side and closes her eyes.

CHI: [- mix] and the [/] the grenouille@s wanted to [/] to [/] to [/] to [/] to [///] to do what +..?

CHI: ++ to wake him up.

CHI: and the turt- [///] the dog wanted not wake him up.

INT: okay.

CHI: [- mix] <and the> [/] and the grenouille@s now is upset.

None of the children recorded in the *Brunet* corpus produced narratives identified as sequence narrative (stage 2). Sequence narratives are similar to heaps, except for the fact that the events labeled all revolve around a central theme or character. Extract 3.4.3 is taken from a primitive narrative (stage 3) elicited from Oliver.

Extract 3.4.3.

Stage 3: Primitive Narrative

Oliver; 4;02

CHI: a boy and a dog and a frog and (.) a bee (.) flied away.

CHI: and the little boy was fishing fish.

CHI: but he got a tortoise.

Extract 3.4.3. includes a description of the setting as well as the first story grammar episodes – the utterance “but he got a tortoise” relates the initial event which will trigger the narrative.

Extract 3.4.4 is taken from the first narrative elicited from Julian. It illustrates stages 4 to 5 in Applebee's classification. Indeed, at this stage, Julian started using tense-aspect morphology to order narrative events – progressive morphology is used to describe the setting and contrasts with bare or past tense-aspect forms. The focus of the narrative is mostly on the central character, although the lack of clear cohesive devices makes it sometimes hard to interpret.

Extract 3.4.4.

Stages 4-5: Unfocused to Focused Chains

Julian; 5;07

CHI: once upon a time a little boy was fishing.

CHI: and he got a fish and then the fish pull [/] pull.

CHI: and he pull harder the fish.

CHI: he fall down in the water.

Finally, extract 3.4.5. illustrates the last stage of development described by Applebee: events are logically sequenced, the narrative includes evaluative comments on the character's state of mind ("he loved fishing") as well as clearly identifiable story grammar units. At this stage, tense-aspect morphology is used proficiently in narrative discourse. Extract 3.4.5 was selected from the second narrative production elicited from the oldest child in the study, Lucas.

Extract 3.4.5.

Stage 6: True narrative

Lucas, 7;06

CHI: once upon a time there was a boy named jack.

CHI: he loved finish [///] fishing (un)til one day he caught something.

CHI: it was very hard to take out.

I am interested in characterizing the role played by tense-aspect morphology in the development of bilingual children's narrative abilities. In particular, I wonder whether children reach different narrative stages in their two languages at different ages, solely based on linguistic proficiency in each of their languages, or whether narrative competence may be transferred from one language to another. For instance, once children reach later stages of development in one language, one could expect that their narrative performance

in their other language will catch up. The idea behind this would be that once bilingual children become conscious of how target narratives are organized and of what they should include in terms of story-grammar episodes, or focus-building, children may attempt to reach this target narrative in both languages, using the linguistic means at their disposal. Tense-aspect morphology essential to the organization of events in a narrative (such as the English simple past or the French *imparfait*) is considered late-acquired and highly dependent on input quantity and quality. It could thus be expected that the French-English bilingual children may not acquire the target morphology required to sequence and ground events in narrative discourse at the same time in both of their languages. My question is whether evidence could be found of transfer in the field of meta-narrative abilities, regardless of linguistic ability – will children produce more target-like narratives in their non-dominant language once their narrative abilities in their dominant language have reached the latest stages of development?

3.4.3 ATAM morphology in young children’s narrative clauses: the notion of grounding

This work proposes to analyze the narrative productions of bilingual children aged 4;00 to 6;00 years old at the beginning of the study. At that age, the children had all started to use tense-aspect morphology productively in spontaneous discourse, although they did not use the forms identically as the adults in the corpus. Evidence was thus available to claim that children had some knowledge of the morphemes under study, although they didn’t know everything about how such morphemes are used in discourse (Berman and Slobin, 2013). I am particularly interested in investigating how much the bilingual children under study knew about the use of tense-aspect morphology in narrative contexts. I focus in particular on two functions served by tense-aspect morphemes in narratives, namely the temporal ordering of the events narrated and the grounding of events in discourse (Bamberg, 2011; Berman and Slobin, 2013).

Temporal ordering of events requires different abilities depending on the type of narrative considered. In personal, first-person narratives where a narrator relates past events, such events have to be displaced from SpT – they are located in the past. Moreover, as children’s personal narratives are usually defined minimally as “any verbal description of one or more past event” (Umiker-Sebeok, 1979, p. 92), children may also use tense-aspect morphology to order the narrated events chronologically, relative to SpT and to each other. In third-person narratives, where children take on the role of the narrator to tell fictive events, tense-morphology is used to displace narrative time from speech time. Indeed, fictive events in narratives cannot be said to be located in the past, yet they are located on some time-axis and ordered relative to one another. Narrative time is created by ordering narrative events relative to a displaced reference time (Bamberg, 2011). This third anchor point allows the most proficient children to backtrack in time

within their narrative production, by using specific tense-aspect morphology (Berman and Slobin, 2013). I am interested in analyzing the role played by tense-aspect morphology at different narrative stages. Very young children have been said to produce narratives described as a “sequence of clauses whose temporal order is iconic with the order of the narrated events” (Berman and Slobin, 2013, p. 13). Older children are on the contrary able to package events, and present them as co-occurring or sequenced, using tense-aspect morphology. From 5;0 onwards, children have been said to use tense-aspect morphology systematically to order events in their narrative productions (Peterson and McCabe, 1983; Bamberg, 2011; Berman and Slobin, 2013). The purpose of this work is in part to analyze how such morphology develops in the narrative productions of French-English bilingual children between the ages of 4;00 and 6;00, with a specific focus on possible cross-linguistic transfers in the field of narrative abilities.

In narrative discourse, tense-aspect morphemes serve not only to sequence events chronologically, but also to propose a hierarchical ordering of such events (Berman and Slobin, 2013). Mature speakers order clauses in their narratives to highlight the ones which are most important to the global coherence of their narrative. Hopper (1979) suggested that a major function of tense-aspect distinctions is to differentiate main-line (foreground) events from commentary (background) in narrative. This was widely taken up in the literature, and the distinction between background and foreground in narrative discourse is now often considered part of the linguistic universals, as it seems to be present in all languages (Hopper, 1979; Hickmann, 2002). In this perspective, target narratives consist not only in a linear succession of events, but also of events which are structured into hierarchical units (Berman and Slobin, 2013). Before showing how such grounding functions may be served by tense-aspect morphology in French and English, it is necessary to state that any event may be either foregrounded or backgrounded, depending on the narrator (Bamberg, 2011; Berman and Slobin, 2013; Bamberg and Reilly, 2014). This is an additional challenge for children developing their narrative competence, as they are fully in charge of the organization of the story (Berman and Slobin, 2013).

Foreground clauses introduce the main plot line of the narrative, presenting events as chronologically ordered and sequenced (Bamberg and Reilly, 2014; Berman and Slobin, 2013). Such events usually share temporal characteristics which make them highly compatible with the foreground – it is more natural to present events as following each other when the events considered are dynamic, punctual and complete; such events naturally lend themselves to be chronologically sequenced (Hopper, 1979). On the contrary, background clauses often tend to provide additional information, describing the characters’ state of mind or physical characteristics, for instance. Reinhart (1984) formulated three temporal criteria to distinguish between foreground and background clauses (Reinhart, 1984, p. 801). The first criterion is “narrativity” which refers to the fact that foreground clauses match a chronological order. Foreground clauses have also been called “narrative” clauses, since “a change in their order will result in a change in the temporal sequence”

of events (Labov and Waletzky, 1967, p. 28). In other words, events which follow each other chronologically will be related in foreground clauses. The second criterion is punctuality. It claims that punctual events are more likely to be foregrounded than durative, repetitive or habitual events. Background clauses are thus associated with duration as well as stativity to some extent, as habitual reference often conveys a stative, generic value. Finally, the last criterion used by Reinhart (1984) is completeness, which states that foreground clauses are likely to relate completed rather than ongoing events. Indeed, completed events are more likely to be sequenced and ordered than reports of ongoing events (Bardovi-Harlig, 1995). It has thus been frequently suggested that in languages which mark verbs for grammatical aspect, perfective forms will be most frequently found in the foreground, as punctual, non-durative events lend themselves most naturally to a perfective interpretation. On the contrary, background clauses will include more imperfective construals of mostly durative events.

Children developing their narrative competence again have to map forms onto functions. They need both to identify the functions of backgrounding and foregrounding which characterize narrative discourse, and to acquire the forms which allow to express this distinction (Bamberg, 2011). This entails different predictions regarding the distribution of tense-aspect forms in narrative discourse in French and English. Indeed, the two contrastive past tense forms in French are usually means to distinguish foreground and background events in narratives. In English, the simple past may build either perfective or imperfective reference depending on the type of predicate it is used with and on contextual cues (Trevis, 1996; Bertinetto, 2001; Smith, 2013). The distribution of tense-aspect morphology in children's narrative productions throughout the different stages of narrative development differs greatly in French and in English. Indeed, in both languages, children have been shown to first associate past morphology to the foreground. In French, events in the foreground will either be related using the present tense or the *passé composé*. This is consistent with findings from the Aspect Hypothesis that children originally associate past tense morphology predominantly to perfectivity (Shirai, 1991; Bardovi-Harlig, 1994). At this stage, background clauses are generally absent from children's narrative productions. As their narrative proficiency rises they tend to include more background information in their narratives. French monolingual children then tend to use the *imparfait* in background clauses, alongside with present tense forms. English monolingual children at this stage start using past tense-aspect forms with imperfective values in the background, as well as progressive forms.

In both French and English, language proficiency levels have been shown to influence the distribution of tense forms relative to grounding (Hopper, 1979; Bardovi-Harlig, 1994, 1995). The hypothesis according to which children associate the foreground with perfectivity in narrative discourse was labeled the discourse hypothesis (Binnick, 2012), or narrative hypothesis (Bardovi-Harlig, 1994, 1995, 1998). It predicts that children use tense-aspect morphology not relative predominantly to lexical aspect, but rather rela-

tive to grounding distinctions. According to the discourse hypothesis, all foregrounded predicates will receive perfective morphology in narrative discourse, and all backgrounded predicates will receive imperfective morphology. In this perspective, lexical aspect plays a role in that different situation types have temporal characteristics that make them more or less likely to be construed in a sequence of chronologically ordered events, but it is not the main factor to impact the distribution of tense aspect morphology. On the contrary, the Aspect Hypothesis predicts that telic predicates will receive perfective morphology, and atelic predicates imperfective morphology, regardless of grounding (Binnick, 2012). The difference between the Discourse Hypothesis and the Aspect Hypothesis thus lies in the predictions they make for atelic predicates in the foreground – the Discourse Hypothesis expects them to attract perfective morphology whereas the Aspect Hypothesis does not – and for telic predicates in the background – the Discourse Hypothesis expects they will attract imperfective morphology whereas the Aspect Hypothesis does not (Bardovi-Harlig, 1998; Binnick, 2012). I am interested in testing the findings of both the Discourse hypothesis against French-English bilingual children’s productions. I wonder in particular whether children having reached different narrative developmental stages will differ in the way they associate past tense-aspect morphology to lexical aspect categories in the foreground and in the background. Differences between the children’s productions will be systematically tied back to the participants’ bilingualism – using in particular levels of exposure and vocabulary scores in each language (Paradis, 2001, 2010) – in order to examine dominance effects in the use of tense-aspect morphology in the narrative productions of French-English bilingual children. As expected, studies which have addressed the narrative development of bilingual children have shown that children used their two languages in language-specific ways, showing greater tense diversity in French than in English for instance (Fiestas and Peña, 2004). On the macro-structural level, studies have yielded conflicted results. In particular, it is unclear whether bilingual acquisition may trigger delays in the development of narrative discourse and structure in the child’s non-dominant language (Pearson, 2002) or whether bilingual children will produce similarly structured narratives in their two languages, regardless of dominance effects (Rezzonico et al., 2015). In line with usage-based theories, I expect children’s ability to use tense-aspect forms to serve specific narrative functions to increase as children were exposed to more and more input, and that such functions might be easier to grasp in languages where different forms serve different functions. Using tense-aspect morphology in fictive narratives requires that the children have unveiled how tense-aspect forms allow to order events not only chronologically but also hierarchically, with respect to grounding. I have shown earlier that French speakers have more contrastive morphology at their disposal to distinguish between foreground and background clauses, whereas the English simple past tense is used in target-like narratives in both foreground or background clauses. I thus wonder whether the more salient and accessible forms in French will lead French-dominant children to use morphology earlier and more systematically to build local cohesion by distinguishing between foreground and background events.

This chapter dwelled on the how the acquisition of past tense-aspect forms by French and English monolingual and French-English bilingual children have been analyzed within usage-based theories (Tomasello, 2009). It showed that the factors put forth to explain the rates of acquisition of tense-aspect morphology. It showed for instance that type and token frequencies of a form could explain the rates at which the monolingual children in the *Paris* corpus acquired different tense-aspect forms in French. Moreover, it also showed that the children's use of past tense-aspect forms in French appeared to confirm the impact of the semantic transparency of a schema on the rate at which it will be acquired by children – the *imparfait*, a plurifunctional form, was used later by the children in the *Paris* corpus than the *passé composé* for which form-to-function mapping is more unilateral. Questions remain with regards to bilingual acquisition, in particular concerning the consequence of bilingual children's reduced input in one of their languages on the rate at which they will acquire complex constructions, and possible cross-linguistic transfer in the field of morphosyntactic acquisition.

Frequent-form function associations in the input have been put forth by the Prototype Account of the Aspect Hypothesis to explain preferential associations found in the speech of English monolingual children between past tense-aspect morphology and telic predicates. It suggests that adults in CDS used the English simple past mostly with telic predicates, to build aspectual rather than temporal reference; these associations were then treated as prototypical by children who overused them in their first productions. In French, the Aspect Hypothesis predicts that the perfective past tense, will appear first in the speech of children, and will be used predominantly with telic predicates. On the contrary, the imperfective past tense will be used mostly with atelic predicates. In this research, I propose to test the Aspect Hypothesis (and in particular the Prototype Account) against the longitudinal productions of French monolingual and French-English bilingual children, predicting that this will shed light both on the mechanism underlying the acquisition of complex constructions and on the differences between the aspectuo-temporal systems of French and English. As proposed by the Morphology-Sensitive Framework, it may for instance be hypothesized that because lexical aspect is more crucial to the interpretation of past tense-aspect forms in English, children acquiring English may be more sensitive to it than children acquiring French.

Finally, I address in this work the use of past tense-aspect morphology in French-English bilingual narrative data, in order to present a complete picture of the development of tense-aspect morphology in different discursive contexts. Studies on tense-aspect morphology in children's first narrative productions have argued that in such contexts, the use of such morphemes was triggered not by lexical aspect but rather by grounding distinctions. The discourse hypothesis thus predicts that children will present all foregrounded predicates as perfective in their narrative,

while all backgrounded predicates will receive an imperfective interpretation. In this perspective, lexical aspect plays a role in that different situation types have temporal characteristics that make them more or less likely to be construed in a sequence of chronologically ordered events, but it is not the main factor to impact the distribution of tense-aspect morphology. The narrative productions of bilingual children are also studied in order to determine the impact of dominance factors on their ability to organize events in their narrative, and the link between the children's language dominance pattern and their use of past tense-aspect morphology in specific discursive contexts.

Part II

Method and Corpora

Chapter 4

Method: choice of corpora, data collection and tools for analysis

The present chapter is organized as follows: I start by explaining why I used three corpora to investigate various aspects of the acquisition of ATAM morphology. Then, I discuss how I recruited participants to collect narrative and spontaneous data from the same French-English bilingual children. I also explain how the families' language practices and the children's language use were controlled. Finally, I dwell on how the data used in this study was transcribed and coded, and explain how I decided on problematic cases.

4.1 Choice of corpora

This research aims at documenting the acquisition of past tense-aspect morphology by young French monolingual and French-English bilingual children, as well as later uses of such morphology in narrative contexts. To take a developmental perspective on the acquisition of past tense-aspect morphology required using longitudinal data. Working on spontaneous, naturalistic data also allowed me to analyze the children's input and the relationship between the children's and the adults' use of past-tense aspect morphology in the first stages of its acquisition. However, I also wished to investigate bilingual children's later uses of past tense-aspect morphemes in narrative contexts, in order to analyze how children with different exposure patterns come to acquire the tense forms available to them in both of their languages and use them appropriately in various discursive contexts (and thus with various discursive functions). As mentioned in passing in chapter 3, collecting, transcribing and analyzing longitudinal corpora is extremely time-consuming (MacWhinney, 2000). Moreover, a number of longitudinal corpora were collected over the years both of French monolingual and French-English bilingual children, and are now accessible along with their transcriptions. It seemed therefore more useful to collect a corpus

of French-English bilingual children's narrative productions and use existing longitudinal data. I detail the reasons which led me to use the longitudinal corpora I did, as well as the characteristics of the corpus of child narratives that I collected for this study.

4.1.1 French monolingual data: the *Paris* corpus

I have stated before that the aim of this research was originally to test the predictions of the AH against the productions of French-English bilingual children. However, the conclusions of the AH were never, to our knowledge, tested against the longitudinal productions of French monolingual children.

The most famous study arguing for the primacy of lexical aspect over other categories in the acquisition of past tense morphology by French monolingual children was based on experimental data (Bronckart and Sinclair, 1973). Participants in this study were aged 2;11 to 8;07. The experimenter used toys to play out events which differed in terms of duration and of the results they yielded. The children were then asked to relate the action performed in front of them. The authors showed that children under 6 used the *passé composé* to denote punctual, resultative events. The children did not use *imparfait* forms before 6 years old, using the present tense with durative events instead (Bronckart and Sinclair, 1973). This study thus defended a strong version of the defective tense hypothesis, claiming that tense morphology was used by French monolingual children before six to mark aspectual distinctions rather than tense. However, more recent developments of the AH and in particular the prototype account that has been put forth (Shirai, 1991; Shirai and Andersen, 1995) points to the limitations of the study. Indeed, because Bronckart and Sinclair (1973) used experimental data, they could not take parental input into account. Their results thus gave no insight into whether the children under study could be said to model their use of past tense forms on their input. Few other studies tackled the link between lexical aspect and tense morphology in the productions of young monolingual French children. In order to test the predictions of the AH against French-English bilingual data, it was thus first necessary to investigate the relationship between the distribution of past tense forms across lexical aspect categories and the children's input in French monolingual data. Because of the time-consuming aspect of collecting spontaneous, longitudinal data, and because valuable data has been collected and made available to researchers, I decided to use existing French monolingual data rather than collect it. The *Paris* corpus was collected as part of the ColaJE project funded by the French National Research Agency (Morgenstern, 2012). The corpus was selected first because of how easily the videos and transcriptions are available online¹. An important factor in this choice was also the wealth of data collected by members of the CoLaJE project: the children they recruited for the study were filmed from birth to age seven in interaction with members of their family. Because the *passé composé* and the *imparfait* appear at different ages in the speech of

¹Transcriptions and recordings available online: <https://ct3.ortolang.fr/data/colaje/>.

French monolingual children, I needed to have access to recordings spanning a long period of time. The CoLaJE corpus was particularly well adapted in that it allowed to analyze the critical period for the appearance and first stages of development of past tense aspect morphology. The corpus included children recorded in interaction with family members, thus ensuring me access to the caregivers' productions as well as the children's. Finally, the recordings of Antoine and Anaé which I used were transcribed and in part coded by researchers working on the French verbal system, and in particular on the *imparfait* (Parsse and Morgenstern, 2012; Morgenstern et al., 2018; Parsse et al., 2018). Choosing this corpus thus allowed me to root my research within recent work on the acquisition of verbal forms by French monolingual children, and to further the work initiated on Antoine and Anaé's productions (Parsse and Morgenstern, 2012; Parsse et al., 2018). The choice made to focus on a selection of recordings is yet again linked to temporal limitations which prevented me from analyzing all the recordings, as Antoine and Anaé were each filmed during more than thirty one-hour sessions. I also wished to further recent work on the acquisition of past tense-aspect morphology by French monolingual children. It was logical for this study to build on work previously conducted on the data. The studies on the acquisition of the *imparfait* by Antoine and Anaé had already selected and coded a number of recordings of Anaé and Antoine, which allowed them to document various stages of the acquisition of tense morphology including the first stages of the generalization of the *imparfait*, considered as I mentioned before a late-acquired form (Parsse et al., 2018). The data referred to as the *Paris* corpus in the rest of this research consists of eleven sessions for Anaé and ten sessions for Antoine, spaced approximately three months apart between 1;06 and 4;05. The families and children are described in chapter 5 (section 5.1).

4.1.2 French-English spontaneous bilingual data: the *Hervé* corpus

As explained in chapter 3, the AH analyzed the preferential associations found in the speech of monolingual children by looking at parental input – proponents of the AH hypothesis explained that children first restrict their uses of ATAM morphology to specific lexical aspect categories because they extract the most frequent form-function pairings (i.e. constructions) from their input and use them first exclusively. Testing the findings of the AH against bilingual data would allow to further the study of the link between language exposure and the acquisition of tense-aspect morphology, by interrogating whether bilingual children are as able as their monolingual peers to extract salient associations from their dual-language input. The aim of testing the AH against bilingual data is thus two-fold – it should first allow to inform on French-English bilingual acquisition and use of past-tense forms in spontaneous and later in narrative contexts, as the present research interrogates the role of input quantity and quality in the acquisition of past tense morphology by French-English bilingual children. Moreover, it aims at informing on the acquisition of tense-aspect morphology by children from different linguistic background, and in par-

ticular children who speak languages which mark tense and aspect differently. Indeed, considering how children acquire ATAM morphology in French and in English should allow to further the discussion on whether the acquisition of tense-aspect morphemes is universally triggered by lexical aspect, or whether children may rely on different cues to acquire and generalize ATAM morphology depending on the most salient functions these morphemes serve in the language(s) they are acquiring (Bertinetto, 2012). The conclusions of the AH have seldom been tested against bilingual data, and to our knowledge never against longitudinal French-English bilingual data. It was thus essential for this work to analyze French-English longitudinal data, even more so considering that most studies on the acquisition of past tense-aspect morphology by French-English bilingual children used experimental data (Paradis et al., 2007; Nicoladis et al., 2007; Paradis, 2010; Nicoladis and Paradis, 2012). The use of elicitation tasks in many of the studies tackling the acquisition of past tense forms by French-English bilingual children may explain the conflicting results they yielded concerning a possible “bilingual delay” in the acquisition of past tense forms.

Once again, the choice of using an existing corpus was motivated first by the time-consuming aspect of collecting longitudinal, spontaneous data. Indeed, I believe it necessary to make use of the time that was put into the collection of longitudinal bilingual corpora which have been made available for other researchers to work on. I chose to work on the *Hervé* corpus (Hervé et al., 2016), which included the transcriptions of recordings from Sophie and Anne, as well as some of the recordings², two French-English bilingual children living respectively in Manchester and London, England. I selected the corpus for my study of the development of tense-aspect morphology in the spontaneous productions of French-English bilingual children for several reasons. First of all, the children were recorded once a month for a year in both of their languages, between around 2;06 and 3;06 – precisely during the time when English monolingual children have been reported to start generalizing the use of past tense-aspect morphology across lexical aspect categories. The fact that the children were recorded in different sessions in interaction with a caretaker who spoke predominantly French or English during the session ensured that I would have access to a sufficient amount of productions in both languages. Moreover, the two families recorded for the *Hervé* corpus had been carefully selected, taking into account their socioeconomic status as well as their awareness of the fact that their children had to be consistently exposed to both of their languages to acquire them. Parental questionnaires were used when the families were initially recorded, to document their language practices (Hervé, 2015). This ensured sufficient information had been collected to document the family’s language practices, in particular outside the home. Chapter 5 is dedicated to a description of the participants and their families, with a specific focus on the distribution of French and English in the productions of the adults and the children over the period.

²The children’s names were changed, as requested by the ethics committee of the University of Manchester (Hervé, 2015).

4.1.3 French-English narrative bilingual data: the *Brunet* corpus

One of the limits of the corpora described above has to do with the uncertainty surrounding the existence of a long-lasting bilingual delay in the acquisition of tense-aspect morphology by children with different exposure patterns. It thus seemed important to consider later stages of development in this study, in order to investigate possible differences in the rates of development of past tense morphology in the bilingual child's two languages. The *Brunet corpus* thus includes data from six children aged between 3;11 to 6;03 at the beginning of the recording period. I recorded the children's narrative productions twice at a year's interval. This was done first to get a sense of the diversity of bilingual children's linguistic abilities at a given point in time, as well as to show that the language abilities of bilingual children evolve as their experience with their two languages develops. Indeed, language dominance may shift over time as the children grow and use their languages differently (Grosjean, 2008, 2010). Considering older children's productions allowed me to go beyond the initial stages of development and to determine both whether evidence of a bilingual delay in the acquisition of past-tense morphology was found, and whether such delay resolved over time or continued well into childhood.

I have extensively discussed the predictions made by functionalist or usage-based approaches on the acquisition of tense-aspect morphology. Such theories predict that children will first restrict their uses of tense-aspect morphology to express the most salient functions served by verbs inflected for the past tense in their input. I wish to test these predictions using the two longitudinal corpora presented above, which both allow for an analysis of the children's productions as well as of their input. However, functionalist approaches also predict that children's first use of past tense forms may be strongly linked to the characteristics of the situation in which the form is produced: as shown in chapter 3, the French past tense forms, be it the *imparfait* or the *passé composé*, do not serve the same functions in spontaneous and narrative discourse for instance. I question the link between the children's production of past tense forms and the functions they serve in specific discursive contexts. I have mentioned earlier that this work aims at informing both on the differences between the tense-aspect systems of French and English and on the differences between monolingual and bilingual acquisition of past tense forms. Concerning the latter, one of the questions I wish to answer was whether meta-linguistic abilities such as the ability to structure a narrative production and include the relevant story-grammar episodes are abilities that can be transferred from the bilingual child's dominant language to her non-dominant language. Concerning the former, recording the narrative productions of French-English children in three different settings including a spontaneous interview was meant to allow for a study of the use of past tense-aspect morphology with the various functions served by the forms in different discursive contexts. Given that past tense-aspect morphemes do not serve the same functions in narrative and in spontaneous discourse, I wished to investigate whether they would be used productively faster in spontaneous or

in narrative contexts. One could assume that because the children are more frequently exposed to spontaneous uses of past tense-aspect morphemes, they will master their use in spontaneous contexts before they do in narrative ones. However, the relative stability of form-function pairings for past tense-aspect morphology in narrative discourse may also make their acquisition easier than in spontaneous contexts where past-tense morphology is plurifunctional in both English and French. Past tense-aspect constructions may also be more contrastive in narrative than in spontaneous contexts – the functions served by the *passé composé* and the *imparfait* contrast more in narrative contexts where these forms are used respectively to signal foregrounded or backgrounded events than in spontaneous ones where both tenses may be used to locate events in the past. Because I wanted to highlight how diverse bilingual profiles may be, I chose to record children living in Paris and in London. The children were thus expected not to have reached the same stages of development in their two languages, even more so given that the majority language outside of their home was not the same for the children growing up in Paris and those growing up in London. The family dinners recorded allowed me to analyze the families' language practices inside the home, which contributed to the identification of the children's dominance patterns.

4.2 Data collection: the *Brunet* corpus

I collected the *Brunet* corpus from 2017 to 2019 in Paris and London, where I recorded the narrative productions of six bilingual children in each of their languages as well as two family dinners with each family. My primary aim was to explore the use of tense-aspect morphology by French-English bilingual children in narrative contexts. This was naturally entailed by the functionalist theoretical approach in which this study is grounded, which implies that language is acquired as a tool to reach communicative goals in different discursive contexts. This research aims at determining whether past tense-aspect constructions may be acquired at different rates in spontaneous or narrative contexts, and whether bilingual children are able to transfer their narrative abilities from their dominant to their non-dominant language. I provide information below on how the participants were selected and how the corpus was collected.

4.2.1 Participant recruitment

The children were recruited through announcements written in French and in English and distributed through my professional and personal networks in London and in Paris, as well as on social media in the fall of 2017. The criteria for participant selection included the children's linguistic experience with French and English, their age and their geographical location. The children thus had to have been raised bilingual from birth, i.e. they had

to have been exposed to French and English from birth. The recruitment did not focus on parental linguistic practices – for instance, it was not required for the parents to have adopted the “one parent-one language” strategy in order for their child to be included in the study. Indeed, I am particularly interested in studying the variety of bilingual profiles and practices within the family, and thus was interested in recruiting participants who may not have had exactly the same level of exposure to each of their languages. Similarly, the recruitment process did not exclude participants based on the language spoken at their schools, which allowed children attending monolingual or bilingual schools to participate in the study. This is again explained by the aim of the study, which is in part to document the diversity of bilingual profiles even among children who had been exposed to two languages from birth, and the impact of such diversity on the acquisition and use of past tense-aspect morphology.

The cut-off ages of 3;0 and 6;0 were decided upon based on the tasks presented to the children. Indeed, the narrative tasks in which the children were asked to participate required the children to be at least three years old, which is the age around which children have been reported to start narrating events rather than merely labeling referents. It was also likely that by three years old, children would have had started to use past tense-aspect forms in both of their languages in spontaneous contexts and would be able to use them in narrative contexts to order narrative events. It was decided that the children should not be older than six years old when entering the study, which would make them seven at the most by the end of the study. By seven years-old, studies have shown that children are generally able to use past tense-aspect forms to order clauses in a narrative. The children’s entry into literacy, as they start learning to read around six years old, plays an important role in the development of their narrative abilities (Bamberg, 2011). The present research is interested in characterizing the way in which bilingual children gradually acquire the past tense-aspect forms available to them in their input, and learn to use them in spontaneous and in narrative contexts. A cut-off age around six years old was thus deemed sufficient to collect the type of data needed for this study.

Finally, the children were recruited from two European capitals, London and Paris. The recruitment took place in Paris because of geographical proximity – this work was conducted in a Parisian university, and it was thus relatively easy both to recruit families in Paris and to plan recordings in the families’ homes. Restricting the recruitment to the Paris area was thus linked to practical reasons, although not exclusively. Indeed, this area is also characterized by a relative homogeneity in socioeconomic levels. Socioeconomic levels as well as parental levels of education have been shown to impact the rates of language acquisition (Hoff, 2006; Gathercole et al., 2016). Although this is not the focus of my research, it was necessary to try and control the socioeconomic levels of the families recruited. This was done indirectly through the delimitation of the geographical zone for the recruitment. Once the families had been recruited, parents were also asked to fill out a questionnaire on language practices, which included information on parental levels

of education. This confirmed that the families I recruited belonged to roughly the same socio-economic backgrounds. Children were also recruited in London because the aim of this research was to highlight the impact of exposure levels and language practices on the acquisition of tense-aspect morphology by French-English bilingual children. London was chosen naturally as a recruitment field for several reasons. First, it is very easily accessible from Paris by train, which would allow to minimize travels in the process of the collection of the corpus. London is also close enough to Paris that professional and personal networks could be activated quite easily in order to facilitate the recruitment of participants. Second, the *Hervé* corpus which was also analyzed in this research comprises video-recordings from two children living in Manchester and London. Recruiting participants from London thus ensured a certain level of homogeneity in the variety of English spoken by the children whose productions are analyzed in this work. Finally, recruiting families from Paris and London rather than from a smaller town in the UK for instance in part ensured that the participants would be of similar socio-economic statuses, given that both cities are capitals as well as regional, cultural and financial hubs.

The recruitment announcements are reproduced at the end of the manuscript (appendix A). Seven children were recruited overall: four were living in Paris and three in London at the time of the recordings. Unfortunately, one of the Parisian families originally recruited dropped out of the study before the end. Six children were thus recorded – three lived in Paris and three in London. All but one family were constituted of an English-speaking parent and a French-speaking parent (see chapter 5, section 5.3 for a detailed description of the families and their language practices). All families were seen six times, at their homes: twice for the recording of a family dinner, and twice for the recording of the target child's narrative productions in both of her languages (the children thus participated in four narrative elicitation sessions on the whole). The distribution of the sessions over the period is given in section 4.2.3, while section 4.2.2 dwells on how the experiment was designed, taking into account task-type effects and organizational challenges. Finally, all the families were asked to give their informed consent for their children's productions to be recorded and used in academic settings. When I went to the families' home for the first time, I sat down with the child's caregivers and presented them with the consent forms provided in appendix B. They were told to take their time to read the consent forms and I answered their questions. The consent form included an authorization to use the videos picturing the child in the context of my PhD work, and to share anonymized transcripts with members of the scientific community.

4.2.2 Designing the experiment: choice of material and task-type effects

As I mentioned earlier, I decided to collect a bilingual corpus in order to record bilingual children's narrative productions in both of their languages. The aim was to show that French-English bilingual children's use of past tense-aspect morphology must be analyzed

in different discursive contexts in order to get a full grasp of their linguistic competence. Moreover, recording the narrative productions of bilingual children was meant to allow to analyze later stages in the acquisition of past-tense aspect morphology by French-English bilingual children, which have seldom been under focus. I was also interested in documenting the variety of bilingual children's profiles, even within the children considered simultaneous bilinguals. This was done in part through the recording of family dinners, which allowed me to characterize the families' language practices at home and to reflect on their impact on the children's use of their two languages.

The questions I collected this corpus to answer is thus whether and under which conditions French-English bilingual children were able to use past tense-aspect morphology in both of their languages to serve narrative functions. I also wished to investigate dominance effects, as well as possible effects of task complexity. I wondered in particular whether their narrative abilities were transferred from their dominant to their non-dominant language.

I chose to compare bilingual children's productions on narrative tasks based on different contextual props, because they have been shown to yield different results (Colletta, 2004; Bamberg, 2011; Prigent et al., 2015). The children were first presented with two narrative tasks, and then encouraged to participate in a spontaneous discussion where they were asked about past events. In the first task, they were asked to tell a story based on a wordless picture book – two different books from the Frog collection (Mayer, 1969; Mayer and Mayer, 1971) were used to elicit productions in French and in English. In the second task, they had to retell the story of a short wordless video clip from a “Tom and Jerry” cartoon after having just watched it. Finally, the aim of the interviews conducted with the children was to elicit personal narratives of past events. Each narrative task is described below, after a short description of the vocabulary tests presented to the children in order to contribute to the assessment of the children's language dominance patterns. Additional information on how each task was conducted is given in section 4.2.3.

I was particularly interested in assessing the impact of variations in age and in the level of language exposure on the acquisition of tense-aspect morphology by French-English bilingual children. I thus recruited children of different ages, and who had had different levels of exposure to each of their languages, although they had all been exposed to both languages from birth. I decided to include a vocabulary assessment task in my experiment, in order to gather neutral information for each child about her linguistic development in each of their languages. This lexical development task was carefully selected. The first requirement was material: working with young children implied that I kept the length of the experimental sessions to a minimum to avoid straining the children, especially given how cognitively demanding narrative tasks can be. The bulk of the experimental sessions was thus devoted to the recording of the children's narrative productions, and the vocabulary task was chosen to be as short and non-demanding as possible. The children's lexical diversity was assessed in each of their languages, in the fields of reception

and production. I chose to focus on lexical development for several reasons. First and foremost, lexical development scores have been shown to be good predictors of children's grammatical development (Jackson-Maldonado and Goldstein, 2012). Moreover, several studies have pointed towards a correlation between the amount of input received and the development of lexical items (Thordardottir, 2011). I chose to use the lexical diversity tests from the Evaluation du Langage Oral (Oral Language Evaluation, ELO) battery (Khomsî, 2001). It includes lexical evaluation tests in both production and reception as well as word-repetition tasks, comprehension tasks and utterance production tasks targeting morphosyntax. The aim of including lexical diversity testing in my study was not to provide a comprehensive description of the children's linguistic development, but rather, along with parental questionnaires on language practices and the family dinners recorded, to help determine language dominance for each child; I thus decided to test only the children's productive and receptive vocabulary in both of their languages. I selected the ELO battery because it was developed to assess oral language performance of French monolingual children aged from 3;00 to 9;00 and thus was adapted to the ages of the participants selected for this study. The ELO material for lexical diversity testing is easily accessible and very easy to manipulate which was a requirement for it to be used in this study, as the recordings took place in the families' home over two countries; the material had to be easy to move and to set up. The aim of assessing the children's lexical development was not to compare the vocabulary scores obtained by the children under study to norms or standards identified in previous studies, but rather to describe their lexical development in each of their languages, in order to supplement the information on language practices obtained through the parental questionnaires and the recordings of family dinners. The ELO material used to test lexical diversity in French was translated into English in order to test the bilingual children under study in both of their languages

The first narrative task was based on a wordless picture book. I expected this task to be less cognitively demanding for the children because it allowed them to rely on the picture-book to tell their stories, and because such an activity was likely to be familiar to children brought up in Western cultures. Indeed, in Western societies, children and parents engage in book reading activities frequently, although in the early stages of development such activities may be more about labeling referents than about actually telling a coherent story (Bamberg, 2011). Because this task is less demanding than recall-tasks for instance, I expected it to yield longer productions by the children and data rich enough to be analyzed in terms of the children's use of past tense-aspect morphology. This task type is useful in that it compensates for the increased difficulty of using language in a monologue-like situation. I chose not to provide a model story to the children, as is sometimes done by researchers using wordless picture books to elicit narratives. This practice has been shown to yield narratives that contain a greater number of episodes than spontaneous narratives (Schneider and Dubé, 2005), but I question whether they reflect the real narrative abilities of the children under study. Indeed, when children are presented first with a model story

before being asked to re-tell it, it seems that memory abilities are tested as much as their ability to produce an efficient narrative. Finally, this narrative task was of particular interest to the present study as it enabled me to test the children's ability to deviate from prototypical associations between tense and lexical aspect categories in specific discursive contexts. Indeed, children have been reported to use progressive morphology more freely in narrative discourse than in spontaneous discourse, where children first tend to inflect atelic, durative predicates for the progressive (Bamberg, 2011). Particular attention was paid to the way events were depicted in the picture book, and how this depiction could influence the stance adopted by young children on the narrative, as mentioned in chapter 2. In the picture books I used to elicit narratives from the children, falling events are illustrated in two different ways. The character is sometimes represented as having fallen or on the verge of falling, which may encourage children narrators to take a perfective, external perspective on the falling event. On the contrary, when the character is drawn in mid-fall, it is most likely that it will be described from an imperfective, internal viewpoint (Bamberg, 2011). This suggests that children are able from early on to use derived interpretations of predicates, and thus that the initial restriction of tense-aspect morphology to specific situation types is more likely linked to characteristics of the input than to immature cognitive abilities (Berman and Slobin, 2013). Because of the influence of the depiction of events in the book on the choice of tense-aspect morphology by the children it was essential to use similar material to elicit narratives in French and in English. I thus decided to use two picture books from the same collection and authors: *Frog, where are you?* (Mayer, 1969) and *A boy, a dog, a frog and a friend* (Mayer and Mayer, 1971). Both stories are based on the same characters and follow the same structure – they naturally lend themselves to be analyzed in terms of their story-grammar. The main issue with this task-type is that it might elicit descriptive language samples rather than constructed narratives (Berman and Slobin, 2013). Descriptive language is often less complex than narrative language, with children relying on simple structures to get their meaning through. Studies have shown that imperative and present verbal forms, which are most frequently used in children's spontaneous productions (Parisse and Morgenstern, 2012), were proportionally more represented than the less frequent verbal forms in narratives elicited by a wordless picture book (Prigent et al., 2015). This observation suggests that a narrative task based on a wordless picture book might not be sufficient on its own to elicit past tense aspect morphology in the speech of young children.

A semi-guided narration task was included in order to compensate for the weakness of tasks generating narratives from wordless picture books. I thus chose to use a narration recall task as well. This task consists in showing the child a short video clip telling a story with identifiable story grammar components. The children were shown two “Tom and Jerry” cartoons (Hanna and Barbera, 1951, 1956). Both cartoon extracts lasted approximately two and a half minutes, and had a similar structure: they included all story-grammar elements, from the initial situation to a final resolution. Moreover, both

cartoons revolved around a clear complicating event. In the first cartoon (Hanna and Barbera, 1956), an initial situation is disturbed by an egg falling from a woodpecker's nest and etching in Jerry's house. A number of actions follow, where Jerry aims at preventing the bird from pecking at his furniture. The extract ends with Jerry taking the bird back to its nest and leaving it there. In the second extract (Hanna and Barbera, 1951), the initial situation is less clearcut, as the extract starts with Tom cooking a goldfish. His attempt is made more difficult by Jerry who takes back the fish – in the rest of the cartoon, both Tom and Jerry carry out actions to eat and save the fish respectively. The extract ends with Tom falling into one of Jerry's traps and blowing himself up. It was expected from these similarities in the structure that both events would be likely to be retold using past tense-aspect morphology, to order the events in sequence, as chronologically following one another. Once they had seen the clip, the children were asked to tell the story they had just seen in their own words. Studies have highlighted that narration recall tasks prompt children to use more past tense markers (Prigent et al., 2015). This task type is also less likely to prompt descriptive speech, as children do not have a visual support to rely on when producing their narrative. However, narrative recall tasks have been shown to be more cognitively demanding, and to yield shorter narratives (Paradis, 2010; Prigent et al., 2015).

Finally, I chose to have the interviewer elicit personal narratives from the children. This enabled me to complete the array of narrative contexts in which productions were elicited from the children – from guided narrations in the third person to more spontaneous personal narrations in the first person. Personal narratives were elicited by asking the children about past events and experience. This interview setting was chosen because it would allow to elicit a high number of past tense forms in the children's speech, asked to relate past experiences. However, a high number of tense forms does not necessarily imply that the child uses tense-aspect morphology creatively – in a spontaneous interview, the forms could sometimes be provided in the interviewer's questions. I also used spontaneous interviews in order to balance the challenge posed by the first tasks which required that the children produce narratives based on unfamiliar pictures (McCabe et al., 2008). Indeed, the familiarity of the children with the events they are asked to relate has been shown to influence the quality of their narrative production. If a child is unfamiliar with a story, she will find it more difficult to organize the events (McCabe et al., 2008). On the contrary, when children are asked to relate personal experience, they tend to do so in a more complex manner, often producing a longer, more detailed narrative (Heilmann et al., 2010). However, this task might once again be especially challenging for young children in particular, as it implies that they are able to produce a narration without relying on any kind of visual or auditory support. It thus requires that the children fully break from the here and now in developing their narrative, which has been deemed more demanding for young children whose productions are originally intrinsically linked to the situation of utterance (Pariisse et al., 2018). It also implies that the children are able to follow and

express the chronological order of events, as well as to decide which elements to include or not in their narratives, which has been shown to represent an additional cognitive demand (Prigent et al., 2015).

4.2.3 Conducting the recording sessions: organization and limits

I collected the *Brunet* corpus over approximately a year and a half from December 2017 when I recorded the first family dinners, to the summer of 2019 when I recorded the last narrative sessions. The vocabulary tests as well as the collection of the children's narrative productions were conducted in each language, in different sessions led by different interviewers (see below for more details). Two periods can be identified within this time lapse, as I recorded the children's narrative productions in each of their languages and a family meal twice, with recording sessions set about a year apart. Recording the children's narrative productions in both of their languages twice allowed me to take a developmental perspective on the acquisition and use of past tense-aspect morphology by French-English bilingual children in narrative contexts.

At the end of 2017, I thus began to record family dinners in Paris and in London. I then proceeded to record the children's narrative productions in French, and then in English. The recording of the children's narrative productions in both of their languages was intentionally spaced out so as to reduce bias linked to the children's familiarity with the task. Organizational constraints also played an important role in the timing of the recordings, and in part explains the irregularities in the schedule. First of all, I had to arrange trips to London to record the participants recruited there and it was not always easy to find time slots where both I and the families would be available to plan a recording session. Julian's family moved to the Sultanate of Oman in 2019, between the two recording periods. This move forced me to postpone the recording of Julian's narrative productions to August 2019 and prevented me from recording a second family dinner. Indeed, I was able to organize narrative sessions while the child and his mother were in transit in Paris during their summer vacations. Table 4.1 details the dates of each session for each participant (D stands for Dinner, N for Narration, FR for French and EN for English) and gives the age of each participant during each session.

Filming family meals allowed me to get a glimpse into the bilingual families' language practices. Meal-time was chosen because it is a time when it is likely that the family gets together. Collecting spontaneous data was important first for me to access a sample of parental input in order to analyze the children's use of their languages in light of their input. As I have mentioned before, amount of exposure has been identified as a determining factor in language acquisition. Exposure patterns for each child were determined both through parental questionnaires on language practices and through close-analysis of the families' language practices during the two family meals I recorded.

Participant	Lucas	Arthur	Oliver	Julian	Emma and Charlotte
D1	09.12.2017 6;01.27	02.12.2017 5;06.12	08.12.2017 3;11.06	22.11.2017 5;01.07	21.11.2017 3;00.04
N1 FR	24.02.2018 6;04.14	25.02.2018 5;09.5	24.02.2018 4;01.22	07.03.2018 5;04.23	23.10.2018 3;11.06
N1 EN	21.04.2018 6;06.9	18.03.2018 5;09.26	21.04.2018 4;03.19	08.05.2018 5;06.24	17.12.2018 4;00.30
D2	28.04.2019 7;06.16	28.04.2019 6;11.5	15.06.2019 5;05.13	/	13.11.2019 4;11.27
N2 FR	28.04.2019 7;06.16	28.04.2019 6;11.5	27.04.2019 5;03.25	07.08.2019 6;09.22	26.09.2019 4;10.09
N2 EN	15.06.2019 7;08.02	16.06.2019 7;00.23	15.06.2019 5;05.13	08.08.2019 6;09.23	14.11.2019 4;11.28

Table 4.1: Dates of each session for all participants (age)

Given these goals, I decided that I would not participate in the family meals I recorded, in order to minimally influence the families' language practices. This ties back to the observer's paradox, a term first used by Labov (1972) and which refers to the fact that "the aim of linguistic research (...) must be to find out how people talk when they are not being systematically observed" and that "yet we can only obtain this data by systematic observation" (Labov, 1972, p. 209). Of course, the presence of the camera in itself was a reminder for the family that they were being observed, but I hoped that the camera would be more discrete and forgettable than an additional person sitting at the dinner table. To record family meals, I thus set the camera on a tripod before leaving the room. I settled in another room but stayed in the house in order to be able to assist the family in case problems occurred with the camera. This did not happen however, and I thus did not intervene during the family dinners.

During the narrative sessions, I did not overtly disclose my own bilingualism to the children, by speaking exclusively French with the family. This was done in order to ensure that the bilingual children under study would be in a monolingual mode (Grosjean, 1985, 2004) during the narrative sessions. Indeed, studies have shown that bilingual speakers will show different types of language behaviors depending on the language mode they are in (see Grosjean (2004) for a review), relying more frequently on their two languages when in a bilingual mode. Genesee (1989) also noted that bilingual children's use of their two languages in experiments could have been influenced by the fact that bilingual children were often tested in a bilingual language mode – for instance in interaction with bilingual caretakers or bilingual interviewers which had displayed their bilingualism to the children by using both of their languages in front of them or by showing signs of understanding. The strategy I adopted to control language mode in the sessions was thus not to display my bilingualism to the children. I spoke exclusively French with the family and asked the parents to be presented as a French speaker to the child during

the first meeting. This strategy is not ideal and was probably not entirely full-proof, as it is extremely difficult to hide one's bilingualism (Grosjean, 2004), but I believe it was the best strategy I could have adopted given the conditions of the study. I thus led the narrative sessions in French and was assisted by an English-speaking interviewer during the narrative sessions in English. I recruited the interviewers from my close professional circle, as it was relatively easy to find colleagues with almost native-like proficiency in English. All the interviewers who helped me conduct the recording sessions in English had a training in English studies, held a C2 level in English and had lived at least a year in an anglophone country in the past five years. Unfortunately, they were also all bilingual as it was difficult to find non-French speakers in my professional circle. It would have been best to be assisted by the same interviewer for all of the recording sessions in English, but this was unfortunately made impossible by organizational challenges. Four interviewers in total helped me collect the children's narrative productions in Paris and in London. In particular, having to conduct two interviews set a year apart in two different countries made it hard to rely on the same co-interviewers, especially given that all interviewers participated in the study voluntarily on their free time. The interviewers were briefed before each task; they were given examples of topics they could discuss with the child during the spontaneous interview, types of feedback they could provide (they were asked to try using non-verbal feedback as much as possible). In retrospect, I believe it would have been more efficient to organize pilot-sessions with the children, in order to identify more precisely the difficulties met in eliciting their narrative productions and to devise clearer strategies to solve these difficulties. This might also have ensured that the children were less intimidated by the setting, as they would have participated in the tasks once before the corpus collection truly began. The sessions in each language lasted approximately fifteen to twenty minutes.

All sessions were video-recorded. The children were all tested in French first. The sessions started with the vocabulary tests, which I describe in detail below. The children then participated in the narrative task based on the wordless picture book. Two books from the Mercer Mayer Frog Stories were used to elicit oral narratives in French and in English. The picture-book used to elicit productions in French, "Frog where are you" (Mayer, 1969) has been widely used in research on monolingual and bilingual narrative development (see (Cohen et al., 2021) for a review). I chose to use a different book from the same collection with very similar plots and the same characters to elicit narratives in English, in order to reduce bias linked to the children's familiarity with the material (Mayer and Mayer, 1971). The picture book used in the English sessions, "A boy, a dog, a frog and a friend" (Mayer and Mayer, 1971), was four pages longer than the one used in the French sessions (28 and 24 pages long respectively). Before beginning the task, the children were given the same instructions in French and in English (Berman and Slobin, 2013): "*this is a story about a boy, a dog and a frog. First you're going to look through the pictures. Then you're going to tell me the story as you look through them again*". The children thus

familiarized themselves with the plot before being asked to tell the story. The children were left free to decide whether they wanted to hold the book and turn the pages themselves. Before starting to tell the stories, the children were also reminded that stories usually start in a certain way, and asked whether they remembered the words usually found at the beginning of stories in French and in English. The interviewer was advised to provide part of the phrase “Once upon a time” (or its French equivalent “*Il était une fois*”) so that children familiar with the phrase would use it in their narrative. This was done in order to make sure the children would provide narrative rather than descriptive productions; the focus of my study being past tense-aspect forms, it was necessary that the children were put in a narrative mode, which would encourage them to use tense-aspect morphology to sequence events and order them chronologically. However, in the midst of the recording, the interviewers sometimes forgot to provide the children with the phrase. Because the children were sometimes intimidated by the unfamiliar setting in which they were placed, back-channeling was used to encourage them to go on. Similarly, vocabulary assistance was provided when lexical difficulties prevented the children from continuing their stories. The interviewers were told to avoid including finite verbs in their back-channeling except when repeating the children’s utterances. Finally, I had to decide how to place the camera to record the children’s narrative productions based on the wordless picture-books. Given that I conducted the recordings alone in two countries, I could not take two cameras and tripods with me and thus had to decide where to place the camera I had. In the wordless picture-book task, it was important for the camera angle to allow for the recording of the pages of the book, so that there would be no ambiguity regarding the correspondence between the images and the utterances produced by the children. Unfortunately, as shown



Image 4.1: Screenshot of the video recording of Arthur during the wordless picture-book task

in image 4.1, this meant that the camera could not be placed opposite the child, and that some information linked to facial expressions or gaze were lost. In future studies, I will try to use more than one camera, in order to get visual information from different viewpoints.

After producing a narrative based on the wordless picture book, the children were asked to watch a short video clip, taken from the “Tom and Jerry” cartoon. Once again, different wordless extracts were used to elicit productions in French and in English. In the sessions in French, I used a clip from the Tom and Jerry episode called “The Egg and Jerry” (Hanna and Barbera, 1956). In the sessions in English, another extract from the same series was selected. Both video clips were selected because they included a lot of actions in sequence, performed by a reduced number of characters. As I mentioned before, retell narrative tasks have been deemed more cognitively demanding than narrative elicitation tasks based on a wordless picture-book, where the picture book provides support to the child’s narrative. On the contrary, retell tasks require that the child remember narrative episodes and their organization. In order to create a more genuine narrative context, the children watched the cartoon alone and were asked to retell it to the interviewer. In the French sessions recorded in London, the French-speaking mothers were present during the recordings. This presence was put to use by asking the children to retell the cartoon to their mothers, who had not seen it. This was meant to encourage the children to be as comprehensive as possible in their retell and not to rely on shared, implicit knowledge.

During the English sessions, as I was assisted by an interviewer who conducted the narrative tasks and the interview, I was able to operate the camera. Recordings were cut in between tasks in order to change viewpoints – so that I could place the camera opposite the children during the narrative retell and the spontaneous interview and capture gestures and facial expressions as well as verbal speech, as illustrated in image 4.2. Finally, the children participated in a semi-guided interview aimed at eliciting past tense-aspect forms. The interviewers were instructed to ask the child about past events. Depending on the timing of the recording session and on what had happened in the children’s lives prior to the session, the children were asked about a recent birthday or vacation or about their past week in school. This part of the protocol was especially challenging for the interviewers, because it required them to adapt to the topics mentioned by the child and to steer the conversation towards the past domain without influencing the child’s choice of verb forms. The interviewers were given examples of back-channeling they should favor during the interview (namely verbless utterances such as “and then what?”, “is that so?”, “anything else?”). This task implied that the interviewers first manage to get the children to engage in the conversation as spontaneously as possible. This was not always easy, as the children were sometimes intimidated by the setting and the camera. In such cases, the focus of the interviewer sometimes switched from eliciting past-tense forms to simply eliciting speech. One way that I could have anticipated the difficulties researchers were faced with when eliciting semi-spontaneous productions from children would have been to test the protocol beforehand on children that would not have been included in the study.



Image 4.2: Screenshot of the video recording of Arthur during the narrative-retell task

This would have allowed me to identify the main challenges posed by this protocol before actually conducting the experiments and to warn the interviewers against these. This is something I will consider in future work, in order for the interviewers to get a better grasp of the tasks before the beginning of the data-collection process. During the English sessions, the camera was set during the interview so as to include both participants in the discussion (the child and the interviewer), as displayed in image 4.3. Once again, using two cameras to film would have avoided having to change the filming angle in between tasks and is something I will do in future work.

4.2.4 Assessing language dominance: parental questionnaires and vocabulary tests

This study proposes to analyze French-English bilingual children's narrative productions in a monolingual mode. This implies that the interviewer only spoke one language to the child and did not acknowledge uses of the other language. I decided to record monolingual sessions so that I could interrogate the impact of French-English bilingual children's linguistic background on the way they learn to use tense-aspect morphology in their narrative productions. One of my goals is to test the claim according to which microstructure elements such as morphosyntax are less transferable from one language to another than macrostructure features, such as the inclusion of necessary story-grammar episode (Cohen et al., 2021). This required that close attention be paid to assessing the children's language dominance patterns. It was done first by asking the parents to fill out a questionnaire on language practices and having the children participate in receptive and productive



Image 4.3: Screenshot of the video recording of Arthur during the interview

vocabulary tests.

4.2.4.1 Questionnaires on language practices

Parental questionnaires were handed out in order to gather information on language practices at home as well as information related to the parents' educational background. Moreover, studies have shown that family language practices at home had a critical impact on the rates of acquisition of the minority language (De Houwer, 2007). The questionnaire I handed out was divided into four sections: one concerning the mother, one concerning the father and two concerning the children (one section was dedicated to the target child and the other to her siblings). The information section on the parents included questions on their date and place of birth, as well as places where they had spent extended periods of time. It also included questions about the languages they spoke and about how and when they acquired these languages, as well as about daily language use. Questions on language use asked for information on the amount of exposure and use of each language daily, as well as questions about the language practices adopted with their children. Information was asked about which languages were used most frequently inside the home, and the parents were asked to specify which language(s) they used with their child, whether they used one more than the other and whether the language they spoke with their child was the majority language inside the home. Finally, the parents were asked to write a paragraph describing the language strategies used with their children. The section of the questionnaire dedicated to the target child allowed me to document the children's history with each of their languages. The questionnaire asked information about the child's his-

tory with her two languages, including the age at which the child produced her first words and utterances in each language and the child's daily use of her two languages both at home and at school. To help the parents document language use at home, the questions invited them to indicate which language the child used spontaneously in interaction with each of her parents, and to describe a typical week for their child by stating where the child would usually spend time, with whom, in what language and for how long. Information was also asked about the children's language experience at school, in particular whether they attended a bilingual or a monolingual school and what language distribution was observed at school in cases where they attended a bilingual school. Additionally, information was collected about the child's reading and TV habits – the questionnaire asked the parents to give an estimate of the amount of time spent reading or watching TV daily and in what language. Information was included on the child's reading activities since experience with the narrative genre in a language has been shown to impact narrative development in that language (Cohen et al., 2021). Parents were also asked to evaluate their child's language proficiency in reception and production in each of their languages. The aim of the questionnaires was to collect information which was meant to allow me to determine the children's dominance patterns. It was thus precious to have access to parental evaluation of their child's linguistic skills, although these were not taken at face value but rather combined and compared with the results of the child in the vocabulary tasks in each language in order to determine whether the children were dominant in one or the other of their two languages. Finally, a section was dedicated to the description of the target child's siblings, including their age and a short description of their language practices (the questions focused on whether the target child's siblings used two languages daily and with whom). The questionnaires were handed out to the families at the beginning of the study, who were asked to either send it back or to give it back to me during later recording sessions. Out of six families, I collected parental questionnaire at the very beginning of the study from four families. The two remaining families needed to be reminded of filling out the questionnaire which I did at the start of the second recording period, at the fall of 2019. Because the recording sessions were distributed over two periods set a year apart, the daily lives of the families sometimes changed radically during this time. As mentioned earlier, and as will be described in more details in chapter 5, one of the families I recorded moved from France to the Sultanate of Oman which obviously had an impact on the family's daily experience with French and English. I thus decided to ask the families to fill out the same parental questionnaires a second time at the end of the data collection process. This was presented to the parents as a chance to document any recent changes in their language practices. Several families also seized the occasion to correct or specify the information they had given on the first questionnaire they had filled out. The need to document language practices consistently rather than only once at the beginning of the recording session was pointed out in the literature (De Houwer and Bornstein, 2016). Indeed, language use and practices appear not to be set in stone, but rather to evolve over time depending on various criteria including but not restricted

to geographical relocation as well as changes in school or in leisure activities. Finally, the information gathered thanks to parental questionnaire was confronted to the actual language practices observed during the family dinner. Indeed, the participants to the dinner were often in a bilingual mode, in which the children's use of their two languages may shed light on language dominance (Döpke, 2001)

4.2.4.2 Vocabulary tests

Parental questionnaires on language practices were completed by vocabulary tasks adapted from the ELO testing material (Khomsi, 2001) to allow for testing in French and in English (the test battery and the reasons why it was selected are presented in section 4.2.4.2, pp. 157 to 158).

The testing material addressed both receptive and productive vocabulary in French. I translated the vocabulary items included in the testing material provided in the ELO battery from French to English so that the same items were used in the sessions in both languages. The ELO battery included 20 lexical items in reception and 50 in production. A number of reasons justified that I used only 31 lexical items to test the children's productive vocabulary (out of the 50 provided in the ELO battery). First of all, the ELO testing material was devised to test children's linguistic development from their entry in kindergarten (generally between 2;00 and 3;00 in France) to the end of primary school (when children are around 10;00 in France). As the oldest child I tested in the study was aged around 7;00 during the last recording session and enrolled in year two in London (the equivalent of the French CE1), it was sufficient to use the words provided in the ELO protocol which had been tested on children up to the third grade (CE2 in France and year three in England, that is approximately up to 8;00). This selection was also motivated by practical reasons linked to the organization of the sessions. Indeed, as the children participated in the vocabulary tests at the beginning of the sessions dedicated to the recording of their narrative productions in each of their languages, it was essential to make sure the sessions would not last too long to ensure the children would stay focused and engaged throughout. The vocabulary tests in production and reception were thus conceived so as to include 51 vocabulary items in total, which would ensure that the testing would not last too long.

Vocabulary assessment in both languages was conducted on my personal computer and video-recorded. The children were seated in front of the screen, on which the interviewer scrolled through the pictures. The children were told from the start of the assessment that they could skip any picture if they didn't know the vocabulary item they were asked about. Only positive feedback was given to the children during the task, regardless of whether they pointed to the correct picture or produced the correct vocabulary item. My aim in setting these assessment conditions was to encourage the children to go through the

task and to try to put them at ease – the children were often intimidated by the presence of the camera and it was essential that they felt confident enough to participate in the narrative tasks that would follow.

In the receptive vocabulary assessment, children were shown four pictures on the screen and asked to point towards the picture where the word under focus was drawn. The interviewer prompted the children during the receptive vocabulary task by asking “*montre-moi l’image où il y a un/une...*”, translated into English as “*show me the picture where there is a...*”. When pointing was not explicit enough, the children were asked to point again more clearly. In the productive vocabulary task, the children were shown a picture on the screen and asked “*what is this?*” (“*qu’est-ce que c’est ?*”, in French). As mentioned above, the interviewers were asked either to give no feedback or to give positive feedback, especially when the child seemed intimidated. Each narrative session started with the children taking the receptive and productive vocabulary tests, so that all children received a receptive and productive vocabulary score in each of their languages at the beginning of the recording period and at the end of the period when their narrative productions were elicited once more.

The vocabulary scores obtained by the children were used to assess the children’s language dominance pattern along with the questionnaires on language practices and an analysis of the children’s use of their two languages during the family dinners.

4.3 Transcription and Coding

The three corpora used in this work were video-recorded. The recordings were then transcribed in the CHAT format using the CLAN software, and coded using Excel. The two longitudinal corpora which I was given the chance to use for my study had been previously recorded and transcribed. The *Paris* corpus has been used recently notably to study the acquisition of *imparfait* forms by young French monolingual children (Morgens-tern et al., 2018; Parrisé et al., 2018) and was therefore also partly coded. Each corpus will be presented in more detail in chapter 5, which is dedicated to the characterization of the corpora on which the observations made in this work are based. In the following sections, I describe the CHAT format and CLAN software and how they were useful in this study. Then, I discuss how and why I used Excel to code the data, and present the coding grid I used. Finally, I focus on forms for which coding was not straightforward and describe the choices I made in coding the corpora.

4.3.1 Transcribing in the CHAT format using the CLAN software

The acronym CHAT stands for Codes for the Human Analysis of Transcripts, and is used to refer to the transcription format developed parallel to the CHILDES database. The

CHILDES (Child Language Data Exchange System) project was conceived in 1981 just as the computer appeared as a new key tool for the automatic treatment of transcribed data. The CHILDES program was first only a shared database, before it was upgraded to include better tools for the automatic treatment of transcriptions from 2001 on (MacWhinney, 2000). Among the tools proposed by the TalkBank program is the CHAT language (a transcription and coding format meant to ease the sharing of transcribed data by harmonizing transcription practices), the CLAN (Computerized Language Analysis) software (used to transcribe and automatically analyze language interaction) and the database itself, which includes transcriptions in the CHAT format. These transcriptions were written using the CLAN software, which is also used to launch automatic analyses on the data.

Transcribing the productions of children to study their language development is both necessary and somewhat problematic. It is necessary as it enables researchers to work on computerized transcripts, which allows for both automatic measures to be launched on the transcription as well as for the transcripts to be shared, provided that researchers use a standardized transcription format. The CHAT system provides such a standardized format. Transcribing is a difficult task, first because it implies bridging the gap between oral language and written language. According to the CHILDES manual (MacWhinney, 2000), the greatest danger facing the transcriber would be the will or tendency to treat written and oral languages as if they were the same. This is even more relevant when working with children as the transcriber might be tempted to translate their oral productions into target-like adult speech, assimilating non-standard forms to standard, adult-like productions (Ochs, 1979). Transcribers need to be aware of the biases of undernormalization and overnormalization in order to avoid them, and to be able to associate a production to its adult form when required, and not to do so when it is not justified. There are several ways in which the CHAT format may help avoid frequent pitfalls of transcription, which I detail in the following paragraphs. I start by describing the header section in CHAT files, then the main lines or tiers and the type of information they convey and finally the secondary tiers.

4.3.1.1 Header lines

All transcriptions in the CHAT format must include general information about the recording in header lines which are signaled by an at symbol (“@”). This information includes the languages used in the recording (in image 4.4, the abbreviation “fra” stands for French, “eng” for English and “mix” for mixed utterances), which is essential in order to analyze language use within the family. The header section in CHAT transcripts also includes a list of the participants in the recording and the three-letter code that is used to signal each participant in the transcript. Following are ID tiers (lines 5 to 10 in image 4.4) which summarize central information for each participant, including the languages they use, the name of the corpus of which the recording is part, the three-letter code used to signal each

of the participant’s utterances and the participant’s role. The age of the target child is also given. The remaining lines (lines 11 to 13 in image 4.4) give information on the recording rather than on the participants. The “media” tier is linked to an essential functionality of the CLAN program, which allows the transcriber to align the video recording with the transcription by giving the software indication as to which video file the transcription is based on. By inserting bullets at the end of utterances, each utterance can be linked back

```

1 @Begin
2 @Languages: fra, eng
3 @Participants: CHI Arthur Target_Child, BR1 Alex Brother, BR2 Adam Brother,
4 MOT Mother Mother, FAT Father, OBS Alice Observer
5 @ID: fra, eng|Brunet Corpus|CHI|5;06.09|||Target_Child||
6 @ID: fra, eng|Brunet Corpus|BR1|||Brother||
7 @ID: fra, eng|Brunet Corpus|BR2|||Brother||
8 @ID: fra, eng|Brunet Corpus|MOT|||Mother||
9 @ID: fra, eng|Brunet Corpus|FAT|||Father||
10 @ID: fra, eng|Brunet Corpus|OBS|||Observer||
11 @Media: A02-lunch1, video
12 @Transcriber:Alice Brunet
13 @Date: 02-DEC-2017

```

Image 4.4: Screenshot of the ID headers in the transcription of the first family meal recorded for Arthur

to the original recording. As much as possible, a transcription must reflect the original interaction as it took place, although it can never perfectly reproduce it. Aligning the transcription with the video extract helps unload some of the pressure weighing on the transcript when it is the only source of analyzable data. It is especially useful, as transcribing necessarily implies some degree of interpretation on the part of the transcriber. Thanks to the association of the transcript with the recording, researchers using or checking transcripts can easily confront a transcription choice to the actual recording. Once the head lines have been written, one may start transcribing the data. Transcriptions in the CHAT format include primary and secondary lines or tiers, which contain different types of information. I detail below how they differ and the information I included in the different types of lines.

4.3.1.2 Main lines

Main lines always start with the three-letter code used to identify the participant whose speech is transcribed and end with a bullet signaling the end of the utterance, as illustrated in image 4.5.

Only the participants’ utterances are transcribed on main lines, in ordinary spelling.

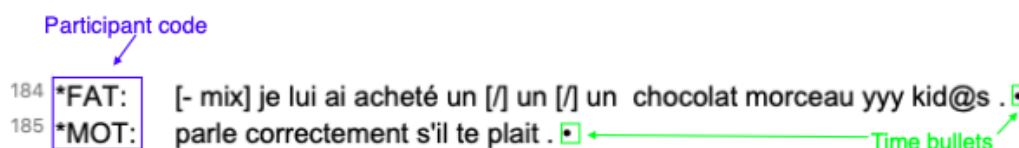


Image 4.5: Extract from the transcription of the first family meal recorded for Arthur (bullets and participant codes boxed)

These utterances may be found along with codes used to signal speech processes which impact the verbal flow (see the description below). Each line should correspond to one utterance, term which should thus be carefully defined. Not all researchers agree on what constitutes an utterance. I chose to define an utterance according to three criteria deemed robust by the literature (Parisse and Le Normand, 2007). Utterances have to correspond to the smallest syntactically independent clause in context. Independent propositions linked by a simple conjunction were thus treated as two utterances, whereas dependent clauses such as subordinate clauses for instance, were treated as a single utterance. Moreover, utterances have to correspond to a single prosodic unit in order to be considered as such. Finally, an utterance has to be delimited either by a silence (longer than 400 milliseconds) or by the intervention of another participant which would mark the beginning of a new speaking turn. The end of each utterance must be clearly signaled by an utterance delimiter, directly preceding the time bullet. Several codes may be found on main lines to signal phenomena which impact the speech flow. The most frequent codes used in the transcriptions on which this work is based are listed below.

- **Language choice:** [- fra], [- eng], [- mix] and @s

When transcribing a bilingual corpus, one of the main challenges is to account for the ways in which the participants use their two languages. This implies that code-switches are signaled in the transcription, which was done in two different ways in the two bilingual corpora used for this study. Adult participants in the corpus I transcribed usually had a tendency to use one language more than the other. The participant's main language, as reported in the questionnaire on language practices, was listed as the participant's first language in the header lines. Only the utterances which were not in the adult participant's main language were signaled with a language code at the beginning of main lines, either [- fra], [- eng] or [- mix]. The same method was applied to the children's utterances – before transcribing, the recordings were watched and, when possible, the language used most by the children was identified. Only mixed utterances or utterances in the child's other language were signaled by the use of either [- fra], [- eng] or [- mix]. In Arthur's case for instance, whose parents are both native speakers of French settled in London, the main language spoken by all family members during family meals was undoubtedly French. For efficiency purposes, only English and mixed utterances were signaled,

as illustrated by image 4.6. When participants used two languages within a single

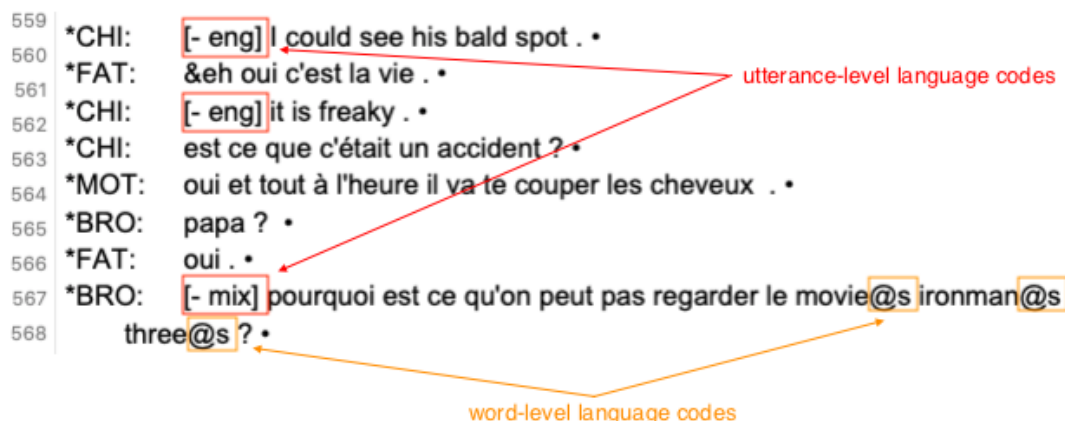


Image 4.6: Codes used to signal word-level and utterance-level language choices are boxed (Extract from the transcription of the first family meal recorded for Arthur)

utterance, the utterance was signaled using the [- mix] language code. This strategy was adopted in the transcriptions of the *Hervé* corpus (Hervé, 2015) which I was granted access to and have thus been able to use for this study. I decided to adopt a similar strategy in the transcription of the bilingual corpus I collected for coherence purposes. Moreover, this annotation system later allowed for automatic analyses in CLAN (see below for more details). Within mixed utterances, words that were borrowed from the other language were signaled with the code “@s” at the end of the word, as illustrated once more by image 4.6.

- **Pauses, repetitions and verbal hesitation markers**

The symbol (.) was used to signal pauses within a speaker’s utterance (i.e. within a single syntactic and prosodic unit) and to distinguish such pauses from pauses between two utterances. Repeated words or phrases were also signaled in the transcription using either the symbols [/], [//] or [///]. If the repeated segment included more than a word, these words were put between < >. The symbol [/] was used to signal words or phrases that were merely repeated, with no syntactic or semantic correction. The code [//] signaled words or segments that were repeated with changes made to the syntax but not to the meaning of the utterance. Finally, the code [///] was used to signal words or segments that were reformulated entirely, i.e. when changes were made to the meaning of the utterance rather than only to its syntax. These codes could be used in combination with one another within a single utterance, as illustrated by image 4.7.

As I have mentioned earlier the main advantage of the CHAT format is that it works hand in hand with the CLAN software which allows to launch quantitative analyses on the data. Signaling repetitions allows to exclude repeated words from

```

803 *FAT: <je connaissais> [/] en fait <je connaissais> [///] <on est> [//] je
804 suis déjà passé plusieurs fois . •

```

Image 4.7: Codes used to signal repetitions or self-repairs (extract from the transcription of the first family meal recorded for Arthur)

quantitative measures such as that of Mean Length of Utterances, in order for these measures not to be artificially inflated by the inclusion of repetitions or self-repairs. Hesitation markers or word fragments (when a speaker started uttering a word but stopped partway through it) were also signaled in the transcription for them to be excluded from automatic measures. This was done by adding an ampersand at the beginning of the form, as in image 4.8 below.

```

792 *MOT: tu veux un yaourt ou pas? •
793 *FAT: &euh non merci moi j'ai bien mangé . •

```

Image 4.8: Code used to signal hesitation markers or word-fragments (extract from the transcription of the first family meal recorded for Arthur)

• Interruptions and Overlaps

Interruptions were signaled by using specific utterance delimiters at the end of interrupted utterances. Utterances interrupted by the speaker herself ended with the code “+//.” Utterances interrupted by another participant were signaled using the code “+/.” Suspended utterances ended with the code “+...” Overlapping utterances were also signaled. Overlapping segments were inserted within < > and signaled by using an “overlap follows” symbol ([>]) or an “overlap precedes” ([<]) symbol.

```

828 *FAT: tu peux arrêter &euh de toucher à la caméra mon chéri [>] ? •
829 *CHI: <je suis> [<] même pas en train de toucher .
830 *FAT: <bon <va te> [/] va te> [>] +/. •
831 *MOT: <va [/] va [/] va> [<] dire à alice que tu as fini de manger name .

```

Image 4.9: Codes used to signal interruptions and overlaps (extract from the transcription of the first family meal recorded for Arthur)

This is illustrated by image 4.9, which includes overlapping utterances on lines 828 and 829. On line 828, the “overlap follows” symbol ([>]) signals the overlap. Since no < > were used before the symbol to delimit the portion of overlapping speech, it should be understood that the word before the “overlap follows” overlaps with the portion of the following utterance delimited by < > and signaled by a “overlap precedes” symbol ([<]). The utterance on line 831 is also signaled as having interrupted the utterance on line 830 thanks to the symbol +/.

- **Undecipherable utterances**

When an utterance was impossible to hear or decipher, the symbol “xxx” was used in lieu of transcribing this portion of speech. This symbol was used either to replace one unintelligible word or segment or the entire utterance. CLAN commands ignore all “xxx” when computing automatic analysis of the data. Utterances or words that were impossible to understand but could be transcribed phonologically in IPA on a secondary line were signaled using the symbol “yyy”.

4.3.1.3 Secondary lines

Secondary lines or “dependent tiers” (MacWhinney, 2000) are lines which directly follow main lines. They contain meta-linguistic information deemed important to fully understand the interaction. Dependent tiers are headed by a % sign introducing a three-letter code in lower-case. These codes correspond to one of the following categories.

- **Morphology Tier**

The morphology tier is a specificity of CLAN, as it allows automatic analysis of utterances into parts of speech. Contrary to the other dependent tiers listed below, the morphology tier is automatically generated thanks to MOR and POST commands, which use the grammars developed in CLAN for several languages to generate and disambiguate the morphology tiers. However, I chose to code the verb forms I analyze in this work manually in Excel rather than to use MOR and POST commands, which yielded erroneous analyses of French forms, in particular homonyms. Rather than to check the MOR lines manually I coded all verb forms in Excel myself.

- **Situation Tier**

Information on the situation of utterance was given in orthographic spelling on situation tiers. These were signaled using the symbol %sit. Comments on the situation included any useful information on the situation deemed necessary to fully understand the utterance transcribed on the preceding main tier. In image 4.10, the %sit

```

156 *MOT:   tiens . •
157 %sit:   MOT feeds CHI .
158 *MOT:   ouvre la bouche name . •

```

Image 4.10: Example of %sit tier (extract from the transcription of the first family meal recorded for Julian)

tier is used to give information on the situation without which the mother’s utterances would be difficult to understand – on line 156, the reference of “*tiens*” (“there you go”) is understood easily upon reading the transcript because of the information conveyed on the situation tier.

- **Gesture Tier**

Gestures that were essential to the understanding of the utterance they accompanied were coded on a dependent tier headed by the %gpx code. These included deictic pointing gestures or nods, as shown in image 4.11. Most of the gestures transcribed were gestures that were produced in place of verbal speech or to complement the reference of verbal speech, as illustrated once again by image 4.11. In cases where no verbal speech was produced, a 0 was transcribed on the main line and made explicit by a %gpx tier (see lines 188-189 in image 4.11).

```

184 *MOT:   lequel il fait mal ? •
185 *CHI:   [- fra] les deux . •
186 %gpx:   CHI points to both nostrils .
187 *MOT:   les deux font mal ? •
188 *CHI:   0 . •
189 %gpx:   CHI nods .

```

Image 4.11: Example of %gpx tiers (extract from the transcription of the first family meal recorded for Julian)

- **Phonology tier**

As mentioned earlier, unintelligible utterances or words signaled with the code “yyy” were transcribed in IPA on a phonology tier beginning with the code %pho. This was done exclusively on the target child’s utterances. Indeed, because I wanted to avoid over-interpretation of the data which may occur when trying to transform oral productions into written data. Using the %pho line to transcribe hardly intelligible utterances produced by the child thus allowed me to treat these non-target utterances as such, rather than to try to equate them with adult-like productions (Ochs, 1979).

- **Comment Tier**

Dependent tiers headed by the %com code include general comments on the utterance they follow. I used these secondary lines to comment on ambiguous verb forms produced by the children, in order to retrieve such examples easily. Ambiguous forms included forms phonetically modified that required some degree of interpretation, as well as homophonous forms, including past-participle, infinitive or *imparfait* forms of first-conjugation verbs in French.

4.3.1.4 CLAN commands used

One of the advantages of CLAN is to allow for a number of automatic quantitative measures to be launched on CHAT files; those that were used in this work are listed below.

- **Mean Length of Utterance**

Because each file was delimited into utterances when transcribed, with each main line corresponding to a single utterance, the MLU program in CLAN allows to measure the Mean Length of Utterance for each participant. CLAN proposes to calculate either an MLU value in words or in morphemes – the latter being based on the %mor line described briefly above. As I mentioned before, the MOR program may also be a source of error if the %mor lines are not checked carefully. Moreover, previous studies have argued that for children aged 2;00 to 4;00, MLU in words or in morphemes were highly correlated in both English and French despite the latter being a morphologically richer language. MLU values given in words are thus as representative of the child’s linguistic development as the value in morphemes, as long as it is calculated on enough words – at least 50, according to previous studies (Parisse and Le Normand, 2007). In this study, MLU measures were calculated on entire recordings.

- **FREQ**

The FREQ command was used to calculate lexical diversity measures, by giving measures of type and token frequencies, yielding Type to Token Ratios (TTR). By dividing the number of types of different words used by the number of tokens found for a given type, one obtains a TTR which acts as an indicator of lexical diversity – a TTR close to 1 indicates a high level of lexical diversity. The FREQ command is also the command I used to track language use and alternations by each participant of the bilingual corpora. Indeed, as all utterances were signaled with a language code, I was able to use the FREQ command to track the number of utterances produced by all participants in each language.

4.3.2 Coding in Excel: description of the grid

As mentioned above, most of the coding of the data was done under Excel once the data had been transcribed in the CHAT format. While CLAN was used to conduct measures of lexical diversity, to assess the distribution of each speaker’s languages across utterances or to determine their mean length of utterance, Excel was used to characterize the verb forms used in the corpora, and in particular those inflected for the past tense. The data transcribed in CLAN was exported into Excel for coding.

The first columns in the Excel spreadsheet contain descriptive information on the recordings. Each line of the Excel file corresponds either to a verbless utterance or to one of the finite verb forms in utterances which contained several clauses. Image 4.12 is a screenshot of the first columns in the Excel grid. These columns contain information on the recording such as the name of the CHAT file from which the utterances were imported, the age of the target child at the time of recording, the language of each utterance (either

	A	B	C	D	E	F
1	File	AGE CHI	lang	Line	Part	Glose
4	sophie-1E	2;6	eng		18 FAT:	how can we make it smaller?
7	sophie-1E	2;6	eng		21 FAT:	there we go that's better isn't it?
8	sophie-1E	2;6	eng		21 FAT:	there we go that's better isn't it?
11	sophie-1E	2;6	eng		24 MOT:	she's so cute.

Image 4.12: Screenshot of the first columns of the Excel Grid (Sophie-E)

English, French or Mix), the line at which each utterance may be found in the transcription, the participant which uttered the utterance described on the line and the utterance itself. Image 4.12 shows how multiple-clause utterances were handled – the father’s utterance line 21 of the transcription contains two finite verb forms and thus fills two lines in the Excel spreadsheet.

G	H	I	J	K	L	M	N	O	P	Q	R
Forme verbale étendue	TPS GRAMM	Forme lemmatisé	PERSONN	STANDARD (1-0)	TYPE ERREUR	CREA/REP (auto/heter) o LEX	CREA/REP (auto/hété) o INFL	COMMENT	TPS CHRO	ASP LEX	ASP GRAMM

Image 4.13: Screenshot of the coding categories (longitudinal corpora)

Image 4.13 shows the rest of the coding grid used to characterize the verb forms produced by the participants in the *Hervé* corpus and the *Paris* corpus. All utterances in the bilingual family dinners recorded as part of the *Brunet* corpus were also coded for addressee, as described below. The coding grid used to analyze narrative discourse was similar to the one displayed in image 4.13, but included an additional column used to distinguish between background and foreground clauses. Because the various files were not coded exactly at the same time, there are minor differences in the way verbless utterances were identified and set aside. In coding the *Hervé* corpus, verbless utterances were signaled with the code “n/a” in the columns dedicated to the description of verb forms. These were in turn easily excluded by using filters in Excel. In the files which were coded later, a column labeled “analyzability” was added – verbless utterances were thus signaled in a single column and easily filtered out. In Image 4.13, columns G to I were filled out for all verbs forms. Indeed, all verb forms were listed exactly as they were used by the participants in column G in image 4.13 entitled “extended verb form” (or “*forme verbale étendue*”). The grammatical tense each form was inflected for was listed in column H. Column I lists the lemmas for each verb form. The aim of this first coding phase was twofold. First, it allowed to describe the distribution of tense forms in the input and in the target child’s productions (see chapter 5 for a detailed account of the tense forms analyzed in each of the three corpora used in this work). Then, it enabled me to single out forms inflected for the past tense in order to analyze them more in depth, using the coding categories described in detail below. As mentioned in chapter 2 (section 2.3.3) some of

these coding categories were also used to analyze around one third of the present-tense forms in the data. Indeed, present tense forms were the most frequent forms used by all the participants and excluding them entirely from analysis would have implied dismissing a substantial part of the data. Moreover, it was essential to code at least part of the present-tense forms in order to determine whether the preferential associations between past-tense forms and specific lexical aspect categories were indeed restricted to the field of the past tense.

- **Addressee**

This coding was used to analyze the bilingual family dinners recorded as part of the *Brunet* corpus, in order to determine how the families' two languages were used by the different family members to address each other. The addressee of each utterance was identified by relying on syntactic and contextual cues. Syntactic cues included the direct mention of the addressee by name, as well as the analysis of pronominal reference. Contextual cues were identified through close analysis of the video files and included multimodal cues such as the participants' gaze or body position when the utterances were produced. The other participants' reactions were also taken into consideration to identify the utterances' addressee. I distinguished between utterances addressed to a single interlocutor, and those addressed to multiple participants (coded as MULT). This coding was used to yield the proportion of utterances addressed to either a single addressee or to multiple addressees produced by each participant who took on the role of speaker during the recordings of family dinners. This is illustrated in extract 4.3.1 below.

Extract 4.3.1.

Arthur, first family meal recorded (out of two)

MOT: je t'en mets par dessus comme ça tu fais de la place ? (*should I put some on top, can you make room?*)

CHI: euh oui il faut juste que je finisse mes fishfingers@s. (*yes I just need to finish my fishfingers.*)

BR2: arthur la prochaine fois tu peux ne pas faire ça ? (*arthur could you not do this next time?*)

FAT: elle est bonne ta vinaigrette. (*your salad dressing tastes good.*)

%gpx: FAT looks at MOT.

CHI: faire quoi ? (*do what?*)

BR2: ça faire ça. (*this, do this.*)

%gpx: BR2 looks at CHI and raises his elbow to the side, mimicking the movement he wants CHI to stop doing.

MOT: il a pas fait exprès. (*he didn't mean to.*)

The extract began as the mother was serving pasta. Her use of the second person pronoun allowed to analyze the mother's first utterance as having a single addressee. Arthur's reaction as well as the video recording allowed to identify him (the target child, coded as CHI) as the addressee of her first utterance – the mother was serving Arthur when she produced the utterance, and Arthur answered her question. The brother's two utterances in the extract were coded as addressed to Arthur. In his first utterance, Arthur's brother identified his addressee by name. The second utterance was produced to answer Arthur's questions which was clear in context as the brother's gaze turned toward Arthur. The addressee of the father's utterance was identified by analyzing both verbal production and gaze. Indeed, the use of the second person singular possessive determiner “*ta*” hinted at a single addressee, which could have been either one of the children or the mother. The father's gaze was crucial in identifying his addressee – image 4.14 is a screenshot of the recording taken at the time the utterance was produced, which shows that the father gazed at the mother at the same time as he produced the utterance.



Image 4.14: Screenshot of the video recording at the time when the father produced the utterance displayed in extract 4.3.1

- **Link to target, person and origin of the form**

Additional analysis was conducted on the forms produced by the target children in the corpora. All the forms produced by the children under focus were coded for person (from first to sixth). They were also coded as either target or non-target, depending on whether they corresponded to the expected, standard form or not. If not, the type of deviation was also characterized. Possible deviations from target included non-standard forms or absence of auxiliary or lexical verbs (“om-aux” or “om-lex”), omission (“om-infl”) or addition (“aj-infl”) of person or tense inflections (“om/aj-inf(tense/pers)”) as well as omission of the subject (“om-s”). When auxiliaries were omitted, the code used to define the type of error also

included the function the auxiliary would have served, i.e. whether the auxiliary was used in adult speech to build an interrogative or negative clause, or a periphrastic tense or aspect (“om-aux(int/neg/prog/perf)”). Finally, verb forms produced by the target children in the data were also categorized as either initiated by the child or as a form replicated up from a previous utterance. When the child used a verb that was not used in the five previous utterances, it was coded as initiated by the child (“c”). When the form could be retrieved from the preceding context, it was coded as either replicated from the child’s own previous utterances (“r(a)”) or from another participant’s utterance (“r(h)”). The past-tense forms produced by the children were also coded to signal whether past-tense morphology had been initiated by the child or replicated from one of her own or her interlocutor’s previous utterances, using the same codes.

- **Chronological reference**

All past-tense forms and around one third of present forms were thus coded for chronological reference – either present, future, atemporal or past. The coding was refined for forms that were analyzed as building past temporal reference, to distinguish between references to the immediate past and references to a more distant past. Among forms coded as referring to the immediate past, I also identified those that had yielded a tangible result at speech time. Coding for chronological reference implied relying on contextual cues accessible either through analysis of the video recordings, when I was able to access them, or through analysis of the transcriptions, which were carefully commented to describe the activity the participants were engaged in. Verbs used to refer to an action in progress at the time of speech were coded as referring to the present time. In extract 4.3.2, Sophie, her father and the observer are playing doctor with dolls. The father, who is a doctor in real-life, led the play session by guiding his daughter in pretending to provide hospital care to her dolls.

Extract 4.3.2.

Sophie, 2;11.06

FAT: you tie the <needle> [//] tube into his arm.

CHI: <yeah> [/] yeah I do this.

FAT: have we got a needle?

OBS: no.

FAT: we don’t have a needle.

FAT: okay.

OBS: a pen.

FAT: +< okay well that can be the fluids.

CHI: yeah.
 FAT: and then we need a tube going from there to there but we don't really have one, do we?
 CHI: no.
 FAT: I should <nick> [//] take some stuff from the hospital and then we can play.
 OBS: yeah that's what my sister did.
 FAT: oh was it.
 CHI: xxx.
 CHI: I nearly finished this.

This extract illustrates how contextual cues were used to determine chronological reference, regardless of grammatical tense. It highlights in particular how grammatical tense and chronological time may differ. Indeed, the past tense form used by the child in the last utterance of the extract (“I nearly **finished** this”) was analyzed as building reference to the present time rather than to a past action. This is entailed by contextual cues, as the child is still in the middle of what she is doing (tying the tube to her doll's arm) which can thus not be construed as having occurred fully in the past. The adverb “nearly”, used with an achievement verb, i.e. a non-durative telic event, focuses the stages preliminary to the full realization of the event. The situation considered is thus presented as ongoing at SpT, and the utterance “I nearly finished this” was thus analyzed as referring to the present time. On the contrary, the past-tense form used by OBS in her last utterance (“yeah that is what my sister **did**”) was analyzed as building reference to the past. This past reference was coded as indefinite – reference to non-immediate past that is not precisely localized, i.e. no information is given as to when the event took place. The past tense is also used in extract 4.3.2 to build atemporal reference. Indeed, in the utterance “I should <nick> [//] take some stuff from the hospital” the past tense is used to signal a modal break rather than a temporal one. The reference “*should take*” was thus coded as atemporal. Present-tense forms were also used in the data to refer to different chronological times, as illustrated in this extract. The father's first utterance (“you tie the <needle> [//] tube into his arm.”) was analyzed as having a modal rather than a temporal value, i.e. the verb form was not used to describe an event in progress at SpT but rather to give the child directions in order to realize the event. It was thus analyzed as building atemporal rather than present reference. The child's utterance on the following line was in turn analyzed as building future reference – when the utterance “<yeah> [//] yeah I do this.” was produced, the child was not yet doing what her father had just advised her to do. The verb form in her utterance is thus used to formulate a prediction, as the child announces that she will tie the tube to her doll's arm. Finally, extract 4.3.2 also illustrates how present-tense forms were used in the data to refer to the present time – the father's utterance “we don't

have a needle” was analyzed as referring to the present time, as the stative situation <we not have a needle> was construed as ongoing at SpT.

- **Grammatical aspect**

All inflected verb forms in the adults’ and the children’s productions were coded for grammatical aspect, as building either perfective or imperfective reference.

- **Lexical aspect**

All past tense forms as well as around a third of the present-tense forms in the data were also coded for lexical aspect, or situation type. Verb forms were stripped of tense and aspect markers before they were distributed into the lexical aspect categories described in chapter 2. Indeed, lexical aspect is based on semantic properties of predicates considered to reflect idealized situations in the world. The method adopted in this work to determine lexical aspect relied on the syntactic correlates of these semantic properties. This was decided in order to reduce the level of interpretation implied by the analysis of lexical aspect as much as possible. Indeed, one of the pitfalls of many studies on lexical aspect is that the way verb forms are classified into lexical aspect categories is seldom made explicit, and often based on semantic criteria which may be left to the coder’s interpretation rather than based on syntactic tests. The tests I used in this work to determine the lexical aspect of predicates are described in detail in chapter 2 (section 2.3.3), and summarized in table 4.2.

- **Foreground and background clauses**

The *Brunet* corpus focused on the children’s use of tense-aspect morphology in narrative contexts in order to determine whether its was equally influenced by the semantic characteristics of predicates in different discursive contexts. I also wondered whether dominance and task-type effects would be systematically identified in the children’s productions in their two languages. One of my hypotheses was that in narrative contexts, children may use tense-aspect morphology with different functions than the ones they served in spontaneous productions. I expected from the literature that as children’s proficiency raised, they would use past perfective or imperfective morphology in both of their languages with different types of predicates, to distinguish the main story-line events from background information. In the children’s narrative productions, clauses were thus coded as either foreground or background clauses, depending on whether the information they conveyed made the narrative move forward or not. Based on the definition by Labov (1972) used in chapter 3, clauses were coded as foreground when they were temporally ordered, that is, when a change in their order resulted in a change of the temporal sequence of events presented in the narrative. Clauses which provided background information or evaluative comments were coded as background clauses.

Example	Morphology	Syntax	
CHI: I want a chair for me please Daddy. (Sophie-1E) < <i>I want a chair</i> >	Shifted interpretation when inflected for the progressive. Specific interpretation in the present tense		Stative
CHI: oh they are talking. (Sophie-4E) < <i>they talk</i> >	Progressive interpretation and entails its perfective counterpart when inflected for the progressive	Compatible with durative adverbials “for + duration” (“ <i>pendant + durée</i> ”)	Activity
CHI: you’re making a hedgehog. (Sophie-2E) < <i>You make a hedgehog</i> >	Does not entail its perfective counterpart when inflected for the progressive	Compatible with completive adverbials “in + duration” (“ <i>en + durée</i> ”)	Accomplishment
CHI: I’ve finished my hamster. (Sophie-2E) < <i>I finish my hamster</i> >	Shifted (progressive) interpretation with progressive morphology or the <i>imparfait</i>	Ingressive interpretation with adverbials of duration	Achievement

Table 4.2: Tests used to classify predicates into lexical aspect categories (summary of section 2.3.3)

4.3.3 Coding lexical aspect: resolving problematic cases in context

As I have mentioned earlier, lexical aspect categories were attributed to predicates rather than to single verbs, and the same verb used in different constructions may fall in different lexical aspect categories. Moreover, verb constellations were stripped of tense-aspect morphology before they were analyzed for lexical aspect. Indeed, lexical aspect is an inherent property of verb constellations which can be analyzed regardless of the choices made by the speaker in presenting the situation denoted by the verb constellation. Although the tests I described above were used systematically to analyze lexical aspect, there were cases where the tests were not enough to decide. In such cases, I had to rely on contextual cues as well as knowledge of world-situations in order to decide. The present section is aimed at describing such cases. I dwell in particular on two problematic verb types with regards to coding lexical aspect: perception verbs, and in particular verbs of visual perception such as “*to see*” (“*voir*”), and verbs with low semantic content which may only be interpreted by relying on contextual information, as discussed below.

4.3.3.1 Analyzing visual perception verbs – lexical aspect of “*to see*” and “*voir*” and implications

Classifying predicates built around perception verbs in terms of lexical aspect has long been identified as a potentially problematic task, and much has been written on the subject in the literature (Khalifa and Miller, 2010; Enghels, 2012). The aim of the present section is not to give an exhaustive overview of perception verbs, but rather to go back on the different ways in which involuntary visual perception verbs were classified in the corpora, in both French and English. Taking a bilingual perspective on the matter was eased by the similarities that exist between French and English in terms of the functions served by the translation equivalents “*to see*” and “*voir*”. Following Enghels (2012), it is useful to mention that the classification of perception verbs into lexical aspect categories is dependent upon the type of perception considered. The differences between visual perception verbs and auditive perception verbs in terms of lexical aspect can thus be traced back to the differences between the perceptive modalities these verbs denote. Indeed, auditory signals are by definition fleeting and temporary whereas visual stimuli tend to be more durative. As Enghels (2012) notes, visual perception “allows repeated or extended acts of perception” whereas auditory perception is bounded in time as a consequence of the nature of auditory stimuli. I am interested in discussing in particular involuntary visual perception verbs, as I argue that their classification not only depends on the nature of the stimuli but also on the type of complements they are used with and on the characteristics of the situation of utterance (Hindsill, 2007). In the English corpora, the verb “*to see*” was classified as falling into the category of statives, accomplishments or achievements depending on the context, the nature of the complement and the characteristics of the

situation of utterance. The stative value attributed to the verb “to see” in English is illustrated by extract 4.3.3 taken from one of the recordings of Sophie during the session in English when she was 3;05 (*Hervé* corpus, Sophie-10E). In extract 4.3.3, Sophie’s father is talking about a school where kids had to do physical education classes in the park in their underwear. Before the beginning of the extract, the father talks about how he was not enrolled in the school when he was young but has since then met a colleague who attended the school as a boy and told him about his experience there.

Extract 4.3.3.

Sophie, 3;04.25

FAT: but <one of my doctors> [//] one of the doctors at work went to that same school and he used to do P-E in his underwear.

MOT: why?

CHI: in his underpants.

FAT: yeah.

MOT: why?

FAT: and you could see from the park.

MOT: but why?

FAT: it’s so weird.

OBS: was he traumatised or not?

FAT: he said <he wasn’t> [//] he always thought it was normal.

MOT: I don’t really **see** why actually.

In her last utterance, the mother used the verb “to see” in a negative construction inflected for the present tense. In this use, the verb “to see” denotes a stative, durative situation. This stative interpretation of the verb constellation is confirmed when trying to inflect it for the progressive. In such cases, the situation <I see why> would gain the feature [+ dynamic], and yield a shifted interpretation of the predicate. Extract 4.3.4 below provides examples of how the verb “to see” could be used either as a state or an achievement. It is taken from the recordings of Sophie during the English sessions (*Hervé* corpus, Sophie-6E).

Extract 4.3.4.

Sophie, 2;11.06

MOT: did you tell Coralie you **saw** some deer?

CHI: deer.

MOT: and [/] and sheep at Tatton Park.
 CHI: sheep.
 MOT: and you went cycling in them.
 OBS: really wow.
 OBS: were they scared when they **saw** you?
 OBS: no?
 FAT: they didn't really move, did they?
 CHI: no.

In extract 4.3.4, the mother asks her child to tell the observer about a time when they went cycling among deer and sheep. The past tense form of the verb “to see” is used once by the mother and once by the observer with different inherent temporal features. It is first used by the mother with an agentive subject (“you”, which refers to the child) and an indefinite quantifier “some” used with a count noun “deer” to denote an indefinite quantity of the referent. This verb form was classified as stative – indeed, the nature of the visual stimuli (deer grazing and thus staying rather static, as confirmed by the father’s last utterance: “*they didn’t really move did they?*”) implies that it has some duration. The classification of the predicate as stative was also justified by the fact that it would yield a shifted interpretation in the progressive. In extract 4.3.4, the observer also uses a past-tense form of the verb “to see” in the utterance “were they scared when they saw you” – where it is used in an adverbial clause of time. In this example, the adverbial “when they saw you” is used to locate the situation denoted by the main verb in time. The verb “to see” in this adverbial clause is thus readily interpreted as denoting a punctual situation which provides the temporal frame for the situation denoted by the verb constellation in the main clause. This is supported by our knowledge of world-situations, which leads us to interpret the event of deer seeing humans riding bikes and taking fright as punctual rather than durative. In such a context, the verb form “saw” in the adverbial clause could be glossed as “when they **noticed** you” and was thus analyzed as belonging to the category of achievements, i.e. as signaling an instantaneous change-of-state, from a non-seeing state to a seeing state. This use of the verb “to see” (“*voir*”) with a meaning similar to that of the verb “to notice” (“*remarquer*”) and an achievement value was also identified in the recordings in French, as illustrated by extract 4.3.5, taken from the recordings of Anaé (*Paris* corpus, Anaé 1;06.08).

Extract 4.3.5.

Anaé, 1;06.08 MOT: tu as vu, regarde. (*have you seen that, look.*)

%gpx: MOT points to a music instrument on the side table.

In 4.3.5, Anaé’s mother uses the verb “*voir*” (“to see”) inflected for the *passé composé* alongside a deictic pointing gesture to draw her child’s attention to the music instrument set on the table in front of them. The verb constellation was analyzed as denoting a change-of-state between a state where the child had not noticed the music instrument to one where she had, and was thus classified as an achievement. Close attention was also paid to how such verb forms should be analyzed in terms of chronological reference. Indeed, *passé composé* forms of the verb “*voir*” were very often used alongside a deictic pointing gesture by the French adults in the corpora as in extract 4.3.5, suggesting that the seeing event they denoted was not entirely located in the past. On the contrary, I analyzed such forms as allowing predominantly to focus the present result of a change-of-state predicate located in the immediate past, i.e. the chronological reference of such forms was analyzed as extending into SpT rather than exclusively focusing a past event. This interpretation is supported in extract 4.3.5 by contextual features provided by the video recording, namely that the form “*as vu*” serves to durably direct the participants’ attention towards the music instrument so that the seeing event denoted can be said to take place at SpT. Moreover, the imperative form of the verb “to look” (“*regarder*”) directly following the *passé composé* form “*as vu*” led me to analyze its chronological reference as present rather than past, because the visual stimuli was still observable and was still the focus of the participants’ attention at SpT. This illustrates the dual value served by the *passé composé* in French – it may be used either to fully break with SpT, with an aoristic value or as a perfect tense, to focalize the relationship between a past event and SpT (Benveniste, 1966). Because of the gradual disappearance of the *passé simple* in oral French, it is common for the *passé composé* to serve these two functions in discourse (Morgenstern et al., 2018). Finally, the verb “*voir*” was sometimes used with the temporal features of an accomplishment, in specific verb constellations in which the complement changed the nature of the visual stimuli. This is illustrated in extract 4.3.6, taken from the first family dinner recorded for Arthur.

Extract 4.3.6.

Arthur-dinner 1

MOT: et Batman on l’a jamais vu Batman ? (*what about Batman, we’ve never seen Batman?*)

FAT: si on l’a vu au cinéma tous les deux. (*we have, we saw it at the cinema together.*)

In this extract, the family was talking about superhero movies they have watched or would like to watch. Both parents used the verb “*voir*” inflected for the *passé composé* and with a count complement – “Batman” in the mother’s utterance, taken up by the father

using the clitic pronoun (in bold in the transcription). In this example, the complement triggers an accomplishment reading of the predicate. Indeed, the predicate “to see a movie” can only be understood as both implying some duration and being bounded on the right – because a movie necessarily has a beginning and an ending, the seeing event in this case is naturally interpreted as having inherent endpoints.

4.3.3.2 Verbs of low semantic content: the case of “to do” (“*faire*”)

The classification of verbs with low semantic content such as “to do” and its French equivalent “*faire*” into lexical aspect categories also deserves attention. Indeed, it is highly dependent on linguistic and extra-linguistic features in both French and English. In English, the first specificity of the verb “to do” is its use as an auxiliary – and thus the fact that it can serve to code a previously mentioned verb phrase. When it was used to code a stative predicate, “do” was thus analyzed as denoting a stative situation, as in extract 4.3.7, taken from a recording session in English with Sophie when she was 3;07 (*Hervé* corpus, Sophie-12E).

Extract 4.3.7.

Sophie, 3;07.01

FAT: do you not have a funny tummy okay.

FAT: okay.

CHI: no I don't.

In extract 4.3.7, Sophie uses the verb “to do” to code the verb phrase “have a funny tummy”, which denotes a stative situation. Auxiliary “do” in the child’s utterance was thus categorized as a stative predicate. In extract 4.3.8, taken from the English recording session in English when Sophie was 2;09 (*Hervé* corpus, Sophie-4E), her father uses auxiliary “do” with a cataphoric value as it is used to code the following verb phrase, “put the pan on the raclette machine” which has the temporal features [–durative], [+telic] and [+dynamic]. The auxiliary was analyzed as belonging to the category of achievements, like the verb phrase it codes.

Extract 4.3.8.

Sophie, 2;09.12

CHI: Dad?

FAT: yeah?

CHI: did you uh put cheese on it ?

FAT: yeah what we do is you put the pan on the raclette machine and it cooks the cheese for you.

The French translation equivalent of “to do” is the verb “*faire*”, which differs from its English translation equivalent in the number of constructions in which it may be used, to denote very different situations. Indeed, whereas English naturally allows to derive new verbs from nouns, French readily uses the verb “*faire*” alongside a prepositional complement specifying the activity that is conducted. This entails that the verb “*faire*” was extremely frequent in the French recordings, as it appeared in contexts where “to do” would not have been used in English, as in extract 4.3.9, taken from the recording session when Anaé was 2;00 (*Paris* corpus).

Extract 4.3.9.

Anaé 2;00.00

MOT: la yyy qui est-ce qui faisait de la luge ? (*who went sledding?*)

MOT: c'est Ael qui faisait de la luge et Anaé aussi. (*Ael went sledding and so did Anaé.*)

In extract 4.3.9, the verb “*faire*” is used with the prepositional phrase “*de la luge*” to refer to sledding – in such examples, verb constellations built around the verbs “*faire*” were analyzed as falling into the class of activities, i.e. denoting atelic, durative and dynamic situations. Similarly, “to do” was classified as an activity when it was used with mass complements as in extract 4.3.10, taken from the English recording session in English when Sophie was 3;04.25 (*Hervé* corpus, Sophie-10E).

Extract 4.3.10.

Sophie, 2;04.25

FAT: when you were doing the jumping jacks.

MOT: she said she did exercises at school.

CHI: we did jumping jacks at school.

All three utterances in extract 4.3.10 contain a verb constellation built around the verb “to do” followed by mass complements, which trigger an activity reading of the predicate.

On the contrary, when “to do” or its French equivalent “*faire*” were used with count complements, they were analyzed as either achievements or accomplishments depending on whether the situation they denoted could be said to have some duration. This highlights once more that lexical aspect can only be analyzed by considering entire predicates, as it is influenced by the countability status of object complements. In extracts 4.3.11 and 4.3.12, the verb “*faire*” was used with count complements and interpreted as either an accomplishment or an achievement depending on whether the situation it denoted was construed as durative or punctual.

Extract 4.3.11.

Anaé, 1;06.08

MOT: tu vas faire un bisou à Aliyah pour lui dire merci ? (*Are you gonna give Aliyah a thank you kiss?*)

In extract 4.3.11, the verb “*faire*” is used with a count complement “*un bisou*” (“a kiss”), which bounds the situation on the right – once the kiss has been given, the event is considered to have reached its inherent endpoint. Moreover, the situation denoted by the predicate can most readily be construed as punctual – it can hardly be inflected for the progressive without triggering a derived interpretation, and it is not compatible with adverbials of simple duration.

Extract 4.3.12.

Anaé, 1;06.08

MOT: Anaé elle a fait cette peinture là. (*Anaé painted this painting there.*)

OBS: qui est-ce qui a fait ces beaux dessins ? (*and who painted these beautiful drawings?*)

MOT: non c’est pas toi qui a fait ça c’est Ael qui a dessiné les schtroumpfs. (*no you didn’t do this one, Ael drew the smurfs.*)

In extract 4.3.12, the mother’s two utterances contain predicates built around the verb “*faire*” and classified as accomplishments: “*faire cette peinture*” and “*faire ça*”, where “*ça*” is a deictic pronoun used to refer to one of the paintings that the participants are looking at. Like in extract 4.3.11, “*faire*” is used in these examples with a count object complement which bounds the situation on the right – the situation <paint a painting> has a right-boundary that is reached when the painting is done. Contrary to the predicate

in extract 4.3.11, the situation <elle faire cette peinture> (<she paint this picture>) was analyzed as [+ duration]: it can easily be inflected for the progressive, the duration of the situation may also be focused on by an utterance such as “*It took her 10 minutes to paint this picture*”.

The variability illustrated above with regards to the classification of the perception verb “to see” and of its French equivalent “*voir*”, as well as of verbs with low semantic content highlights once again the need for predicates to be considered in context – both linguistic and extra-linguistic – in particular in order to be classified into lexical aspect categories. All past-tense forms in the corpora were thus coded for lexical aspect by paying particular attention to situational and linguistic cues, as illustrated by the extract analyses above. I also recoded a sample of the data in order to yield agreement rates, by comparing the coding performed at two distant times. This was done for lexical aspect on 10% of all the forms coded, equally distributed throughout each corpus. The objective was to test the reliability of the coding – for the coding to be considered robust, the goal of 90% of agreement between the two coding phases was set. In the *Paris* corpus, 1063 verb forms were recoded for lexical aspect, and different coding results were obtained for 82 forms (7.6%). In the *Hervé* corpus, 1471 verb forms were recoded and different coding results were obtained for 102 forms (7%). Coding differences were resolved through close analysis and recoded in the entire corpora.

Studying the associations between lexical aspect categories and past tense-aspect morphology in French-English bilingual spontaneous and narrative data required that I study the use of tense-aspect morphology in various situations. First, it entailed that I characterize the interactions between tense-aspect morphology and lexical aspect categories in French naturalistic data, which had seldom been done. I was able to use recordings from two children recorded as part of the *Paris* corpus, Anaé and Antoine between 1;06 and 4;05 – from the first uses of past participles forms by the children to their first instances of generalization of the *imparfait* (Morgenstern, 2012). I also used a longitudinal corpus of two French-English bilingual families, which included monthly recordings of Sophie and Anne, between 2;06 and 3;06 in order to determine whether the predictions made by the AH held against longitudinal French-English bilingual data. The children were recorded twice a month during a year – in interaction with a French-speaking family member or caretaker and with an English-speaking caretaker (Hervé, 2015). Finally, I collected the *Brunet* corpus to analyze French-English bilingual children’s ability to use tense-aspect morphology in narrative contexts. I elicited narrative productions in French and in English from six children during two sessions set a year apart and I also recorded the same children in interaction with their families during meals. The data was transcribed in the CHAT format, which allowed me to use the CLAN software to launch quantitative analyses such as Mean Length of Utterance, measures of lexical diversity and measures on the distribution of languages in the recordings, in order to characterize the three different corpora used. The transcriptions were then exported into Excel which was used to conduct qualitative analysis of the data. Coding in Excel focused primarily on verb forms which were coded for tense, chronological reference, lexical aspect and grammatical aspect. Coding of the data relied on close analysis of the situation in which each form was produced – section 4.3.3 showed how the coding of chronological reference and lexical aspect for instance often required analyzing situational cues identifiable in the interaction.

Chapter 5

Characterization of the corpora: linguistic development and bilingual language practices

As explained in chapter 4, this work is based on three corpora used to determine whether French monolingual children and French-English bilingual children followed the predictions of the Prototype Account in their acquisition of tense-aspect morphology. I also wished to question whether and how bilingual children used tense-aspect morphology to order events in their narrative productions. The aim of this research is thus twofold – it is first to characterize the path of acquisition of past-tense forms by young French monolingual children in order to determine whether the predictions made by the AH hold against the productions of young children acquiring a Romance language. Then, this research also aims at contributing to the discussion on the acquisition of past tense-aspect morphology by French-English children, by analyzing bilingual children’s production at different ages, with different exposure patterns and in both spontaneous and narrative discursive contexts.

The three corpora used in this work are presented in table 5.1, which lists their main characteristics, including mention of the type of data, the number of children whose productions were studied and the type of setting in which they were recorded.

5.1 The *Paris* corpus: longitudinal French monolingual data

The decision to work on longitudinal French monolingual data was motivated by the fact that the AH was seldom tested against the production of French monolinguals. I thus decided to work on longitudinal data from two French monolingual children, collected by

Corpus Name	Type of data	Type of recording	Setting	Number of children	Children's Age
<i>Paris</i> corpus	Monolingual	Longitudinal, 1 hour monthly sessions	Spontaneous interactions with caregivers	2 (Anaé and Antoine)	Between 1;06 and 4;05
<i>Hervé</i> corpus	Bilingual	Longitudinal, 1 hour monthly sessions	Spontaneous interactions with caregivers (one session one language)	2 (Anne and Sophie)	Between 2;06 and 3;07
<i>Brunet</i> corpus	Bilingual	Punctual, recorded twice a year apart	Family dinners and narrative productions recorded twice a year apart	6 (Lucas, Arthur, Oliver, Julian, Emma & Charlotte)	Between 3;11 and 7;08

Table 5.1: Summary of the main characteristics of the three corpora used in this work

the CoLAJE team¹ as part of a research project based on the longitudinal recordings of French monolingual children from their first year of life until their seventh birthday (Morgenstern, 2012). The wide time-frame during which the CoLaJE recordings were conducted constituted a first advantage for me as it ensured that the recordings would cover the first stages of acquisition of tense-aspect morphology in French, i.e. from the first past tense forms used by the children to the children's productive uses of tense-aspect morphology. The second major advantage presented by the *Paris* corpus and in particular by the recordings of Anaé and Antoine was that the transcriptions were available and that previous studies on the acquisition of the *imparfait* (Parisse et al., 2018; Morgenstern et al., 2018) analyzed the verb forms used by Anaé and Antoine in 11 to 13 sessions, evenly distributed from the children's first year of life to their fourth birthday. I was thus able to build on the coding grids used in these studies in order to analyze the correlations between the first uses of tense-aspect morphology and lexical aspect in the speech of Antoine and Anaé. All information on the children's families presented below is taken from the CoLAJE website. Information on the children's linguistic development such as MLU measures or verb diversity measures were also adapted from previous studies on the same recordings – relevant citation information is given in such cases.

5.1.1 Description of the children and their families

Anaé was born on July 24, 2006, and was raised monolingual in the surroundings of Paris. Her mother is a linguist, and is also a member of the team who collected the corpus. Her father is an English teacher. Anaé has two older brothers. The first recordings of Anaé

¹Financed by the French National Research Agency (<https://colaje.scicog.fr/>)

start when she is 1;04, and she was filmed monthly around 30 to 60 minutes until her sixth birthday. All the analyses on Anaé's productions in this work are based on 11 recordings evenly distributed from when she was 1;06 to when she was 4;04. Antoine was born on April 10, 2006. Like Anaé, he was raised monolingual in the area of Paris and filmed monthly from birth until around his sixth birthday. His father is a consultant in banking technology and his mother is the manager of a travel agency. The analyses presented in this work on Antoine's corpus are based on 13 sessions evenly distributed between 1;06 and 4;05. Anaé and Antoine were both filmed in naturalistic situations in the family's home – both children were recorded in spontaneous interaction with family members and friends.

5.1.2 Linguistic development: MLU, lexical diversity and tense diversity

Table 5.2 is in part taken from previous studies on the productions of Anaé and Antoine (Pariße et al., 2018). It lists the sessions that were analyzed for both children and gives descriptive information on their productions. The seventh column gives the children's MLU in each session. These values suggest that Anaé and Antoine display similar rates of language development over the period – around 2;0, Anaé's MLU is slightly higher than Antoine's, but the difference between their MLU scores has disappeared by the end of the children's second year (Pariße et al., 2018). The third and fourth columns give the number of word types and tokens in order to consider the number of verbs used by the children relative to the number of words in general. The fifth and sixth columns in table 5.2 give the raw numbers of verb tokens used by Anaé and Antoine during each session. As described by Pariße et al. (2018), the tokens correspond to verb phrases, including auxiliaries. Modal auxiliaries were not counted as different verb types, but are included in the description of the tenses used by the children over the period. Verb types and tokens values show similar trends in the linguistic development of both children – at the start of their second year, both Anaé and Antoine start to produce a high number of verb tokens and verb types. These values stay high for both children over the period.

Tables 5.3 and 5.4 give the distribution of grammatical tenses in the productions of Anaé and Antoine in percentages relative to the total number of verb tokens in the two children's productions, for which raw values are given. Both tables are taken from a recent study on the emergence of the *imparfait* in Anaé and Antoine's productions (Pariße et al., 2018). I follow the authors in grouping the tense forms used by Anaé and Antoine into five categories, which allows to study the emergence of *passé composé* and *imparfait* forms within the development of other tense forms used by the children during the period (Pariße and Morgenstern, 2012; Morgenstern et al., 2018). Present tense forms and imperative forms were grouped because they are hard to distinguish in the early productions of young French monolingual children, who tend to omit subject pronouns. The category of *passé composé* includes bare participles (where the auxiliary has been omitted). Indeed, as

	Age	Words		Verbs		MLUw
		Types	Tokens	Types	Tokens	
Anaé	1;06.08	358	483	10	18	1,349
	1;09.04	498	854	32	93	1,715
	2;00.00	590	1720	49	323	2,915
	2;03.30	479	1144	41	169	2,388
	2;06.27	607	1935	62	322	3,188
	2;09.23	412	1139	44	203	2,765
	3;01.07	406	1329	46	231	3,273
	3;04.27	722	2620	77	408	3,629
	3;08.10	508	1595	53	243	3,14
	4;00.13	705	3586	99	545	5,087
	4;04.10	601	2030	77	302	3,378

	Age	Words		Verbs		MLUw
		Types	Tokens	Types	Tokens	
Antoine	1;06.22	204	250	3	4	1,225
	1;09.11	283	340	11	29	1,201
	1;11.18	265	354	22	41	1,336
	2;01.28	394	690	21	47	1,751
	2;03.15	380	824	50	128	2,168
	2;05.24	384	1084	53	226	2,823
	2;07.22	472	1357	65	226	2,875
	2;09.16	645	1956	73	360	3,033
	2;11.16	601	1738	51	301	2,892
	3;02.24	387	1184	45	200	3,059
	3;09.22	583	2332	85	401	4
	4;00.09	452	1542	74	268	3,412
	4;05.16	539	1861	72	292	3,453

Table 5.2: Description of Anaé and Antoine’s productions – word and verb types and tokens and Mean Length of Utterances

discussed in chapter 3, French children acquiring the *passé composé* start by producing bare participles before they are able to produce full-fledged *passé composé* forms. It should be noted that bare participles of verbs from the first conjugation groups are homophonous with infinitive forms. Coding such forms for grammatical tense required that they be interpreted as either infinitive or bare participle forms. Their interpretation was guided by adult interpretation; in many cases, incomplete *passé composé* forms produced by the children were made explicit by the surrounding context as in extract 5.1.1.

Extract 5.1.1.

Anaé, 1;09.04

MOT: peut être assis tu veux qu'on le mette assis ? (*do you want us to sit him down?*)

CHI: assis ! (*sit-PP.*)

CHI: tombé ! (*fall-PP.*)

MOT: il est encore tombé ! (*he fell again.*)

The form “*tombé*” is homophonous with the infinitive form of the verb (both are pronounced /tõbe/), which makes its interpretation difficult. However, surrounding context is useful in interpreting the form as a past participle. Not only is it taken up and expanded into a full *passé composé* form (“*est tombé*”) in the mother’s next utterance, but it also follows an utterance where Anaé produces the unambiguous past participle of the verb “*asseoir*” (*to sit down*), “*assis*”. This guided my interpretation of the form “*tombé*” as a past participle as it suggests that Anaé is at a stage where she produces past participles. As Parisse et al. (2018) noted, *passé composé* forms are among the first forms to be used consistently by both children, after present tense forms and roughly at the same time as modal auxiliaries and infinitives. They correspond to the first forms used by both children to refer to the past, as early as 1;06 for Anaé, and 1;09 for Antoine and are used consistently by both children much before the first *imparfait* forms appear (at around 3;00 for both children).

In terms of frequency, the distribution of the first tense forms used by Anaé and Antoine mirror their input – present tense forms are the most frequent forms for both the children and the adults in the two corpora. Modals (grouped with infinitives) and *passé composé* forms account each for around ten percent of the verb forms used by the adults in Anaé and in Antoine’s corpora. The adults in the corpora used the present tense much more frequently than they did the *passé composé*, which is mirrored in the children’s productions – throughout the period, present tense forms were the most frequent forms used by Anaé and Antoine. Finally, neither Anaé nor Antoine produced *imparfait* forms

Anaé	1:06.08	1:09.04	2:00.00	2:03.30	2:06.27	2:09.23	3:01.07	3:04.27	3:08.10	4:00.13	4:04.10	Adults
Present, imperative	83	43	74	79	70	62	74	77	75	64	70	68
<i>Passé composé</i>	6	19	14	7	9	10	12	5	9	8	9	9
Infinitive, modal	11	37	8	12	16	23	9	7	8	8	10	11
Periph. future	0	1	4	2	5	5	3	6	1	3	2	6
<i>Imparfait</i>	0	0	0	0	0	0	2	2	6	13	5	4
Others	0	0	0	0	0	0	0	3	1	4	4	3
Total Tokens	18	93	323	169	322	203	231	408	243	545	302	812

Table 5.3: Distribution of grammatical tenses in Anaé’s productions in each session

at the beginning of the period. They started to do so around at 3:00, first with a restricted set of verbs, before they both extended its use to a greater number of verb types (at 4:00.13 for Anaé and 4:05.16 for Antoine). Following the observations made by Morgenstern et al. (2018) it is interesting to note that the periphrastic future is used consistently by Anaé and Antoine before the *imparfait*, despite both forms having similar frequency in their input. The analysis of the different functions served by the *imparfait* in the speech of adults in the corpora, which is presented in chapter 6, may account for the different rates of acquisition of these forms.

Antoine	1:06.22	1:09.11	1:11.18	2:01.28	2:03.15	2:05.24	2:07.22	2:09.16	2:11.16	3:02.24	3:09.22	4:00.09	4:05.16	Adults
Present, imperative	100	66	46	51	59	53	63	66	73	76	65	66	67	70
<i>Passé composé</i>	0	28	54	26	28	27	17	9	10	11	11	13	9	8
Infinitive, modal	0	6	0	19	9	20	16	20	13	8	10	12	12	10
Periph. future	0	0	0	4	0	0	4	4	3	4	5	4	3	5
<i>Imparfait</i>	0	0	0	0	2	0	0	1	1	0	4	3	9	3
Others	0	0	0	0	2	0	0	0	0	1	5	2	1	4
Total Tokens	4	29	41	47	128	226	226	360	301	200	399	268	292	1067

Table 5.4: Distribution of grammatical tenses in Antoine’s productions in each session

5.2 The *Hervé* corpus: French-English bilingual longitudinal data

In order to determine whether French-English bilinguals are able to rely on input properties as much as their monolingual peers in the acquisition of past tense-aspect morphology, I needed to analyze bilingual children’s longitudinal productions. I was able to use the *Hervé* corpus (Hervé, 2015) which is comprised of all the transcriptions of the recordings of Anne

and Sophie² during a one-year period, and of part of the recordings. As explained below, I did not have access to all the video recordings of the two children, but the transcriptions were sufficiently annotated for me to get a good grasp of the activity the participants were engaged in.

Two one-hour long sessions were organized each month, during which the participants were meant to engage in monolingual interactions. All the French sessions took place with the French-speaking parent. Sophie was recorded in interaction with her father during the English sessions, as he was her main provider of English at the time. Anne was recorded in interaction with her nanny, with which she was reported to spend around forty hours a week. It can thus be expected that the recordings mirror typical interactions in the children's lives. The recordings took place in the family home, with the observer present and included in the routine activities performed, i.e. playing, cooking, having a meal (Hervé, 2015). The observer displayed her bilingualism to the children, using English and French to interact with the children and her caregivers. Sophie was recorded between the ages of 2;06 and 3;07. I had access to 11 recordings and their transcriptions in English and to the 12 transcriptions of Sophie's recording sessions in French. Anne was recorded between the ages 2;04 and 3;02. I was given access to 9 transcriptions of Anne's sessions in English and 3 video recordings, and to 11 transcription files of Anne's sessions in French. Information on the families and their language practices was first provided by Hervé (2015) and is reproduced below. I chose to work on this corpus for several reasons. First, it was collected to investigate several aspects of child bilingualism, including the role played by input properties. The *Hervé* corpus was thus suited to investigate the relationship between the first past-tense forms produced by French-English bilingual children in both of their languages and the distribution of such forms in their input. Another major advantage of using the *Hervé* corpus is that it had been entirely transcribed in the CHAT format, with the transcriptions either aligned with the video files or closely annotated, which facilitated the qualitative analysis of the data.

5.2.1 Description of the families and the recording setting

Both children under study were born and raised in the United Kingdom. They grew up in bi-cultural families – their mothers are French native speakers and their fathers are English native speakers. In the two families, English was the main language used by the parents to communicate with one another. The families were described by Hervé (2015) as middle-class, with comparable education backgrounds – Anne's parents and Sophie's father hold a postgraduate degree while Sophie's mother holds an undergraduate degree (Hervé, 2015, pp. 59-60). More detailed description of the children's language practices is provided below. Both families were aware of the need for their children to be frequently and consistently exposed to both of their languages in order to acquire them. They thus

²Names have been changed for anonymity.

adopted strategies to scaffold their children's bilingual acquisition and made sure their French and English were featured in their daily lives. During the recording period, Anne was taken care of by an English-speaking nanny four days a week. However, her parents reported that they both tried to speak French to their children, and enrolled them in a bilingual primary school in order to ensure they receive consistent input. Sophie's family adopted a different linguistic strategy to ensure that they children be frequently exposed to French, despite being exposed exclusively to English at school – during weekdays, Sophie was looked after by her mother who used French predominantly with her children.

Anne was born on April, 23 2009 in London where she was still living at the time of recording. Her mother was born in France but had been living in the UK for about fifteen years when the family enrolled in the study. Anne's mother had had previous experience with English and bilingualism as she had spent a few years in an English-speaking country as a child and later attended a bilingual school upon coming back to France. Anne's father was born in the English-speaking part of Canada and has been living in the UK since he was a child. He is a native speaker of English and speaks fluent French. Anne has an older brother who was enrolled in a bilingual school at the time of recording. Anne was recorded twice a month between the ages of 2;04 and 3;04.

Sophie was born on May, 6 2009 in Manchester where she was still living at the time of recording. Her mother had been living in the UK for about five years at the time and her father, who is English, had lived in the UK all his life. Sophie's father had a good command of French at the time of recording and sometimes switched from English to French, especially to read books. Sophie's mother had stopped working and was thus her daughter's primary caretaker. Sophie's parents reported that they followed the one parent-one language strategy in order to ensure that both languages would be represented in their children's daily lives. Sophie was recorded during French sessions in interaction with her mother, and during English sessions in interaction with her father between the ages of 2;06 and 3;07. When she was 3;04, Sophie started attending an English-speaking school, which according to Hervé (2015) did not hinder her development in French as she was surrounded by her French grandmother and a French family friend who visited the family for several weeks. She had also befriended a couple of French-English bilingual children about her age at school. She thus maintained regular contact with French speakers or learners upon her enrollment in an English monolingual school and was able to keep developing her French.

5.2.2 Establishing language dominance: language exposure and use

Chapter 1 argued that bilingualism should be studied as a shifting phenomenon, subject to changes in language exposure or language use. I use the concept of language dominance in this perspective, keeping in mind that it is likely to vary over time depending

on the bilingual speakers' experience with their languages Grosjean (1982). This implies that language exposure as well as language use are considered closely when determining language dominance in bilingual speakers (Döpke, 2001). The description of Anne and Sophie's language exposure and use is both based on the results of the parental questionnaires filled in at the time of recording and first presented by Hervé (2015) and on the results of measures launched on the transcriptions.

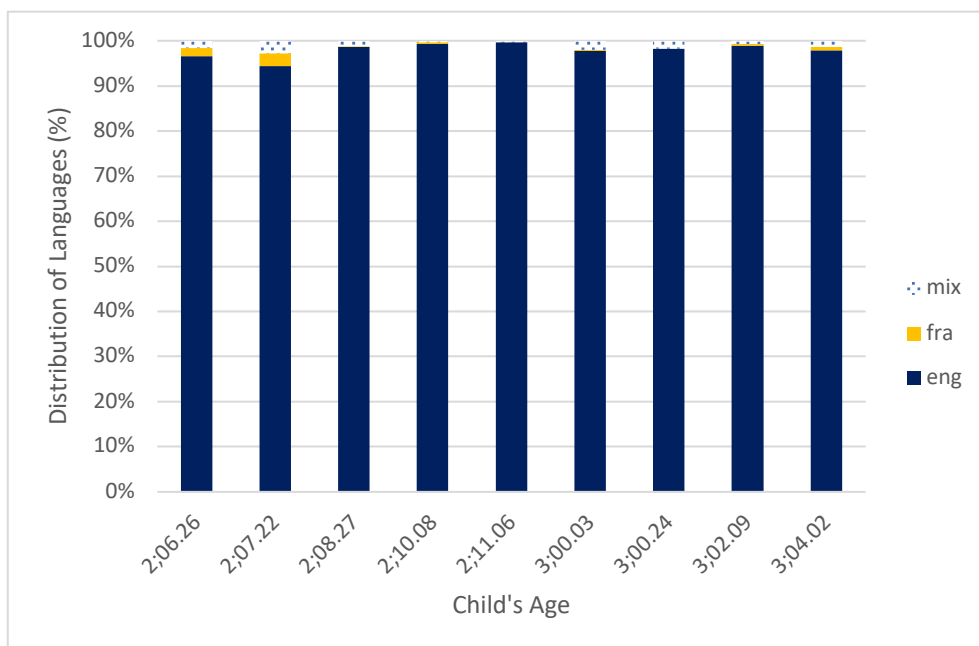
5.2.2.1 Language exposure

Because Anne and Sophie were recorded in settings meant to encourage monolingual interaction, language exposure had to be calculated on the basis of parental questionnaires rather than by analyzing the language distribution during the sessions. The information presented below is taken from Hervé (2015) as I did not have access to the parental questionnaires that were handed out to the parents at the time of recording. Hervé (2015) used a parental questionnaire on language practices aimed at generating a percentage of exposure to English for each child (Cattani et al., 2014). Because Anne's daycare arrangements remained constant throughout the period, her parents were asked to fill out the questionnaire only once. Sophie started attending school in English in the morning from 3;03 onward, so her parents were asked to fill out the questionnaire twice. The results showed that until Sophie started attending school, both children were exposed roughly to the same proportion of English – Anne was estimated to be exposed to English 55% of the time and Sophie around 58% of the time. Initially, the children's exposure to each of their languages was thus fairly balanced. From 3;04 onward, as Sophie started to attend school in English in the morning, her bilingual exposure was skewed towards English, to which she was exposed 65% of the time.

5.2.2.2 Language use

I determined the children's language use patterns by calculating the percentage of English, French and mixed utterances they used during the English and French sessions. During the English sessions, over 90% of the utterances produced by Anne were in English only, as shown in graph 5.1. The percentage of mixed or French utterances was thus low in all the English sessions, and it tended to decrease over the period as Anne used French less and less. During the last session when Anne was 3;04, only 5 utterances out of 232 were in French (2/232) or mixed (3/232).

During the first French session when Anne was 2;04, more than 30% of the utterances she produced were in English (159/458), and a little over 10% were mixed (49/458). Over half of the utterances were thus in French (250/458). Over the period, Anne tended to produce fewer utterances in French. The proportion of mixed utterances stayed constant



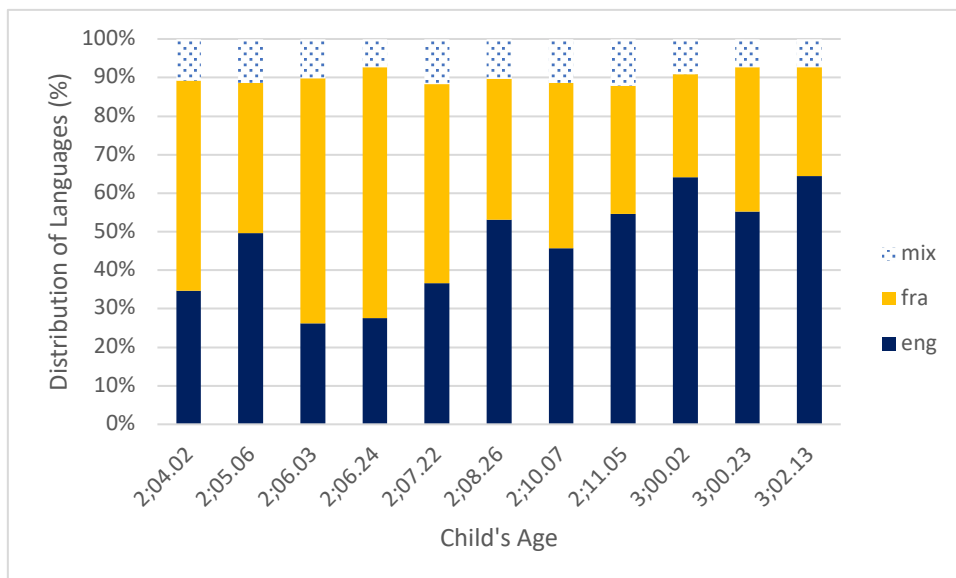
Graph 5.1: Language use in Anne's English sessions

throughout the recordings, averaging around 10%, while the proportion of English utterances grew steadily, accounting for over 60% in the last session (258/400). Graphs 5.1 and 5.2 show a similar trend – English tends to take over during the recording period in Anne's productions, as she uses French less and less during the English sessions, while she produces more and more utterances in English during the French sessions. As pointed out by Hervé (2015), the proportion of translinguaging as well as the proportion of use of both languages in the different settings signals English as the language most used by Anne.

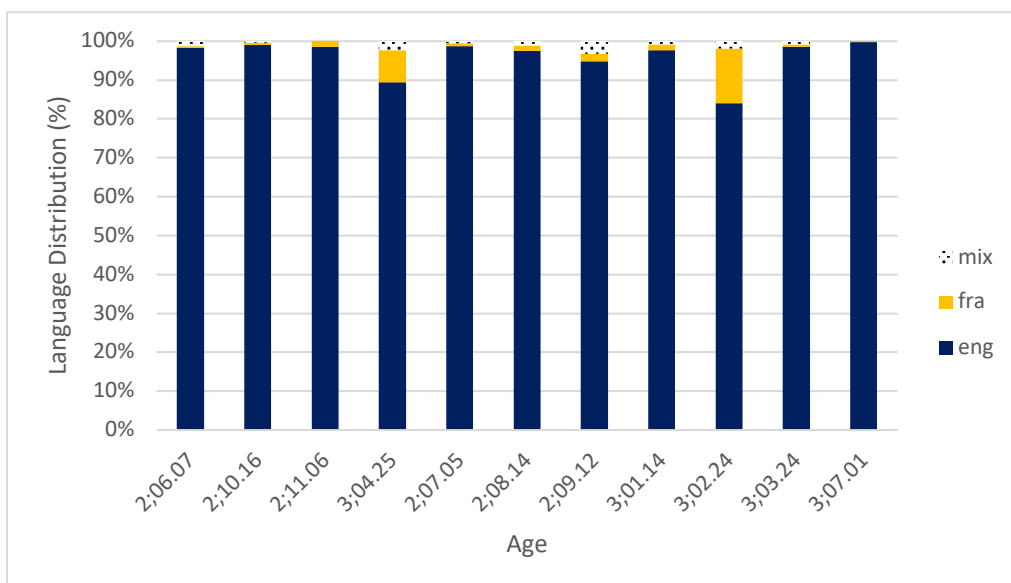
Graphs 5.3 and 5.4 show the distribution of languages in Sophie's recordings in both the French and English settings. During the English sessions, Sophie used English over 95% of the time in all but two recordings (at 3:02 and 3:05, French utterances accounted for 16,7% and 9,3% of the utterances she used). She also used very few mixed utterances when interacting with her father during the English sessions.

Sophie used French consistently during the French sessions over the period but she also tended to resort to her other language more often during the French sessions than she did during the English sessions. The proportion of mixed utterances was also higher during the French sessions – in each session, about 10% of all utterances were mixed utterances while mixed utterances never accounted for more than 5% of Sophie's utterances during the English sessions.

Although the children's language exposure appeared fairly balanced at least at the beginning of the recording period, both Anne and Sophie tended to use English more

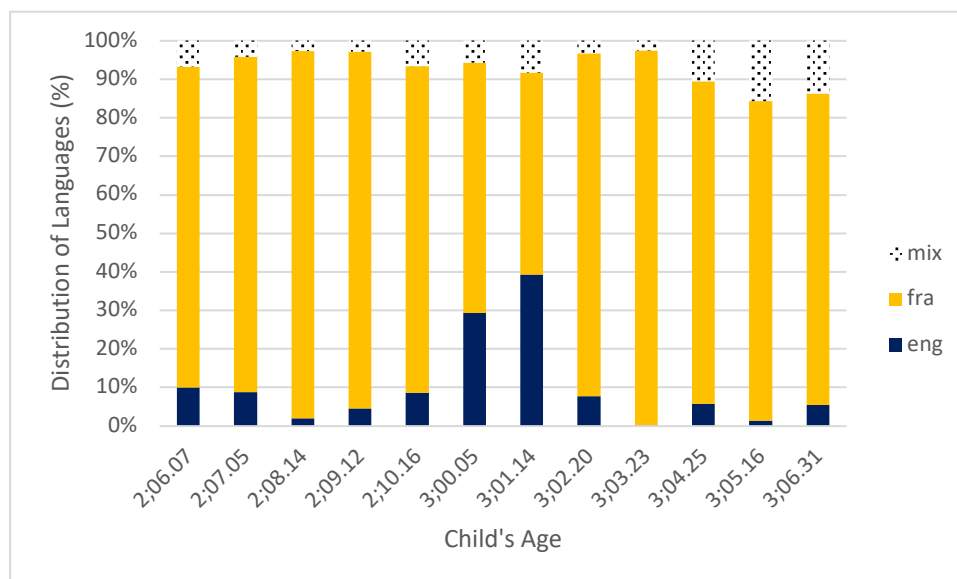


Graph 5.2: Language use in Anne's French sessions



Graph 5.3: Language use in Sophie's English sessions

consistently than they did French. In particular, both Anne and Sophie tended to produce fewer mixed utterances during the English sessions as they did during the French sessions, in which mixed utterances accounted for about 10% of the utterances produced by the children.



Graph 5.4: Language use in Sophie's French sessions

5.2.3 Linguistic development: MLU, lexical diversity and tense diversity

Measures of linguistic development were used to complement the information on the children's language exposure and use presented above. Mean Length of Utterances as well as lexical diversity measures were generated automatically in CLAN, taking into account the language of the filming context – mixed and English utterances were excluded from MLU and lexical diversity measures in French and vice-versa. The count of verb types and tokens in each session is given both as an indicator of linguistic development, and in order to determine the proportion of verbs used by the children during each session. These values are presented in tables 5.5, 5.6, 5.7 and 5.8.

Sophie's MLU in French and in English both grow at similar rates over the period. On the contrary, Anne's MLU in French decreases over the period, while in English the number of multi-word utterances used by Anne grew suddenly from 2;07 onward. This is consistent with the language distribution in Anne's French sessions, showing that English appeared to take over in Anne's productions from the second half of the recording period. The count of verb types and tokens in Anne's French and English sessions also confirms this trend – overall, both children's number of verb types and tokens are higher in English than in French, but the number of different verbs used by Anne in French consistently drops throughout the period, whereas it stays stable in English. On the contrary, Sophie's use of verbs in English and in French is stable throughout the period. Measures of linguistic development and of language use for both children thus suggest a different pattern of language dominance for Sophie and for Anne. Sophie appears to be quite balanced in her use of French and English, whereas English appears to be Anne's stronger language. One of the consequences of these differences in dominance patterns is observable when

	Age	Words		Verbs		MLUw
		Types	Tokens	Types	Tokens	
Sophie	2;06.07	204	986	27	142	2.664
	2;07.05	255	1145	31	199	3.099
	2;08.14	229	1190	27	170	3.030
	2;09.12	218	1081	32	189	3.110
	2;10.16	228	1414	33	249	3.262
	3;00.05	144	448	20	84	2.922
	3;01.14	124	372	19	63	3.325
	3;02.20	199	943	26	151	3.193
	3;03.23	284	1775	37	264	4.923
	3;04.25	273	1228	40	223	3.536
	3;05.16	202	858	31	151	4.917
	3;06.31	174	875	28	150	3.566

Table 5.5: Mean Length of Utterances, number of word types and tokens and number of verb types and tokens in Sophie’s productions during the French sessions

	Age	Words		Verbs		MLUw
		Types	Tokens	Types	Tokens	
Sophie	2;06.07	235	1365	47	206	3.696
	2;07.05	309	1830	62	284	3.538
	2;08.14	251	1365	51	227	3.663
	2;09.12	249	1159	45	176	3.612
	2;10.16	240	1710	50	277	3.708
	2;11.06	309	1740	53	258	4.597
	3;01.14	309	1634	61	252	4.602
	3;02.24	238	1131	39	189	3.856
	3;03.24	293	1460	48	230	4.358
	3;04.25	179	603	28	107	4.143
	3;07.01	311	1920	49	291	4.921

Table 5.6: Mean Length of Utterances, number of word types and tokens and number of verb types and tokens in Sophie’s productions during the English sessions

comparing tense diversity in the productions of both children in French and in English, displayed in tables 5.9, 5.10, 5.11 and 5.12.

Anne’s use of tense forms in French dropped over the period as English gradually took over. Her use of tense forms is also much less diverse in French than in English. In English, Anne’s use of tenses tends to get closer to the distribution observed in her input and to get more diversified over the period. Sophie’s use of tense forms in French is more stable over the period and is closer to her input – the proportion of present tense forms for instance averages 77% in Sophie’s productions in French against 74% in the adult’s productions. However, Sophie tends to use fewer past tense forms in French than the rates observed in the adults’ productions, and she used more English tense forms during the French sessions

	Age	Words		Verbs		MLU _w
		Types	Tokens	Types	Tokens	
Anne	2;04.02	154	456	20	57	1.721
	2;05.06	125	277	18	54	1.753
	2;06.03	120	260	20	39	1.536
	2;06.24	125	405	14	36	1.509
	2;07.22	129	260	13	19	1.600
	2;08.26	96	267	10	37	1.576
	2;10.07	132	313	12	21	1.585
	2;11.05	61	117	6	8	1.487
	3;00.02	51	110	5	7	1.453
	3;00.23	68	178	6	8	1.348
	3;02.13	88	171	4	4	1.517

Table 5.7: Mean Length of Utterances, number of word types and tokens and number of verb types and tokens in Anne’s productions during the French sessions

	Age	Words		Verbs		MLU _w
		Types	Tokens	Types	Tokens	
Anne	2;06.26	178	707	35	124	1.962
	2;07.22	267	1134	47	186	2.939
	2;08.27	276	1629	60	237	3.434
	2;10.08	214	832	39	148	3.228
	2;11.06	244	1034	46	178	3.397
	3;00.03	244	1190	42	196	4.077
	3;00.24	205	805	33	128	3.771
	3;02.09	243	1084	41	200	3.908
	3;04.02	250	915	31	169	4.193

Table 5.8: Mean Length of Utterances, number of word types and tokens and number of verb types and tokens in Anne’s productions during the English sessions

than the adults in her corpus. In English, her use of tense forms over the period tends to get closer to the distribution observed in their input. Chapter 7 provides a close analysis of the use of past tenses by Anne and Sophie.

Finally, graph 5.5 provides a comparison between the MLU_w of the monolingual and bilingual children’s whose longitudinal productions were studied in this work. It shows that Anne’s MLU_w in French dropped over the period, and that it was consistently lower than the other children’s MLU_w. Sophie’s MLU_w is closer to that of both French monolingual children. Sophie and Anaé in particular have very close MLU_w at similar ages, especially during the sessions when they were 3;02 and 3;04.

Sophie	2;06.07	2;07.05	2;08.14	2;09.12	2;10.16	3;00.05	3;01.14	3;02.20	3;03.23	3;04.25	3;05.16	3;06.31	Adults
Present, imperative	73	76	84	88	78	49	50	75	85	81	90	92	75
<i>Passé composé</i>	1	3	2	4	3	4	1	5	4	7	1	1	9
<i>Imparfait</i>	2	1	0	0	0	1	1	0	0	0	0	0	3
Periph. Future	3	5	10	3	8	4	3	7	9	7	7	2	8
Others	1	3	1	1	1	1	0	1	1	0	0	0	4
English	20	13	3	5	11	41	46	12	1	5	2	4	1
Total	182	229	176	202	280	140	119	172	267	234	154	158	5945

Table 5.9: Percentage of tense forms used by Sophie during the French sessions (Token count is given on the last line, percentage of tense forms used by the adults is given in the last column)

Sophie	2;06.07	2;07.05	2;08.14	2;09.12	2;10.16	2;11.06	3;01.14	3;02.24	3;03.24	3;04.25	3;07.01	Adults
Present, imperative	93	64	75	78	83	80	81	75	85	79	84	74
Pres. prog.	1	11	7	13	2	5	4	1	6	2	4	4
Simple past	3	14	9	7	10	5	10	7	7	9	6	12
Pr/Pa perfect	0	4	0	0	1	1	2	1	0	0	0	2
Past prog.	0	1	0	1	0	0	1	0	0	0	0	1
Peri. Future	1	5	3	1	3	4	1	1	1	1	4	4
Others	0	1	5	0	0	3	1	0	1	3	2	2
French	1	0	2	0	1	2	0	15	0	7	0	2
Total	208	284	232	176	281	263	252	222	230	115	291	6238

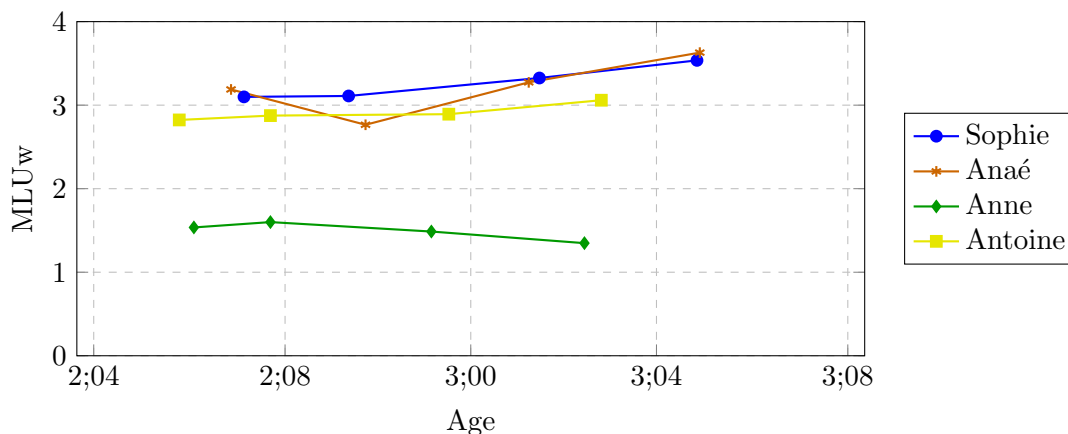
Table 5.10: Percentage of tense forms used by Sophie during the English sessions (Token count is given on the last line, percentage of tense forms used by the adults is given in the last column)

Anne	2;04.02	2;05.06	2;06.03	2;06.24	2;07.22	2;08.26	2;10.07	2;11.07	3;00.02	3;00.23	3;02.13	Adults
Present, imperative	63	46	41	30	16	16	7	5	4	4	1	78
<i>Passé composé</i>	0	8	6	5	0	2	3	2	0	1	0	7
<i>Imparfait</i>	3	0	1	1	0	0	0	0	0	0	0	4
Periph. Future	0	0	3	0	1	1	0	0	0	0	0	7
Others	5	1	1	2	2	2	0	0	1	1	0	3
English	30	44	48	62	80	80	88	93	96	95	99	0
Total	78	95	69	94	100	183	152	116	156	161	201	5064

Table 5.11: Percentage of tense forms used by Anne during the French sessions (Token count is given on the last line, percentage of tense forms used by the adults is given in the last column)

Anne	2;06.26	2;07.22	2;08.27	2;10.08	2;11.06	3;00.03	3;00.24	3;02.09	3;04.02	Adults
Present, imperative	70	71	82	60	79	66	71	66	73	73
Pres. prog.	17	10	6	10	10	7	4	7	1	6
Simple past	12	17	11	26	8	17	22	19	24	15
Pr./Pa. perfect	0	1	0	1	1	0	2	0	0	1
Past prog.	0	0	0	1	0	1	1	0	1	1
Peri. Future	0	0	0	1	3	4	1	3	1	3
Others	0	1	0	3	0	6	0	6	1	2
French	2	1	0	0	0	0	0	0	0	0
Total	126	187	237	148	178	196	128	200	169	3449

Table 5.12: Percentage of tense forms used by Anne during the English sessions (Token count is given on the last line, percentage of tense forms used by the adults is given in the last column)



Graph 5.5: Comparison between the MLUw in French of Sophie, Anaé, Anne and Antoine

5.3 The *Brunet* corpus: French-English bilingual narrative and spontaneous data

The longitudinal productions of Anaé, Antoine, Anne and Sophie were used to study the first stages of acquisition of tense-aspect morphology by French monolingual and French-English bilingual children and their use in spontaneous contexts. I also wished to explore later uses of tense-aspect morphology by French-English bilingual children, focusing in particular on the impact both of differences in the children's exposure to their two languages and of discursive context. I thus collected spontaneous and narrative productions from six children living either in Paris, France or in London, UK and raised in bilingual families. Two of the children were twin sisters, which explains that five families were recruited in total.

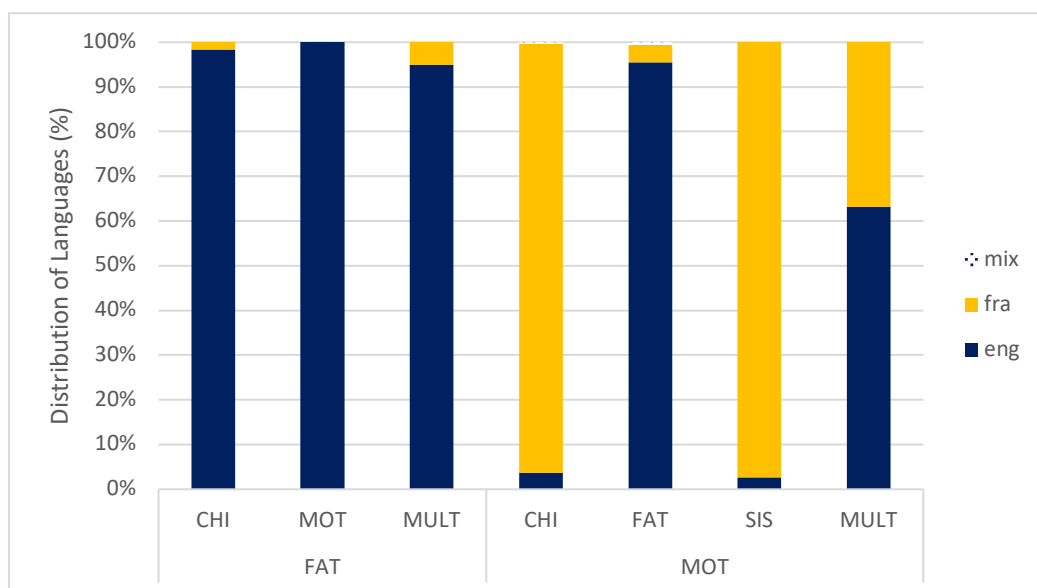
5.3.1 Description of the families and of the children’s exposure to their languages: parental questionnaires and family dinners

In order to protect the participants’ anonymity, all the participants were given pseudonyms. The following paragraphs relate the information gathered from parental questionnaires, complemented by the analysis of language distribution during the family dinners I recorded.

5.3.1.1 Lucas

Lucas was the oldest of the three children I recorded in London. He was born on October 14th, 2011. The first recording sessions took place between December 2017 and April 2018, and the second between April 2019 and June 2019. He was aged between 6;01 and 7;08 at the time of the recordings. His mother is French but had been working as a language teacher and living in London for thirteen years at the start of the study. She was raised monolingual in French but reported using French as much as English in her daily life. His father is British and was raised monolingual in English. He had little command over French at the time of recordings and reported using only English consistently on a daily basis. Lucas attended an English-speaking school at the time of recording. He was reported to read mostly in English and occasionally in French. Lucas’ parents did not report him having any extra-curricular activities in French. His input was thus skewed towards English, as his mother was the sole provider of French at the time of the recordings. Lucas was a single child at the beginning of the recordings, but his little sister was born at the end of the study, in the spring of 2019. In the parental questionnaire, Lucas’ parents reported following the one-parent one-language strategy with their child. This was partly confirmed by an analysis of the language distribution during the family meals I recorded – although the parents occasionally switched to their second language to address their child, both used mostly their native language to address their child. This is illustrated by graph 5.6, which displays the use of languages by Lucas’ parents, depending on their addressee. It shows that Lucas’ father used English more than 95% of the time (out of 266 utterances, only 3 were in French). His use of French was moreover restricted to a few minutes during the second dinner, when he talked with his wife about his linguistic abilities in French. To prove that he could speak the language, he produced two utterances addressed to his son: “*bois*” and “*bois de l’eau*”. He produced his third utterance in French at the end of the same recording, when he joined his wife and son in waving to the camera and said “*au-revoir*”.

Lucas’ mother used French predominantly to address her children – out of 330 utterances addressed to her children, only 13 were in English and one mixed French and English (around 4% in total). Her use of English with her son was mostly linked to the presence of the father. Because the father did not speak French, Lucas’ mother used En-



Graph 5.6: Adults' language use during the two family meals (Lucas); Note: in graphs 5.6 to 5.14, the upper tier is the addressee and the lower tier the speaker

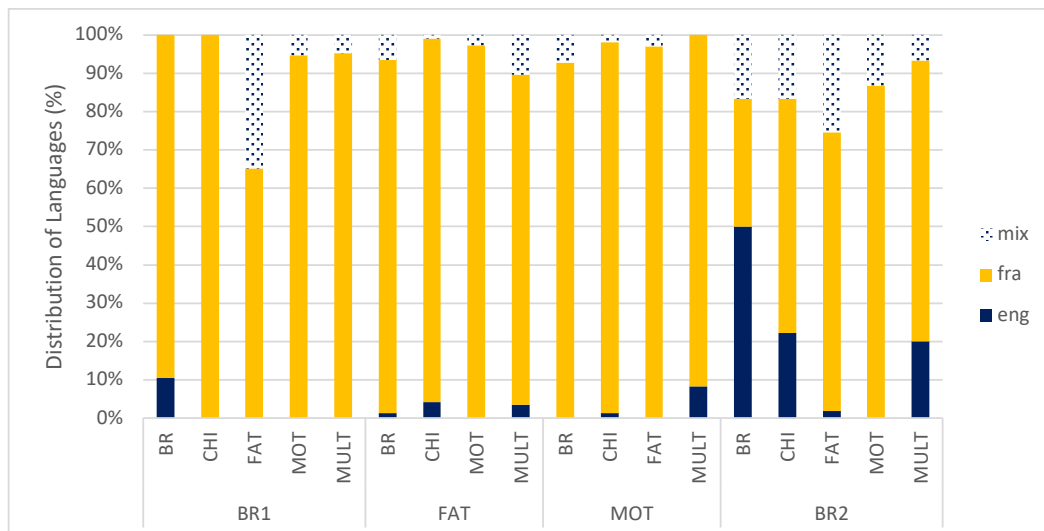
glish with her son mostly when she wished to include her husband in the conversation. She also punctually used English to correct her son's verbal productions in English. During the first dinner for instance, Lucas prayed in English and had trouble remembering the words leading his mother to provide him with the right phrase in English. Finally, both adults used English predominantly in multiparty interactions – this is also interpreted as a consequence of the father not knowing French.

5.3.1.2 Arthur

Arthur also lived in London at the time of the recordings where he was born on May 24, 2012. The first recording sessions took place between December 2017 and March 2018, and the second between April 2019 and June 2019. He was aged between 5;06 and 7;00 during the recording period. Arthur has two older brothers aged respectively nine and seven years old at the beginning of the study. Both of his parents hold post-graduate degrees. His mother was re-training at the time of the recordings to work in academia and his father worked as a quantitative analyst. Both parents were born and spent the first 20 years of their lives in France, but had been living in London for 15 years at the beginning of the study. The father reported having learned Moroccan Arabic from two years old, when he visited family or went on holidays in Morocco, but also reported not having passed the language on to his children. Arthur attended an English monolingual school where he was not exposed to French. However, he also attended a Français Langue Maternelle (FLAM) school for about an hour and a half weekly. At the beginning of the study, the parents reported that their children spent around sixteen to twenty hours weekly with an English

nanny who did not know French. They identified French as the main language they used with their children, although they readily switched to English in the presence of English-speaking people. Arthur engaged in reading activities with his parents in both languages at the beginning of the period. He started to learn to read between the first and the second recording sessions, and read mostly in English (his parents reported that around 25% of his reading activities were in French). The main changes reported in the two parental questionnaires filled out by the parents between 2017 and 2019 was the proportion of each language spoken at home. In 2017 Arthur's parents reported that the family used French 80% of the time at home and English the remaining 20%. In 2019, the parents reported the reverse proportions – English was spoken at home 80% of the time and French 20%. This was explained by the parents' focus when filling out the questionnaires. The mother, who was my main interlocutor, reported that when she had filled out the first questionnaire she had done so from her perspective – she uses mostly French with her children. When she filled out the second questionnaire, she reported that although she and her husband spoke French to their children, the children spoke English among themselves and thus used English much more than they did French. The analysis of the family meals I recorded suggests that French was still the main language spoken by the family when they were all together, as illustrated by graph 5.7. It also confirmed to a certain extent that the children used English mostly to address each other. Utterances addressed to multiple participants were predominantly in French.

The choice of languages was closely related to the topic of the conversation. Both Arthur's parents and brothers used mixed utterances and utterances in English when talking about topics either relating to school activities that took place in English, to movies that they had watched in English, or to places that they had been to in English-speaking countries. This is illustrated by extract 5.3.1, where Arthur's brother is talking with his parents about table tennis, a sport that he plays at school.



Graph 5.7: Adults' and siblings' language use during the two family meals recorded (Arthur)

Extract 5.3.1.

Arthur – Lunch 1

BR1: et tu sais à l'école euh notre euh table elle est trop petite [>]. (*and the table we play on at school is too small*)

MOT: <ouais ouais> [<]. (*right, yes*)

FAT: mais vous êtes très très nombreux comment vous faites pour vous organiser ? (*but there are so many of you, how do you manage?*)

BR1: euh cinq cinq. (*five five.*)

FAT: oui mais à cinq [>] +/- (*right but five.*)

MOT: non mais vous voulez jouer avec le jeu à king@s^a [<]. (*but don't you play the king@s game?*)

BR1: non pas toujours. (*not always.*)

MOT: pas toujours explique le jeu du king@s (.) à papa [>]. (*not always well explain the king@ game to dad.*)

BR1: <king> [<] king's court.

BR1: en fait c'est (il) y a le roi [>] +/- (*well the king is there.*)

MOT: king@s quoi king@s ? (*king@s what king@s?*)

BR1: [- eng] court king's court.

MOT: okay.

BR1: alors en fait là (il) y a le king@s là (il) y a le challenger@s. (*so the king@s is there and the challenger@s is there.*)

FAT: 0.

BR1: alors là (il) y a le challenger@s là (il) y a le king@s. (*so the king@s is there and the challenger@s is there.*)

BR1: le king@s c'est la personne qui a gagné le xxx. (*the king@s is the one who won the xxx.*)

BR1: le king@s il a two@s lives@s [>]. (*the king@s has two@s lives@s.*)

^aThe code @s was used to signal French or English words used within utterances in the other language – here, it signals the word “king” as being in English within an utterance in French.

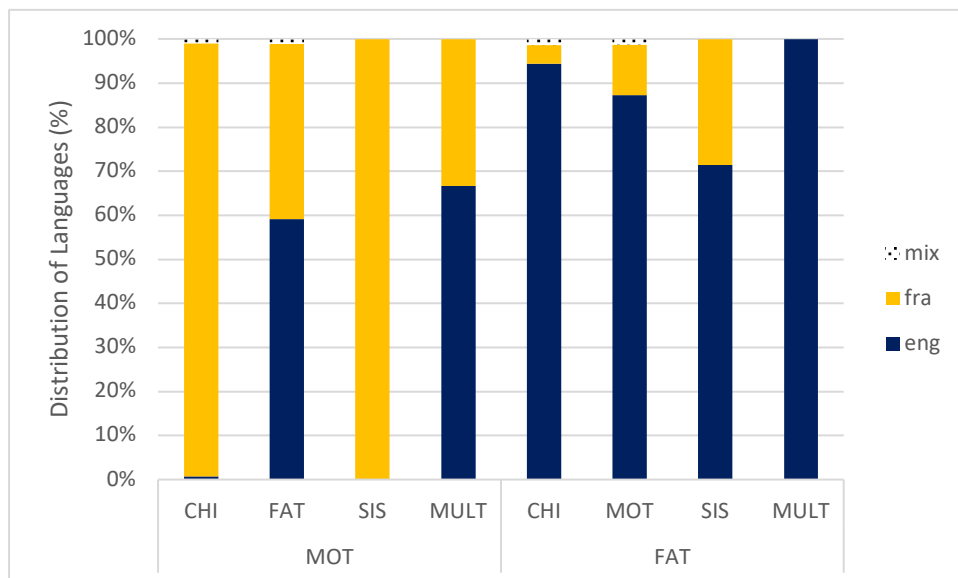
The main language of the interaction is originally French, as illustrated by the first utterances of the extract. The mother initiates a switch to English when she mentions a game that the children play at school. Because they know the game’s name only in English – or perhaps because it has no equivalent in French – the mother herself resorts to English when she asks about “*le jeu du king@s*” (*the king’s game*), using a mixed utterance. Interestingly, although the child knows the word for “king” in French (as he starts explaining the rules by saying “*en fait ici il y a le roi*” (*well the king is there*), he goes on by using the English word, producing mixed utterances until the end of the extract. This illustrates the complementarity principle mentioned in chapter 1 (Grosjean, 1985), which describes the way bilingual speakers learn their two languages by participating in different activities with different people and with different communicative goals, and how each of their languages will subsequently be favored to talk about different fields of life. Here, the child favors English to discuss a game that he learned in that language. All the participants moreover used French predominantly in multiparty interactions – French appeared to be the main language of the family, although they occasionally used English when discussing a topic or theme covered in English.

5.3.1.3 Oliver

Oliver is the youngest of the three children I recruited in London, UK. He was born on January 3rd, 2014. The first recording sessions took place between December 2017 and April 2018, and the second between April 2019 and June 2019. He was thus aged between 3;11 and 5;05 during the recording sessions. His father was born in the UK and raised monolingual in English, however he lived a year in Paris, France at the age of twenty-five and thus had some command of French, although he reported using English predominantly in his daily life. He worked as an architect in London. Oliver’s mother is a French native who had been living in London for twelve years at the start of the study. At the time, she worked as an applied arts teacher in an English-speaking school in London. She reported speaking French predominantly to her children – although the parents did not call it by name, the description of their language practices resembled the

one parent-one language strategy as both of them reported using exclusively their native language with their children. Oliver attended an English-speaking school but spent about an hour and a half a week in a French club, and watched movies in French. Apart from that, his mother was his sole provider of French except during the summer holidays when the family usually spent a few weeks in France. Reading activities took place in French or in English at home, but solely in English in school. Oliver has a younger sister who started producing her first words at the end of the recording period. In the second questionnaire on language practices I asked them to fill, the mother reported that her children spoke French with one another.

Graph 5.8 displays the languages used by the adults depending on whom they addressed. The analysis of language choices during the two family meals I recorded confirmed on the whole the information reported in the parental questionnaires. Oliver's father mostly used English to address his child (out of 71 utterances addressed to his child, 67 were in English), while his mother used mostly French with her son (out of 440 utterances addressed to her son, 434 were in French). English was the main language used by both adults in utterances addressed to several addressees. This is consistent with the parents' language use reports – the mother reported using English in her daily life outside of home, while the father reported that although he had some command of French, he was more inclined to use English in his everyday life. The mother's English was thus stronger than the father's French, and was thus the language used by the family in multiparty interactions.



Graph 5.8: Adults' language use during the two family meals recorded (Oliver)

Both parents occasionally used the other language, which appeared to be triggered by the situation. Oliver's father used French in two situations: to discuss future vacations in

France and to correct his child's manners, as illustrated in extract 5.3.2. His use of French was thus mostly contextual and guided by the language and topic choices of his son.

Extract 5.3.2.

Oliver – Dinner 2

CHI: [- fra] plus de ça. (*more of this.*)

MOT: plus de sauce [///] plus d'aioli ? (*more sauce [///] more aioli?*)

CHI: [- fra] oui. (*yes.*)

FAT: [- fra] s'il te plaît. (*please.*)

MOT: oui s'il te plaît. (*yes please.*)

CHI: [- fra] oui s'il te plaît. (*yes please.*)

The mother's choice of languages was also closely linked to the topics discussed. This is illustrated in extract 5.3.3, where the mother uses English school terminology ("year one") that has no exact equivalent in French. Her son also answers with a mixed utterance, using the title "miss" and the word "week". This is once more characteristic of the complementarity principle – Oliver's use of English words when discussing the topic of school can be explained by the fact that he attends an English school and has thus acquired terms related to school in English rather than in French.

Extract 5.3.3.

Oliver – Dinner 2

MOT: [- mix] et est+ce que tu sais qui ça sera ta nouvelle maitresse en [/] en year@s one@s? (*and do you know who your new teacher will be in year one?*)

CHI: 0.

MOT: on te l'a dit ou pas ? (*have you been told or not?*)

MOT: mange bien s'il te plaît. (*watch the way you eat please.*)

CHI: [- mix] je crois miss@s NAME@s. (*I think miss@s NAME@s.*)

MOT: tu l'as déjà rencontrée ? (*have you met her yet?*)

CHI: oui. (*yes.*)

MOT: gentille ? (*nice?*)

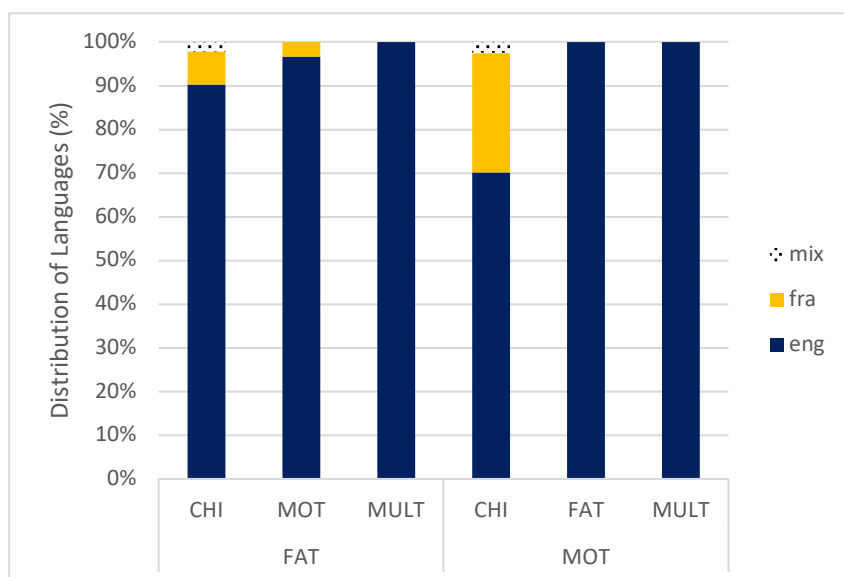
CHI: 0.

CHI: [- mix] elle fait le yyy week@s. (*she teaches during the yyy week.*)

5.3.1.4 Julian

Julian was the oldest child I recruited in Paris, France. He was born on October 16, 2012. The first recording sessions took place between November 2017 and April 2018, and the second in August 2019. He was thus aged 5;10 at the beginning of the study and 6;09 during the last recording sessions. His father was born in Scotland and raised monolingual in English. His mother was born in Paris but spent the first six years of her life in Beijing where she learned English, a language she reported using as much as French in her daily life. Since their child's birth, the parents had moved to a different country on three occasions – the first years of his life were spent in the Congo, and when they accepted to take part in the study they had been back for six months from Norway, where they had spent two years. Julian attended preschool in Norway where he learned Norwegian which he reportedly had started to forget by the beginning of the study, having no opportunity to speak it in Paris. At the beginning of the study, Julian attended a bilingual school. There, he was reported to be exposed to the same amount of French and English but was signed up in the French reading group, which meant that reading activities at school took place mostly in French. Halfway through the recording period, the family moved from Paris to the Sultanate of Oman. From then on, English became the language mostly spoken outside of the home. In the second questionnaire I asked the families to fill out, the mother reported that her son attended an American school in Oman and that they lived within an English-speaking community. Even though the family had made a few French-speaking friends, all the children attended the American school and English was the main language they used among themselves. To try to maintain his French input, Julian's parents made sure he attended one hour of French classes per week. They reported that his English had out-developed his French in the year since they had moved there; in particular, Julian was reported to read solely in English during the second half of the recording period. Unfortunately, the family's move prevented me from recording a second family dinner – when I recorded Julian's second narrative productions, only the child and mother had come back to France for the summer while the father stayed in Oman to work. The family did not report following strict guidelines when it came to choosing which language they would speak with their child. In practice, because the father only spoke basic French, the family's main language at home was English. This was confirmed by the analysis of the adults' language choices during the two family dinners recorded. During these dinners, over 90% of the father's utterances were in English (115/125) as well as over 75% of the mother's utterances (165/213). Both adults used English predominantly to address each other and their child, as well as in multiparty interactions. Around 30% of the mother's utterances addressed to her child were in French, as illustrated by graph 5.9.

Over half of the parents' utterances addressed to their child in French were instructions linked to table manners, once again suggesting that language choices were closely tied to topic or in this case communicative functions (Grosjean, 1985). It is also likely that the



Graph 5.9: Adults' language use during the family meal recorded (Julian)

high proportion of instructions on table manners within the father's utterances in French is linked to his basic command of French – he gave his son one-word instructions but switched to English to develop, as illustrated in extract 5.3.4 below.

Extract 5.3.4.

Julian – Dinner 1

CHI: daddy daddy look look it (i)s trees.

FAT: [-fra] julian assis. (*julian sit down.*)

CHI: but daddy look.

FAT: [-fra] assis. (*sit down.*)

CHI: yyy.

FAT: I thought you were feeling sick.

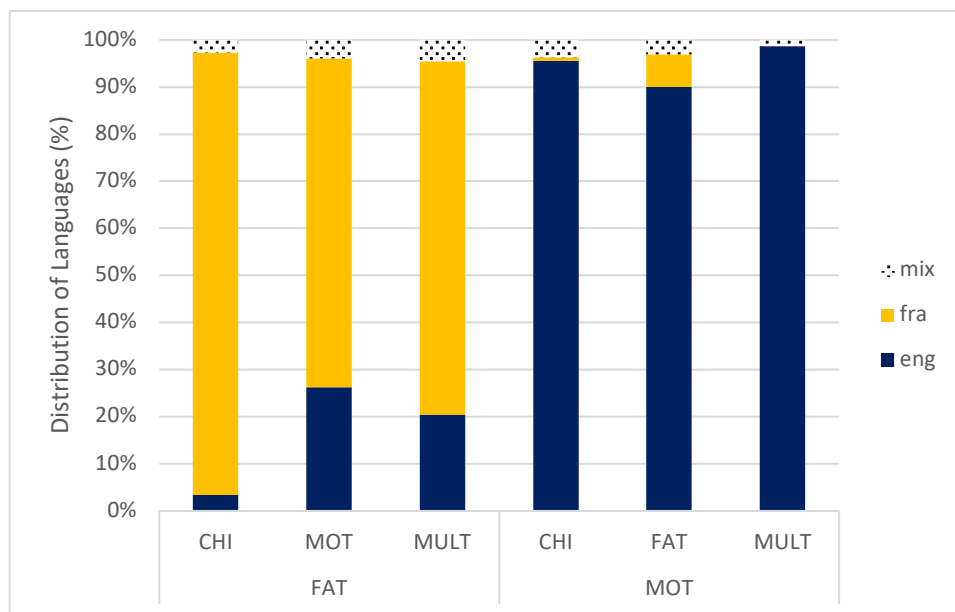
FAT: I have a surprise for you maybe I will keep it.

MOT: [-fra] okay assis. (*okay sit down.*)

5.3.1.5 Emma and Charlotte

Emma and Charlotte are twin sisters who lived in Paris at the time of recording. They are the youngest participants in the study, as they were born on November 18, 2014. I recorded the first family dinner November 2017 but waited until October 2018 to record the children's narrative productions for fear that the children would be too young to

participate in such a demanding task in their two languages. The first narrative sessions took place between October and December 2018, and the second between September 2019 and November 2019. Their mother is an English native who had been living in Paris for around ten years at the beginning of the study. She was raised monolingual but reported having learned French and German as an adult. She held a postgraduate degree and worked as a business development manager at the time of the study. Emma and Charlotte's father was born and raised in France. He studied in Newcastle, England and on the whole spent nine years in England before settling in Paris. He holds a graduate degree and worked as a civil engineer at the time of the recording. He reported using and being exposed to French and English roughly at the same rates in his daily life. The mother, an English native in a francophone country reported using English exclusively with her children except in the presence of people who did not speak the language. The father reported being less strict in his choice of languages, occasionally switching between French and English. The children were not exposed to English outside of home, except for a few weeks during the holidays when they went to visit their grandparents in England. The parents considered both children to be more proficient in French since they had started attending a French monolingual school.



Graph 5.10: Adults' language use during the two family meals recorded (Emma and Charlotte)

Graph 5.10 displays the distribution of languages in the adults' productions during the family meals I recorded. It confirmed on the whole what the parents had indicated in the parental questionnaires. Emma and Charlotte's mother used mostly English to address her children (96% of the 584 utterances addressed to her children were in English), while their father mostly spoke French to them (92% of the 453 utterances he addressed to his

children were in French). 70 of the father’s 633 utterances were in English, around one third of which were addressed to his children, while only 15 of the mother’s 749 utterances were in French, a fourth of which were addressed to her children. The mother’s mixed utterances again show that bilingual families’ languages tend to be mapped onto different domains of their lives. Since the two children attended a French speaking school, the mother tended to use French terminology, often to refer to activities, personnel or school grade levels which do not have exact equivalents in English. This is illustrated in extract 5.3.5 in which the child is telling her mother that she does not want to stay in school for the “*goûter*”, a late afternoon snack served to children in France, which schools organize for parents who are working or busy. There is no equivalent for the term in English, and it is therefore used in French by both mother and child.

Extract 5.3.5.

Charlotte – Dinner two

MOT: okay well don’t worry about the goûter@s.

MOT: don’t worry about the goûter@s if I am finished I will come and get you (.) uh?

MOT: but I know NAME has been missing you.

MOT: she will be all sad because she hasn’t seen you for a few days.

CHI1: [- eng] I don’t want to go [=! pleure].

MOT: what is the matter ?

CHI1: [- mix] I don’t want to go to the goûter@s d’école@s.

Finally, English was the language favored by the mother to address multiple interlocutors. The father used mostly French in multiparty interactions, but used English in around 20% of the utterances coded as addressed to multiple interlocutors – there was more variability in his choice of languages in multiparty interactions than in child-directed speech, which was linked to the fact that the father frequently aligned with his wife’s use of English.

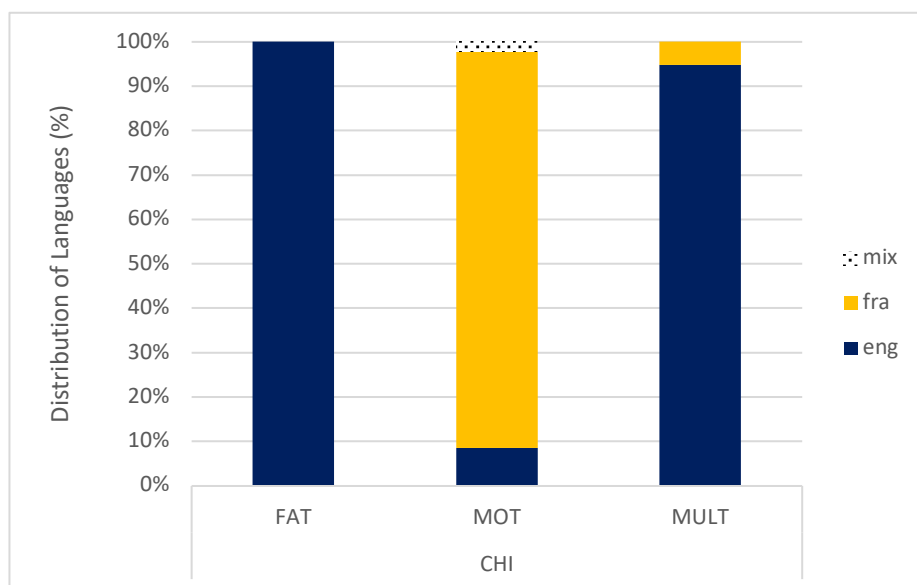
5.3.2 Children’s language use: close analysis of the children’s language choices in the spontaneous and semi-guided settings

The assessment of language dominance for the children of the *Brunet* corpus relies in part on the description of their exposure to French and English presented in the previous section. However, establishing language dominance also requires an assessment of the children’s use of their languages, which was conducted based on the analysis of the family

dinners (i.e. in a spontaneous setting) and of the children's narrative productions (i.e. in a semi-guided setting). As described earlier, the narrative sessions recorded with the children of the *Brunet* corpus were meant to be monolingual. The children's language choices in each session, and in particular the proportion of use of the language which was not the session's main language was used to assess language dominance. The results of the measures of linguistic development presented in the next section were also used as complementary tools to determine the children's language dominance patterns.

5.3.2.1 Lucas

Lucas produced 279 utterances during the two family dinners I recorded. Graph 5.11 gives the proportion of English, French and mixed utterances depending on the child's addressee. It shows that his choice of languages was highly dependent upon the addressee – Lucas produced 127 utterances in French, out of which 126 were addressed to his mother. Out of the 150 utterances he produced in English, 120 were addressed to his father.



Graph 5.11: Lucas' language use during the two family meals recorded

The distribution of languages observed in the Lucas' spontaneous productions is largely similar to that of his parents – Lucas and his father addressed each other in English more than 95% of the time, while Lucas and his mother addressed each other in French more than 90% of the time. Moreover, the previous section showed that Lucas' parents tended to favor English in multiparty interactions. Lucas reproduced this linguistic behavior, adjusting his language choice to mirror that of his interlocutors (Genesee et al., 1996). Lucas produced 2 mixed utterances (out of 279) which both aimed at filling a lexical gap in French. Although he used his languages in roughly the same proportions, this may

suggest a dominance in English (Genesee et al., 1995). Lucas produced 287 utterances during the two narrative sessions recorded in English. Only one was a mixed utterance, which Lucas produced in the interview setting when he started discussing his proficiency in French and English, and the impact of English, his dominant language, on his productions in French. In extract 5.3.6, Lucas thus used French to quote himself in French when he was explaining to the interviewer what he found difficult in learning two languages, namely the influence of English, his dominant language, on his French productions.

Extract 5.3.6.

Lucas – Second narrative session (N2) in English – interview setting

CHI: like sometimes in English I say my name is called and my mom has to correct me like my name is.

INT: that is okay <that is> [///] you are learning [>].

CHI: and [<].

CHI: [- mix] and sometimes in French I said je@s suis@s sept@s ans@s.

Lucas's use of languages was slightly different in the narrative sessions in French. It was also different in the first session and the second. During the first session, Lucas used 6 mixed utterances out of 73, half during the narrative task based on the wordless picture book and half during the interview. He used English during the first task to fill lexical gaps in French, as in extract 5.3.7.

Extract 5.3.7.

Lucas – First narrative session (N1) in French – picture book setting

CHI: et après le chien a tombé. (*and then the dog fell.*)

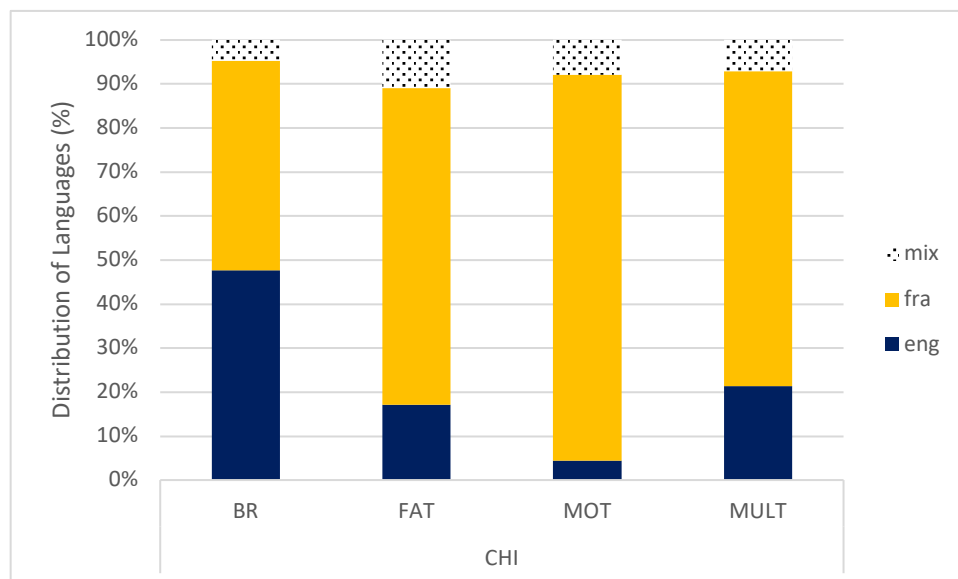
CHI: et après il a cassé le jar@s. (*and then he broke the jar.*)

Lucas also used English in the interview setting in both recording sessions. During the interview, he produced mixed utterances to explicitly ask for a translation equivalent when retelling the story of a movie he mentioned having seen with his father. He also used English when discussing school activities, which he conducts in English as he attended an English speaking school at the time of recording. Once again, it appears that the topics mentioned influence the choice of languages by the bilingual child – domains which are

usually experienced in English (in this case, a movie watched in English and school) will be likely to be covered in English (Grosjean, 2016). Lucas's choice of languages during the narrative sessions suggests that he is dominant in English, as there were more instances of translanguaging during the sessions in French than during the sessions in English (Genesee et al., 1995).

5.3.2.2 Arthur

Arthur produced 188 utterances during the two family meals I recorded out of which 144 (77%) were in French, 28 (15%) were in English and 16 were mixed (8%). The 28 utterances he produced in English occurred during the second family meal, and were used mostly to address his brother or his father (21/28). As mentioned earlier, Arthur's parents had reported that their children used mostly English with one another, which was partly confirmed as more than half of the utterances directly addressed to his brothers were either in English or mixed. As shown in graph 5.12, 72% of Arthur's utterances addressed to his father were in French, as well as 86% of those addressed to his mother.



Graph 5.12: Arthur's language use during the two family meals recorded

Arthur had a clear tendency to use English to talk about movie characters (4/28) or playful activities – either to discuss games or initiate them (17/28). This is consistent with the information gathered from the parental questionnaires, which identified English as the language the children used when playing with one another. In multiparty interactions, Arthur favored French over English, which confirmed that French was the main language used by the family members to interact with one another. In the narrative settings, Arthur's use of his two languages was fairly balanced – he used English in only one mixed

utterance (out of 371 utterances) produced during the second recording session in French (see extract 5.3.8).

Extract 5.3.8.

Arthur – Second narrative session (N2) in French – interview setting

CHI: et après alex a venu et il a fait peur. (*and then alex came and scared him.*)

INT: <ah oui> [/] ah oui les lézards il faut pas bouger hein. (*right you shouldn't move with lizards.*)

INT: <ça va> [/] ça va super vite les lézards. (*they move so fast lizards.*)

CHI: oui. (*yes.*)

INT: quand tu leur fais peur +/. (*when you scare them.*)

CHI: une fois j'ai attrapé un à turkey@s. (*I caught one once in turkey.*)

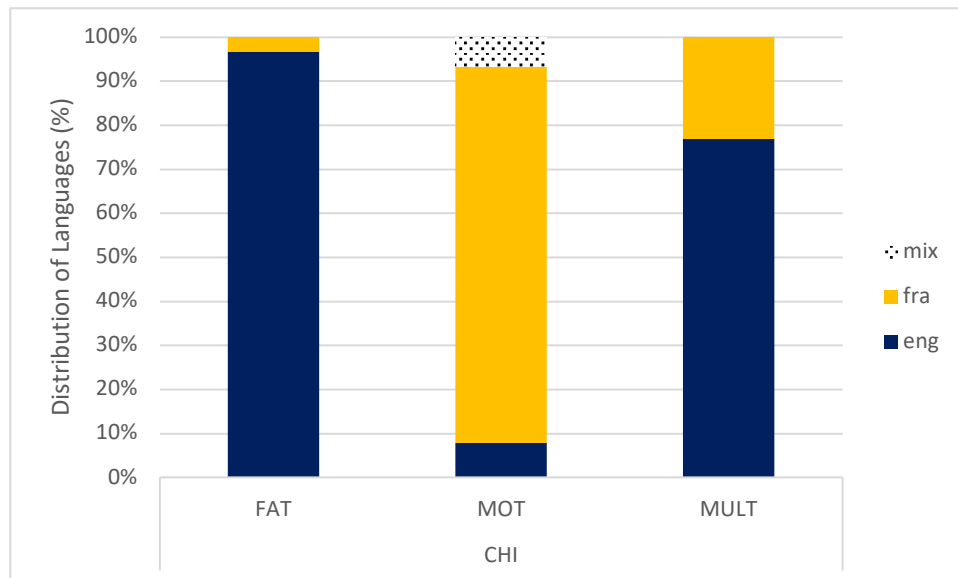
INT: t'as attrapé +... (*you caught...*)

CHI: ++ un à turkey@s. (*one in turkey.*)

In the interview setting, I asked him to tell me about his holidays and he started explaining how he and his brothers attempted to catch lizards during their last vacation in Morocco. He went on telling me how he had succeeded in catching one only once during a previous trip to Turkey. The French equivalent of “Turkey” is “*Turquie*” – the two terms differ in their phonetic realizations (the French term is pronounced /tyʁki/ and the English term /tɜːrki/), and Arthur pronounced it within the English phonological system. There were no mixed utterances or utterances in French among the 347 utterances he produced during the English session. The very low proportion of mixed utterances and the absence of utterances produced in the language that was not the session’s main language in his narrative productions suggest that Arthur was rather balanced in his use of his languages for narrative purposes.

5.3.2.3 Oliver

Oliver produced 209 utterances during the two family meals I recorded. Most of the utterances he produced were addressed to his mother and in French (146/209). He addressed only 31 utterances directly to his father, most of which were in English (only 1/29 was in French, when he answered “*oui*” to his father asking him whether he wanted a glass of water). The low number of utterances addressed to his father is mostly explained by the fact that his father cared for his baby sister during much of the two dinners, while his mother was in charge of overseeing the dinner.



Graph 5.13: Oliver's language use during the two family meals recorded

On the whole, Oliver's language choices mirrored those of his parents – he addressed his father in English over 95% of the time, and his mother in French around 86% of the time. Moreover, the previous section showed that Oliver's parents used predominantly English in multiparty interactions, a tendency reflected in Oliver's output. Oliver also had a clear tendency to use English and mixed utterances when talking about domains he experienced in English or that were English-specific – during the family dinners, these were mostly school and food, as illustrated in extract 5.3.3, where both Oliver and his mother use the English term “rice pudding” within utterances in French.

Extract 5.3.9.

Oliver – Dinner 2

MOT: alors il y a ça à manger encore. (*you still have to eat this.*)

MOT: <il y a un yaourt ou il y a un rice+pudding@s> [<]. (*there's yoghurt or rice pudding.*)

CHI: moi veux [/] moi [/] moi veux manger rice+pudding@s. (*I want rice pudding.*)

MOT: okay.

Oliver's choice of languages during the family dinners appeared closely linked to his addressee and to the topics mentioned, however neither English nor French were used more consistently than the other. During the narrative sessions however, his use of languages

was skewed towards English. Indeed, he used only English during the recording sessions in English, but switched to English occasionally during the sessions in French – out of the 352 utterances he produced during the French sessions, 14 were in English or mixed. Most of the utterances he produced in English were used during the spontaneous interview (11/13), when the child was asked to talk about school which he attended in English. The remaining two utterances were one-word utterances with which the child described the character of the cartoon he was asked to watch and retell by using the word “woodpecker”, whose translation equivalent in French he did not know. The distribution of languages during the narrative sessions suggest that Oliver spoke English more consistently than French, especially when the topics discussed belonged to domains of life which he experienced in English such as school.

5.3.2.4 Julian

Julian’s use of languages showed a preference for English during the family meal I recorded while the family was still living in Paris. Out of the 154 utterances the child produced, 139 were in English (90%). Julian thus used English, French and mixed utterances in similar proportions as his parents did (80% of the utterances produced by his mother and 92% of those produced by his father were in English). English was also the main language he used to address multiple interlocutors, as was the case in his input – his parents used French mostly in child-directed-speech. Switches to French were usually initiated by the mother, as illustrated in extract 5.3.10.

Extract 5.3.10.

Julian – Dinner 2

MOT: what is your favorite dessert?

MOT: [-fra] c’est quoi ton dessert préféré ? (*what is your favorite dessert?*)

CHI: [-fra] fraise ! (*strawberries*)

MOT: [-fra] des [/] des fraises [>]. (*strawberries.*)

CHI: <xxx in corsica> [<].

MOT: [- mix] allez@cs get up.

CHI: yes but that is the dessert in corsica [>].

MOT: <c’est quoi> [<] +//. (*what is it?*)

MOT: yeah uh we do not really eat strawberries in corsica.

MOT: yes.

MOT: there is strawberries in corsica [>].

FAT: <do you> [<] +//.

MOT: actually last year we had xxx.

CHI: last year [>] ?
 MOT: <alors c'est quoi> ton dessert préféré> [<] ? (*so what is your favorite dessert?*)
 FAT: do you want the whole one now [<]?
 FAT: or half?
 CHI: [-fra] dessert [/] les desserts xxx au chocolat. (*chocolate desserts.*)
 FAT: do you want a whole one now or half [>]?
 MOT: [-fra] <quand on va> à la boulangerie, qu'est+ce+que c'est que tu veux toujours [<]? (*what do you always want when we go to the bakery?*)
 CHI: [-fra] toujours ? (*always?*)
 CHI: [-fra] des éclairs au chocolat. (*chocolate éclairs.*)

At the beginning of the extract, the mother reformulates in French a question she originally asked in English (“what is your favorite dessert?” / “*c'est quoi ton dessert préféré ?*”) and the child aligns with this language choice, answering in French (“*fraises*”). He switches back to English upon expanding on his answer (“yes but that is the dessert in corsica”), then switches back to French after his mother asks her question in French again. Despite the predominant use of English during the family dinner I recorded, extract 5.3.10 illustrates how Julian was able to switch between his languages to align with his interlocutor’s language choices.

During the sessions in French, 98% of the 415 utterances he produced were in French while during the sessions in English 97% of the 676 utterances he produced were in English. In the first recording period, he produced 134 utterances during the narrative session in English, all of which were in English. At the same period during the French session, he produced 129 utterances, only one of which was in English. He switched to English during the interview when relating a fire drill which took place in the bilingual school he attended at the time, to report the evacuation announcement that was made in English. During the second recording period a year later, Julian switched to English during the French session when talking about his experience in Oman, mostly to give the names of places. The English narrative session took place after Julian had come back from holidays with his grandparents, and he tended to include French words in English utterances when asked to talk about his vacation, as illustrated in 5.3.11.

Extract 5.3.11.

Julian – Second narrative session (N2) in English – interview setting

CHI: we stayed three hours at the hospital.

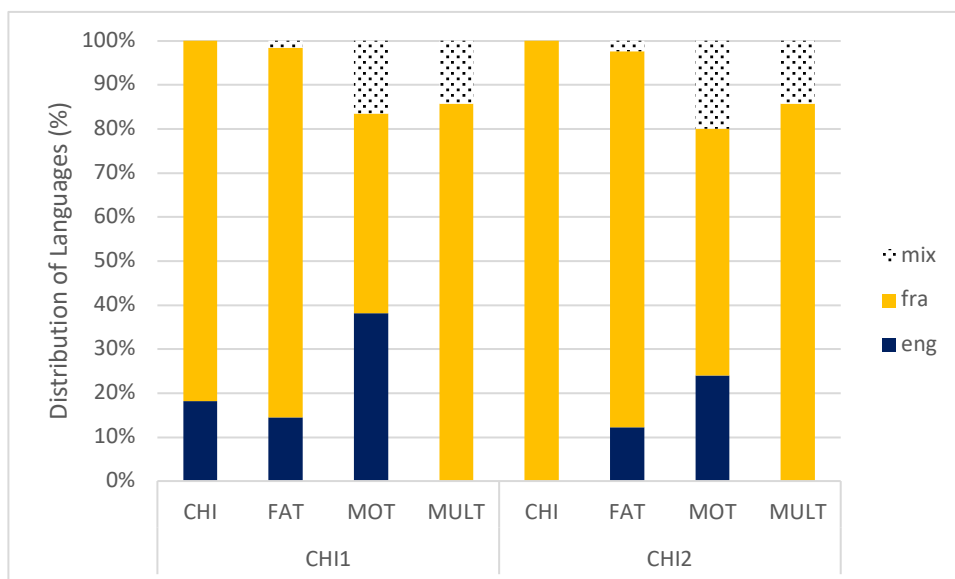
INT: three hours?
 CHI: no it was at the you know urgences@s [/] urgences@s.
 INT: mhmh.
 CHI: so I saw actually there was somebody that cut his tongue at the pool.
 INT: ouch.
 CHI: yes.
 CHI: and also so I saw somebody with menottes@s you know like +...
 CHI: he did not yyy but I saw him go away because he was already [/] already here when we were here.
 CHI: so we could not even go see <the house of ajaccio> [///] the house of napoleon.
 CHI: because we were wanted to go there.
 CHI: because we went to a resto@s.
 CHI: <and the> [/] and there was [///] and he said that there were no pistachios.
 CHI: but five minutes after he said actually there is pistachios.

Once again, Julian’s use of French words in this extract is consistent with the complementarity principle in that it illustrates how language is acquired in specific situations, with specific interlocutors and communicative functions. Thus, an event experienced in one of the bilingual speaker’s languages will lead to specific terms linked to this event being acquired and used in this language. Julian used the words “*urgences*” (*emergency room*), “*menottes*” (*handcuffs*) and “*resto*” (an abbreviation of “*restaurant*” often used in France) in French because he was asked to relate an episode which happened in French.

5.3.2.5 Emma and Charlotte

Emma and Charlotte mostly used French utterances during the family dinners – 75% of the utterances produced by Charlotte (CHI1) and 73% of the utterances produced by Emma (CHI2) were in French. Moreover, although both children used French frequently with all addressees, the English and mixed utterances Emma and Charlotte produced were mostly addressed either to each other or to their mother (respectively 46/55 and 71/90 of the children’s utterances in English and 10/12 and 28/38 of the children’s mixed utterances were addressed to their mother). This is illustrated by graph 5.14.

The children’s choice of languages mirrors their parents’ use of languages illustrated by graph 5.10, which showed that the mother mostly used English to address her children while their father mostly used French. The main difference between the children’s input and their output lies in their choice of languages to address multiple interlocutors –



Graph 5.14: Emma and Charlotte's language use during the two family meals recorded

whereas the children's mother used mostly English in multiparty interactions, both children used mostly French and mixed utterances. The children's language choices were not systematically explainable by an analysis of the topics discussed, as the children used both French and English to talk about the same domains. Both children used French more consistently than English both during the family meals and during the narrative sessions, suggesting that they were dominant in French at the time of recording. During the first recording session when both children were 3;11, only Emma participated in the narrative session – Charlotte showed signs of fatigue and did not take part in the narrative tasks. Emma moreover did not participate in the narrative tasks in English during the first recording session, supporting the interpretation that she was dominant in French at the time. During the first French session, she produced only 54 utterances, a low number compared to the other children of the corpus and to the session in which she participated a year later, when she produced 172 utterances in French. During the second recording session both children participated in the narrative tasks in both languages. Both also produced more utterances during the narrative sessions in French: Emma produced 172 utterances during the French narrative sessions and 107 during the English sessions, out of which 10 were either in French or mixed utterances (around 9%). Charlotte produced 159 utterances during the French narrative session and 86 during the narrative session in English, out of which 4 were mixed or French utterances. Both children used French during the English sessions much more during the narrative tasks than during the spontaneous interview, mostly to fill lexical gaps in English as illustrated by extract 5.3.12.

Extract 5.3.12.

Emma – Second narrative session (N2) in English – picture book setting

CHI: <the dog> [/] the dog sleeping like that.

CHI: [- mix] and the [/] the grenouille@s wanted to [/] to [/] to [/] to [/] to [///] to do what +..?

CHI: +, to wake him up.

CHI: and the turt- [///] the dog wanted not wake him up.

INT: okay.

CHI: [- mix] <and the> [/] and the grenouille@s now is upset.

Far from signaling only deficits in lexical knowledge, instances of use of French within English productions also allowed to grasp the children's grammatical competence in English. In extract 5.3.13, Charlotte borrows a lexical item from French ("taper", *to hit*) which she integrates into the English linguistic system, showing her ability to use the past progressive morphology productively.

Extract 5.3.13.

Emma – Second narrative session (N2) in English – picture book setting

CHI: yyy the fish and the mouse.

INT: yes and what happened?

CHI: and he was eating it.

INT: the cat was eating what?

CHI: no the cat was eating the fish.

INT: he was trying to eat the fish yes and so what happened?

CHI: [- mix] she [///] the mouse was tapping@s the cat.

Overall, Emma and Charlotte's choice of languages during the family meals and during the narrative sessions I recorded suggested that they were dominant in French during both recording periods. Indeed, they used more utterances in French than they did in English, and tended to use French during the narrative sessions in English more than they used English during the French sessions. This is consistent with the fact that they were more consistently exposed to French than to English during the recording period.

5.3.3 Linguistic development: MLUw, number of verb types and tokens and vocabulary scores in production and reception

The recording of two family dinners did not guarantee that the amount of language used by the children would be sufficient for MLUw measures to be representative of their language development, especially since the children often used both French and English within the same utterances during the family meals. Excluding all mixed utterances reduced the number of utterances on which to run MLUw, which was thus calculated on the children's narrative productions and complemented by the vocabulary scores obtained by the children on the receptive and productive vocabulary tasks and the count of verb tokens and types in the children's narrative productions. The values are listed in tables 5.13 and 5.14 and commented on below. The children's use of tenses in spontaneous and narrative contexts are described in chapter 8.

	N1						N2					
	Age	Verb		Voc.		MLUw	Age	Verb		Voc.		MLUw
		Types	Token	Recep.	Prod.			Types	Token	Recep.	Prod.	
Lucas	6;06.09	59	165	14	18	6.15	7;08.02	59	170	14	21	9.19
Arthur	5;09.26	38	115	17	20	4.36	7;00.23	51	119	18	25	6.43
Oliver	4;03.19	37	108	15	18	5.81	5;05.23	46	121	16	21	5.02
Julian	5;06.24	37	92	18	15	5.43	6;09.23	62	298	17	16	6.55
Emma	4;00.30	/	/	9	9	3.23	4;11.28	18	72	14	12	4.35
Charlotte	4;00.30	/	/	10	8	/	4;11.28	23	52	11	13	3.66

Table 5.13: Linguistic development measures during the first (N1) and the second (N2) narrative sessions in English

	N1						N2					
	Age	Verb		Voc.		MLUw	Age	Verb		Voc.		MLUw
		Types	Token	Recep.	Prod.			Types	Token	Recep.	Prod.	
Lucas	6;04.27	24	60	9	10	5.54	7;06.16	36	135	10	11	5.72
Arthur	5;09.06	33	74	17	17	4.47	6;11.05	47	130	18	20	4.41
Oliver	4;01.22	31	54	12	13	3.51	5;03.25	36	99	14	19	3.37
Julian	5;04.23	86	38	16	22	5.60	6;09.22	90	527	17	24	6.05
Emma	3;11.06	45	141	10	11	3.85	4;10.09	39	134	15	16	4.64
Charlotte	3;11.06	/	/	11	11	/	4;10.09	39	102	13	14	4.30

Table 5.14: Linguistic development measures during the first (N1) and the second (N2) narrative sessions in French

5.3.3.1 Lucas

Lucas' input was skewed towards English at the times of both recordings, as his mother was his only provider of French. The analysis of language distribution during the family dinners confirmed that English was the main language he was exposed to at home, despite his mother addressing him almost exclusively in French. He attended an English-speaking school and lived in London, and thus was exposed to English more consistently than to French. This did not seem to impact his use of languages during the family meals I

recorded, where he used both of his languages in roughly the same proportions. However, he produced more mixed utterances during the narrative sessions in French than he did during the English sessions, suggesting that he was dominant in English at the time of the recording. The linguistic development measures presented above provide a complementary picture which supports this interpretation. Indeed, he obtained higher scores in the receptive and productive vocabulary tasks in English than he did in French during both recording sessions. Moreover, he was able to provide more vocabulary items in English than he did not provide in French – during the first session, he produced 9 vocabulary items in English that he had not been able to produce in French, against only two vocabulary items in French that he did not provide in English. During the second recording session a year later, he provided 11 vocabulary items in English that he did not provide in French, against only 1 in French that he did not provide in English. This supported the interpretation that his lexicon was more developed in English than in French throughout the recording period. Finally, he used more verb types and tokens in his narrative productions in English than he did in French during both recording sessions, despite a surge in the number of verb types and tokens used in French during the second recording session.

5.3.3.2 Arthur

The analysis of language use during the family dinners I recorded for Arthur showed that his input at home was skewed towards French as 92% of the utterances produced by his parents and siblings during the family meals I recorded were in French (845/928). He attended an English speaking school at the time of recording and lived in an English-speaking country – he thus received more input in English outside of home than in French, although he also attended a French speaking school for about an hour and a half weekly. The analysis of Arthur's language choices during the narrative sessions in French and English suggested that he was rather balanced in his use of languages. Indeed, he produced roughly the same number of utterances in French and in English during the narrative sessions in each language (respectively 369 and 347), and almost never used his other language during the narrative sessions. This interpretation is supported by the results of the linguistic measures presented above. Two differences stand out between his use of French and English. First, during the first recording sessions, he used more verb types and tokens in English than he did in French. This difference was however no longer observable during the second session, where he used roughly as many verb types in French and in English. Second, he obtained higher scores on the productive vocabulary tasks in English than he did in French, although no difference was observed between the receptive vocabulary scores he received in both languages. The difference between the productive vocabulary scores he obtained in French and in English should not however be automatically interpreted as a sign of language dominance, but should rather be interpreted within the frame of the complementarity principle which I have already mentioned (Grosjean, 1985, 2016).

Indeed, the distribution of vocabulary items provided by Arthur in his two languages supports the claim according to which bilingual children's lexicons do not exactly overlap. Rather, because children acquire language by participating in different activities, with different interlocutors and communicative functions, their languages tend to cover different domains of their lives. During the first recording session, Arthur provided 4 vocabulary items in English that he wasn't able to provide in French, but was also able to produce 3 vocabulary items in French that he was not able to provide in English. During the second recording period he provided 6 vocabulary items in English that he had not been able to provide in French, and three in French that he had not provided in English. Overall, Arthur was thus considered fairly balanced in his two languages.

5.3.3.3 Oliver

Oliver's input at home was skewed towards French, as around 72% of the utterances produced by the adults were in French (562/778). Outside of home, he attended an English speaking school and was thus mostly exposed to English. Between the two recordings, he started attending a French club for about an hour and a half a week. During the family meals, Oliver used mostly French, however during the narrative sessions he switched to English during the narrative sessions in French, while he used only English during the narrative sessions in English. He switched to English from French mostly during the spontaneous interview when relating personal experience, suggesting that the topic discussed during the spontaneous interview (school and holidays) influenced his language choice. The linguistic measures listed above however show a slight discrepancy in the number of verb types and tokens used during the first narrative sessions in English and French (in French, he used 33 verb types and 74 tokens, against 38 types and 115 tokens in English), which was confirmed in the second recording session (36 types and 99 tokens in French, against 46 types and 121 tokens in English). He also obtained higher vocabulary scores in English than he did in French, and provided more vocabulary items in English that he had not produced in French than vice-versa. Oliver was thus considered dominant in English at the time of recordings.

5.3.3.4 Julian

Julian's input at home was largely skewed towards English – 83% of the utterances produced by his parents were in English during the family dinner I recorded (284/342). During the first recording session, he attended a bilingual school where he was exposed roughly to the same amount of French and English. His extracurricular activities took place in French as he was living in Paris at the time. He was considered fairly balanced during the first recording session, which was partly confirmed by the linguistic measures presented in tables 5.13 and 5.14. Indeed, he produced roughly the same amount of verb types during

the narrative sessions in French and in English (38 and 37 respectively) and obtained close scores in the receptive vocabulary tasks although he scored lower in English than in French in the productive vocabulary tasks (22 in French against 15 in English). Julian is the only participant whose family moved between the first and second recording sessions, leaving France for the Sultanate of Oman where they joined an English-speaking community of expatriates and where he attended the American school and conducted most of his activities in English. In the second parental questionnaire I asked the parents to fill, they reported that he used English much more consistently than French. However, the linguistic measures presented above did not confirm this – Julian scored higher on the productive vocabulary task in French than he did in English (obtaining scores of 24 and 16 in the respective languages), and produced more verb types and tokens during the session in French than he did in English. Moreover, he provided all of the vocabulary items he had managed to provide in English in French as well. This apparent discrepancy between parental reports and the linguistic measures in each of his languages can be explained by the fact that the second recording period took place during the summer vacation, after Julian had spent a month with his grandparents who spoke only French. This highlights once more the shifting aspect of language dominance in bilingual speakers, depending on their current experience and need for both of their languages (Grosjean, 2010).

5.3.3.5 Emma and Charlotte

Emma and Charlotte were exposed to roughly the same amount of French and English during the family meals I recorded – 56% of the utterances produced by their parents were in English (791/1401), 40% were in French (565/1401) and 3% were mixed (45/1401). They were however mostly exposed to French outside of home – they attended a French-speaking school and extra-curricular activities, and except for a few weeks a year when they visited their grandparents in England, their mother was their sole provider of English. The children used French more consistently than English during both the family meals and the narrative sessions I recorded. This suggested that they were dominant in French, which was confirmed by several observations. However, Emma obtained close receptive and productive vocabulary scores in French and in English during the two recording sessions. During the second session, out of the 12 vocabulary items she provided in English 4 were not provided in French, supporting once more the complementarity principle which states that bilingual speakers' lexicons do not always overlap. During the second recording session, where she participated in the narrative tasks in both of her languages, she used almost twice the number of verb types and tokens in French as she did in English (18 types and 72 tokens in English and 39 types and 134 tokens in French). She also received higher scores on the vocabulary tasks in French than she did in English, and was thus considered dominant in French. Charlotte only participated in the second narrative sessions, but took the vocabulary tests during both recording sessions. She obtained close scores on

the receptive and productive vocabulary tasks, although these were slightly higher in French at both times (during the second recording session when I recorded her narrative productions as well, her receptive and productive vocabulary scores were 13 in French and 11 in English). She moreover provided 4 vocabulary items in French that she did not provide in English, while she produced only one vocabulary item in English that she did not provide in French). Finally, she used more verb types and tokens in French than she did in English (39 types and 102 tokens in French against 23 types and 52 tokens in English). She was thus considered dominant in French at the time of recording.

Table 5.15 summarizes the most salient features of the *Brunet* corpus. It focuses on the children’s language exposure, language use and language dominance patterns. The column entitled “child’s use of languages” considers the children’s language choices during the family dinners I recorded and the amount of translanguaging during the narrative sessions. Codes are used for conciseness – CHI stands for “child” or “children”, MOT for “mother” and FAT for “father”; FRE stands for “French” and ENG stands for “English”.

	City & Age	Mother's native lang. and choice of languages	Father's native lang. and choice of languages	Child's use of languages	Dominance pattern
Lucas	London, Between 6;01 and 7;08	FRE native, used FRE to address CHI, ENG to address FAT and MULT	ENG native, Mostly ENG	Mirrored adult language choice – FRE with MOT and ENG with FAT and ENG with MULT. More translanguaging during the FRE narrative session	English
Arthur	London, Between 5;06 and 7;00	FRE native, mostly FRE. ENG to align with children or discuss certain topics (school, ...)	FRE native, mostly FRE. ENG to align with children or on certain topics (school, ...)	FRE with MOT and FAT, ENG used most frequently with brothers on specific topics; FRE main language used during family dinners. No translanguaging during the narrative sessions	Balanced
Oliver	London, Between 3;11 and 5;05	FRE native, uses mostly FRE with CHI and ENG with FAT and MULT; ENG used to with specific topics (school)	ENG native, mostly ENG	Used both languages during the family dinners. More translanguaging during the FRE narrative sessions	English
Julian	Paris (first recording period) and Oman (second recording period), Between 5;10 and 6;09	FRE-ENG bilingual, uses ENG and FRE with her child	ENG native, uses FRE punctually (table manner instructions)	Mostly ENG during dinners; same amount of translanguaging in the FRE and ENG narrative sessions	Balanced
Emma & Charlotte	Paris, Between 3;11 and 4;11	ENG native, uses ENG with the children FRE on specific topics (school)	FRE native, FRE or ENG	Used FRE with MULT, ENG with MOT and FRE with FAT. Emma – 2 FRE narrative sessions only 1 in ENG; Charlotte – only 1 narrative session in FRE and ENG	French

Table 5.15: Summary of the main characteristics of the participants' language use and dominance patterns in the *Brunet* corpus

This research is based on two longitudinal corpora, which include recordings from two French monolingual children, Anaé and Antoine, aged 1;06 to 4;05 and two French-English bilingual children, Sophie and Anne, between 2;04 and 3;06. All children were recorded in naturalistic interaction with their caregivers and the observer. These longitudinal corpora were selected to question whether the first uses of past tense-aspect morphology by French monolingual and French-English bilingual children confirmed the conclusions of the AH, based on the productions of English monolingual children. The description of the two bilingual children's language practices as well as the linguistic development measures presented in this chapter suggested that Sophie was fairly balanced in her use of her two languages, whereas Anne proved to be dominant in English during the recording period. Sophie's use of tenses in French will be compared to Anaé's and Antoine's, as they obtained similar MLUw scores in French over the period, suggesting they followed similar developmental paths. The main question addressed in this study relates to the relationship between tense morphology and situation aspect with a particular focus on the relationship between the children's input and their own productions. Finally, this research interrogates later uses of tense-aspect morphology by French-English bilingual children aged 3;11 to 7;0 with different exposure patterns and in spontaneous and narrative discursive contexts. The analysis of language use and exposure of the bilingual children in the *Brunet* corpus along with the measures of linguistic development presented above allowed to estimate the children's language dominance during the two recording sessions. They suggested that two of them (Lucas and Oliver) were dominant in English, two were fairly balanced in their use of languages (Arthur and Julian) and two were dominant in French (Emma and Charlotte). The analysis of the children's language exposure and use also confirmed the trends in bilingual acquisition identified in chapter 1. First, it supported the view of bilingualism as a shifting phenomenon showing that language dominance in particular needs to be considered as flexible and subject to change depending on changes in the bilingual speakers' need for both of their languages. The analysis of language use by the children of the *Brunet* corpus also illustrated the centrality of the complementarity principle (Grosjean, 1985, 2016) in understanding what motivates bilingual speakers' language choices. It appeared that the children under focus tended to use their languages differently depending on their addressee, the topic at hand or the communicative function of their utterances. Moreover, their lexicons in both of their languages often did not overlap, as they were able to provide vocabulary items in one language but not in the other and vice-versa. Finally, the children's use of mixed utterances also illustrated the concept of translanguaging whereby bilingual speakers are viewed as using their two languages as an integrated system in order to communicate efficiently. All the children in the corpus showed their ability to access linguistic features from their two languages simultaneously in

bilingual settings (i.e. during the family meals when they perceived their interlocutors as bilingual in order to communicate efficiently).

Part III

The use of tense-aspect morphology in French monolingual and French-English bilingual children: results and analyses

Chapter 6

French monolingual children's early uses of past tense-aspect morphology

The present chapter analyzes the emergence and first uses of past tense forms in the spontaneous productions of two French monolingual children. As explained in chapter 5, the analyses presented below are based on 11 recordings from Anaé and 13 recordings from Antoine evenly distributed between approximately 1;06 and 4;05. In all sessions, Anaé and Antoine were recorded in interaction with their caregivers. The aim of this study is to describe how French monolingual children learn to use the past tense forms available to them in the input. Within usage-based theories, important studies on the acquisition of such morphemes have highlighted the role of various factors such as frequency of the form in the input, functional complexity or discursive salience (Tomasello, 2009; Parisse and Morgenstern, 2012; Leroy et al., 2013), while proponents of the Aspect Hypothesis have claimed that the acquisition of past tense-aspect forms is initially guided by lexical aspect. The prototype account (Shirai, 1991; Shirai and Andersen, 1995) reconciles the Aspect Hypothesis with usage-based principles, as it claims that the preferential associations found in the speech of English monolingual children between ATAM morphology and specific lexical aspect categories can be explained by a distributional bias in Child Directed Speech (CDS) – adults used the perfective past tense mostly with telic events in CDS, and the imperfective past predominantly with atelic predicates. They concluded that children build prototypical associations from the input they receive between perfective and imperfective morphology and corresponding lexical aspects, before generalizing the use of tense-aspect morphology across lexical aspect categories. I propose to test the Aspect Hypothesis and its predictions against French longitudinal data, in order to inform us on how children gradually learn to use past tenses in French, and to reflect on the role played by the children's linguistic experience in their acquisition of past tense-aspect morphology.

6.1 Emergence and development of perfective and imperfective past tense forms

Before turning to the associations between lexical aspect and past tense-aspect morphology observed in Antoine and Anaé's corpora, I provide a description of the emergence of perfective and imperfective past tense forms in Anaé and Antoine's productions. This section presents several results: the proportion of different past participles and full-fledged *passé composé* forms in the speech of both children and adults in the corpora, the evolution of these proportions over time in child data, the number of types and tokens inflected by the children and the adults, and the proportion of forms contributed by the children (as opposed to those taken up from their own or their caregivers' previous utterances). Table 6.1 below summarizes the data presented first in chapter 5, with a specific focus on past tense forms – it displays the total number of verb tokens used by the children during each session, the proportion of past participles, *passé composé* and *imparfait* forms (token count and percentages are both given), as well as the children's MLU. The beginning of the period corresponds for both children to a time when the number of verbs used in each session started to grow. From around 2;00 onwards, both Anaé and Antoine started to use a high number of verbs consistently in each session. Both children had a tendency to use past participle forms more at the beginning than at the end of the period, although this tendency was more marked for Antoine than it was for Anaé – Antoine appears to take longer than Anaé to use full *passé composé* forms consistently. Like Anaé however, as the number of *passé composé* forms produced in each session increased, the number of past participles produced decreased. This indicates that both children were in the midst of acquiring the *passé composé* during the period. By the second half of the recording period, both children produced *passé composé* forms consistently in each session and more frequently than they did bare participles. As predicted by the literature, the *imparfait* was used later than the *passé composé* by both Anaé and Antoine. It was not produced consistently and productively by the children until the end of the period. The following sections focus in more details on the emergence and use of perfective and imperfective morphology in Anaé and Antoine's data over the period.

6.1.1 Focus on the different realizations of the *passé composé*

As mentioned above, both children started producing past participle forms before they used the *passé composé* consistently. Past participles in adult and child speech were coded either as part of a *passé composé* form, as a bare participle, as a participle following a copula verb or as an adjective within noun phrases. All past tense forms in the corpora were coded formally, as falling into one of these four categories. Past tense forms which combined a past participle with *être* or *avoir* used as auxiliaries were coded as full *passé composé* forms as in extract 6.1.1.

	Age	Verbs	Past Participle		<i>Passé Composé</i>		<i>Imparfait</i>		MLU
		Tokens	Tokens	%	Tokens	%	Tokens	%	
Anaé	1;06.08	18		0,0	1	5,6		0,0	1,349
	1;09.04	93	17	18,3	1	1,1		0,0	1,715
	2;00.00	323	24	7,4	21	6,5	1	0,3	2,915
	2;03.30	169	2	1,18	10	5,9		0,0	2,388
	2;06.27	323	4	1,24	24	7,4		0,0	3,188
	2;09.23	203	5	2,46	8	3,9	1	0,5	2,765
	3;01.07	231	2	0,9	26	11,3	4	1,7	3,273
	3;04.27	408	3	0,7	17	4,2	9	2,2	3,629
	3;08.10	243	4	1,7	20	8,3	12	4,9	3,14
	4;00.13	548	4	0,7	42	7,7	71	13,0	5,087
	4;04.10	302	4	1,3	24	8	14	4,6	3,378
	Antoine	1;06.22	4		0,0		0,0		0,0
1;09.11		29	7	24,1	1	3,45		0,0	1,201
1;11.18		41	22	53,7		0,00		0,0	1,336
2;01.28		47	10	21,3	2	4,26		0,0	1,751
2;03.15		127	23	18,1	14	11	2	1,6	2,168
2;05.24		226	34	15	27	12	1	0,4	2,823
2;07.22		227	20	8,8	21	9,3	1	0,4	2,875
2;09.16		362	17	4,7	19	5,3	3	0,8	3,033
2;11.16		301	2	0,7	29	9,6	3	1,0	2,892
3;02.24		200	2	1	19	9,5		0,0	3,059
3;09.22		401	6	1,5	41	10,2	17	4,2	4
4;00.09		269	5	1,9	29	10,8	8	3,0	3,412
4;05.16		294	5	1,7	22	7,5	25	8,6	3,453

Table 6.1: MLU, Verb tokens and proportion of past tense forms for each child in each session

Extract 6.1.1.

Anaé, 2;00.00

CHI: c'est la vache à moi. (*it's my cow.*)

CHI: t'as vu c'est yyy la vache à moi ! (*see, it's my cow.*)

MOT: oui qui est-ce qui l'a donnée ? (*right, and who gave it to you?*)

CHI: je sais pas. (*I don't know.*)

Such forms were used only sporadically by both children in the first recordings; Anaé produced full *passé composé* forms consistently only from the third session onwards (when she was 2;00.00), and Antoine used them frequently from 2;03.15 onwards. Before children produced full *passé composé* forms consistently, they used bare past participles in three distributional contexts which were coded differently. I distinguished between instances where past participles were used alone with an adjectival value as in extract 6.1.2. In this extract, mother and child are playing with a toy train. The child used the past participle form “*cassé*” to comment on a train cart that had come loose. Until the session when he was 2;05.24, such forms accounted for the majority of forms bearing past morphology used by Antoine.

Extract 6.1.2.

Antoine, 1;09.11

MOT: toutoutou on fait ? (*shall we do toutoutou?*)

CHI: cassé ? (*broken?*)

MOT: cassé ? (*broken?*)

Bare past participle forms and full *passé composé* forms were distinguished from past participles used after the copula verb *être*, as in extract 6.1.3. I included filler-syllables followed by past participles (like /e/, signaled in the transcription with the code @fs) in this coding category, because of their phonological stability and of how systematically they were produced in the same distributional pattern (Peters, 2001). As explained in chapters 4 and 5, adult interpretation was also central in deciding how to code a given form. In extract 6.1.3, the interpretation of Anaé's production as a copula followed by a past participle was supported by the fact that the mother took up her daughter's forms as “*c'est fini*” and “*c'est cassé*”.

Extract 6.1.3.

Anaé, 1;09.04

MOT: c'est mouillé.

CHI: e@fs **fini** maman ! (*finished mummy!*)

MOT: c'est fini il y a plus rien ? (*is it finished is there nothing left?*)

CHI: e@fs **cassé** ! (*broken!*)

MOT: mais nan c'est pas cassé. (*no it's not broken.*)

Bare participles in this distributional pattern were the forms most frequently used by Anaé at the beginning of the period. Finally, past participles used with an adjectival value to qualify nouns (i.e. used as modifiers of the head nouns within noun phrases) were also identified. Such forms were only used by the adults in the corpora and were excluded from the analyses presented below. As explained above, both children used past participles with an adjectival value rather than full *passé composé* forms at the beginning of the period, a tendency which had reversed by the end of the period.

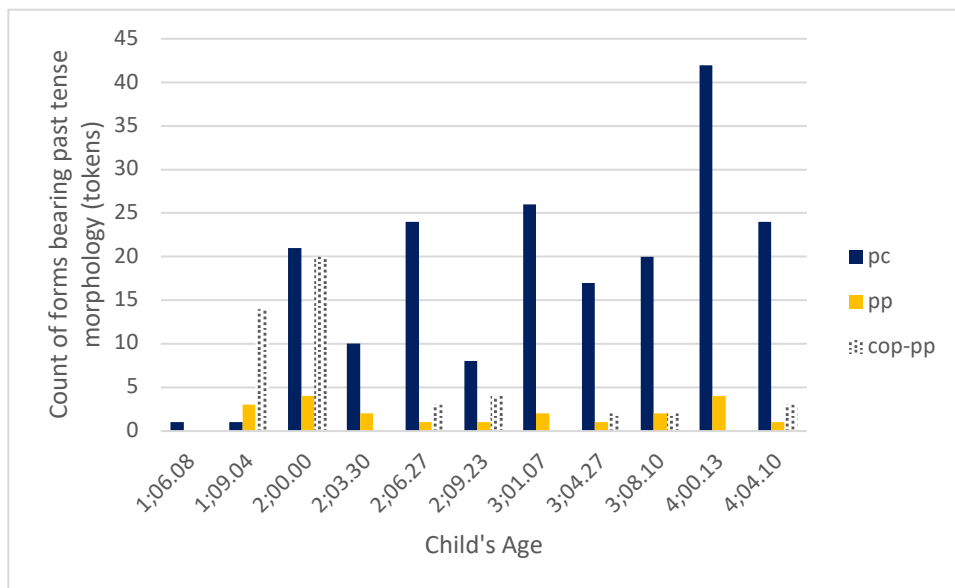
6.1.2 Distribution of past participles and *passé composé* in Anaé and Antoine's productions

The present section displays the proportion of bare participles, participles used after copula verbs and *passé composé* forms in both children's productions and in their input over the period. It also analyzes the relationship between the children's productions and their input, and questions how differences in the children's input may be used to explain differences between the two children's productions.

6.1.2.1 Anaé

Including bare participles used after copula verbs, Anaé used 263 verb forms bearing past perfective morphology. Bare past participles accounted for less than 0.73% of the total number of verb phrases used by Anaé. This was a much higher proportion than what was observed in her input, as bare past participles accounted for only 0,08% of the total number of verb phrases used by the adults in her corpus. Moreover, the standard deviation (later SD) of bare past participles was higher in Anaé's data than in her input (0.88% for Anaé against 0.1% for the adults), suggesting a higher degree of variability in Anaé's use of bare past participles. Past participles used after copula verbs accounted for 1.7% of the total number of verb forms used by Anaé, which was closer to the proportion observed in her input – such forms accounted for for 1.1% of the total number of verb forms found in the adult data. However, there was again more variability in Anaé's productions than

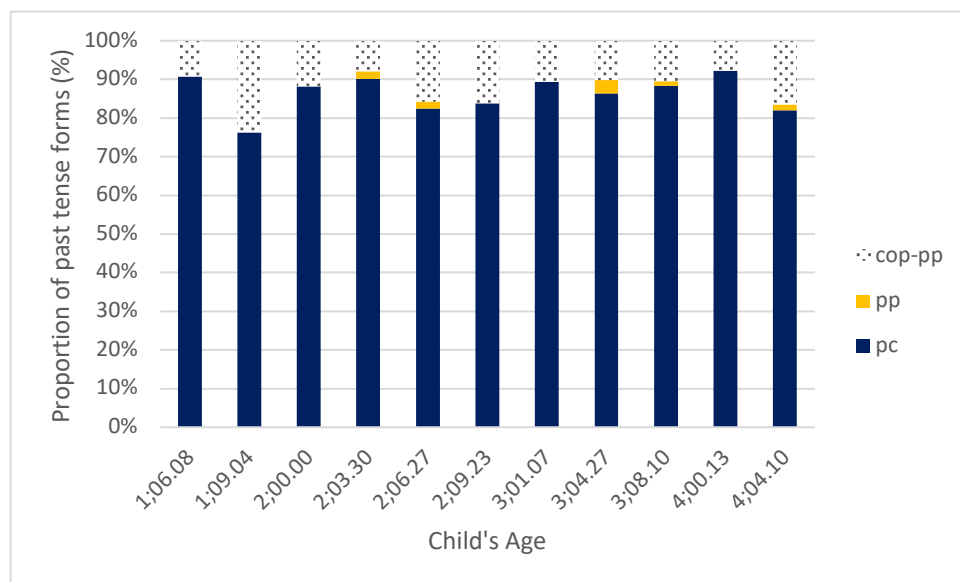
in her input (SD in Anaé’s productions of past participles used after copula verbs was 4.56% against 0.47% in her input). Finally, full-fledged *passé composé* forms accounted for 6.3% of the total number of verb phrases used by Anaé used. Overall, the percentage of *passé composé* forms produced by Anaé was close to the one observed in her input, as these forms accounted for 7.4% of the total number of verb phrases used by the adults over the period. SD values for both Anaé and the adults in the corpus were also similar (Anaé’s SD in the proportion of *passé composé* forms was of 2.69% against 2% in her input).



Graph 6.1: Proportion of bare past participles (pp), past participles in copular constructions (cop-pp) and *passé composé* (pc) forms in Anaé’s productions

Graphs 6.1 and 6.2 consider only the verb forms inflected with past perfective morphology in Anaé’s productions and her input. Graph 6.1 displays the raw number of bare participles, participles used after copula verbs and *passé composé* forms in Anaé’s productions over the period, in order for it to take into account the variability in the number of forms bearing past morphology used by Anaé. On the whole, it shows that as the number of such forms increases over the period, so does the number of *passé composé* forms. Conversely, the number of bare past participles and participles used in copular constructions tend to decrease. The proportion of bare past participles and participles used after copula verbs in Anaé’s productions also grows more stable over the period. Indeed, such forms are characterized by a high degree of variability in the first six recordings – in the first half of the recording period, SD for bare participles is 1.16% while it reaches 5.9% for participles used in copular constructions. In the last five recordings, SD values are much closer to the one’s observed in the adult data – 0.29% for bare past participles and 0.46% for participles used in copular constructions. Graph 6.2 gives the proportion of bare participles, participles used after copula verbs and *passé composé* in Anaé’s input. The

values are given as percentages, since there was less variability in the number of forms produced by the adults during each session. It illustrates what the SD values presented above highlighted, namely that there is less variation in the distribution of past morphology on the whole in the adult data than in Anaé's productions. The latter were characterized by a high degree of variability in the distribution of past perfective morphology, especially in the first half of the recording period.



Graph 6.2: Proportion of bare past participles (pp), past participles in copular constructions (cop-pp) and *passé composé* (pc) forms in Anaé's input

A comparison between graphs 6.1 and 6.2 also shows that the distribution of forms in Anaé's productions closely resembles that observed in her input from the seventh session onward (when Anaé was 3;01.07). From then on, she produces mostly full-fledged *passé composé* forms, which never account for less than 80% of the perfective past tense forms she produces. There is thus a clear tendency for Anaé's use of past tense forms to resemble her input over the period.

The number of different verb types and tokens inflected by Anaé for past perfective morphology also increased, as shown in table 6.2.

Anaé	1;06.08	1;09.04	2;00.00	2;03.30	2;06.27	2;09.23	3;01.07	3;04.27	3;08.10	4;00.13	4;04.10
Types	1	7	18	9	11	10	15	13	15	32	17
Tokens	1	18	45	12	28	13	28	20	24	46	28

Table 6.2: Verb types and tokens used with past perfective morphology in Anaé's data

Anaé produced only one verb form inflected for the perfective past tense during the

Anaé - Input	1;06:08	1;09:04	2;00:00	2;03:30	2;06:27	2;09:23	3;01:07	3;04:27	3;08:10	4;00:13	4;04:10
Types	38	37	34	37	33	21	31	31	43	23	37
Tokens	65	101	76	101	57	37	94	59	86	39	67

Table 6.3: Verb types and tokens used with past perfective morphology in Anaé’s input

first session, but reached 32 different types and 43 tokens during the session before last when she was 4;00.13. On the whole, she used 73 different verb types over the period and 263 tokens, which gives a type token ratio of 0.28. This is close to the TTR value observed for the adults in the corpus – Anaé’s parents used 166 different verb types over the period and 785 tokens which yields a TTR ratio of 0.21. The number of verb types and tokens used with past perfective morphology in Anaé’s input is given in table 6.3. A comparison between tables 6.2 and 6.3 confirms what was observed in graph 6.1, namely that Anaé’s production of past tense forms tends to resemble her input and to grow more stable, in particular from the second half of the recording period onwards.

As predicted by the usage-based theories of acquisition, the verb types that Anaé used in perfective past tense constructions were also the forms that were most frequently inflected for the perfective past tense in her input. The most frequent forms in the corpus were identified by calculating the average number of tokens used for all verb types, and multiplying this value by two – forms that were used two times more than the average were considered frequent forms.

Table 6.4 lists the most frequent forms found inflected for the perfective past tense in adult and child speech in Anaé’s recording – forms that were used more than 7 times by Anaé and more than 10 times by the adults in the corpus were considered frequent. Twelve forms were thus considered frequent in Anaé’s productions, 10 of which were also among the most frequent forms used in the input (the verbs are in bold in table 6.4). Moreover, the most frequent verbs “*faire*” and “*voir*” in her input (respectively used 82 and 70 times, almost twice as frequently as the third verb on the list) were also the verbs Anaé inflected for the perfective past tense most frequently (respectively 19 and 15 times).

Finally, Anaé’s creation or retrieval of forms was also analyzed – as described in chapter 5, all past tense forms used by the children were coded as either contributed (c) by the children or replicated from their own (r(a)) or another speaker’s (r(h)) previous utterances. Each form was coded twice – once with regards to the lexical item used (regardless of the conjugation) and once with regards to the morphology (regardless of the lexical item). In extract 6.1.4, the form in bold produced by Anaé was coded as contributed both in terms of the lexical item and the morphology used. Anaé’s utterance (“*il est tombé*”) does not really answer her mother’s question, which asked about Anaé’s brother geographical location at SpT (“*il est où Ael ?*”). However, there is a syntactic continuity between both

	Input	Anaé
Types (tokens)	faire (82)	faire (19)
	voir (70)	voir (15)
	mettre (39)	mettre (9)
	trouver (38)	trouver (21)
	avoir (31)	
	finir (29)	finir (14)
	manger (22)	manger (7)
	tomber (19)	tomber (9)
	aller (19)	
	dire (17)	dire (7)
	mouiller (14)	
	tromper (14)	
	jouer (14)	
	partir (11)	partir (7)
	comprendre (10)	
	donner (10)	
	casser (10)	casser (8)
		vomir (7)
	cacher (7)	

Table 6.4: Forms most frequently inflected for the perfective past tense in Anaé’s productions and in her input

utterances, as Anaé took up the phrase “*il est*” from her mother’s utterance. Despite this continuity, the past participle was contributed by Anaé to the interaction, which justifies the classification of the form as a creation.

Extract 6.1.4.

Anaé, 1;06.08

MOT: on va piquer la viande. (*we will prick the meat.*)

MOT: comme ça. (*like this.*)

MOT: voilà. (*there you go.*)

MOT: vas+y. (*go ahead.*)

MOT: tu manges ? (*are you eating?*)

CHI: yyy.

CHI: yyy.

MOT: allez mange ! (*eat up.*)

CHI: yyy voilà. (*there.*)

MOT: c’est pas bon ? (*is it not good?*)

CHI: e@fs quoi ? (*what?*)

MOT: il est où Ael Anaé ? (*where is Ael, Anaé?*)

CHI: yyy !
 MOT: il est où ? (*where is he?*)
 CHI: oh il e@fs **tombé** ! (*he fell!*)
 MOT: il est tombé ? (*did he fall?*)

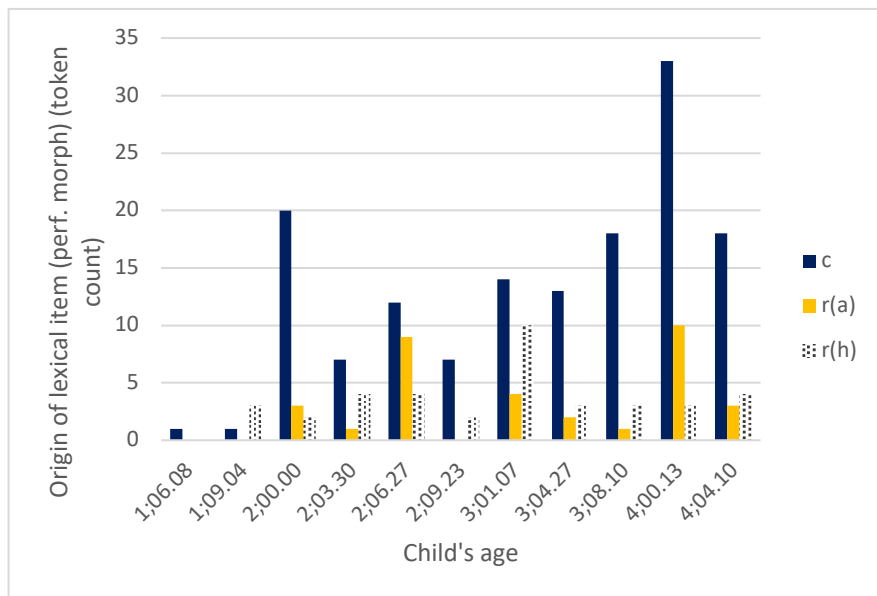
In extract 6.1.5 however, the lexical item used by Anaé with past perfective morphology (in bold in the transcription below) was coded as replicated from her interlocutors' previous utterance (r(h)). In terms of the morphology used, it was coded as a contribution (c), as past perfective morphology was provided by Anaé rather than taken up from a previous utterance. It is important to note however that at this stage in the child's linguistic development, it is unsure that she produced a full-fledged *passé composé* – the form “*c'est*” was used very frequently by Anaé at this age, and the *imparfait* and past participle forms of the verb “*taper*” are realized with similar phonetic features. The interpretation of the form as a *passé composé* was based here on parental interpretation, as the mother takes up Anaé's production and provides her daughter with a past perfective form (“*elle t'a tapé*”).

Extract 6.1.5.
Anaé, 2;00.00
 MOT: qu'est+ce+qu'elle faisait Anouk ? (*what was Anouk doing?*)
 MOT: elle te tapait ? (*was she hitting you?*)
 MOT: pourquoi ? (*why?*)
 CHI: yy **c'est tapé** euh a@fs a@fs joue. (*hit the cheek.*)
 MOT: sur la joue ? (*on the cheek?*)
 MOT: pourquoi elle t'a tapé ? (*why did she hit you?*)

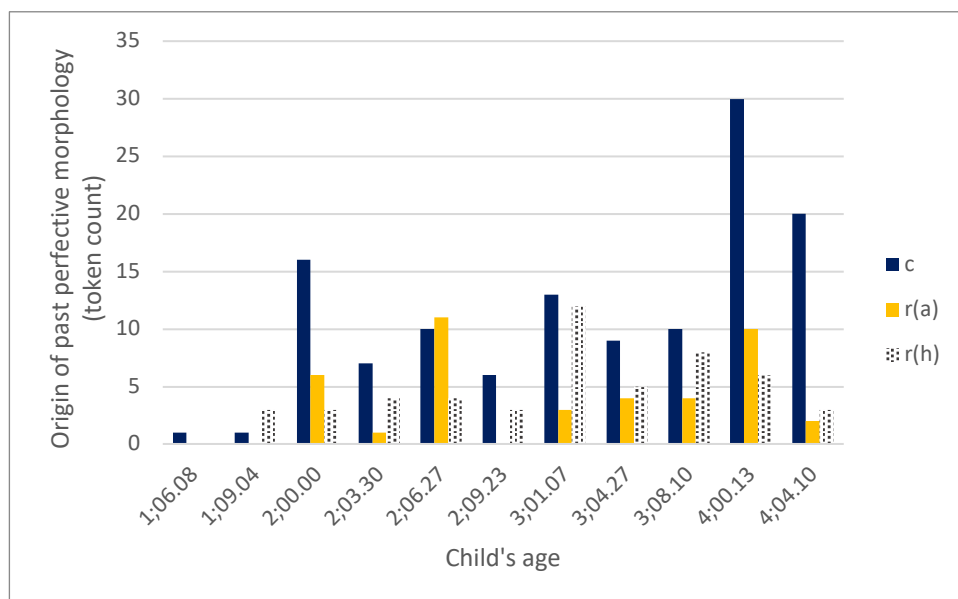
Finally, extract 6.1.6 gives an example of a form (again, in bold in the transcription) coded as fully replicated from her interlocutor's previous utterances (both in terms of lexical and morphological choice). Such forms are noted r(h) in the graphs below.

Extract 6.1.6.
Anaé, 1;09.04
 MOT: je crois qu'il peut pas tenir debout Anaé. (*I don't think it can stand Anaé.*)

MOT: peut-être assis tu veux qu'on le mette assis ? (*do you want us to sit him down?*)
 CHI: **assis** ! (*sit-PP*)



Graph 6.3: Among forms inflected for the perfective past tense, count of lexical items contributed by Anaé or replicated from her or her interlocutor's previous utterances



Graph 6.4: Among forms inflected for the perfective past tense, count of ATAM morphology contributed by Anaé or replicated from her or her interlocutor's previous utterances

Over the period, the proportion of forms contributed by Anaé to the interaction tended to increase, both in terms of lexical choice and of her use of past perfective morphology. This is illustrated by graphs 6.3 and 6.4, which display a similar trend. The first session when Anaé was 1;06.08 should be interpreted with caution as Anaé only produced one past perfective form, which she did not take up from her interlocutor's previous utterances. Because she produced so few forms during the first session, it was excluded from the mean and SD measures presented below. Over the period, about 25% of the lexical items used by Anaé were taken up from another speaker's utterance in the immediate context (SD=20%). Grouping the sessions in two periods shows that the proportion of lexical items Anaé replicated from her interlocutors' utterances was both higher and more variable in the first half of the recording period – from when she was 1;09.04 to when she was 2;09.23, a little over 32% of the lexical items she used were replicated from other speakers' preceding utterances (SD=26%). In the second half of the recording period, this proportion dropped to 18% (SD=9.7%). Graph 6.3 shows that the proportion of lexical items used with past perfective morphology analyzed as having been contributed by Anaé or replicated from her own previous utterances increased steadily and became more stable in the second half of the recording period. The same tendency is observed when considering Anaé's production of past perfective morphology. The first six recording sessions are characterized by a higher proportion of past morphology replicated from previous utterances, as well as by higher variability overall – from the session when she was 1;09.04 to the session when she was 2;09.23, 36% of the past tense morphology she used was produced by her interlocutor in previous utterances (SD=25%). In the second half of the recording period (between the ages of 3;01.07 and 4;04.10), the proportion of past tense morphology Anaé taken up from her interlocutors' utterances dropped to 26% (SD=13%). There was thus a tendency for Anaé to contribute past tense morphology more frequently in the second half of the recording period. In the last two recording sessions Anaé predominantly contributed past tense morphology or replicated it from her own utterances – over 85% of her use of perfective past morphology in these sessions was coded as contributed by Anaé, either contributed or replicated from her own previous utterances.

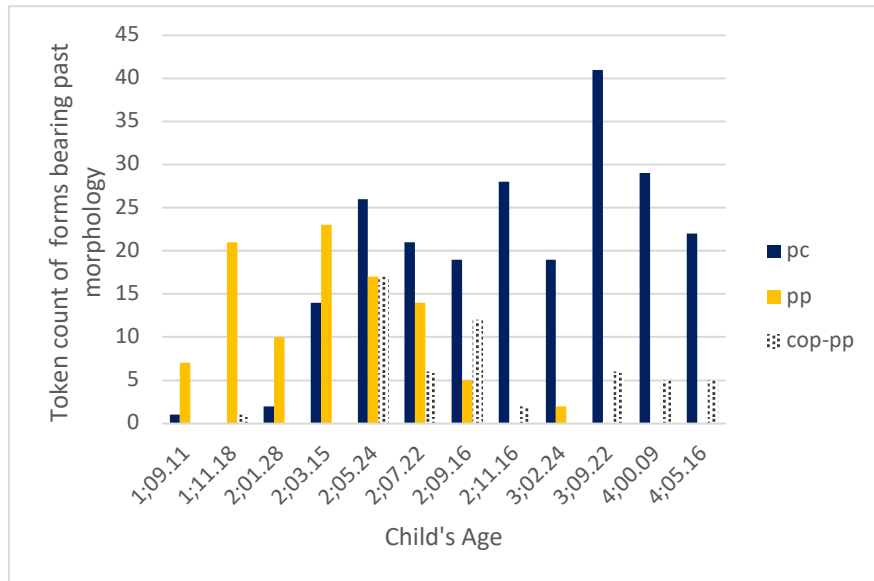
6.1.2.2 Antoine

Over the recording period, Antoine produced 358 past perfective verb forms, which accounted for 15% of all the verb phrases he used. Like Anaé, he used bare participles, participles following copula verbs, and full-fledged *passé composé* forms. The adults in Antoine's corpus produced 1402 verb forms bearing past perfective morphology, which accounted for around 10% of all verb phrases they used. Bare past participles accounted for 4% of the total number of verb phrases used by Antoine, while they accounted for only 0.3% of the total number of verb forms used by the adults in the corpus. SD values over the period show a higher degree of variability in how frequently Antoine used such

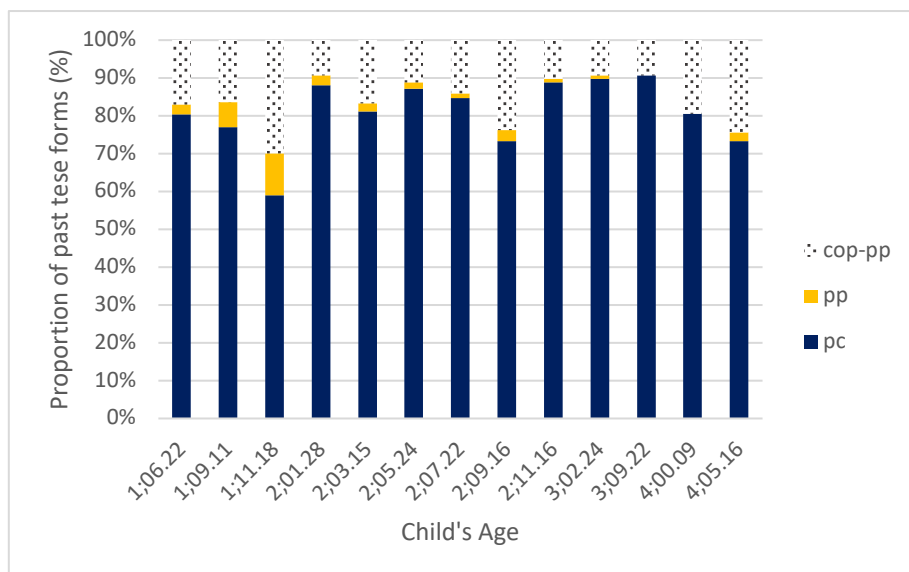
forms (SD=15%) relative to the adults (SD=0.36%). Both the proportion of bare past participles and SD values were also higher in the first half of the recording period than at the end. In the first seven sessions, the proportion of bare participles reached 18.4% of all verb phrases used by Antoine (SD=16%). In the last seven sessions, the proportion of bare participles used by Antoine dropped to 1.27% of all verb phrases (SD=0.6%). Although both proportions and SD values were still higher than the ones observed in his input, Antoine's use of bare participles tended to gradually resemble his input over the period. Past participles used in copular constructions accounted for 2.1% of all the verb phrases used by Antoine, and 1.6% of the verb forms used in his input. Once again, SD values were higher in Antoine's productions than in his input, and there was also more variability in Antoine's use of participles in copular constructions in the first half of the recording period than in the second (SD value in the first seven recording sessions was of 2.8%, against 1.1% in the last six recordings). There was no difference in the average proportion of such forms relative to all the verb phrases used by Antoine during the first and the second half of the recording period, mostly because there were four sessions during the first recording period when he did not produce any past participles in copular constructions, against only one during the second period. When these sessions were excluded from count, the average proportion of past participles used after copula verbs was much higher during the first period than the second (it amounted to 4.2% in the sessions when Antoine was aged between 1;06.22 and 2;07.22 and around 1.6% between the ages of 2;09.16 and 4;05.16). Antoine's use of past participles in copular constructions tended to get more stable and to resemble his input over the period. Finally, full-fledged *passé composé* forms accounted for around 9% of all verb phrases used by Antoine, and 8% of the verb phrases used by the adults in his corpus. The proportion of *passé composé* forms relative to other verb phrases used by Antoine was lower and more variable in the first half of the recording period (mean value=5.7%, SD=5%) than in the second half of the period (mean value=8.8%, SD=2%).

Graphs 6.5 and 6.6 consider only the verb forms bearing past morphology, and display the distribution of bare participles, participles used in copular constructions and full-fledged *passé composé* forms in Antoine's data and in his input. Graph 6.5 gives raw values rather than percentages. Considering the token count allows to take into account the growing number of forms produced by Antoine during each session. Because there was less variability in the adult data, graph 6.6 displays percentages rather than token counts.

Graph 6.5 shows the proportion of bare past participles decreased over the period, while the proportion of *passé composé* and past participles used in copular constructions increased. As explained earlier, the distributional pattern in which Antoine used past participles tended to resemble the one observed in his input over the period. By the eighth recording session when Antoine was 2;11.16, the proportion of full-fledged *passé composé* forms had reached over 90% of the forms built with past participles, and never dropped below 80% from then on.



Graph 6.5: Count of bare past participles (pp), past participles in copular constructions (cop-pp) and *passé composé* (pc) forms in Antoine's productions



Graph 6.6: Proportion of bare past participles (pp), past participles in copular constructions (cop-pp) and *passé composé* (pc) forms in Antoine's input

Antoine used 90 different verb types and 358 tokens in past participle constructions, yielding a TTR of 0.25. He first used past participles when he was 1;09.11, and used only 3 different verb types and 8 tokens at the time. He reached 23 different verb types and 41 verb tokens during the session when he used the highest number of verb forms bearing past morphology at 3;09.22. The adults in Antoine's corpus used 201 different verb types and 1402 tokens, yielding a TTR of 0.14. Tables 6.5 and 6.6 give the number of verb

types and tokens used either as bare participles, participles in copular constructions or *passé composé* forms during each session in Antoine's productions and his input. In the latter, the number of types and tokens was relatively stable over the period while it tended to increase in Antoine's productions.

Antoine	1:06.22	1:09.11	1:11.18	2:01.28	2:03.15	2:05.24	2:07.22	2:09.16	2:11.16	3:02.24	3:09.22	4:00.09	4:05.16
Types		3	10	6	16	14	17	22	14	8	22	32	18
Tokens		8	22	12	37	61	41	31	31	21	47	20	27

Table 6.5: Verb types and tokens used as bare participles, participles in copular constructions or *passé composé* forms in Antoine's data

Antoine - Input	1:06.22	1:09.11	1:11.18	2:01.28	2:03.15	2:05.24	2:07.22	2:09.16	2:11.16	3:02.24	3:09.22	4:00.09	4:05.16
Types	42	52	45	33	33	47	34	36	42	31	54	43	35
Tokens	112	152	117	75	90	125	78	105	98	97	149	118	86

Table 6.6: Verb types and tokens used bare participles, participles in copular constructions or *passé composé* forms in Antoine's input

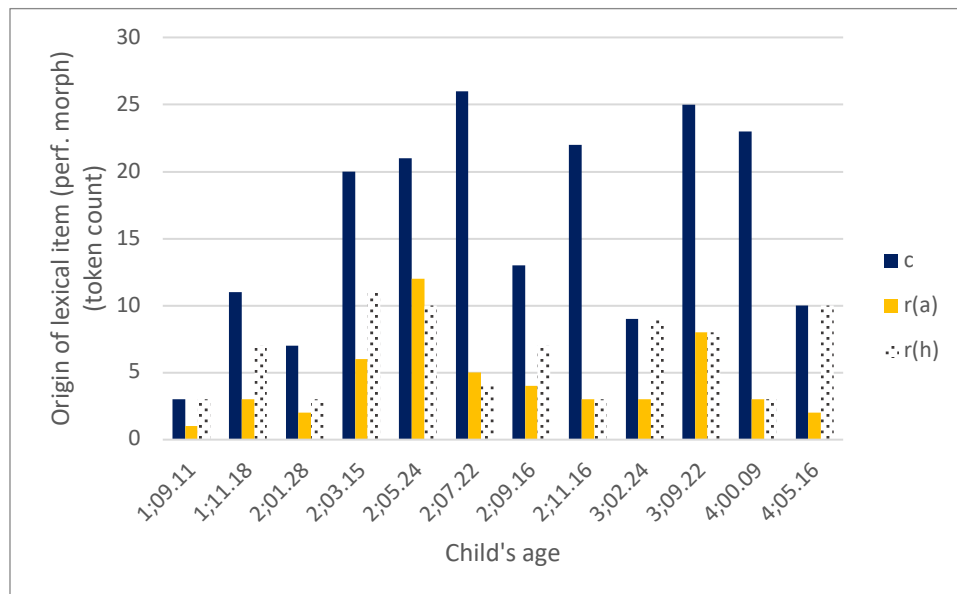
Table 6.7 lists the most frequent forms bearing past morphology in Antoine's productions and in his input. Similarly to what was observed for Anaé, the verb types Antoine used with past morphology were mostly the forms that were most frequently associated with such morphology in his input. Out of the twelve verb types that Antoine used most frequently over the period, ten were also among the most frequent forms used by the adults in the corpus (in bold in table 6.7 below).

Graph 6.7 considers only the forms Antoine inflected for past perfective morphology, and gives the proportion of lexical items contributed or replicated from his or his interlocutors' utterances. It shows that from the start of the recording period, around 40% of the lexical items used by Antoine with perfective past morphology were forms that he contributed to the interaction, i.e. forms that were not used in previous utterances. This proportion was relatively stable over the period, as the proportion of lexical items analyzed as contributed by Antoine averaged 60% (SD=12%) overall. Although Antoine tended to use lexical items in past tense constructions which were also the most frequent lexical items found in such constructions in his input, he did not only retrieve forms from previous utterances – rather, a little over half of the lexical items he used with past morphology were lexical items he contributed to the interaction. Graph 6.8 gives the proportion of past tense morphology that was analyzed as having been replicated from previous utterances or contributed by Antoine. Once again, Antoine's production of past tense morphology was

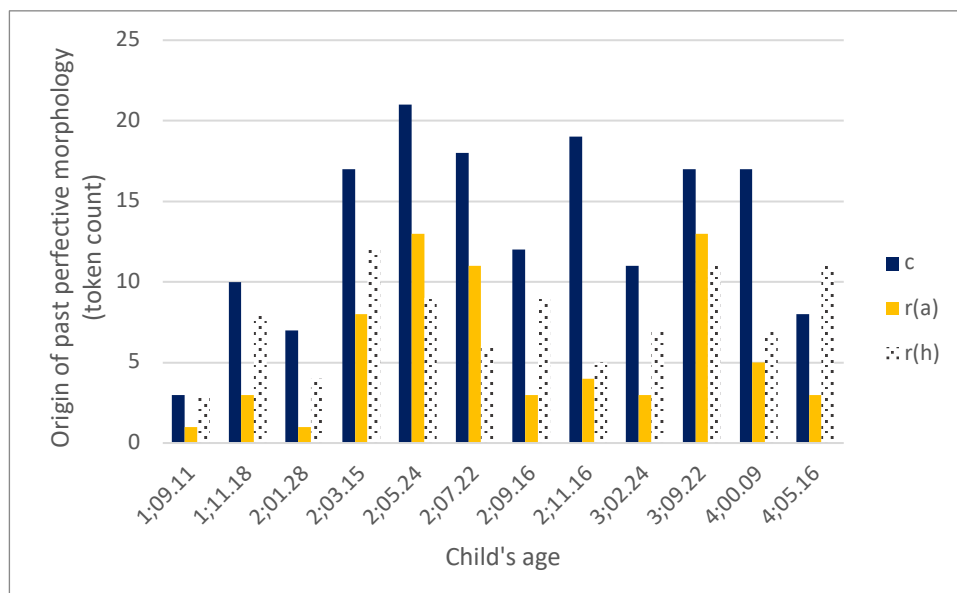
	Input	Antoine
Types (tokens)	faire (168)	faire (18)
	dire (103)	
	voir (87)	voir (29)
	finir (69)	finir (29)
	être (57)	
	tomber (47)	tomber (26)
	mettre (46)	mettre (13)
	manger (45)	manger (9)
	casser (39)	casser (36)
	avoir (37)	
	prendre (22)	
	aller (22)	
	comprendre (21)	
	gagner (21)	gagner (12)
	apprendre (20)	
	donner (19)	
	partir (19)	
	mouiller (17)	
	oublier (16)	
	acheter (15)	
trouver (15)		
		asseoir (11)
		réparer (11)

Table 6.7: Forms most frequently inflected for the perfective past tense in Antoine’s productions and in his input

stable over the period. The proportion of past perfective morphology used productively by Antoine (i.e. that was not produced in previous utterances) averaged 50% (SD=8%). A comparison between the values presented for Antoine and Anaé is provided below.



Graph 6.7: Among forms inflected for the perfective past tense, proportion of lexical items contributed by Antoine (c) or replicated from his (r(a)) or his interlocutors' previous utterances (r(h))



Graph 6.8: Among forms inflected for the perfective past tense, proportion of ATAM morphology contributed by Antoine (c) or replicated from his (r(a)) or his interlocutors' previous utterances (r(h))

6.1.2.3 Summary and comparison between Antoine and Anaé

Both children tended to use more full-fledged *passé composé* forms and less bare participles over the period, gradually mirroring the distribution of past perfective morphology observed in their input. Both children's use of past perfective morphology was also characterized by a greater degree of variability in the first half of the recording session, until Anaé was 3;01.07 and Antoine was 2;11.16. From these sessions onward, both children's use of past perfective morphology steadily approximated the distribution observed in their input. The two children had close TTR values – 0.28 for Anaé and 0.25 for Antoine. Moreover, the verb types they inflected most frequently for past perfective morphology (more than two times the average of tokens for each verb type) were also the most frequent verb types found with such morphology in their input.

The main difference between Anaé and Antoine's use of past perfective morphology has to do with the distribution of past participles. Indeed, Anaé tended to use fewer bare past participles than she used participles in copular constructions, while the reverse trend was observed in Antoine's productions. An explanation for this may be found by considering the distribution of these forms in the children's input. Indeed, out of the 782 forms inflected with past perfective morphology by the adults in Anaé's corpus, only 0.9% were bare past participles (7/782). Such forms were moreover not used consistently by the adults over the period, as they were used in only 5 of the eleven recording sessions analyzed for Anaé. Conversely, the adults in her corpus used past participles in copular constructions during all the recording sessions. These forms accounted for 13% of the forms inflected with past perfective morphology by the adults in the corpus (101/782) and 18% of the forms inflected with past perfective morphology in Anaé's productions (48/263), while bare participles accounted for only 8% (21/263) of the past perfective forms she produced. Comparatively, in Antoine's corpus, although the proportion of bare past participles was also low in his input (40/1402 or 3%), they were found in the adult data in all but 2 of the 13 recording sessions and were thus more steadily available in the child's input.

Finally, both Anaé and Antoine used tense-aspect morphology productively over the period – they inflected lexical items for past tense morphology that were not used in previous utterances; they also used past tense morphology productively more than 50% of the time over the period. The main difference between the proportion of forms productively used by the children (both in terms of the proportion of lexical items and past tense morphology that the children spontaneously contributed to the conversation) is the global trend observed for each child over the period. Indeed, a clear upward trend was identified in Anaé's data, which suggested that she used lexical items and past tense morphology more and more productively over the period. In the third recording session, during which she produced 23 forms inflected with past tense morphology (against 1 and 4 forms during the first and second sessions respectively), only around 10% of the lexical items and per-

fective past morphology she used had been replicated from another speaker's previous utterances. The proportion of lexical items and past perfective morphology Anaé spontaneously contributed to the interaction steadily increased over the period. On the contrary, this proportion was stable in Antoine's data. Overall, he tended to use past perfective morphology less productively than Anaé – the forms inflected with past perfective morphology he used were less frequently analyzed as having been contributed by Antoine, both in terms of lexical items and of morphology.

6.1.3 *Imparfait* forms in the speech of both children

The use of the *imparfait* in Anaé and Antoine's productions was extensively studied in previous work (Pariſse et al., 2018), which identified similar trends in the productions of Anaé and Antoine. Both children started using *imparfait* forms later than they did the *passé composé*, and the *imparfait* was not consistently used by the children until the end of the recording period. Anaé first used *imparfait* forms during the session when she was 3;01.07. From then on, she used *imparfait* forms in all sessions until the end of the recording period. Antoine used *imparfait* forms sporadically a little earlier – the first *imparfait* forms in his data were identified in the session when he was 2;03.15, in although he did not use *imparfait* forms consistently until he was 3;09.22. On average, *imparfait* forms accounted for 2.7% of all the verb phrases used by Anaé (SD=4.1%). Anaé's use of *imparfait* forms was thus characterized by a high level of variability – excluding the sessions when she didn't use the imperfective past tense, the proportion of *imparfait* forms she used in each session varied from 2% to 13%. In the adult data, the proportion of *imparfait* forms relative to all verb phrases averaged 3.8% (SD=2.3%). The distribution of *imparfait* forms in Anaé's data was thus less stable than in her input. It was also more variable than what was observed in Antoine's productions. Indeed, the proportion of *imparfait* forms he used averaged 1.6% relative to all verb phrases in his production (SD=2.5%). Excluding the sessions when he produced no *imparfait* forms, the proportion of *imparfait* in all sessions ranged from 2% to 9%. In the adult data, *imparfait* forms accounted for 3.3% of all verb phrases (SD=1.6%). There was thus more variability in how both children used the *imparfait* than what was observed in their input.

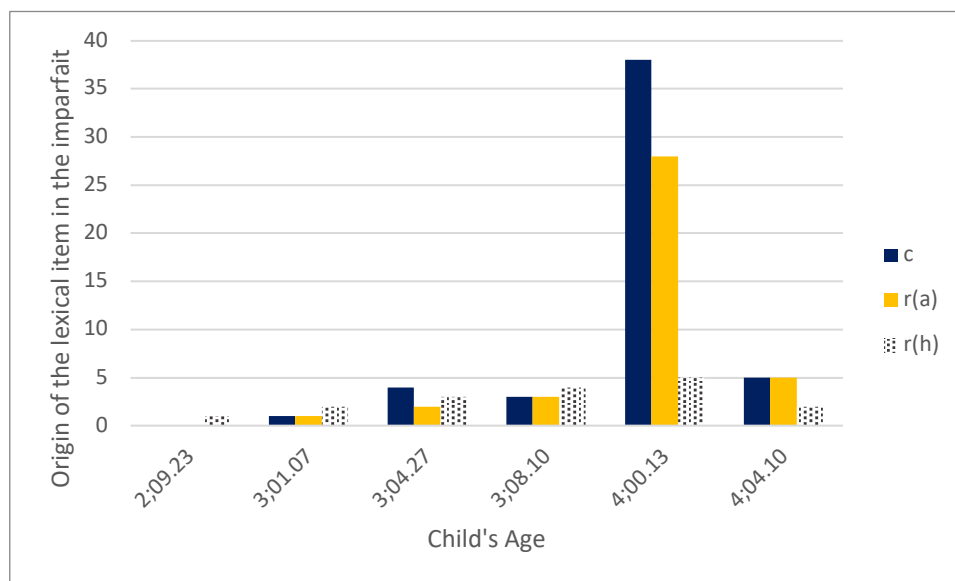
Table 6.8 lists the verb types and tokens inflected for the *imparfait* in Anaé's productions. When Anaé was aged between 1;06.08 and 3;08.10, she produced almost exclusively homophone forms of the *imparfait*, mostly inflecting the verbs “avoir” and “être” for the *imparfait*. These were also the verbs most frequently inflected for the *imparfait* in her input (the verb “être” inflected for the *imparfait* accounted for 51% of all *imparfait* forms in Anaé's input, and the verb “avoir” for 15%). Only three other forms were used by Anaé during this period: “appelait”, “fallait” and “voulait”. Until the session when Anaé was 4;00.13, the number of verb tokens used in the *imparfait* during each session remained low. From then on, Anaé used both a higher number of verb types and tokens in the

Anaé	2;00.00	2;09.23	3;01.07	3;04.27	3;08.10	4;00.13	4;04.10
						avait (19)	
						c'était (11)	
						était (9)	
						dormait (4)	
						étais (3)	
						y+avait (3)	
						jouaient (2)	
						mettait (2)	
						sontaient (2)	
						arrosait	
						attendait	
						avais	
						croyaient	
						dessinait	
						étaient	
						faisait	
						fermait	
						mettaient	était (4)
						parlait	avait (3)
					c'était (4)	partait	étais
					avait (2)	portait	allait
				c'était (4)	était (2)	riait	glissait
				y+avait (2)	étais	rigolaient	pouvait-faire
			avait	appelait (2)	avais	sentait	regardait
			c'était	avait	fallait-dormir	trouvait	vendait
Forms	était	c'était	appelait	était	voulait-dormir	voyait	voulait-atrapper
Types	1	1	3	6	7	25	9
Tokens	1	1	4	9	12	71	14

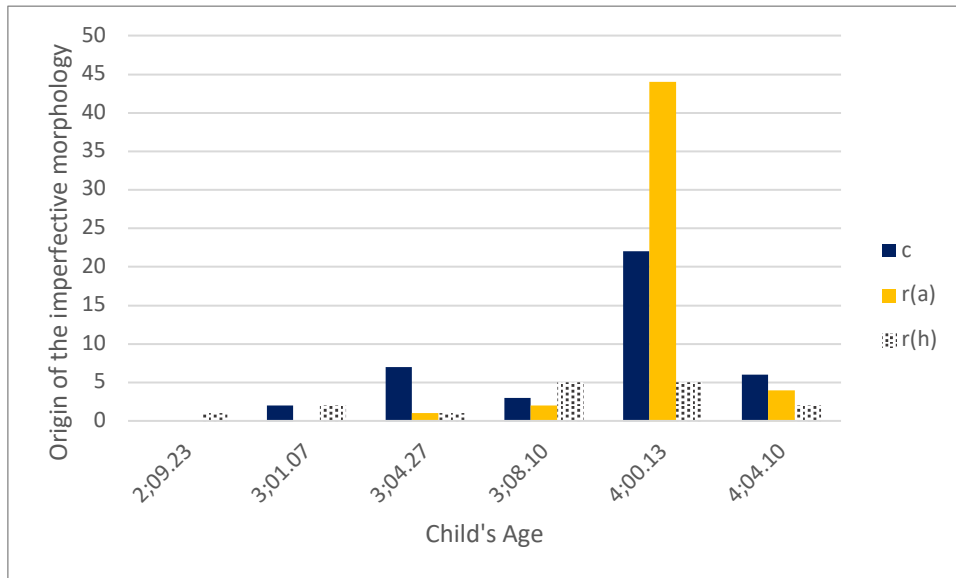
Table 6.8: Verb types and tokens inflected for the *imparfait* in Anaé's productions

imparfait (25 types and 71 tokens when she was 4;00.13 and 9 types and 14 tokens when she was 4;04.10). In addition to the higher number of verb types and tokens used in the *imparfait* by Anaé at 4;00.13, she also started using past imperfective morphology productively. This is suggested by the form “*sontaient*” which she produced instead of the target form “*étaient*”, and which signals her gradual understanding of the construction of the *imparfait*. Indeed, she no longer merely produced imperfective past tense forms as unanalyzed wholes, but rather used past imperfective morphology productively, using the present tense form “*sont*” (plural third person) with the imperfective past morpheme “*-aient*”. The variability observed in Anaé's use of the imperfective past tense does not reflect the trend in her input. Indeed, as shown in table 6.9, both the number of types and tokens used by the adults in Anaé's corpus were stable over the period.

Anaé - Input	1;06.08	1;09.04	2;00.00	2;03.30	2;06.27	2;09.23	3;01.07	3;04.27	3;08.10	4;00.13	4;04.10
Types	8	10	12	5	5	6	10	9	7	9	9
Occurrences	11	28	36	15	7	18	35	17	32	31	31

Table 6.9: Verb types and tokens inflected for the *imparfait* in Anaé's inputGraph 6.9: Among forms inflected for the *imparfait*, count of lexical items contributed by Anaé or replicated from her own or her interlocutor's previous utterances

Graph 6.9 gives the count of lexical items used in the *imparfait* by Anaé which she either contributed or replicated from previous utterances. Graph 6.10 displays the count of imperfective morphemes that were used productively by Anaé against those which were taken up from preceding utterances. Both graphs show that the verb token Anaé used in the *imparfait* at 2;09.23 was fully taken up from her interlocutor's previous utterance – both the lexical item used and the imperfective morphology Anaé used were replicated from another speaker's utterance. The session during which she produced most *imparfait* forms (at 4;00.13), was also the session when she used the *imparfait* most productively. She used imperfective morphology with lexical items that she did not retrieve from her interlocutor's preceding utterances, and also tended to initiate or maintain the use of imperfective morphology. This was also the case in the last session when she was 4;04.10, where less than 20% of the forms she used in the *imparfait* were replicated from another speaker's previous utterance. Over the period, that Anaé tended to initiate the use of the *imparfait* more frequently (as shown by graph 6.10), and to use it with lexical items that she provided rather than replicated from her interlocutor's previous utterances (as illustrated by graph 6.9).



Graph 6.10: Among forms inflected for the *imparfait*, count of morphemes contributed by Anaé or replicated from her or her interlocutor's previous utterances

Extract 6.1.7 illustrates the first creative use of the *imparfait* by Anaé – where she contributed both imperfective morphology and the lexical item she inflected for the *imparfait*.

Extract 6.1.7.

Anaé, 3;04.27

CHI : crotte de nez. (*bogey.*)

CHI: c'est qui là? (*who's that?*)

MOT: c'est le loup. (*it's the wolf.*)

CHI: mais il s'appelle comment le loup ? (*but what's the wolf's name?*)

MOT: ah je sais pas comment il s'appelle. (*I don't know what his name is.*)

%sit: MOT leaves the room to ask Anaé's brothers to go to bed.

CHI: il s'**appelait** tiko. (*his name was tiko.*)

CHI: alors c'est tiko. (*so this is tiko.*)

MOT: alors vas-y crotte de nez. (*right so bogey, go ahead.*)

%sit: MOT is back and prompts Anaé to take up where she left off.

CHI: alors tiko. (*so tiko.*)

CHI: il s'appelle tiko lui. (*his name is tiko.*)

MOT: d'accord. (*alright.*)

MOT: vas-y. (*go ahead.*)

CHI: **c'était** ce matin un loup de yyy. (*it was this morning a wolf yyy.*)
 CHI: un vrai loup qui s'**appelait** +... (*a real wolf called tiko.*)

The first form in bold in the transcription is the first *imparfait* form used productively by Anaé with a verb other than *avoir* or *être*. The extract starts with Anaé pointing at the first page of the book she has opened, and saying the title of the book (“*crotte de nez*”). She then points to the picture of the character below the title and asks her mother who the character is (“*c'est qui là?*”). The mother answers “*c'est le loup*”, which prompts Anaé to qualify her question by asking for the character’s name (“*mais il s'appelle comment le loup*”). Her mother answers by saying that she does not know and leaves the room; Anaé then makes up a name for the character and announces it by using the *imparfait* (“*il s'appelait Tiko*”). This creative use of the *imparfait* (where neither the lexical item nor the imperfective morpheme it is used with were produced in a previous utterance) was closely tied to the situation of pretend-reading it was produced in. This is studied in more details in section 6.3, which focuses on the temporal functions of the *imparfait*. Here, the *imparfait* should be analyzed as signaling a modal break rather than a temporal one. It is used by Anaé when she departs from a factual description of the character to its fictive naming. The utterance “*il s'appelait Tiko*” could then be glossed as “let’s say his name was Tiko”, with the *imparfait* signaling the entry into the narrative. When her mother comes back into the room and prompts her to take up her narrative, Anaé departs from the fictive mode and uses a present tense form to inform her mother of her naming of the character (“*il s'appelle Tiko*”). The mother acknowledges this decision and encourages her daughter to take up her activity of pretend-reading. Anaé does so once again by switching to the *imparfait* in the final utterances of the extract (“*c'était un loup de yyy. / un vrai loup qui s'appelait +...*”). Such uses of the *imparfait* in activities of pretend-reading make up the bulk of the imperfective past tense forms used by Anaé during the session when she generalized imperfective morphology to a greater number of verb types, when she was 4;00.13. Earlier uses of the *imparfait* by Anaé are consistent with the predictions of usage-based theories, which predict that children will first use the forms that are most frequently represented in their input, and that these forms are first used as unanalyzed wholes. This is supported by the observation that she first used fixed forms directly taken from her input during several sessions before she generalized imperfective past morphology to different types of verbs. The use of the *imparfait* appears to be highly tied to characteristics of the situation of utterance (Parisse et al., 2021), as Anaé started to generalize the *imparfait* to a high number of verb types during situations where she engaged in pretend-reading activities. Such situations were likely to trigger the use of imperfective past morphology to signal a modal break, which is characteristic of the imperfective past tense in French.

Similar observations can be made on Antoine’s data – he did not use the *imparfait*

consistently over the period, and only generalized its use to a high number of verb types at the end of the recording period. He used his first *imparfait* forms during the session when he was 2;03.15, and until the session when he was 3;09.22, he never used past imperfective morphology with more than three verb types. The *imparfait* forms used by Antoine in each session are listed in table 6.10. It shows that Antoine also restricted his first uses of the *imparfait* mostly to the verbs “être” and “avoir”, which were also the most frequent verb types used in the *imparfait* by his caregivers (“être” and “avoir” respectively accounted for 40% and 14% of the verb types used in the *imparfait* in Antoine’s input). As mentioned above, Antoine used more verb tokens in the *imparfait* during the sessions when he was 3;09.22 and 4;00.09, but only extended the use of the *imparfait* to a significantly higher number of verb types during the last recording session, when he was 4;05.16. During this recording session, he engaged in pretend-play activities, in which the *imparfait* would likely to be used with a modal value (this is detailed in section 3 of the present chapter).

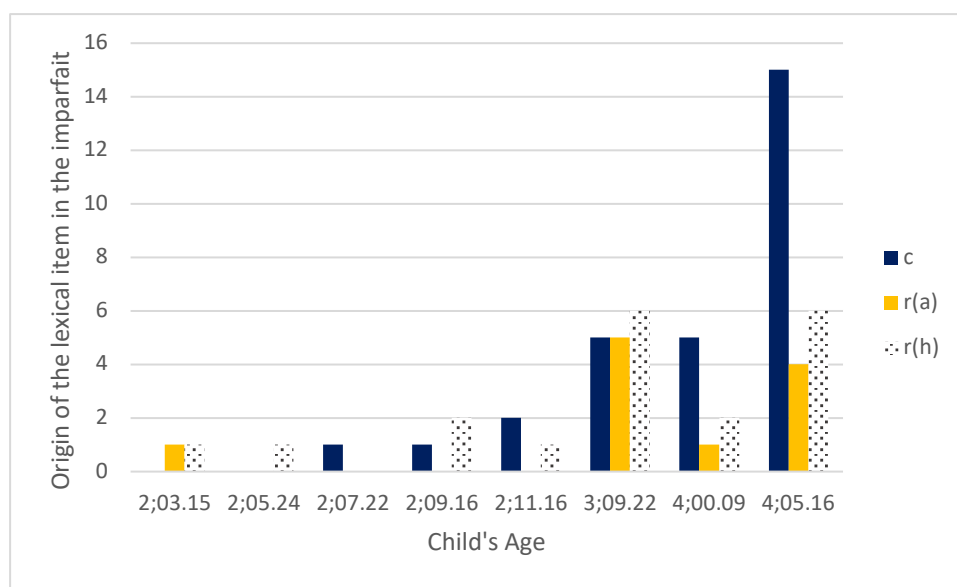
Antoine	2;03.15	2;05.24	2;07.22	2;09.16	2;11.16	3;09.22	4;00.09	4;05.16
								c’était (7)
								était (2)
								étais (3)
								avait (3)
						avais (5)		disait (2)
						étais (4)		garait (2)
						c’était-rangé (2)		y+avait
						avait (2)		avaient
						fallait	c’était (3)	disais
				avait	c’était	étais	était (3)	étaient
				étais	avait	était	croyais	pensais
Forms	venait	était	c’était	était-arrêté	y+avait	voulait-aider	faisait	venait
Types	1	1	1	3	3	8	4	12
Tokens	2	1	1	3	3	17	8	25

Table 6.10: Verb types and tokens inflected for the *imparfait* in Antoine’s productions

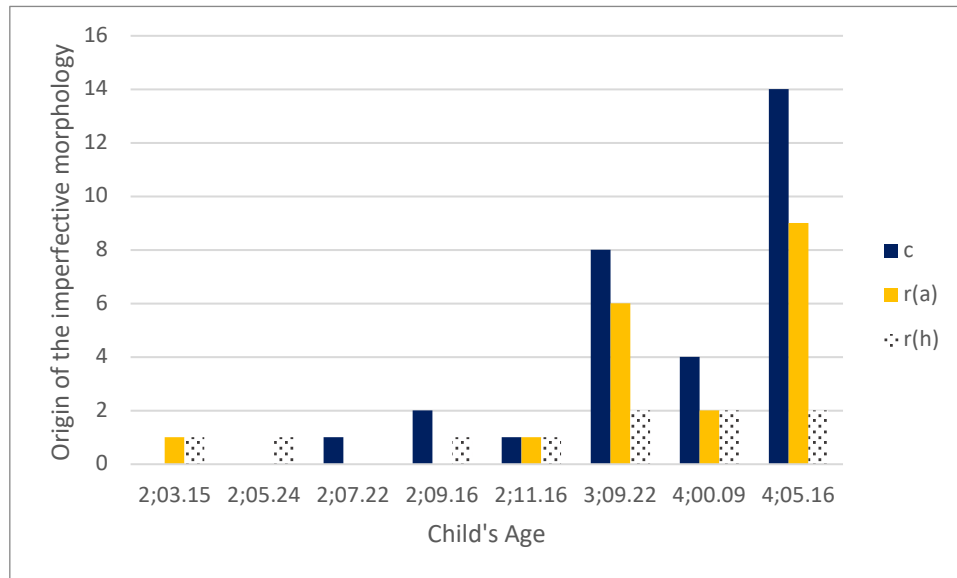
Similarly as for Anaé, the variability observed in Antoine’s production of imperfective past tense forms over the period cannot be directly tied back to the rates of production of the imperfective past tense in his input. Table 6.11 gives the number of verb types and tokens inflected for the *imparfait* in Antoine’s input. Contrary to what was observed in Antoine’s productions, the *imparfait* was consistently used by the adults in Antoine’s corpus in all sessions. Frequency alone thus cannot explain why both Anaé and Antoine did not use the *imparfait* consistently over the period. Section 3 of the present chapter focuses on the temporal functions served by the *imparfait* as a way to explain the children’s use of past imperfective morphology in both corpora.

Graphs 6.11 and 6.12 confirm the trend identified in previous studies on Antoine’s use of the *imparfait*. During the first two recording sessions, Antoine’s did not use imperfective past morphology productively – he used two verb tokens in the *imparfait*, first taking up a form from another speaker’s previous utterance, and then immediately repeating the form.

Antoine - Input	1;06.22	1;09.11	1;11.18	2;01.28	2;03.15	2;05.24	2;07.22	2;09.16	2;11.16	3;02.24	3;09.22	4;00.09	4;05.16
Types	8	17	6	8	11	4	8	8	9	10	5	6	11
Occurrences	19	61	8	24	24	5	11	22	19	25	9	14	31

Table 6.11: Verb types and tokens inflected for the *imparfait* in Antoine's inputGraph 6.11: Among forms inflected for the *imparfait*, count of lexical items contributed by Antoine or replicated from his own or his interlocutor's previous utterances

The only form he used in the *imparfait* during the second recording session was taken up from his interlocutor's previous utterance. From the third session onward, Antoine started using imperfective past morphology with lexical items that had not been used in the preceding utterances, although he restricted the use of such morphology to two verb types which, as mentioned above, were the most frequent verb types inflected for the *imparfait* in his input. Finally, the session when Antoine was 3;09.22 was when he started to use the *imparfait* with a higher number of verb tokens and types. Graph 6.12 shows that from this session on, Antoine also initiated and maintained the use of the *imparfait* rather than predominantly taking up imperfective past morphology from his interlocutors' previous utterances. This tendency is maintained in the last two recordings, during which the proportion of *imparfait* forms directly taken up from another speaker's utterance remain lower than in the previous sessions.



Graph 6.12: Among forms inflected for the *imparfait*, count of morphemes contributed by Antoine or replicated from his own or his interlocutor's previous utterances

The present section showed that over the recording period, both Anaé and Antoine's use of perfective and imperfective past tense forms tended to gradually resemble their input. Regarding past perfective morphology, both children first used participles rather than full-fledged *passé composé* forms, but they also both gradually used more and more *passé composé* forms over the period, gradually mirroring their input. The children's use of past perfective morphology was characterized by a high degree of variability in the first half of the recording period and grew more stable over the period as the proportion of perfective past tense forms they used gradually tended to approximate the proportions observed in their input. This trend was also accompanied by a tendency to use past perfective morphology more spontaneously and productively – both children used more and more verb types inflected for past perfective morphology over the recording period. Anaé especially also contributed more and more new lexical items inflected for the perfective morphology, and also initiated the use of past perfective morphology more frequently at the end of the recording period than at the beginning. Antoine used past perfective morphology less productively – more past perfective forms he used were forms he had replicated from his interlocutor's previous utterances. The recording period also corresponded to the time when both children started to use the *imparfait*. The first forms used by both Anaé and Antoine in the *imparfait* were the forms most frequently found in the *imparfait* in their input – mostly homophones of the verbs “*être*” and “*avoir*”. Both children generalized imperfective past morphology to a greater number of verb types at the end of the recording period, during one session when they engaged in

pretend-play or pretend-reading activity, demonstrating that the children's use of the *imparfait* was highly tied to the situation of utterance (Pariisse et al., 2018, 2021). Anaé and Antoine's use of past tense forms confirmed several predictions of the usage-based theories. First, perfective past tense forms, which were more frequently represented in the input were also used by both children before imperfective past tense forms. Second, both children used perfective and imperfective morphology first with the forms that were most frequently found inflected with such morphology in their input. Finally, the differences observed between the children in their first uses of past perfective morphology – namely that Anaé tended to use more past participles after copula verbs rather than bare participles – could be tied back to the consistency with which such forms were used in their input.

6.2 Tenses and lexical aspect

Several studies on the productions of monolingual children of different languages have observed preferential associations in children's productions between past morphology and specific lexical aspect categories. Such studies have argued that English monolingual children initially strongly associate past perfective morphology to telicity and punctuality, predominantly inflecting predicates belonging to the lexical aspect categories of achievements and accomplishments for the perfective past, before generalizing the use of such morphology to other situation types (first to activities, and later to states). The same children were said to use imperfective past morphology predominantly with atelic, durative situations types. These preferential associations between tense morphology and lexical aspect, sometimes labeled an “undergeneralization” of tense morphemes, led many linguists to hypothesize that the first uses of tense morphology in children's speech were aimed at marking aspectual distinction rather than temporal ones (Bronckart and Sinclair, 1973; Bloom et al., 1980a), suggesting that all children follow a universal path of acquisition of tense-aspect morphology triggered by the inherent temporal features of predicates. Testing the aspect hypothesis and its predictions against French data should inform us on how children gradually learn to use past tenses in French, and to highlight the role played by the children's linguistic experience in their acquisition of tense-aspect morphology. The present section compares the associations between past tense-aspect morphology and lexical aspect found in the speech of Anaé and Antoine and in their input. Section 6.2.1 analyzes the association between perfective past morphology and lexical aspect in the children's productions and in their input, while section 6.2.2 addresses the children's generalization of past perfective morphology across lexical aspect categories. I then turn to the associations between imperfective past morphology and lexical aspect in section 6.2.3.

		% Activity	% Achiev.	% States	% Accomp.	Total Tok.
Anaé	<i>Passé composé</i>	14.0	57.2	5.1	23.7	215
Child	Present	12.4	7.2	67.6	12.8	1170
	<i>Imparfait</i>	14.4	3.6	78.4	3.6	111
Adult	<i>Passé composé</i>	17.8	46.7	8.7	26.9	681
	Present	23.5	9.9	50.4	16.2	5977
	<i>Imparfait</i>	12.7	3.8	78.7	4.9	264
<hr/>						
		% Activity	% Achiev.	% States	% Accomp.	Total Tok.
Antoine	<i>Passé composé</i>	15.2	69.3	3.1	12.4	320
Child	Present	13.3	13.8	58.7	14.2	1428
	<i>Imparfait</i>	3.3	0	83.3	13.3	60
Adult	<i>Passé composé</i>	17.5	46.2	10.1	26.3	1166
	Present	20.5	12.2	48.5	18.8	9514
	<i>Imparfait</i>	16.8	6.1	68.9	8.3	406

Table 6.12: Distribution of *passé composé*, *imparfait* and present tense forms across lexical aspect categories in Adult and Child speech for Anaé and Antoine over the period

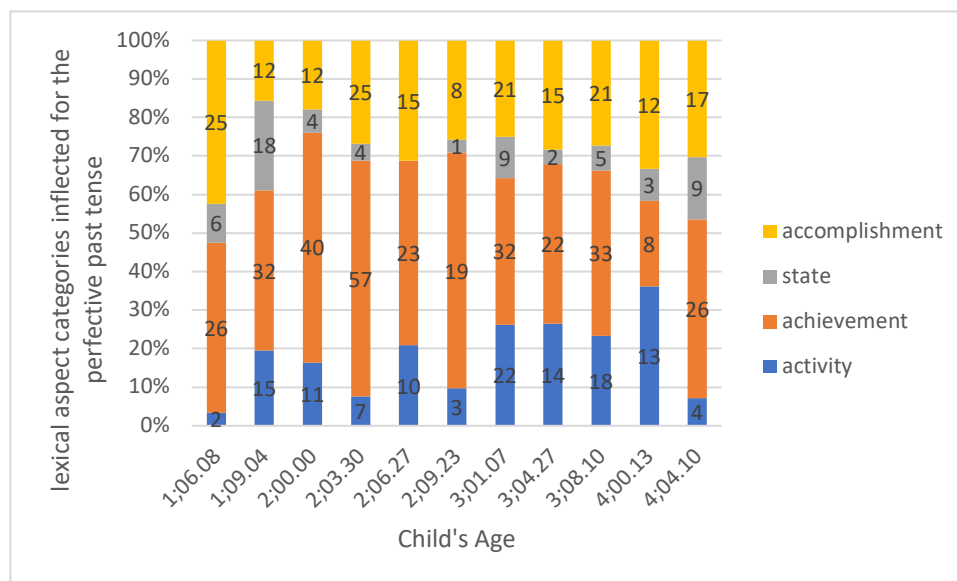
6.2.1 Associations between perfective past tense and lexical aspect

The Prototype Account predicts that adults in CDS will associate perfective morphology predominantly with telic, punctual verbs (accomplishments and achievements). In the following sections, only full *passé composé* forms and bare past participles were considered. Past participles used after a copula verb were excluded, as they unambiguously focused the result of events rather than their past temporality. Table 6.12 gives the distribution of tense forms across lexical aspect categories for the perfective and imperfective past tenses as well as for the present tense, which was the most frequent tense used by both children and adults in the corpora. It shows similar tendencies in the children’s productions and in their input regarding the association of these three tenses with lexical aspect categories – the present tense and the *imparfait* were mostly used by the children and the adults in the corpora with stative predicates, while the *passé composé* was predominantly used with telic situation types (accomplishments and achievements).

In Anaé’s input, telic predicates accounted for 73.6% of the forms inflected for past perfective morphology. A similar proportion was found in Antoine’s input where 72.5% of the perfective past tense forms used by the adults were accomplishments or achievements. Both Anaé and Antoine’s caretakers thus tended to use the perfective past tense with accomplishments and achievements much more frequently than with atelic situation types (activities and states). Chi-square values were calculated in order to determine whether this tendency in the input was significant, or whether it could be attributed to chance. The results were significant for the adults in both corpora (Anaé: $\chi^2(1) = 151.31$, $p < 0.00001$;

Antoine: $\chi^2(1) = 236.37, p < 0.00001$) – the adults in both corpora used the perfective past tense predominantly with telic predicates (accomplishments and achievements).

Graph 6.13 gives the distribution of past perfective forms across lexical aspect categories over the period in Anaé’s input¹. It shows that the adults in Anaé’s corpus used the perfective past tense with all lexical aspect categories in all but one recording session and that on the whole, the distribution of past perfective forms across lexical aspect categories in the adults’ productions in Anaé’s corpus was stable over the period.



Graph 6.13: Distribution of lexical aspect categories among verb forms inflected for the perfective past tense in Anaé’s input (token count in black)

There is one session when Anaé was 4;00.13 during which the proportion of perfective past tense forms used with activity predicates increased significantly (36% of the perfective past tense forms used by Anaé’s mother were activities during the session when Anaé was 4;00.13). This can be explained by situational factors – during this session, the observer was absent and the camera was operated by Anaé’s mother who was also her main interlocutor. Because she was operating the camera, she remained off-frame during the recording session and did not directly engage in the pretend-play and pretend-reading activities carried out by Anaé, who tended to use monologic utterances either because she pretended to read or because she was commenting on the actions she performed alone. In such cases, her mother attempted to engage in an interaction with her child, often by asking her questions about past events, mostly using activity predicates inflected for the perfective past tense.

This is illustrated by extract 6.2.1 during which Anaé was playing with a toy farm

¹In this graph and the following, the orange bar gives the proportion of achievements (noted c), the yellow bar gives the proportion of accomplishments (noted r), the grey bar gives the proportion of states (noted e), and the blue bar gives the proportion of activities (noted a).

which was set in front of her, along with toy farm animals. In this extract, her mother used activity predicates inflected for the perfective past tense (in bold in the transcription) to ask her about what she did the night before, during a sleepover at a friend's house. Anaé did not answer right away but rather continued commenting on the toys she was playing with, leading her mother to repeat the question. This happened several times during the recording, which explains the surge in activity predicates inflected for the perfective past tense during this session. Apart from this recording, the distribution of past perfective morphology across lexical aspect categories in Anaé's input was stable throughout the recording period.

Extract 6.2.1.

Anaé, 4;00.13

%act: CHI puts down a toy hay bale.

CHI: ça c'est pour les cochons aussi. (*that's for the pigs as well.*)

CHI: oh.

MOT: bon alors vous **avez fait** quoi d'autre chez Caro vous avez regardé un film et puis ? (*so what else did you do with Caro, you watched a movie and what else?*)

CHI: et puis on a joué un peu. (*we played for a while.*)

MOT: vous **avez joué** à quoi ? (*what games did you play?*)

CHI: +< la paille. (*the hay.*)

%act: CHI takes the hay bale and puts it behind her, off-camera.

CHI: hop.

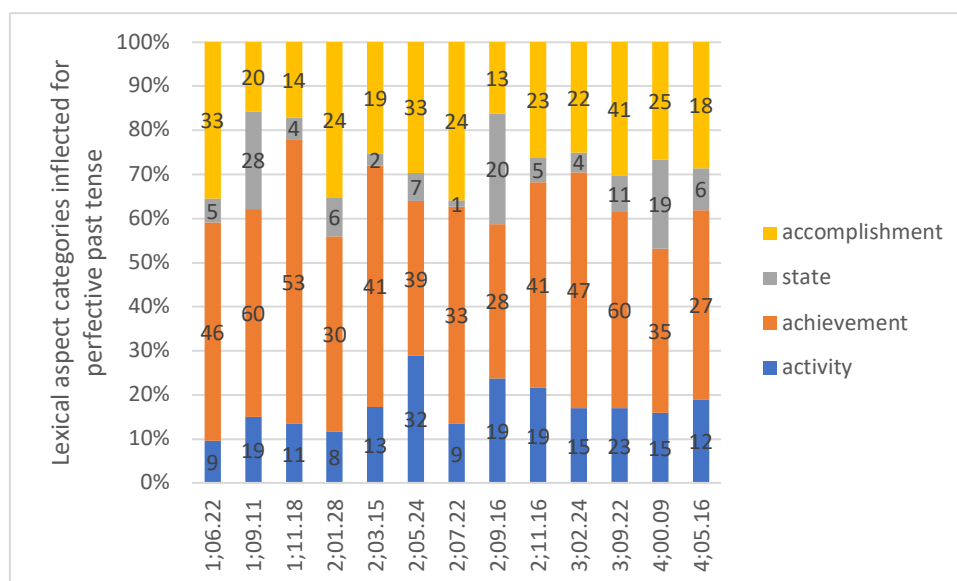
CHI: hop.

MOT: vous **avez joué** à quoi ? (*what games did you play?*)

CHI: euh <au carame(l)> [/] au caramel <et au(ssi)> [/] <et aussi à plein de playmobil> ! (*caramel and also with lots of playmobil figures.*)

Graph 6.14 gives the distribution of past perfective tense forms across lexical aspect categories in Antoine's input, which was also stable over the period. There was a clear tendency for the adults in Antoine's corpus to associate past perfective morphology predominantly with telic predicates.

Finally, chi-square values were also calculated in order to determine whether the adults in the corpora used past perfective morphology significantly more with achievements (punctual and telic predicates) than with the three other lexical aspect categories. Once again, the results were significant for both corpora (Anaé: $\chi^2(3) = 216.11$, $p < 0.00001$; Antoine: $\chi^2(3) = 341.36$, $p < 0.00001$) – the adults in both corpora used the *passé com-*



Graph 6.14: Distribution of lexical aspect categories among verb forms inflected for the perfective past tense in Antoine's input

posé more frequently with achievements than they did with any of the three other lexical aspect categories.

The next prediction made by the Prototype Account is that children would treat these frequent associations in their input (between telic predicates and past perfective morphology and between achievements and past perfective morphology) as prototypical form-function pairings and would overuse them in the first stages of development. Table 6.13 summarizes the percentage (token count within brackets) of perfective past tenses used with telic predicates in both adult and child data in Anaé and Antoine's recordings.

	Child data	Adult data
Anaé corpus	80.1 (174)	73.6 (501)
Antoine corpus	81.7 (263)	72.5 (851)

Table 6.13: Percentage (token count) of perfective past tense used with accomplishments and achievements

Chi-square values were calculated in order to determine whether the children associated past perfective morphology with telicity significantly more than what was observed in their input. The results showed that both children indeed used the *passé composé* even more often than their parents with telic predicates (Anaé: $\chi^2(1) = 4.77$, $p < 0.05$; Antoine: $\chi^2(1) = 11.359$, $p < 0.001$). The difference in the p value obtained for both children signals that the difference between children and adults' rates of association of past perfective morphology and telic predicates was more clear-cut for Antoine than it was for Anaé, although a significant difference was observed for both children between their use of past

	Child data	Adult data
Anaé corpus	57.2 (123)	46.7 (318)
Antoine corpus	69.3 (223)	46.2 (542)

Table 6.14: Percentage (token count) of perfective past tense used with achievement predicates

perfective morphology and the rates observed in their input. The results concur with the predictions of the prototype account whereby children overuse frequent associations found in their input.

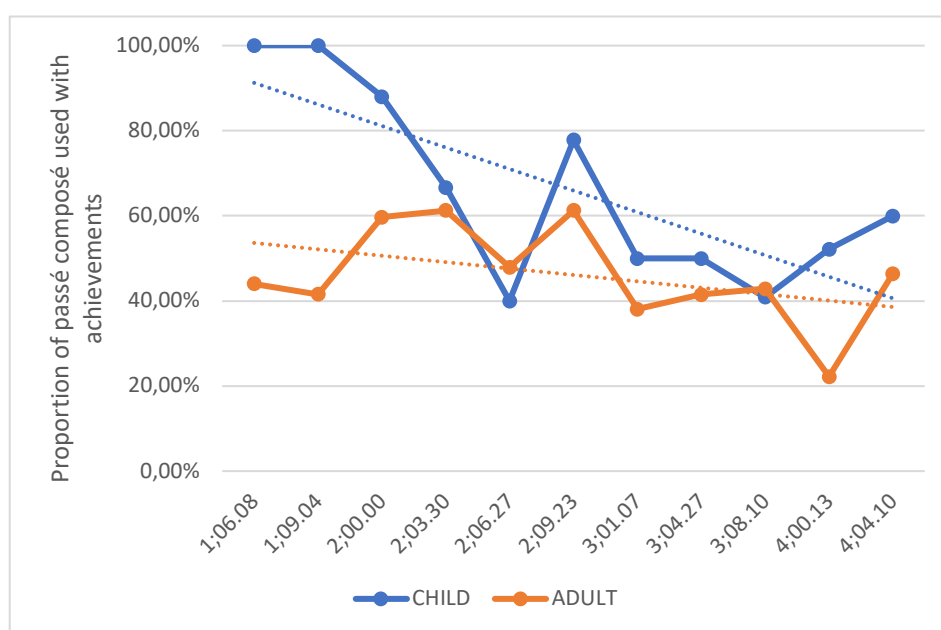
I then considered only telic, punctual predicates (achievements, in Vendler’s terminology) to determine to what extent children tended to inflect them predominantly for the perfective past tense. Table 6.14 summarizes the percentage (token count within brackets) of perfective past tenses used with achievement predicates in both adult and child data in Anaé and Antoine’s recordings. Once again, chi-square values showed that the children significantly overused the frequent association found in their input between the *passé composé* and achievement predicates (Anaé: $\chi^2(3) = 8.33$, $p < 0.05$; Antoine: $\chi^2(3) = 62.52$, $p < 0.0001$). The values show that both children tended to use the *passé composé* with achievement verbs even more frequently than their parents did, although once again this tendency was more marked for Antoine than it was for Anaé. This is consistent with the prediction made by the Aspect Hypothesis that children will overuse perfective morphology with achievements in particular in the first stages of development. It is also consistent with the predictions of the prototype account which claims that children associate past perfective morphology to telic predicates because they overuse frequent associations found in their input, as achievements were the predicates most frequently inflected for the perfective past tense by the adults in both corpora. However, it questions the claim that the acquisition of ATAM morphology is exclusively guided by lexical aspect – indeed, if telicity were the main temporal feature guiding the acquisition of ATAM morphology, no difference should be observed between the categories of achievement and accomplishment.

6.2.2 Generalization path of past perfective morphology

The Aspect Hypothesis predicts that children will use perfective past morphology first with telic, punctual predicates (i.e. achievements), before they generalize the use of the *passé composé* to other lexical aspect categories. The next question I addressed was whether the children indeed generalized the *passé composé* across lexical aspect categories, and if so, whether they followed the path predicted by the Aspect Hypothesis.

Graph 6.15 displays the percentage of *passé composé* forms that were achievement verbs in child and adult data during each of Anaé’s recording sessions. Despite some variability, there is a tendency for the proportion of *passé composé* forms used with achievement

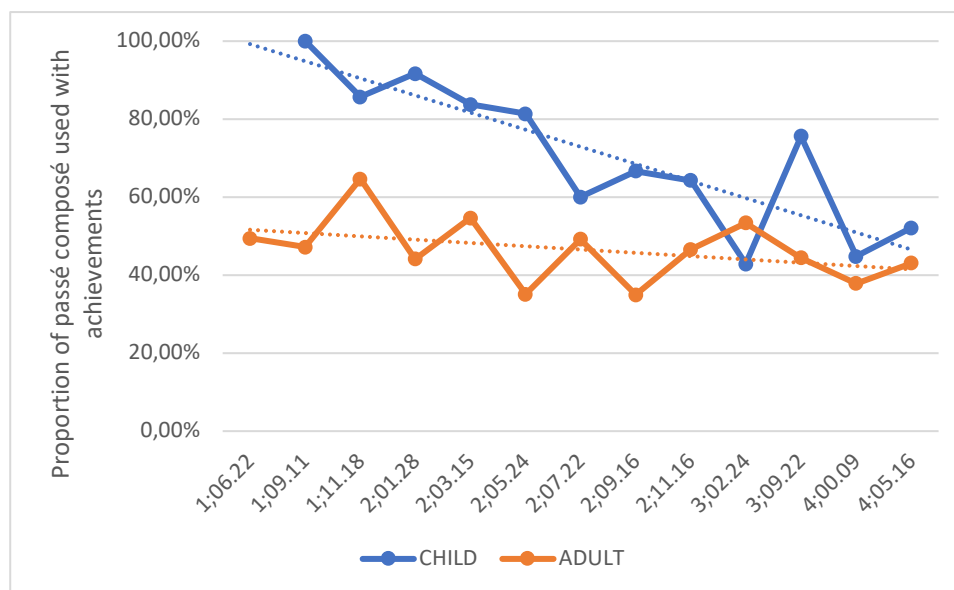
predicates to decrease in Anaé's productions². At the beginning of the period, 100% of the verb forms used in the *passé composé* by Anaé were achievements, and this rate dropped to 60% by the end of the period, resembling adult rates. Chi-square values were calculated to compare the first six sessions to the last five sessions of the recording period. This was done in order to determine whether the significant difference observed between the rates of association of perfective past tense morphology and achievement predicates in the speech of the children and in their input held over the period, or whether this difference had disappeared in the second half of the recording period. The difference between the rates of association of the *passé composé* and achievement predicates in Anaé's productions and in her input was significant only during the first half of the recording period (Period 1: $\chi^2(3) = 8.80$, $p < 0.05$; Period 2: $\chi^2(3) = 6.21$, $p = 0.102$). She no longer had a tendency to associate past perfective morphology to achievement predicates significantly more than the adults in her corpus during the second half of the period.



Graph 6.15: Proportion of *passé composé* forms used with achievement predicates (full lines) and linear trendline (dotted lines) in Anaé's corpus

Antoine also tended to associate the perfective past tense almost exclusively with achievement predicates at the beginning of the period, but these rates dropped significantly by the end of the period, as illustrated by graph 6.16. At the beginning of the period, 100% of the perfective past tense forms used by Antoine were achievement verbs, while they accounted for around 50% percent of the *passé composé* forms he used during the last recording session. There was thus a tendency for Antoine to generalize the use of past perfective morphology to other lexical aspect categories over the period. I calculated chi-square values to compare the association rate between achievement predicates and

²This was confirmed by the calculation of linear trend lines explained below.



Graph 6.16: Proportion of *passé composé* forms used with achievement predicates (full lines) and linear trendline (dotted lines) in Antoine's corpus

past perfective morphology in the first six sessions and in the last seven sessions of the recording. Contrary to what was found for Anaé, Antoine associated the *passé composé* to achievements significantly more than the adults in his corpus during both the first and the second half of the recording period (Period 1: $\chi^2(3) = 51.15$, $p < 0.00001$; Period 2: $\chi^2(3) = 19.48$, $p < 0.001$).

Globally, there was a tendency for both children to generalize the use of the *passé composé* across lexical aspect categories, although this was more marked in Anaé's data than in Antoine's. Linear regressions were computed to yield the trend of the data over the period (dotted lines in graphs 6.15 and 6.16). These trends show two important things: first, both children's rates of association of past perfective morphology with achievement predicates decreased over the period, and got closer to adult values (adult and child trend lines tend to get closer in both graphs). Second, as expected, the trend lines traced for the adult data show less variability than what is observed for the children. However, the adults in both corpora also tended to associate the perfective past tense to achievements less at the end of the recording period than they did at the beginning. This may suggest that the adults in the corpora scaffolded the children's acquisition of the perfective past tense by overusing it with telic, punctual predicates, aligning with their children's use of past perfective morphology. This is illustrated in extract 6.2.3, in which Antoine and his uncle (the observer, noted OBS in the transcription) were talking about a cube tower that the child had built on the coffee table in front of him, and which he toppled over at the beginning of the extract.

Extract 6.2.2.

Antoine, 2;01.28

OBS: ah non elle est belle <faut xxx la laisser xx> [///] faut la laisser comme ça. (*no it's nice you should leave it as is.*)

CHI: un deux trois (.) 0 [=! sourit]. (*one two three.*)

%act: CHI touches the tower with his finger and then topples it over by pushing it with his hand.

OBS: tu la refais ? (*will you do it again?*)

CHI: non **tombée**. (*no fell-PP.*)

OBS: mais je sais qu'elle **est tombée** mais maintenant qu'elle **est tombée** (il) faut la remettre. (*I know it has fallen down but now that it has you should do it again.*)

Extract 6.2.3 exemplifies the first past tense forms used by Antoine in the corpus – the form “*tombée*” is a bare participle, which is taken up by the observer, who expands it into the full-fledged *passé composé* form “*est tombée*” which he repeats twice. Such scaffolding uses of past perfective morphology can explain why adults associated past perfective morphology with achievement predicates slightly more often at the beginning of the period (when such forms accounted for most of the past perfective forms used by the children) than at the end of the recording period.

These observations of preferential associations in the speech of children between telic, punctual predicates and the *passé composé* do not necessarily lend support to the claim that children’s acquisition of past tense-aspect morphology in French is triggered by lexical aspect. Indeed, the analysis of the differences between the generalization path of perfective morphology across lexical aspect categories in Anaé and Antoine’s productions suggest that lexical aspect is not the sole trigger of acquisition of past perfective morphology. In order to determine the generalization path of past perfective morphology in the children’s productions, only the forms for which perfective morphology had been coded as initiated by the children were counted. This was done in order to avoid biases that could have originated from considering forms directly replicated from another speaker’s utterance as productive uses of past perfective morphology. Extract 6.2.3 gives an example of *passé composé* forms which were analyzed as replicated from her mother’s previous utterance.

Extract 6.2.3.

Anaé, 2;03.30

MOT: oui tu t(e) rappelles quand on était allés au zoo ? (*yes do you*

remember when we went to the zoo?)

CHI: ouais. (*yes.*)

MOT: on avait pris le train. (*we went by train.*)

CHI: anaé e@fs a pris o@fs train. (*anae took a train.*)

MOT: anaé elle a pris le train et on est allés où ? (*anae took a train and where did we go?*)

CHI: yyy **allés** où ? (*go where?*)

MOT: on est allés au +..? (*we went to the...*)

CHI: au +..? (*the...*)

MOT: zoo. (*zoo.*)

CHI: zoo. (*zoo.*)

MOT: et qu'est-c(e) qu'on a vu au zoo ? (*and what did we see at the zoo?*)

CHI: au zoo yyy on **a vu** +... (*in the zoo we saw...*)

MOT: on a vu des +/. (*we saw some...*)

CHI: +< serpents ! (*snakes!*)

Antoine also replicated stative predicates inflected for the *passé composé* from his interlocutor's previous utterances before he produced them productively. Because they were analyzed as having been taken up from another speaker's previous utterance, instances such as the forms in bold in extracts 6.2.3 and 6.2.4 were excluded from the analysis of the path followed by Anaé and Antoine in their generalization of past perfective morphology from achievement predicates to different categories of lexical aspect.

Extract 6.2.4.

Antoine, 2;09.16

MOT: ben <mamy claud> [/] oui t(u) as été déjeuner chez mamy Claude.
(*well yes you had lunch with grandma claud.*)

CHI: 0.

MOT: mais avant d'aller chez mamy claud on a été où ? (*but before we went to grandma Claude's house where did we go?*)

CHI: <**été** où> [=! chuchote]. (*did go where?*)

MOT: oui on a été où ? (*yes where did we go?*)

CHI: **été** où ? (*did go where?*)

MOT: chez le +..? (*to the...*)

CHI: 0.

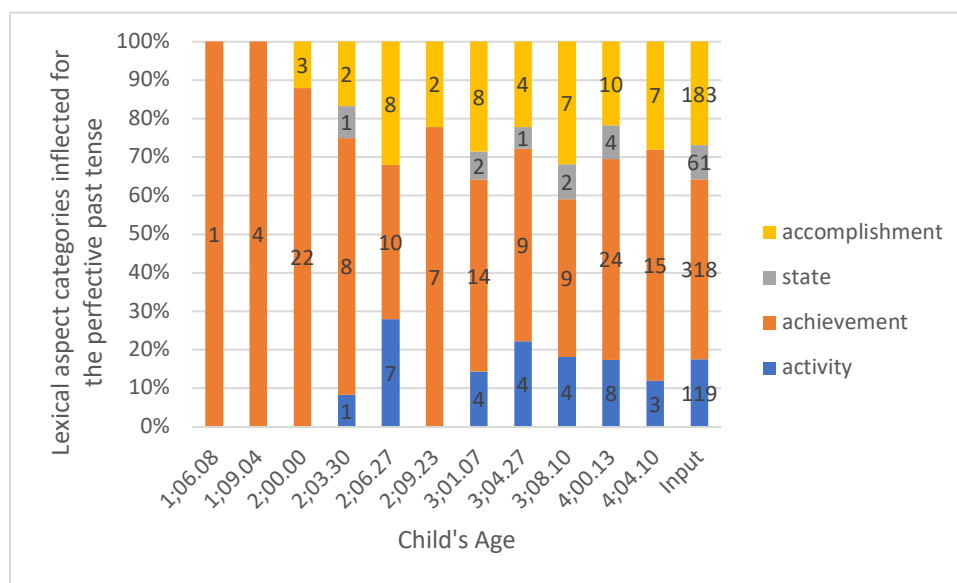
%act: CHI moves his lips while looking at MOT.

MOT: (en)fin au laboratoire. (*well to the lab.*)

CHI: au laboratoire. (*to the lab.*)

MOT: oui ! (*yes.*)

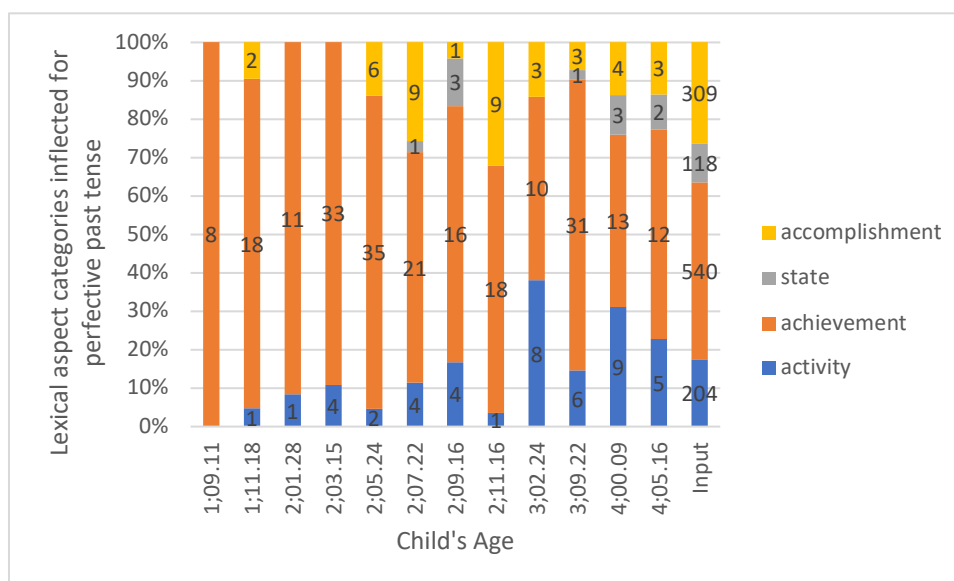
Graph 6.17 thus considers *passé composé* forms had been contributed by Anaé, and gives their distribution across lexical aspect categories for each recording session.



Graph 6.17: Distribution of lexical aspect categories among verb forms inflected for the perfective past tense in Anaé's productions

Anaé followed the generalization path predicted by the Aspect Hypothesis, as she first extended her use of past perfective morphology to telic, durative predicates (i.e. accomplishments) when she was 2;00.00, and only later to activities (i.e. atelic, durative predicates) when she was 2;03.30. She used past perfective morphology productively with stative predicates only at the end of the period, and did so only with three different verb types – the verbs of perception *voir* and *entendre*, and *avoir*. The children did not follow exactly the same trend in their creative uses of past perfective morphology across lexical aspect categories.

As shown in graph 6.18, Antoine first generalized past perfective morphology to activity predicates consistently from the third recording session onward (when he was 1;11.08), and only later did he start using the *passé composé* with accomplishments. This contradicts the claim made by the Aspect Hypothesis according to which the acquisition of past perfective morphology is universally triggered by lexical aspect properties, and in particular that telicity is the main temporal feature guiding the acquisition of past perfective morphology. I argue that Antoine's use of past perfective morphology can be explained by an analysis of the functions such forms serve in his input and in his productions – this is addressed in



Graph 6.18: Distribution of lexical aspect categories among verb forms inflected for the perfective past tense in Antoine's productions

the last section of the present chapter, dedicated to the temporal reference of past tense forms in Anaé and Antoine's recordings.

6.2.3 Associations between imperfective past tense and lexical aspect

The Aspect Hypothesis predicts that children will start using imperfective morphology predominantly with atelic, durative situation types, mirroring the linguistic behavior of their caretakers. In the case of the *imparfait*, I expected to find it associated primarily with states and activities in both child and adult data. Table 6.15 gives the percentage of *imparfait* forms used with atelic predicates in child and adult data for both corpora (token count is given within brackets). It shows that the *imparfait* was used predominantly with atelic predicates by the children and adults alike.

	Child data	Adult data
Anaé corpus	91.9 (102)	91.4 (244)
Antoine corpus	86.7 (52)	85.7 (353)

Table 6.15: Percentage (token count) of imperfective past tense forms used with activities and states

Contrary to the predictions of the Prototype Account, no significant difference was found between adults' and children's rates of association between atelic predicates and the imperfective past tense (Anaé: $\chi^2(1) = 0.1978$, $p = 0.66$; Antoine: $\chi^2(1) = 0.0423$, $p = 0.837$) – the children mirrored their input in terms of using the *imparfait* predominantly

with atelic predicates. The AH moreover predicts that imperfective past tenses will be associated to atelic predicates (states and activities) in similar proportions. Table 6.16 gives the percentage of imperfective past tense forms used by the children and the adults with stative predicates over the period.

	Child data	Adult data
Anaé corpus	77.5 (86)	78.7 (210)
Antoine corpus	83.3 (50)	68.9 (284)

Table 6.16: Percentage (token count) of imperfective past tense used with activities and states

A distinct analysis of the two categories revealed that both Anaé and Antoine used the imperfective past tense significantly more often with stative predicates than with the other lexical aspect categories (Anaé: $\chi^2(3) = 172$, $p < 0.00001$; Antoine: $\chi^2(3) = 111.3$, $p < 0.00001$). This suggests that the acquisition of past tense-aspect morphology in French is not universally triggered by the inherent features of telicity or duration, contrary to what is argued by some proponents of the Aspect Hypothesis. The prototype account predicts that children will use past imperfective morphology first with stative predicates before generalizing it to other lexical aspect categories because children initially overuse frequent associations in their input. However, although the adults in both corpora did use the *imparfait* mostly with stative predicates, both children did not systematically exaggerate this tendency. Anaé's use of the *imparfait* with stative predicates did not significantly differ from her input ($\chi^2(3) = 0,45577$, $p = 0.93$), i.e. Anaé used the imperfective past tense with stative predicates in similar proportions as those observed in her input. Antoine on the contrary used the *imparfait* with stative predicates more frequently than the adults in his input ($\chi^2(3) = 12,958$, $p < 0,005$). This difference in the children's use of the *imparfait* can be explained by comparing their gradual acquisition of the *imparfait* over the period. The verb types and tokens used by both children in the *imparfait* during each session were listed in section 6.1.3. It showed that both children first used the *imparfait* exclusively with the most frequent verb types it was used with in their input (mostly inflecting the verbs “être” and “avoir” for the *imparfait*). It also highlighted differences in the way both children started to use the *imparfait* gradually with more types and tokens. Indeed, Anaé started using more verb tokens in the *imparfait* at 3;08.10, before she used it with a greater number of verb types and tokens during the session when she was 4;00.13 (when she used 23 types and 71 tokens in the *imparfait*). Although Antoine also used the *imparfait* with a greater number of forms at the end of the period, he never used it with more than 12 verb types and 25 tokens. During this session, he also mostly used the *imparfait* with stative predicates (only four of the 12 verb types he used the *imparfait* with belonged to another lexical aspect category than states). The results presented in section 6.1.3 also showed that Antoine used the *imparfait* less productively than Anaé – most of the imperfective past tense forms he used had been produced by another speaker in a previous utterance.

By the end of the recording period, Antoine did not use past imperfective morphology as productively as Anaé and still used it with stative predicates significantly more often than the adults in the corpus.

In this section, I analyzed the associations between tense forms and lexical aspect in adult and child data in order to determine whether Anaé and Antoine's acquisition of tense-aspect morphology could be analyzed as triggered by lexical aspect, or whether it could be tied back to the adults' rates of associations of past tense-aspect morphology with specific categories of lexical aspect. I aimed to test the predictions of the prototype account, which claims that children will first extract frequent (prototypical) associations found in their input between tense-aspect morphology and lexical aspect categories and overuse such associations in the first stages of development. The analysis of the distribution of past perfective morphology in the children's input confirmed that the adults in both corpora used the perfective past tense predominantly with telic predicates (accomplishments and achievements), and to an even greater extent with punctual, telic predicates (achievements). Both Anaé and Antoine moreover tended to overuse these frequent associations, in particular in the first stages of development. They used perfective morphology with telic situation types more often than the adults in their input, and used perfective morphology even more frequently with achievements than with any other lexical aspect category. Moreover, I identified a tendency for both children to generalize the use of past perfective morphology to other situation types during the period. This was especially striking in Anaé's data, as her rates of association of past perfective morphology with achievements was significantly different from her input only in the first half of the recording period. She also followed the generalization path predicted by the Aspect Hypothesis, as she extended the use of past perfective morphology first from achievement to accomplishment predicates, only later using it productively with activity and to a lower extent stative predicates. However, Antoine did not follow the same generalization path – he extended the use of past perfective morphology to activities before he used it with accomplishments. This observation of individual differences between the two children suggests that lexical aspect may not universally trigger the acquisition of tense-aspect morphology. Finally, Anaé and Antoine largely mirrored their input in their use of the *imparfait*, as no significant difference was found between the adults and the children's rates of association of imperfective morphology with atelic situation types. Contrary to Anaé, Antoine did tend to overuse imperfective morphology with stative predicates, which were also the predicates most frequently inflected for the *imparfait* in his input. The differences observed between Antoine and Anaé's use of the *imparfait* suggest that when children start using the imperfective past tense productively as Anaé did during the period (with verb types other than the ones most frequently inflected for the

imparfait in their input) the distribution of imperfective morphology across lexical aspect categories gets closer to the adult model.

6.3 Temporal reference of past tense-aspect forms

The analysis of the temporal reference of past tense forms in Anaé and Antoine's corpora was conducted with several goals in mind. First, I wished to determine whether the children under study used the perfective and imperfective past tenses with the full range of functions they were used with in their input. As mentioned earlier, the late acquisition of the imperfective past tense for instance could be explained by its dual function in adult speech, where it may be used either to denote a temporal or a modal break. Moreover, the perfective past tense has generalized in French from an aoristic marker to a more generic past tense form, and may thus be used with primarily temporal or aspectual functions. I wished to determine whether the children under study used the *passé composé* first to comment on the present result of a past event before they used it to build primarily past temporal reference, as suggested by previous studies (Parisse et al., 2018). If attested, such uses of past perfective morphology could help explain the preferential associations in the speech of Anaé and Antoine between telic situation types and past perfective morphology – if the children under study used the perfective past tense predominantly to comment on the present results of completed events, then it is likely that the verb inflected for the past tense will be telic.

6.3.1 Temporal reference of the *passé composé*

The temporal reference of *passé composé* forms was coded by relying on close analysis of the video recordings as well as on parental interpretation of the children's productions. The aim of such coding was to distinguish between forms used to refer exclusively to speech time, forms used to refer to actions completed in the past which had yielded tangible results at speech time and forms that were used to fully break from speech time. Past participles used in copular constructions were excluded from the analyses presented below, as the temporal reference of the copular construction was determined by that of the copula verbs rather than that of the participle.

Some of the past perfective forms used by both Anaé and Antoine were interpreted as having an unambiguously present orientation, i.e. their value was analyzed as adjectival rather than temporal. They mostly included bare past participles produced by the children, which were especially frequent at the beginning of the recording period. This is illustrated by extract 6.3.1, during which Antoine and the observer were standing in front of a laptop whose internet connection was down.

Extract 6.3.1.

Antoine, 1;11.18

OBS: +< oh bah@i dis+donc il marche pas l'ordinateur là ? (*the computer is not working is it?*)

OBS: tu sais pas reconnaître toi mais là il marche pas. (*you don't know how to tell yet but it's not working.*)

OBS: internet <le réseau il est> [/] le réseau il est out. (*the internet network is down.*)

CHI: +< xxx pas. (*not.*)

MOT: ouais. (*yes.*)

CHI: yyy yyy **cassé** ! (*broken.*)

%gpx: points to the computer.

OBS: c'est pas l'ordinateur qu(i) est cassé c'est la [/] la connexion qui est cassée. (*the computer is not broken, the network is.*)

In extract 6.3.1, the observer commented on the computer not working, to which Antoine reacted by pointing to the computer and using the past participle form “*cassé*”. Adult interpretation of the form guided the coding of its temporal reference as present, as the observer took up the form with an unambiguously adjectival function, following a copula verb inflected for the present tense (“*c'est pas l'ordinateur qui est cassé*”).

From early on, the children also produced past participles and full-fledged *passé composé* forms which were interpreted as locating situations prior to speech time. Among such forms, I distinguished between those referring to events that had produced a tangible result at speech time (coded “*pa-r*”) and those whose reference was fully disconnected from the situation of utterance (coded “*pa*”). The forms which referred to events whose results were tangible at speech time were not coded as exclusively present because focalizing the present result of a completed event and at least part of its past temporality were not considered necessarily exclusive. This is illustrated by extract 6.2.2, used first in section 6.2.3 of the present chapter, where the child toppled a cube tower over and used the past participle form “*tombée*” after it had fallen down. I argue that forms such as the ones in bold in extract 6.2.2 can be analyzed as focusing both the past temporality of the falling event as well as its present result.

Extract 6.2.2

Antoine, 2;01.28

OBS: ah non elle est belle <faut xxx la laisser xx> [///] faut la laisser

comme ça. (*no it's nice you should leave it.*)
 CHI: un deux trois (.) 0 [=! sourit]. (*one two three.*)
 %act: CHI touches the tower with his finger and then makes it fall by pushing it with his hand.
 OBS: tu la refait ? (*will you do it again?*)
 CHI: non **tombée**. (*no fell-PP.*)
 OBS: mais je sais qu'elle **est tombée** mais maintenant qu'elle **est tombée** (il) faut la remettre. (*I know it has but now that it has fallen down you should do it again.*)

Table 6.17 gives the temporal reference of the perfective past tense forms in the adult and child data in both corpora; in addition to the three coding categories described above, perfective past tense forms were also sometimes analyzed as building future and atemporal reference (mostly in habitual statements). These were infrequent in the corpora however, and the present section focuses on the perfective past tense forms which were used to build reference to the past or present times. For each child, I give the temporal reference of perfective past tense overall (which takes into account all 11 and 12 sessions for Anaé and Antoine respectively), as well as values for the first half of the recording period (Phase 1, which considers only the first six recording sessions for Anaé and Antoine) and for the second half of the recording period (Phase 2, based on five recordings for Anaé and six for Antoine). Similarly as for the analysis of the rates of association between lexical aspect and tense, this was done in order to identify possible differences in the way both children used past tense-aspect forms to build temporal reference over the period.

Table 6.17 shows that the temporal functions served by perfective past tense forms were very similar in Anaé and Antoine's input. Over the period, 67% of the perfective past tense forms used in Anaé's input were analyzed as building exclusively past reference, while 6% of the perfective past tense forms in her input were analyzed as referring to speech time, and 26% of the forms were used to refer to a past event whose results were tangible at speech time. In Antoine's input, around 62% of the perfective past tense forms were used to build exclusive reference to the past, 8% were used with an adjectival value to refer to speech time and 28% were used to focalize the present result of past events. There were differences between the functions served by perfective past tense in child and adult data over the period. The most striking difference had to do with the proportion of perfective past tense forms used to build exclusive past reference. Both children used the perfective past morphology significantly less than the adults to build exclusive reference to the past (Antoine: $\chi^2(1) = 90.16$, $p < 0.00001$; Anaé: $\chi^2(1) = 5.8104$, $p < 0.01$). There were also individual differences between the children and the way their use of past tense forms evolved during the recording period. A comparison between the temporal reference of perfective past tense forms used by each child during phases one and two

Anaé		PR	PA	PA-R	FUT	ATP	Total Tok.
	Entire period	12.56	58.14	27.44	1.4	0.47	215
Child	Phase 1	10.53	36.84	51.32	1.40	0	76
	Phase 2	13.67	69.78	14.39	1.44	0.72	139
Adult	Entire period	6.02	67.11	25.99	0.67	0.45	681
<hr/>							
Antoine		PR	PA	PA-R	FUT	ATP	Total Tok.
	Entire period	20.94	31.88	40.31	4.38	2.50	320
Child	Phase 1	32.26	18.06	42.58	6.45	0.65	155
	Phase 2	10.30	44.85	38.18	2.42	4.24	165
Adult	Entire period	7.89	61.66	28.04	1.03	1.37	1166

Table 6.17: Temporal reference of perfective past tense form in adult and child data

shows that the temporal functions served by the perfective past tense forms in child data tended to get closer to their input. The proportion of perfective past tense forms used to build exclusively past reference in particular was closer to adult rates for both children during the second half of the recording period. This was particularly striking for Anaé – during phase two, there was no longer any significant difference between the proportion of perfective past tense forms Anaé used to locate situations exclusively prior to speech time and that observed in her input ($\chi^2(1) = 0.3775$, $p = 0.538$).

Close analysis of the temporal reference of the past perfective tense forms used by the children shows that the first verb forms inflected for the perfective past tense by both children mostly referred either to speech time or were used to comment on the result of an action carried out in the past which had yielded a tangible result at speech time. Until the session when she was 2;03.30, Anaé used perfective past morphology exclusively with telic predicates, to refer to speech time or to a past event whose results were tangible at speech time. This is illustrated by extract 6.3.2.

Extract 6.3.2.

Anaé, 2;00.00

CHI: on ferme. (*we close it*)

%act: CHI closes the toy shower door.

MOT: 0 [=! rit].

CHI: oh.

CHI: 0 [=! rit] j'ai fait tomber ! (*I made it fall*)

Prior to this extract, Anaé had sat a stuffed animal on top of a toy shower cabin with which she was playing. Upon shutting the door of the cabin, the toy animal fell over. Anaé produced the *passé composé* form “*ai fait tomber*” while reaching for the stuffed animal, as illustrated by image 6.1. This form was analyzed as referring both to the past temporality of the event, and to its result which was tangible at speech time (as the stuffed animal was still knocked over when Anaé produced the form).



Image 6.1: Screenshot of the video recording of Anaé (2;00.00) when she produced the *passé composé* form “*ai fait tomber*”

During the first sessions when he used past perfective morphology, Antoine also used bare past participles and *passé composé* forms predominantly with telic predicates to refer to events located at speech time, or to completed events which had yielded tangible results at speech time. Extracts 6.3.1 and 6.2.2 on pages 268 and 261 respectively exemplify such uses. In extract 6.3.1, the form “*cassé*” was analyzed as primarily building reference to speech time, because it was used to comment on the state of the computer at speech time rather than on the breaking event itself. In extract 6.2.2, Antoine used the past participle form “*tombée*” after the cube tower he had built had just fallen, and the form was thus analyzed as focalizing both the past temporality of the falling event and its present result. Image 6.2 shows another situation in which Antoine produced the past participle form “*tombé*” with the same temporal value during the session when he was 1;11.18. As he was leaving the room, Antoine fell to the ground in the corridor and immediately uttered the form “*tombé*”, which in this context was also analyzed as both locating the falling event in the past by signaling its completion, and focalizing its present result (Antoine was still on the ground when he produced the form).

In the first half of the recording period, the use of past perfective morphology by both children appeared to be triggered by the tangibility of the events’ results at speech time. This can explain why both Anaé and Antoine used perfective morphology almost



Image 6.2: Screenshot of the video recording of Antoine (1;11.18) when he produced the PP form “*tombé*”

exclusively with telic predicates at the beginning of the recording period – they initially used perfective morphology to comment on the present result of an event, either with an exclusively adjectival function, or to signal events as completed when they had yielded tangible results at speech time.

Atelic predicates were inflected for the perfective past tense later in the period by both children. When they were inflected for the perfective past, atelic predicates were mostly used to locate situations prior to speech time, rather than to focalize a resulting situation at speech time. Anaé started using perfective past morphology to build exclusively past reference during the session when she was 2;03.30. At this stage however, the perfective past tense forms she used to refer to past events fully displaced from speech time were forms that she had replicated from previous utterances. This is illustrated in extract 6.2.3, initially used in section 2 of the present chapter.

Extract 6.2.3

Anaé, 2;03.30

MOT: oui tu t(e) rappelles quand on était allés au zoo ? (*yes do you remember when we went to the zoo?*)

CHI: ouais. (*yes.*)

MOT: on avait pris le train. (*we went by train.*)

CHI: anaé e@fs **a pris** o@fs train. (*anae took a train.*)

MOT: anaé elle a pris le train et on est allés où ? (*anae took a train and where did we go?*)

CHI: yyy **allés** où ? (*go where?*)

MOT: on est allés au +..? (*we went to the...*)
 CHI: au +..? (*the...*)
 MOT: zoo. (*zoo.*)
 CHI: zoo. (*zoo.*)
 MOT: et qu'est-c(e) qu'on a vu au zoo ? (*and what did we see at the zoo?*)
 CHI: au zoo yyy on a vu +... (*in the zoo we saw...*)
 MOT: on a vu des +/. (*we saw some...*)
 CHI: +< serpents ! (*snakes!*)

The three past perfective forms used in the extract by Anaé can be analyzed as forms at least partially replicated from her interlocutor's previous utterances – Anaé takes up the past participle “*pris*” from her mother's utterance to produce the *passé composé* form “*a pris*”. She then takes up the past perfective forms “*allés*” and “*a vu*”. These forms, which were the first atelic predicates Anaé inflected with past perfective morphology were predominantly used to build exclusive reference to the past. During the fifth session when she was 2;06.27, she used past perfective morphology productively to refer to situations fully disconnected from speech time, i.e. which had not yielded a tangible result at speech time. This session was also the first session when she started to use past perfective morphology productively with atelic predicates. This is illustrated in extract 6.3.3 where Anaé starts telling the observer about a scene that did not occur in the immediate past and whose results were not observable at speech time. In this extract, when Omer, the family dog, enters the room where she is being filmed, Anaé starts relating a time when he had pooped and thrown up in the house. She thus used perfective past morphology to refer to situations fully disconnected from speech time, although her recollection of these events can be analyzed as having been triggered by characteristics of the situation of utterance – in this case, the presence of the dog in the room.

Extract 6.3.3.

Anaé, 2;06.27

CHI: +< Omer euh. (*omer.*)

MOT: pardon Omer. (*sorry omer.*)

CHI: mais Omer elle a fait caca. (*but omer pooped.*)

CHI: berk [/] berk [/] berk.

OBS: +< où est+ce+qu'il a fait caca ? (*where did he poop?*)

CHI: i(1) a fait caca <dans le> [//] (.) dans la yy. (*he pooped in the...*)

OBS: dans la +..? (*in the?*)

CHI: dans la bibliothèque. (*in the library.*)

OBS: dans la bibliothèque ? (*in the library?*)

CHI: il a vomi euh +//. (*he threw up.*)
 OBS: +< oh mais ça fait longtemps ça. (*ah but that was a long time ago.*)
 CHI: elle a vomi. (*she threw up.*)
 OBS: ça fait longtemps. (*that was a long time ago.*)
 CHI: elle a vomi dans le bureau. (*she threw up in the office.*)

A similar example of such uses of past perfective morphology was identified later during the same session. In extract 6.3.4, Anaé was coming down the stairs with her brother to play in the living room when she used perfective past morphology to relate past events fully disconnected from speech time.

Extract 6.3.4.

Anaé, 2;06.27

CHI: les bébés ça joue en pyjama hein. (*babies play in their pajamas you know.*)

OBS: +< et t(u) es un bébé toi ? (*and are you a baby?*)

CHI: oui. (*yes.*)

OBS: ah.

CHI: suis un bébé. (*am a baby.*)

CHI: moi z@fs ai allé au bureau +... (*I went in the office.*)

CHI: +, je@fs me suis cognée là. (*and bumped there.*)

%gpx: CHI touches her head.

OBS: c'est vrai ? (*did you?*)

CHI: oui. (*yes.*)

OBS: et t(u) as pleuré ? (*and did you cry?*)

CHI: oui. (*yes.*)

OBS: comme un bébé alors. (*like a baby then.*)

CHI: là. (*there.*)

%gpx: CHI points to the ceiling behind OBS.

At the beginning of the extract, Anaé, who was dressed in her pajamas, claimed that babies played in their pajamas, which led the observer to ask her whether she was a baby. Anaé answered that she was, and went on to recall a time when she hit her head on the stairs that she had just come down in the extract. Her recollection appears to be triggered either by the mention of her being a baby, or by the fact that she had just passed through the place where she had hit her head. The past tense forms she used in this extract were

analyzed as disconnected from speech time, as they were used to locate the narrated events prior to speech time, without focalizing their present result.

Antoine used past perfective morphology with one atelic predicate (1/22) to locate a situation prior to speech time during the session when he was 1;09.11, although at this stage he replicated the atelic past perfective form from one of his interlocutor's previous utterance. He used past perfective morphology productively to locate one atelic predicate prior to speech time during the fourth recording session, when he was 2;01.28 (1/11). In this extract, Antoine rolled a ball on the ground, and commented on it rolling by using the present tense (“*ça roule*”). Once the ball had stopped, he produced the *passé composé* form “*a roulé*”, to signal the event as completed prior to speech time. From this session until the end of the recording period, Antoine used past perfective morphology more and more frequently to locate situations exclusively prior to speech time rather than to focalize the present result of past events.

Extract 6.3.5.

Antoine, 2;01.28

CHI: <ça roule> [/] ça roule ! (*it's rolling.*)

FAT: hein ? (*uh?*)

CHI: ça roule ! (*it's rolling.*)

CHI: xxx.

CHI: a@fs roulé. (*it rolled.*)

This gradual use of past perfective morphology to build past temporal reference is illustrated by extract 6.3.6 taken from the session when Antoine was 2;09.16. Antoine and his uncle were engaging in a joint reading activity, which gave way to a labeling activity initiated by the adult. After naming the vegetable depicted on the page (“*courgettes*”), Antoine related that he had already eaten zucchinis by using a *passé composé* form “*a mangé*” to locate the situation <*on manger (des courgettes)*> as having occurred prior to speech time.

Extract 6.3.6.

Antoine 2;09.16

OBS: ça c'est quoi ? (*what are these?*)

CHI: les pommes+de+terre. (*potatoes.*)

OBS: des pommes+de+terre. (*potatoes.*)

<p>OBS: ça c'est des poireaux. (<i>these are leeks.</i>) CHI: poireaux. (<i>leeks.</i>) OBS: et ça c'est les +..? (<i>and this are... </i>) CHI: ++ courgettes. (<i>zucchini.</i>) OBS: oui bravo ! (<i>right well done!</i>) CHI: on en a mangé chez taty. (<i>we had some at auntie's.</i>)</p>
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There are similarities in the way both children used perfective past morphology to build temporal reference over the period. Until the session when she was 2;06.27, Anaé mostly used perfective past tense forms to comment on a state of events at speech time or to comment on the present result of an event located in the past (67/75). Up to this time she used perfective past morphology also almost exclusively with telic predicates (73/75 predicates she inflected for the *passé composé* were telic). A similar trend was observed in Antoine's data – until he was 2;05.24, he inflected mostly telic predicates for the perfective past tense (72/78) either with a purely adjectival value or to refer to a past event which had yielded tangible results at speech time (60/78). From these sessions onward, both children used past perfective morphology with more diverse temporal functions, although differences were observed in the proportion of perfective past tense forms used to refer to the present result of a past event against the proportion of forms analyzed as building exclusive reference to the past. During the second half of the recording period, from when Anaé was 3;01.07 onward, 71% of the perfective past tense forms she used were analyzed as building reference exclusively to the past rather than focusing the present results of past events. Anaé thus used past perfective morphology to locate situations prior to speech time in similar proportion as what was observed in her input in the second half of the recording period. Antoine also tended to use perfective past morphology to build past reference more often during the second half of the recording period, although there was still a significant difference between the temporal functions of past tense forms in his productions and in his input (42% of all past tense forms he used during the second half of the period were used primarily to locate situations prior to speech time, without focalizing their tangible results at speech time).

The differences between the functions served by perfective past tense forms in child and adult data in both corpora mirror the differences observed in the children's rates of association between past perfective morphology and lexical aspect. At the beginning of the period, both children tended to use past perfective morphology significantly more often than the adults in their corpus either to refer to past situations which had yielded tangible results at speech time or with an adjectival value, to refer to speech time. They also tended to use past perfective morphology significantly more with telic predicates than the adults in the corpora. In the second half of the recording period, the differences between Anaé and her input were no longer significant – she used past perfective morphology with telic

predicates and to build reference to the past as often as the adults in her corpus. By the end of the recording period, the temporal functions served by perfective past morphology in Anaé's productions diversified to resemble her input, as did the lexical aspect categories she used it with. Conversely, Antoine used past perfective morphology with telic predicates and to refer to the present result of completed events significantly more often than the adults in his corpus during both the first and the second half of the recording period. A possible explanation for the children's preferential association between *passé composé* forms and telic predicates may thus lie in the temporal functions with which they used past perfective morphology. Anaé and Antoine used past perfective morphology first with a purely adjectival value or to locate events in the immediate past and focalize their tangible result at speech time. This would lead them to use the perfective past mostly with telic predicates, which naturally lend themselves to focalize a present result as they entail a shift from an initial state to a resulting state (i.e. they are bounded on the right).

6.3.2 Temporal reference of the *imparfait*

The previous sections showed that the children used the imperfective past tense productively only at the end of the recording period, and did so mostly with stative predicates which were also the most frequently inflected for the *imparfait* in the adult data. In this section, I analyze the temporal reference of imperfective past tense forms in adult and child data in Anaé and Antoine's corpora. The *imparfait* was mostly used by the adults and children in the corpora either to locate predicates in the past or to build atemporal, modal reference. It was also analyzed as building reference to the present time, mostly in cases of backshift when the reporting verb was in the *imparfait*. Finally, it was used with future reference although quite infrequently, mostly with an attenuative value. It was for instance frequently used by the adults to suggest a new activity to the children or request something. Table 6.18 gives the raw number of tokens used in the *imparfait* by the children and the adults, and the proportion of *imparfait* forms used to refer either to the present, past or future times, or to build atemporal reference (in percentages). The present section focuses on the temporal functions most frequently served by the *imparfait* forms used by the children in the corpus – reference to the past, and atemporal reference.

In the adult data in both corpora, the *imparfait* was predominantly used with stative predicates (see section 6.2.3), to locate them prior to speech time. It differed from the *passé composé* in terms of its aspectual value. Whereas the *passé composé* was used to refer to completed events in the past (with or without tangible results at speech time), the *imparfait* was used by the adults to take an internal perspective on past situations, i.e. to present them as ongoing rather than completed.

In extract 6.3.7, this is illustrated by the contrastive aspectual value of the *plus-que-parfait* and the *imparfait*. In this extract, the observer and the mother were talking about

Anaé	% PR	% PA	% ATP	% FUT	Total Tok.
Child	1.80	38.74	59.46	0	111
Adult	2.27	86.74	10.23	0.76	264
Antoine	% PR	% PA	% ATP	% FUT	Total Tok.
Child	5.00	58.33	36.67	0	60
Adult	5.17	81.77	11.82	1.23	406

Table 6.18: Temporal reference of imperfective past tense forms in adult and child data

how Antoine had been asking to listen to the same song over and over again for a month. The recording was set in January, and the observer recalled a time in December when Antoine was staying at his place and had already started to ask to listen to the song. The *plus-que-parfait* form “*avait eu*” used within a time adverbial clause allowed the observer to set a reference time prior to speech time as well as to take a perfective standpoint on this period of reference, i.e. to focalize its endpoints and present the situation as completed. Once the reference time had been established, the *imparfait* was used to locate situations within this time-frame without focalizing their endpoints. First, the *imparfait* was used to locate stative situations prior to speech time and to take an imperfective stance on these situations – the verb “*commencer*” inflected for the *imparfait* (“*ça commençait*”) allowed to take an internal perspective on the event. Second, the *imparfait* was also used to build past habitual reference, i.e. to refer to repeated events in the past. In extract 6.3.7, the predicates “*prenait l’air malheureux*” and “*faisait 0*” are both inflected for the *imparfait* in order for them to be construed as repeated – they are presented as having occurred anytime someone would change the music. This past habitual interpretation was frequently yielded by the inflection of telic predicates for the imperfective past tense in the corpus, whereas stative predicates inflected for the *imparfait* mostly yielded a past interpretation with no habitual value.

Extract 6.3.7.

Antoine, 1;09.11

OBS: +< quand on l’avait eu en décembre il **était** marrant parce-qu’il **était** là i(l) **disait** +/. (*when we had him over in December he was funny because he would say...*)

MOT: +< ah c’est vrai que ça **commençait** aussi. (*right it was already beginning.*)

OBS: +< il **était** là +.. (*he would...*)

%sit: OBS is offscreen, but probably mimicks the child's gesture of facial expression

MOT: ah oui [/] oui c'est vrai que ça **commençait**. (*right right it was already beginning.*)

OBS: +< dès que tu lui **mettais** autre chose i(l) **prenait** l'air malheureux puis i(l) **faisait** 0 [=! petits bruits] 0 [=! rit]. (*anytime you would put something else on he would make an unhappy face and would be like...*)

MOT: ah oui [/] oui c'est vrai que tu l'as eu en décembre xxx. (*right you had him over in December.*)

OBS: +< et vous ça fait un mois qu(e) ça dure ! (*and you have been enduring it for a month.*)

This is also illustrated by extract 6.3.8, in which Anaé's mother is asking her daughter about a time when the family went skiing. First, she inflects the verb "être" for the *imparfait*, which locates the stative predicate prior to speech time. Then, she produces the telic predicates "mettre tes chaussures" and "mettre (quelque chose)" in the *imparfait*, which yields a past habitual interpretation. The *imparfait* was used not to refer to a unitary event but to repeated past events, i.e. to all the times when Anaé put her ski boots on.

Extract 6.3.8.

Anaé, 3;08.10

MOT: e(lle)s **étaient** comment tes chaussures ? (*what were your shoes like?*)

MOT: c'est des chaussures ou des bottes ? (*are they shoes or boots?*)

CHI: des chaussures ! (*shoes.*)

MOT: t(u) es sûre ? (*are you sure?*)

CHI: non [=! sourit] ! (*no.*)

CHI: c'**était** +... (*they were...*)

CHI: +, les chaussures de ski ! (*ski boots.*)

MOT: non (.) pas les chaussures de ski dans les jardins c'**était** les après+ski rouges ! (*not ski boots in the gardens, they were snowboots.*)

CHI: ouais ! (*yes.*)

MOT: +< et au ski tu **mettais** tes chaussures et après ? (*you wore your ski boots to ski and then what?*)

MOT: quand t(u) avais mis les chaussures qu'est+ce+que tu **mettais** ?

(once you had your ski boots on, what did you put on?)

CHI: j(e) sais pas [=! sourit] ! *(I don't know.)*

Finally atemporal uses of the *imparfait* accounted for around 10% of the imperfective past tense forms used by the adults in both corpora. These uses were thus not the most frequent in the adult data, but they were highly tied to specific situations. The adults in Antoine's corpus mostly used the *imparfait* with an atemporal value in situations of pretend-play – a situation repeated often during the recordings was one of Antoine and his uncle playing with toy cars and pretending to repair them. In Anaé's corpus, uses of the *imparfait* with a modal value, to build irrealis reference, were most frequent in situations of pretend-reading involving mostly the child and her mother. This is illustrated by extract 6.3.9, during which Anaé was engaged in the pretend-reading of a book – she was holding the book and turning pages on her own, commenting on the pictures as she went through them. The *imparfait* forms used by Anaé's mother in her last two utterances were analyzed as building irrealis reference – they were used to signal a modal break rather than a temporal break. It is interesting to note the contrastive use of the present and of the *imparfait* in this situation of pretend-reading. Indeed, the present tense is used by both Anaé and her mother in the beginning of the extract with a descriptive value, when Anaé pointed to the picture of an animal on the page and her mother asked herself what its name was, until Anaé comments on it being a baby. All of these utterances were analyzed as descriptive rather than fictive – Anaé and her mother were in fact describing the picture rather than narrating a story, and they used the present tense to do so. The mother shifted to the *imparfait* to depart from a descriptive mode and adopt a narrative mode – in her last two utterances, she was no longer merely describing the picture but rather retelling the narrative episode leading up to the page she was looking at with her daughter. The *imparfait* was used here not to locate situations prior to speech time but rather to signal a break from reality.

Extract 6.3.9.

Anaé, 3;04.27

CHI: hé un petit truc là. *(oh (there's) a small one there.)*

MOT: ah oui c'est un petit comment ça s'appelle ? *(right, it's a small one how is it called?)*

CHI: un petit lapin. *(a small rabbit.)*

MOT: euh c'est pas un lapin c'est un. *(that's not a rabbit it's a.)*

MOT: un petit rat palmiste ça s'appelle. *(it's called a ground squirrel.)*

CHI: il est bébé. *(he's a baby.)*

MOT: c'est un bébé ouais. (*it's a baby yes.*)

CHI: xxx.

MOT: +< et en fait c'**était** le petit rat qui **mangeait** les légumes et c'est pour ça que la hyène elle [/] elle **essayait** d'attraper le rat. (*and the squirrel was eating the vegetables, that's why the hyena tried to catch the squirrel.*)

MOT: et qu'elle **cassait** tout dans le jardin. (*and why she ruined everything in the garden.*)

The first *imparfait* forms used by Anaé and Antoine located stative predicates in the past. This is illustrated by extract 6.3.10, taken from the session when Anaé was 3;08.10. In this extract, Anaé was in the kitchen with her mother and the observer. Her mother was cooking off-screen; the extract starts with her handing Anaé a picture, and asking her to describe it.

Extract 6.3.10.

Anaé, 3;08.10

MOT: oh tiens regarde. Qu'est-ce que c'est ça ? (*oh look! What's that?*)

CHI: c'est quand quand j'**étais** dehors à... (*it's when when I was outside in...*)

OBS: où ça ? (*where?*)

OBS: ça sent bon déjà la ratatouille. (*the ratatouille already smells good.*)

CHI: ben oui. (*well yes.*)

OBS: tu sens avec ton nez ? (*Can you smell it with your nose?*)

MOT: c'est où ça Anaé ? (*Where is that Anaé?*)

CHI: c'**était** chez nous. (*It was at home.*)

Anaé's use of the *imparfait* in this extract is typical of her early uses of imperfective past morphology – in the first two sessions when she used the *imparfait*, she used it exclusively to locate stative predicates prior to speech time. When considering each recording session separately, it appears that Anaé used the *imparfait* predominantly to locate atelic situations prior to speech time in all but two sessions. When she was 3;04.27 and 4;00.13, most of the *imparfait* forms she used were analyzed as atemporal, i.e. they were used to build irrealis reference. The session when she was 4;00.13 was also by far the session when she produced the highest number of *imparfait* forms – as described in section 6.1.3, she produced 71 verb tokens inflected for the *imparfait*, 54 of which were analyzed as denoting

a modal rather than a temporal break. This explains why imperfective past tense forms used to build atemporal reference were over-represented in her productions compared to her input. As shown in table 6.18, modal *imparfait* forms accounted for 59.46% of imperfective past tense forms used by Anaé over the period. However, such uses were much more punctual than temporal uses of the *imparfait* – Anaé used imperfective past tense forms more consistently over the period to locate situations in the past than to build irrealis reference. Antoine used the *imparfait* mostly to locate situations prior to speech time – *imparfait* forms were used with a temporal function in all of the eight sessions during which Antoine used imperfective past morphology. Antoine also used *imparfait* forms with a modal value, although less frequently and less consistently – he did not use imperfective morphology to build irrealis reference until he was 2;09.16, and did so only during four of the eight sessions when he used *imparfait* forms.

Both children generalized the use of the *imparfait* to a higher number of different verb types belonging to a wider range of lexical aspect categories during one particular session, when Anaé was 4;00.13 and Antoine was 4;04.10. Both of these sessions were also the sessions during which the children most frequently used the imperfective past tense to build irrealis reference – during these sessions, 76% of the *imparfait* forms used by Anaé and 72% of the *imparfait* forms used by Antoine were analyzed as building atemporal reference. This high proportion of modal *imparfait* forms used by both children can be explained by the fact that these sessions saw the children engaging either in pretend-reading or pretend-play activities, which were likely to trigger uses of the *imparfait* to build atemporal rather than past reference. I questioned whether there was a correlation between the generalization of the *imparfait* across situation types and the fact that it was used to build atemporal rather than past reference. I also wondered whether this correlation, if established, would reflect the children's input. The results were especially striking in Anaé's corpus. Indeed, Anaé's parents had a strong tendency to use the *imparfait* with atelic verb constellations, but they also used telic predicates inflected for the imperfective past tense. They used the *imparfait* across lexical aspect categories both to locate situations in the past and to build atemporal reference, as illustrated by extracts 6.3.8 and 6.3.9 above. However, Anaé used the *imparfait* with telic and atelic predicates with different functions. Atelic predicates were found inflected for the *imparfait* in Anaé's productions both to locate situations prior to speech time (as illustrated by extract 6.3.10) and to build atemporal, fictive reference. However, she used the *imparfait* with telic predicates only to build atemporal reference, as in extract 6.3.11 below. In this extract, Anaé was once again engaged in a pretend-reading activity. She was holding the book and turning the pages herself, also occasionally turning the book to show her mother the pictures. In this extract, she used telic predicates (in bold) inflected for the *imparfait* to build irrealis reference.

Extract 6.3.11.

Anaé, 4;00.13

CHI: +, et [/] et [/] et pendant que les petits jouaient euh à les voitures +... (*and while the little ones played with cars...*)

CHI: tu connais pas cette image [=! sourit]. (*you don't know this picture.*)

%sit: CHI turns the book to show MOT the page.

MOT: hum [/] hum.

CHI: 0.

CHI: après maman chien me(ttait) [/] **mettait** Pe(tit Lapin) [/] Pe(tit Lapin) [/] Petit Lapin dans la baignoire et Petit Chien dans la baignoire. (*then mommy dog put Little Rabbit in the bathtub and Little Dog in the bathtub.*)

CHI: +, pour se laver et prendre le dodo. (*so they would wash and go to bed.*)

MOT: d'accord ! (*alright.*)

CHI: après +... (*after...*)

CHI: +, i(ls) **mettaient** les pyjamas e@fs pyjamas +... (*they put they pajamas on.*)

CHI: +, et [/] et [/] et Petit Chien avait un pyjama de [/] de [/] de un dragon. (*and Little Dog had dragon pajamas on.*)

This was less clear-cut in Antoine's data, although two thirds of the telic predicates he used in the *imparfait* were analyzed as building atemporal reference. Moreover, in the session where Antoine produced the most imperfective past tense forms, all the telic predicates he inflected for the *imparfait* were used to build atemporal reference.

Extract 6.3.12.

Antoine, 4;05.16

CHI: on **disait** que là c'était le papa et la maman et là y avait l'enfant. (*let's say here it was the dad and the mum and the child was there.*)

OBS: d'accord là c'est l'enfant. (.) (*alright this is the child.*)

CHI: étaient trois. (*were three.*)

OBS: ils étaient trois (.) (*there were three of them.*)

The form in bold in extract 6.3.12 is the *imparfait* form of the verb "dire" (*to say*) in the third person singular, which yields a telic interpretation when it takes a countable

object, as is the case here. Here, this telic predicate as well as the atelic ones that follow (in bold) are inflected for the *imparfait* to build fictive reference in a situation of pretend play. It is interesting to note that even though his interlocutor gave the child feedback using a present tense (“*est*”), the child stuck to the *imparfait*, reasserting the modal break he introduced in his first utterance until the adult eventually aligned, producing an *imparfait* in the last utterance of the extract.

One of the justifications that may be put forth to explain this use of the *imparfait* with telic predicates to build atemporal reference predominantly has to do with form-function pairings established by children acquiring language. As mentioned earlier, studies have suggested that children first build form-functions pairings unidirectionally, extracting from their input the most frequent form-function pairings and using this pairing exclusively in the first stages of development. It might then be hypothesized that the *passé composé* would have been learned by Antoine and Anaé as the past tense used most frequently to locate telic situations in the past. In turn, they use the *imparfait* with telic predicates with another function: to build atemporal, fictive reference rather than to locate events in the past.

The present section analyzed the associations between tense forms and temporal reference in adult and child data. It aimed at determining whether the French monolingual children under study used the French perfective past tense predominantly to past events whose effects were tangible at speech time, which could explain the preferential associations observed in their productions between perfective past morphology and telic lexical aspects (Parisse et al., 2018). This was in part confirmed by the analysis of Antoine and Anaé’s input and productions. Indeed, the *passé composé* was used to locate events exclusively prior to speech time more frequently in the adult data than in the children’s productions. Both Anaé and Antoine used the perfective past tense predominantly to refer to past completed events which had yielded tangible results at speech time. This could explain the children’s tendency to use past perfective morphology more frequently with telic predicates than what was observed in the adult data – if the children used past perfective morphology to refer to completed past events whose result was tangible at speech time, it is likely that it will be used most frequently with telic predicates. This explanation was supported by the observation that during the second half of the period, Anaé’s use of the *passé composé* was no longer significantly different from that of the adults in the corpus, both in terms of the temporal reference of perfective past tense forms and of the lexical aspect categories they spanned. Over the period, the children used the imperfective past tense mostly to locate stative predicates prior to speech time. Although the imperfective past tense was used more frequently by the adults in both corpora to build past rather than modal reference, both children also used imperfective past morphology to build irrealis reference. Modal uses of the *im-*

parfait in adult data was highly linked to situational factors, as such forms were found almost exclusively in situations of pretend-play or pretend-reading. These were also the situations in which the children used *imparfait* forms with a modal value. Interestingly, when the children used the *imparfait* with telic situation types, they tended to do so to build fictive reference rather than to locate predicates in the past.

This chapter showed that the children followed similar trends in their acquisition of perfective and imperfective past tenses. Anaé and Antoine used past participles before they used full-fledged *passé composé* forms, which were gradually used in similar proportions as what was observed in their input. Both children also first used the *passé composé* and the *imparfait* with the verb types most frequently inflected for these tenses in the adult data. The fact that imperfective past tense forms were used later than perfective past tense forms may be explained by several factors. First, *imparfait* forms were less frequent in the children's input than *passé composé* forms. Second, the *imparfait* was used with two distinct functions in the children's input – to refer to the past and to build irrealis reference. Conversely, the perfective past tense had a more unilateral form-function pairing, as it was mostly used by the adults to locate completed events in the past. As predicted by the Prototype Account, adults in both corpora used the *passé composé* especially with telic predicates, and even more frequently with achievement predicates. The *imparfait* was mostly used by the adults with stative predicates. Both children also tended to overuse past perfective morphology with telic predicates, especially at the beginning of the recording period. Anaé generalized the use of past perfective morphology during the second half of the period, reaching adult-like rates of association of perfective morphology and achievement predicates. Antoine still used the *passé composé* more frequently with achievement predicates than with any other lexical aspect category in the second half of the recording period. The children did not follow the same path in generalizing perfective past morphology to other categories of lexical aspect – Anaé followed the predictions of the Aspect Hypothesis, contrary to Antoine who extended the use of the perfective past first to activities and only later to accomplishments. The children's use of the imperfective past also in part contradicted the predictions of the Prototype Account. Indeed, Anaé, who used imperfective morphology more productively than Antoine during the period, used it with stative predicates in similar proportions as the adults in her corpus. The analysis of the temporal reference of past-tense forms was conducted to determine whether the associations observed between the perfective past tense and telic situation types could be explained by close-analysis of the functions served by these forms in adult and child speech. This was in part verified – the adults in both corpora used the *passé composé* mostly to refer to past events disconnected from speech time while the children first used past participles either bare or as part of *passé composé* forms either to refer to speech time, or to focalize the past temporality of events which had yielded tangible results at speech time. This would lead the children to use past perfective morphology more frequently with telic predicates, as they entail a shift from an initial state to a resulting state and thus yield tangible results. Finally, the analysis of the temporal reference of *imparfait* forms showed that the children used telic predicates with imperfective past morphology in spe-

cific situations of pretend-play and pretend-reading, to build irrealis rather than temporal reference. This may suggest that Anaé and Antoine first built unilateral form-function mapping where the *passé composé* was the tense they used to locate telic predicates in the past, and the *imparfait* the tense used with telic predicates to build irrealis reference.

Chapter 7

Bilingual longitudinal study: early uses of tense-aspect morphology by two French-English bilingual children

In this chapter, I analyze the production of past tense-aspect forms by Anne and Sophie, two French-English bilingual children recorded from approximately 2;06 to 3;06. Tables 7.1 and 7.2 list the sessions analyzed for Anne and for Sophie, and their age during each session. In French, eleven recording sessions were analyzed for Anne and twelve sessions for Sophie, in English, nine sessions were analyzed for Anne and eleven for Sophie.

File (.cha)	Child's Age
Anne4E	2;06.26
Anne5E	2;07.22
Anne6E	2;08.27
Anne7E	2;10.08
Anne8E	2;11.06
Anne9E	3;00.03
Anne10E	3;00.24
Anne11E	3;02.09
Anne12E	3;04.02

File (.cha)	Child's Age
Anne1F	2;04.02
Anne2F	2;05.06
Anne3F	2;06.03
Anne4F	2;06.24
Anne5F	2;07.22
Anne6F	2;08.26
Anne7F	2;10.07
Anne8F	2;11.05
Anne9F	3;00.02
Anne10F	3;00.23
Anne11F	3;02.13

Table 7.1: Number of sessions analyzed for Anne and age in French and in English

The primary aim of this chapter is to study the mechanisms underlying the acquisition of past ATAM morphology by bilingual children. This was done by analyzing the link between the children's productions and their input, in order to investigate how dual language

File (.cha)	Child's Age	File (.cha)	Child's Age
Sophie1F	2;06.07	Sophie1E	2;06.07
Sophie2F	2;07.05	Sophie2E	2;07.05
Sophie3F	2;08.14	Sophie3E	2;08.14
Sophie4F	2;09.12	Sophie4E	2;09.12
Sophie5F	2;10.16	Sophie5E	2;10.16
Sophie6F	3;00.05	Sophie6E	2;11.06
Sophie7F	3;01.14	Sophie7E	3;01.14
Sophie8F	3;02.20	Sophie8E	3;02.24
Sophie9F	3;03.23	Sophie9E	3;03.24
Sophie10F	3;04.25	Sophie10E	3;04.25
Sophie11F	3;05.16	Sophie12E	3;07.01
Sophie12F	3;06.31		

Table 7.2: Number of sessions analyzed for Sophie and age in French and in English

exposure impacts the acquisition of tense aspect morphology in French and in English. I wish in particular to test the predictions of the Prototype Account of ATAM morphology, which explains the preferential associations found in the speech of children between past morphology and lexical aspect by suggesting that children extract prototypical form-function pairings from their input and use these exclusively in their early productions of tense-aspect morphology. This research was conducted in order to determine whether the bilingual children under study would be as able as the monolingual children studied in chapter 6 to draw regularities from input (in the case of the bilingual children, their dual-language input), and whether they would follow the same acquisition path of past tense-aspect morphology in French.

The first section considers the emergence and development of past verbal morphology in the speech of Anne and Sophie in both of their languages. It also addresses non-standard productions by both children and questions whether these can be analyzed as signs of cross-linguistic influence in the acquisition of past tense-aspect morphology. The second section of the chapter focuses on the association between tense forms and lexical aspect in order to determine whether the adults in the corpus associated past morphology with specific lexical aspect categories predominantly in both French and English, and whether the bilingual children under study overused such frequent associations between past morphology and lexical aspect in their dominant and non-dominant languages. Finally, the last section of this chapter analyzes the temporal reference of past tense-aspect morphology in French and in English, in order to determine whether it can contribute to explain the associations of tense-aspect morphology with specific categories of lexical aspect in the first stages of development. As in chapter 6, I thus provide formal analyses in the first section, focusing on forms bearing past morphology, before turning to the functions served by these forms in adult and child data in the second and third sections.

7.1 Emergence and development of past tense forms in French and English

This section describes Anne and Sophie's first uses of past forms in French and in English. It considers past tense-aspect morphology on the formal level and provides several results. First, it gives the proportion of past forms relative to all the finite forms used by the adults and the children in French and in English. Then, it questions the link between the forms used by the children and their frequency in adult speech, first by identifying the verb types most frequently used by the adults and the children and then by analyzing the proportion of forms analyzed as contributed by the children or replicated from previous utterances. Finally, a subsection is devoted to the analysis of the most frequent non-standard past tense-aspect forms used by Anne and Sophie in French and in English, in order to assess the impact of language dominance patterns on the use of past tense-aspect morphology by the bilingual children under study.

7.1.1 First past tense forms in French and English

Sophie was aged 2;06.07 during the first recording in English, and 3;07.01 during the last English session of the period. The analyses of Sophie's use of past tense forms in English were conducted on eleven recording sessions evenly distributed over the period. Sophie used 2554 tense forms during the English recording sessions out of which only 59 forms were in French. These forms in French excluded from the analyses presented below. Table 5.10 used in chapter 5 gave the distribution of the verb forms used by Sophie in each session, as well as the distribution of tense forms in the adult data. It showed in particular that Sophie and the adults in her corpus used the present tense in similar proportions – present tense forms accounted for 48% of the forms used by Sophie and 49% of the forms used by the adults in her corpus. Conversely, Sophie used proportionally fewer past tense forms than what was observed in her input, as will be shown again below. These results confirm the observation made in the literature that past tense morphology is late-acquired in English, and that it may be more sensitive to variations in the rate of exposure and use of language than present tense morphology (Tomasello, 2009; Paradis et al., 2011). Table 7.3 considers only the forms bearing past morphology in Sophie's input and in her productions. It provides the types of constructions in which Sophie and the adults in her corpus used past morphology over the period – past participles, simple past forms, present perfect forms and past progressive forms. The inclusion of past participles (either bare or in copular constructions) was motivated by the fact that they were among the first forms bearing past morphology used by the children and that they were frequently used at the beginning of the recording period. The values presented in table 7.3 are given in percentages of the total number of tense forms used in child and adult data. The last two lines give the token count of forms bearing past morphology in each session, and

Sophie	2;06.07	2;07.05	2;08.14	2;09.12	2;10.16	2;11.06	3;01.14	3;02.24	3;03.24	3;04.25	3;07.01	Adults
Past participles	10	2	1.7	0.6	1	0.4	2	1	0.4	3.5	0.7	1.8
Simple past	3.4	14	9.1	6.8	9.6	5.3	10	6.8	7	8.7	5.5	11.4
Pr. / Pa. Perfect	0.5	3.5	0	0	0.7	0.8	1.6	0.5	0.4	0	0.34	2
Past prog.	0	1	0.4	1.1	0	0.4	0.8	0	0.4	0	0.3	1.8
Total (Pa. Tok)	29	60	26	15	32	18	37	19	19	14	20	968
Total (% all tense forms)	14	21	11.2	8.5	11.4	6.8	14.7	8.6	8.3	12.2	6.9	15.8

Table 7.3: Percentage of forms bearing past morphology used in Sophie’s corpus during the English sessions

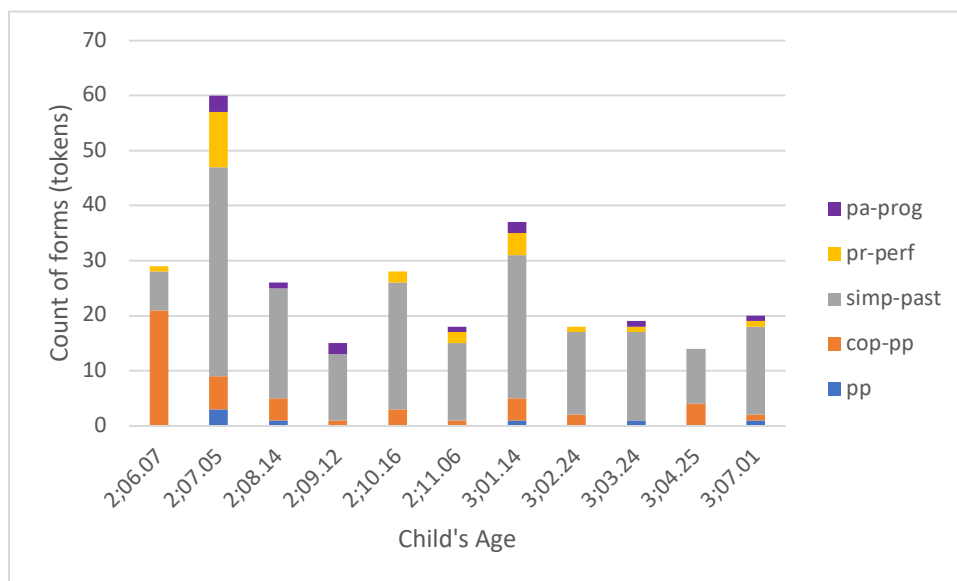
the percentage of all tense forms used it represents. The last column gives the values for the adults computed over the period rather than for each session. On average over the recording period, forms bearing past morphology accounted for 11% of all the tense forms used by Sophie (289/2554), although table 7.3 shows that there was variability in how many past tense forms Sophie used during each session (SD=4%). Most of these forms (191/289) were simple past forms, which accounted for 7% of all tense forms used by Sophie in the corpus (SD=3%). Simple past forms were also the most frequent forms bearing past morphology in the productions of the adults in the corpus (712/6239, or 11% of the tense forms used by the adults).

Graph 7.1 gives the distribution of past tense forms in Sophie’s productions during the recording sessions in English¹. It presents a token count rather than percentages because of how variable Sophie’s use of past morphology was over the period. It shows that Sophie used simple past forms in all the recording sessions, although there was a high variability in the number of forms used in each session – for instance, she produced 41 simple past forms at 2;07.05 (14% of the verb forms used during this session) and only 7 at 2;06.07 (3%). Overall, Sophie also used fewer simple past forms than Anne (a comparison between the two children’s use of past tense forms is provided in more details below). Past participles were also used consistently by Sophie over the period. They accounted for around 2% of all the verb forms she used over the period (50/2554), although there was once again a high degree of variability in the number of past participles used during each session (SD=3%). Graph 7.1 shows that past participles were mostly used in copular constructions, with an adjectival rather than a temporal function, as illustrated in extract 7.1.1. In this extract, Sophie and her father were playing in her room, and Sophie handed a toy to her father for him to make it work. The observer then reported that Sophie’s mother had told her it did not work anymore. She used the past participle “broken” with an adjectival value, which was taken up in Sophie’s next utterance. Such non-finite forms are excluded from the analyses presented below.

¹The proportion of past tense forms relative to all finite verb forms used by Anne Sophie during each session in both of their languages is given in appendix C.

Extract 7.1.1.
Sophie, 2;07.05
 OBS: last time [NAME] said it was **broken** but +...
 FAT: oh is it?
 FAT: maybe xxx.
 CHI: why Mummy said it's **broken**?

Finally, Sophie used present perfect (22/2554) and past progressive (11/2554) forms over the period, although to a lesser extent and less consistently than she used forms inflected for the simple past. These forms were also much less frequent in Sophie's input than simple past forms, as shown in table 7.3. Present perfect forms were however more frequent in Sophie's input than in Anne's input, and were also used more frequently by Sophie than by Anne over the period.



Graph 7.1: Number bare participles (pp), past participles in copular constructions (cop-pp), simple past (simp-past), past progressive (pa-prog) and present perfect (pr-perf) forms in Sophie's productions in English

The following paragraphs consider only simple past forms, which were the most frequent as well as the most consistently used by Sophie in the English recording sessions. Tables 7.4 and 7.5 give the number of verb types and tokens inflected for the simple past as well as the number of utterances produced by Sophie and the adults in her corpus during each recording session in English. The adults consistently produced more utterances, and inflected a higher number of verb types and tokens for the simple past than Sophie did. However, the difference between the number of types and tokens inflected for the simple

past by the adults and by Sophie cannot merely be explained by the adults' tendency to produce more utterances during each session. Indeed, the difference between the number of verb tokens inflected by Sophie and the adults in her corpus for the simple past was systematically more important than the difference between the number of utterances produced by the child and by the adults. Similar trends can nevertheless be identified in the number of types and tokens inflected for the simple past during the different recording sessions. The session when Sophie was 2;07.05 was for instance the session when both the child and the adults used the simple past with the highest number of verb types and tokens, while the lowest number of tokens inflected for the simple past in both child and adult data was reached during the session when Sophie was 2;06.07. The session at 3;04.25 however shows the highest difference observed between child and adult speech – it is the session during which Sophie used the simple past with the lowest number of verb types and the second lowest number of verb tokens, while it corresponded for the adults to a session when they used a high number of verb types and tokens. This can be explained by the recording context, as the participants were recorded during a family meal. In this situation, interactions among adults were more frequent than when the child was filmed in play sessions with one of her caregivers, as was the case in the other recording sessions. This is confirmed by the difference observed between the number of utterances produced by Sophie during this session, which was the lowest in all the recording sessions, whereas the adults in her corpus produced a similar number of utterances during this session and during the other sessions.

Sophie (ENG)	2;06.07	2;07.05	2;08.14	2;09.12	2;10.16	2;11.06	3;01.14	3;02.24	3;03.24	3;04.25	3;07.01
Types	6	18	11	9	9	9	15	9	9	4	8
Tokens	7	41	21	12	27	14	26	15	16	10	16
Number of utterances	381	535	388	333	477	378	362	348	335	166	384

Table 7.4: Verb types and tokens inflected for the English simple past by Sophie

Sophie - Input (ENG)	2;06.07	2;07.05	2;08.14	2;09.12	2;10.16	2;11.06	3;01.14	3;02.24	3;03.24	3;04.25	3;07.01
Types	20	39	27	23	25	26	29	21	17	31	16
Tokens	41	155	104	51	88	76	108	53	56	122	66
Number of utterances	662	760	614	590	674	554	515	431	542	472	429

Table 7.5: Verb types and tokens inflected for the English simple past by the adults in Sophie's corpus

The most frequent verb types inflected for the simple past in adult and child data were identified following the same method as the one presented in chapter 6 – forms that were

used more than two times the average were considered frequent. In the adult corpus, each verb type was used an average of seven times. Forms that were used more than fourteen times were considered frequent. In Sophie's data, verb types were used on average four times each – forms that were used more than eight times were considered frequent. These forms are displayed in table 7.6.

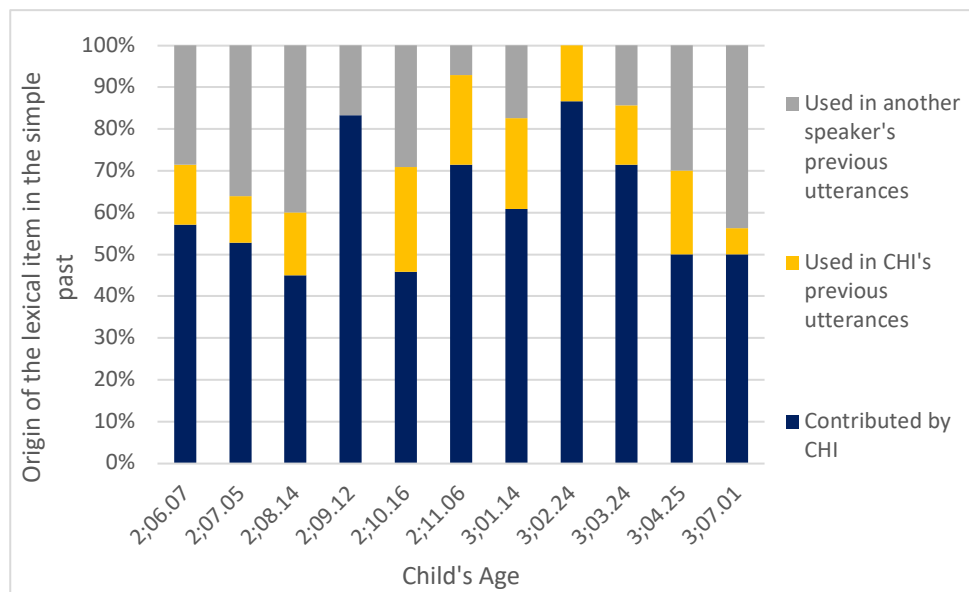
	Input	Sophie
Types (tokens)	to be (182)	to be (30)
	to say (84)	to say (25)
	to do (78)	to do (31)
	to get (35)	to get (10)
	to have (35)	
	to go (31)	to go (9)
	to put (23)	to put (12)
	to like (22)	
	to think (22)	
	to make (15)	
		to finish (15)
	to forget (8)	

Table 7.6: Most frequent verb types inflected for the simple past in Sophie's productions and in her input in English (count within brackets)

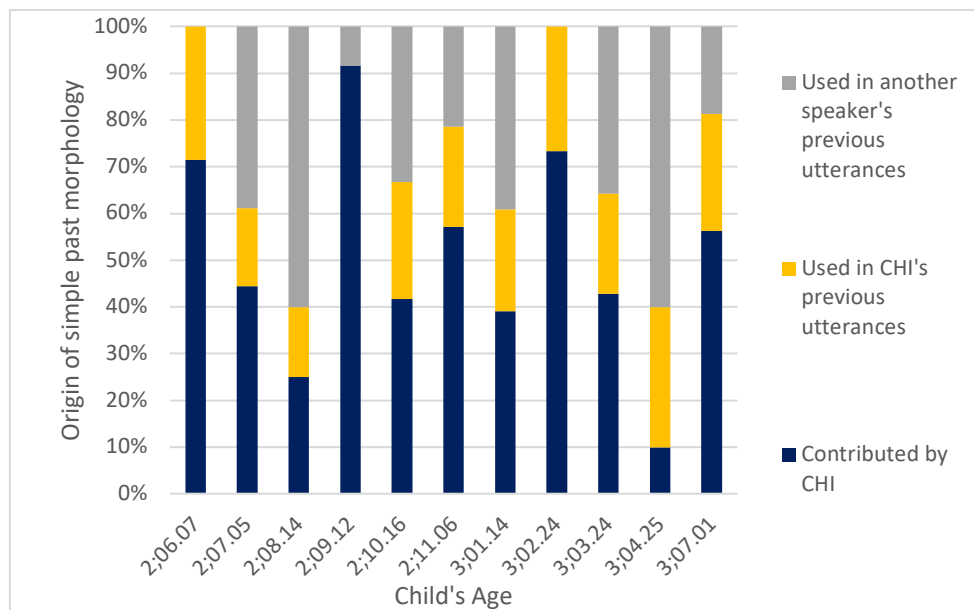
Table 7.6 shows that six of the eight forms most frequently inflected for the simple past by Sophie were also among the most frequent forms used by the adults (in bold in table 7.6 below). Sophie's use of simple past morphology in English was thus consistent with the predictions of usage-based theories – the simple past was the past form most frequently used in Sophie's input, and it was also the past form she used first and most consistently over the period. Moreover, she used the simple past most frequently with the verb types that were most frequently inflected for the simple past in her input.

Next, the forms for which past morphology had been produced by Sophie were coded as either contributed by the child or used in her own or her interlocutor's previous utterances. Forms for which past morphology was coded as omitted (seven forms overall) were excluded. Once again, the results presented below focus on the simple past, which was the past form most consistently used by Sophie. Overall, the lexical items which Sophie inflected for the simple past were more frequently items she had contributed or had already used in her own previous utterances than forms replicated from another speaker's previous utterances in English – over the period, 81% of the lexical items inflected by Sophie for the simple past were lexical items she contributed to the interaction (149/184). Graph 7.2 gives the distribution of lexical items inflected for the simple past that were coded as contributed by Sophie or replicated from her own or her interlocutor's previous utterances. It shows that among the forms inflected for the simple past, the proportion of lexical items contributed by Sophie or already used by her in her previous utterances was

high throughout the recording period.



Graph 7.2: Among forms inflected for the simple past, proportion of lexical items contributed by Sophie or used in her own or her interlocutor’s previous utterances



Graph 7.3: Among forms inflected for the simple past, proportion of past tense morphology contributed by Sophie or used in her own or her interlocutor’s previous utterances

Sophie also contributed simple past morphology to the interaction more frequently than she replicated it from her interlocutor’s previous utterances – over the period 69% of past tense forms were coded as forms where the use of simple past morphology had been initiated by the child (either in this utterance or in her own previous utterances).

Graph 7.3 gives the proportion of past tense morphemes either initiated by Sophie or used in her own or her interlocutor's previous utterances. Both graphs show that from the first session of the period onward, Sophie was able to use past tense morphology with lexical items she contributed to the interaction, as well as to contribute past tense morphology to the interaction and to align with her interlocutor's use of past tense forms. The session at 3;04.25 shows once again a different trend than what was generally observed in the other sessions – 60% of the past morphology used by Sophie was coded as replicated from her interlocutor's previous utterances. As for the low number of verb types used by Sophie during this session, this can be explained by the situation in which the participants were recorded. During the family meal recorded in this session, the adults tended to guide the interaction more than during other recording sessions where they more often engaged in one-on-one interaction with Sophie.

Extract 7.1.2 provides an example of a creative use of simple past morphology by Sophie when she was 2;07.05. During this extract, father and child were engaged in a joint-reading activity with a book they have read several times over and that the child knows well. The father read the book and sometimes paused to let Sophie complete the sentences. While reading the book, he used the term “astounding”, leading Sophie to ask what it meant. Sophie produced two past tense forms during this extract (in bold in the transcription) which were coded as initiated by her and replicated from her own utterances, illustrating her ability to initiate the use of past morphology in the interaction from early on during the recording period. Contexts where she engaged in one-on-one interactions were also more likely to have her initiate the use of past morphology as she would more easily guide the interaction in such contexts than in multiparty interactions such as the one illustrated by extract 7.1.3.

Extract 7.1.2.

Sophie, 2;07.05

%sit: FAT and CHI are reading a children's book entitled “The Gruffalo”

FAT: you see said the mouse I told you so, astounding said the Gruffalo.

CHI: what's astounding?

FAT: astounding it means like amazing.

CHI: oh.

FAT: like if you say something's astounding that is like wow.

FAT: that's amazing.

CHI: oh why **did** you **do** that **was** amazing?

FAT: sorry?

CHI: why **did** you **do** that?

FAT: amazing?

CHI: yeah.
 FAT: you know what amazing means, don't you?
 CHI: amazing.
 FAT: you know when you do something really good like you go for a wee on the toilet we say that's amazing Sophie well+done.

Extract 7.1.3 is taken from the session when Sophie was 3;04.25, during which the family was recorded around dinner. This extract begins with the father asking Sophie a question about her day at school, which was answered by the mother who had picked her daughter up from school earlier that day. The mother told her husband what Sophie had already told her (*“she said she did exercises”*) and Sophie complemented this answer by specifying the type of exercises she did (*“we did jumping+jacks at school”*), replicating the past form “did” from her mother’s previous utterance. In response to Sophie’s answer, her father asked her whether she had changed into her sportswear in physical education. Sophie answers non-verbally in the negative, which leads the father to wonder why they had bought her new physical education clothes that she had not yet been asked to wear. Once again, this question was answered by Sophie’s mother rather than by Sophie, who was focused on her food. The extract thus illustrates why, during the family dinner that was recorded, the parents produced more utterances than their child. A plausible explanation may be found in the fact that at that age Sophie was not as able as the adults around her to eat and talk at the same time, which led the mother to answer for her daughter, most likely in order to let her concentrate on her eating. Sophie does however interact with her parents in the extract, for instance in her last utterance where she asked her father whether he had attended the school he was talking about, inflecting the auxiliary “do” for the past form and using the irregular past tense form of the lexical verb “go”. This form was coded as a form in which past tense morphology had been initiated by another speaker’s utterance – Sophie aligned with the use of past morphology rather than initiating it.

Extract 7.1.3.

Sophie, 3;04.25

FAT: Soph' <did you> [///] so apart from [///] did you do P-E then?

MOT:no I don't think so.

FAT: when you were doing the jumping jacks.

MOT: she said she did exercises at school.

CHI: we **did** jumping jacks at school.

FAT: yeah but did you get your P-E clothes on [///] your black shorts and

your green t-shirt?

FAT: no?

FAT: I don't know why we've bought those because you've never worn them yet, have you?

MOT: yeah but they don't change them yet.

MOT: xxx use it after.

FAT: Sophie when I was your age we used to live in [NAME].

FAT: it wasn't far from here.

FAT: and Mummy used to go to the park and there's the school next to the park you could see +/.

CHI: +< with Ella?

FAT: no before she was born.

FAT: and you could see <the school> [///] the primary school doing P-E and they used to have to do P-E in their knickers and underpants.

MOT: what?

OBS: no.

FAT: yeah Mum and Dad were gonna send us to this school and I was terrified.

MOT: what?

FAT: yeah.

OBS: that's weird.

CHI: and **did** you **went** to that school?

FAT: no I didn't and I was very pleased.

However, although Sophie aligned with her interlocutor's use of past morphology, the last form she produced testifies to some degree of linguistic elaboration. Indeed, she did not merely replicate a past form from her input, but rather produced the non-standard form "did went", in which she used past marking twice, on the auxiliary and on the lexical verb.

During the French sessions, Sophie used 2313 tense forms, out of which 270 were in English (around 12%). This was much more than what was observed in her input, where forms in English accounted for only 0.6% of all tense forms used by the adults (33/5945). Moreover, Sophie also used more tense forms in English during the French sessions than she used French tense forms during the English recording sessions, which suggests a slight dominance in English at the time of recording. The proportion of English tense forms she used during the sessions in French was higher at the beginning of the session than at the end. When Sophie was 2;06.07, 22% of the tense forms she used during the French sessions were English tense forms. There were also two sessions during which Sophie used the highest proportions of English tense forms (respectively 52/140 and 55/119), when she

was 3;00.05 and 3.01.14. These sessions were also the sessions when she used the highest proportion of English utterances, as shown in graph 5.4 (used in chapter 5). During the last four recording sessions in French, only 3% of the tense forms she used were in English (23/813). The most frequent tense she used in French was the present tense – present tense forms accounted on average for 71% (1636/2313) of all tense forms used by Sophie in French (SD=15%). This was very similar to what was observed in her input, where present tense forms accounted for 75% of all tense forms used over the period (4485/5945). The following analyses consider forms bearing past morphology, which accounted in average for 4% (98/2313) of all tense forms used by Sophie in French (SD=2%). This was a much lower proportion than what was observed in her input, where past tense forms accounted for around 12% of all tense forms used in French.

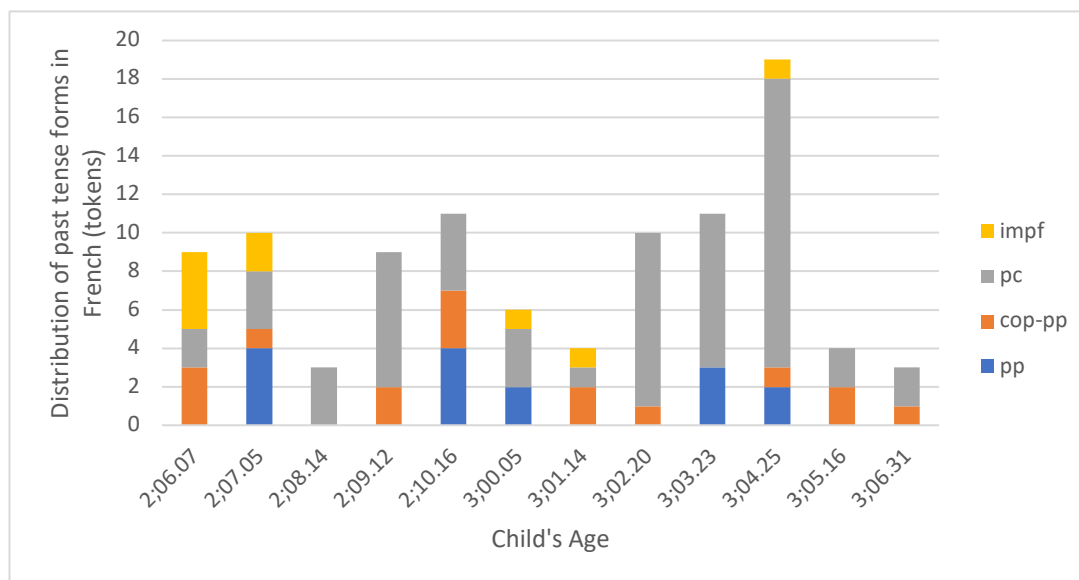
Past participles accounted for 1.3% of all tense forms used by Sophie, almost twice the proportion that was observed in the adult data (0.6%, 34/5945). Full-fledged *passé composé* forms accounted for 2.6% of all tense forms used by Sophie (59/2313), while they accounted for 8.5% of the tense forms used by the adults in the corpus (505/5945). Finally, the imperfective past tense was used by Sophie in only five of the twelve recording sessions in French and accounted for only 0.4% of all tense forms used by the child (9/2313), against 3% in the adult data (188/5945). Table 7.7 focuses on French tense forms bearing past morphology (past participles either bare or following a copula verb, *passé composé* and *imparfait* forms). Despite the low number of tokens concerned, the values presented in table 7.7 are given in percentages of the total number of tense forms used, in order for the distribution of forms in child and adult data to be easily comparable. The last two lines present the number of verb tokens used with past morphology and the percentage of all tense forms it represents. The last column indicates the values for the adults computed over the period rather than for each session.

Sophie	2:06.07	2:07.05	2:08.14	2:09.12	2:10.16	3:00.05	3:01.14	3:02.20	3:03.23	3:04.25	3:05.16	3:06.31	Adults
Past participles	1.6	2.2	0	1	2.5	1.4	1.7	0.6	1.1	1.3	1.3	0.6	0.5
<i>Passé composé</i>	1.1	1.3	1.7	3.5	1.4	2.1	0.8	5.2	3	6.4	1.3	1.3	8.5
<i>Imparfait</i>	2.2	0.9	0	0	0	0.7	0.8	0	0	0.4	0	0	3.2
Total (Pa. Tok)	9	10	3	9	11	6	4	10	11	19	4	3	5945
Total (% all tense forms)	5	4.4	1.7	4.5	3.9	4.3	3.4	5.8	4.1	8.1	2.6	1.9	12.2

Table 7.7: Percentage of forms bearing past morphology used by Sophie during the French sessions

Graph 7.4 illustrates the token count of forms bearing past morphology. It shows that *passé composé* forms were the only forms used by Sophie in all the recording sessions. The second forms most consistently used were past participles in copular constructions, i.e. non-finite forms with an adjectival rather than a temporal value. Finally, bare past participles were used proportionally more at the beginning of the recording period than

at the end – during the two sessions when Sophie was 3;03.23 and 3;04.25, she used such forms less than she did *passé composé* forms (she produced 3 and 2 bare participles when she was 3;03.23 and 3.04.25 against 10 and 15 *passé composé* forms).



Graph 7.4: Proportion of bare participles (pp), past participles in copular constructions (cop-pp), *passé composé* (pc) and *imparfait* (impf) forms in Sophie's productions in French

Tables 7.8 and 7.9 display the number of verb types and tokens used with perfective past morphology either as full-fledged *passé composé* forms or as bare past participles during each recording session in child and adult data. These show that Sophie used significantly fewer verb types and tokens bearing past perfective morphology than the adults in her corpus. Moreover, there was more variability in Sophie's use of *passé composé* forms and bare participles than in her input. Indeed, Sophie used on average four verb types (SD=2) and seven tokens (SD=4) per session, while the adults used on average twenty-six verb types (SD=5) and 58 tokens (SD=19). Proportionally, standard deviation values were higher in Sophie's data than in her input, pointing to a higher degree of variability. Moreover, as was observed in English, the difference between the number of verb tokens bearing past perfective morphology in Sophie's productions and in her input did not mirror the difference between the number of utterances produced by Sophie and by the adults in her corpus. The adults in Sophie's corpus produced systematically more utterances than Sophie did during the one-hour sessions recorded; however the difference between the number of verb forms bearing past perfective morphology in Sophie's productions and in her input was even greater than the one between the number of utterances produced by the child and the adults in the corpus.

Sophie (FRE)	2:06.07	2:07.05	2:08.14	2:09.12	2:10.16	3:00.05	3:01.14	3:02.20	3:03.23	3:04.25	3:05.16	3:06.31
Types	3	4	3	7	6	2	2	7	2	4	3	3
Tokens	5	8	3	9	11	5	3	10	11	17	4	3
Number of utterances	456	426	402	378	517	250	245	358	394	410	216	306

Table 7.8: Verb types and tokens bearing past perfective morphology used by Sophie during the French sessions

Sophie - Input (FRE)	2:06.07	2:07.05	2:08.14	2:09.12	2:10.16	3:00.05	3:01.14	3:02.20	3:03.23	3:04.25	3:05.16	3:06.31
Types	25	24	20	27	39	25	24	34	19	26	25	28
Tokens	59	54	53	61	68	62	47	110	34	59	40	48
Number of utterances	594	570	467	488	643	529	496	643	476	593	232	493

Table 7.9: Verb types and tokens bearing past perfective morphology used by the adults during the French sessions in Sophie’s corpus

Table 7.10 lists the most frequent verb types used with past perfective morphology in child and adult data in Sophie’s corpus – it groups *passé composé* and bare past participles.

	Input	Sophie
Types (tokens)	faire (107)	faire (16)
	dire (43)	
	finir (41)	finir (31)
	voir (39)	
	mettre (34)	
	avoir (33)	
	trouver (30)	trouver (7)
	donner (23)	
	être (22)	
	aller (21)	
	acheter (21)	
	prendre (13)	
	manger (12)	
	tomber (10)	
	oublier (10)	

Table 7.10: Most frequent verb types bearing past perfective morphology in Sophie’s productions and in her input (count within brackets) in French

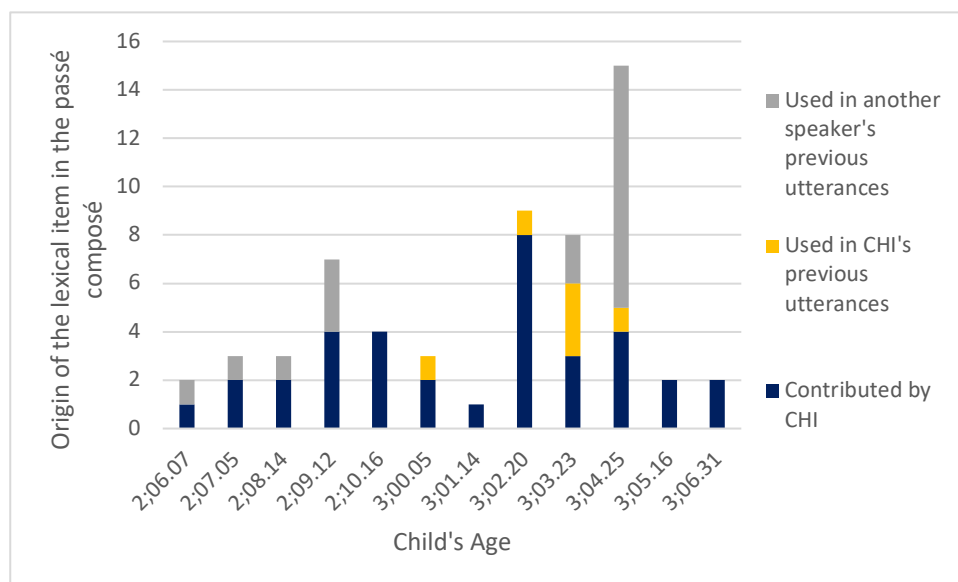
The adults in the corpus used each verb type five times on average and forms that were used more than ten times were thus considered frequent. Sophie used each verb type a little over three times on average and types that were used more than seven times were thus considered frequent. As predicted by usage-based theories of language acquisition,

the most frequent bare participles or *passé composé* forms used by Sophie were also among the most frequent forms used by the adults in her corpus.

Sophie used the imperfective past tense with only five verb types and nine tokens over the period. The most frequent tokens found in the *imparfait* in child and adult data were homophone forms corresponding to the inflection of the verb “être” for the *imparfait* (seventy-five verb tokens in adult data and three verb tokens in child data). This is similar to the tendency observed in chapter 6 in the early uses of the imperfective past tense by French monolingual children, before they started using the inflection productively.

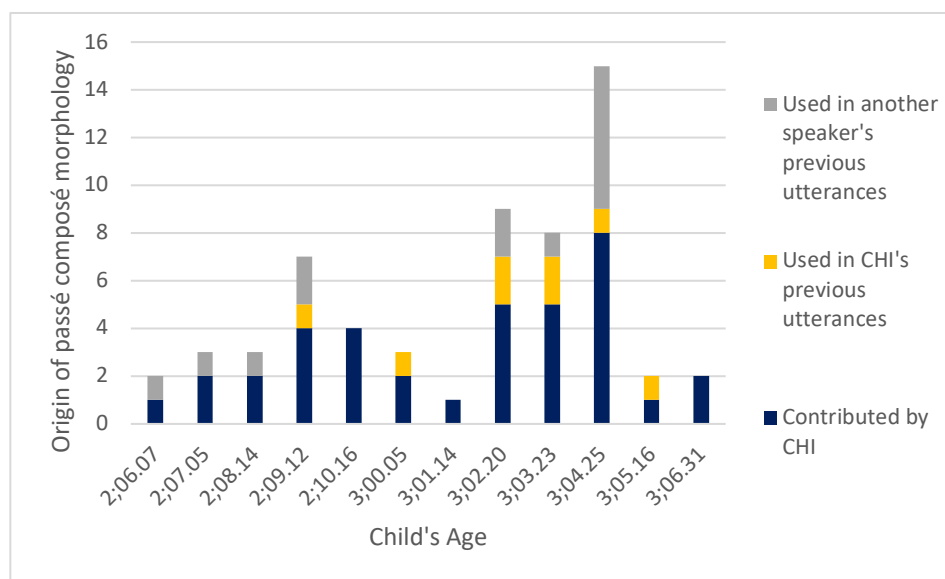
Finally, forms were coded as either initiated by the child or replicated from her own or her interlocutor’s previous utterances. The results are presented for *passé composé* forms (including bare past participles), which was the past form most consistently used by Sophie during the period. They are given in token count rather than in percentages because of the low number of *passé composé* forms used by Sophie over the period and because of the high degree of variability in the number of forms produced during each session.

Graph 7.5 gives the number of lexical items in the *passé composé* that were either contributed by the child, replicated from her own utterances or from her interlocutor’s previous utterances. It shows that Sophie was able to use past perfective morphology with lexical items that she had contributed to the interaction from the beginning of the recording period onward.



Graph 7.5: Among forms bearing past perfective morphology in Sophie’s productions, proportion of lexical items coded as contributed by the child or replicated from her own or her interlocutor’s previous utterances

Graph 7.6 gives the proportion of forms for which past perfective morphology was



Graph 7.6: Among forms bearing past perfective morphology in Sophie's productions, proportion of such morphology coded as contributed by the child or replicated from her own or her interlocutor's previous utterances

coded either as contributed by the child or replicated from her own or her interlocutor's previous utterances. Both graphs show that Sophie used more forms bearing past perfective morphology during the session when she was 3;04.25. Comparing the proportion of lexical items coded as replicated from her interlocutor's previous utterances to the proportion of forms for which past perfective morphology was contributed by Sophie shows that she replicated lexical items from her interlocutor's previous utterances more frequently than she contributed them to the interaction, but that she initiated the use of past perfective morphology more often than she replicated such morphology from her interlocutor's previous utterances. Even during the session when the lexical items she used in the *passé composé* or as bare participles were mostly coded as replicated from another utterance, Sophie initiated the use of past perfective morphology more often than she took it up from a previous utterance.

Extract 7.1.4 illustrates Sophie's ability to initiate past perfective morphology – in this extract, she was playing a memory game with her mother, her sister (Ella) and the observer. The mother told her sister which image she had yet to find, and Sophie used past perfective morphology to signal that she had found the card (in bold in the transcription).

Extract 7.1.4.

Sophie, 3;04.25

MOT: Ella toi, tu dois trouver la tortue ou la trottinette ou le seau. (*Ella,*

you have to find the turtle, the scooter or the bucket.)
 CHI: moi, j'**ai trouvé** trottinette pour Ella. (*I found the scooter for Ella.*)
 MOT: ah c'est gentil. (*that's nice.*)

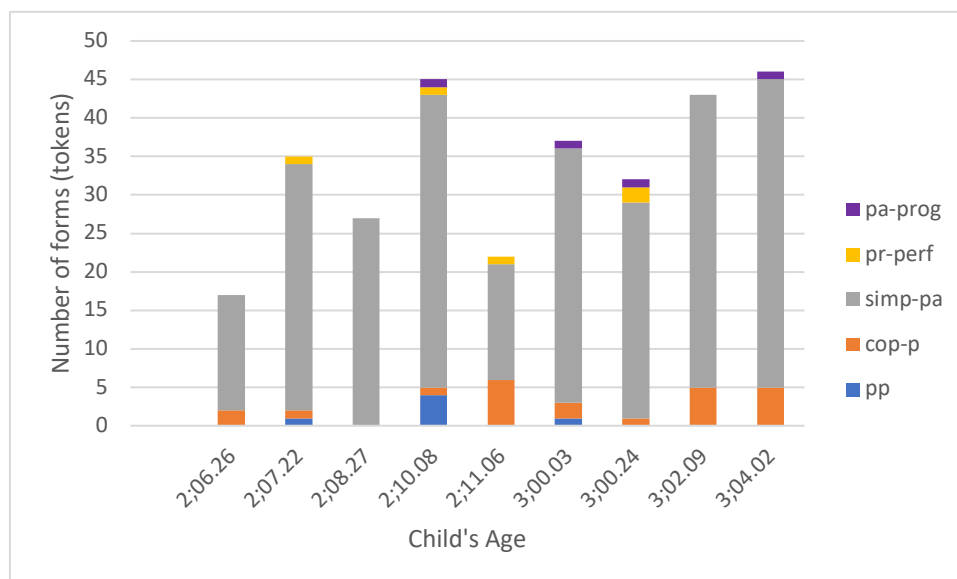
Anne used 1571 tense forms over nine recording sessions in English which were distributed from when she was 2;06.26 to when she was 3;04.02. Out of these 1571 tense forms used during the English sessions, only four were in French. The description of the tense forms in Anne's corpus provided in chapter 5 showed that present tense forms were the most frequent forms used in Anne's productions and in her input (71% and 73% of the tense forms produced by Anne and the adults in her corpus respectively were present tense forms). Table 7.11 considers the forms bearing past morphology used by Anne and the adults in her corpus. It displays the types of constructions in which Anne used past morphology in English. The values provided are percentages of the total number of tense forms used by Anne during each session. The last column gives the proportion of each construction in her input over the entire recording period. The last two lines give the token count of forms bearing past morphology in child and adult data (considering again each session for Anne and the entire recording period for the adults in her corpus), as well as the percentage of tense forms bearing past morphology relative to all tense-aspect forms used in Anne's productions and in her input.

Anne	2;06.26	2;07.22	2;08.27	2;10.08	2;11.06	3;00.03	3;00.24	3;02.09	3;04.02	Adults
Past participles	1.6	1.1	0	4.1	3.4	1.5	0.8	2.5	3	1.9
Simple past	11.8	17.1	11.4	25.7	8.4	16.8	21.9	19	23.7	14.5
Pr. / Pa. Perfect	0	0.5	0	0.7	0.6	0	1.6	0	0	1.3
Past prog.	0	0	0	0.7	0	0.5	0.8	0	0.6	0.5
Total (Pa. Tok)	17	35	27	46	22	37	32	43	46	643
Total (% all tense forms)	13.4	18.7	11.4	31.1	12.4	18.8	25	21.5	27.2	18.6

Table 7.11: Percentage of forms bearing past morphology used by Anne during the English sessions

Overall, Anne produced 307 forms bearing past morphology across the period. The proportion of these forms relative to other tense forms in Anne's productions varied during the different sessions – when she was 2;08.27, such forms accounted for 11.4% of all tense forms used by Anne, against 31% during the next session when she was 2;10.08. There was a tendency for this proportion to stabilize during the last four sessions – they accounted on average for 23% of all tense forms used by Anne during these sessions (SD=4%).

Simple past forms were the past forms Anne used most consistently over the period. The simple past was also the second most frequent past form used by Anne – she produced



Graph 7.7: Proportion of bare participles (pp), past participles in copular constructions (cop-pp), simple past (simp-past), past progressive (pa-prog) and present perfect (pr-perf) forms in Anne's productions in English

261 forms inflected for the simple past out of 1571 finite forms in total (17% of all the finite forms used by Anne were inflected for the simple past, $SD=7\%$). In her input, such forms accounted for 15% of all the finite forms used (520/3449). She used 29 past participles during the period, mostly in copular constructions (23/29). This was also similar to what was observed in her input, as the adults in the corpus used 94 past participles over the period, 84 of which were used in copular constructions. Past participles used with a purely adjectival function in copular constructions accounted for 1.8% of the total number of verb forms used by Anne, and 1.9% of the verb forms used by the adults. The main difference between Anne's productions and her input concerns the use of the perfect. Present perfect forms accounted for 1.3% of the total number of tense forms used by the adults, and only 0.3% of the tense forms used by Anne. As noted earlier, perfect forms were more frequently used in Sophie's input and in her productions than in Anne's corpus.

Graph 7.7 displays the distribution of past tense morphology into the coding categories – past participles (either bare or following copula verbs), present perfect, simple past, past progressive forms. As what was observed in Sophie's productions, it shows that Anne used the simple past consistently from the beginning of the period onward – simple past forms were used by Anne during all the sessions, and they were also used more frequently than any other form bearing past morphology. Past participles used in copular constructions were also used in all the recording sessions by Anne although in lesser proportions. Finally, present perfect and past progressive forms were used only sporadically by Anne. There was less variability overall in Anne's use of simple past forms than what was observed for Sophie. Anne also used more simple past forms than Sophie did in each recording session

except the second one (when Sophie was 2;07.05 and Anne 2;07.22). Further comparison between the two children's use of past morphology in French and in English is provided in the last section of this chapter.

The measures presented next on the number of verb types and tokens focus on simple past forms,, which were the only past tense forms frequently and consistently used by Anne over the period. Tables 7.12 and 7.13 give the number of verb tokens and types inflected for the simple past during each session in child and adult data.

Anne (ENG)	2;06.26	2;07.22	2;08.27	2;10.08	2;11.06	3;00.03	3;00.24	3;02.09	3;04.02
Types	4	10	14	16	8	14	11	13	11
Tokens	15	30	27	39	15	33	28	38	39
Number of utterances	352	421	485	264	313	303	222	286	227

Table 7.12: Verb types and tokens used in the simple past by Anne

Anne - Input (ENG)	2;06.26	2;07.22	2;08.27	2;10.08	2;11.06	3;00.03	3;00.24	3;02.09	3;04.02
Types	24	25	27	33	23	25	33	31	33
Tokens	72	88	67	80	52	89	122	75	93
Number of utterances	440	405	367	267	473	428	363	498	486

Table 7.13: Verb types and tokens used in the simple past by the adults in Anne's corpus

Anne used fewer verb types and tokens than the adults in her corpus in all the recording sessions, although from the second recording session onward the number of tokens she used tended to grow, except for the session when she was 2;11.06. This session was also the session when the adults around her used fewer verb types and tokens inflected for the simple past. As what was observed in Sophie's corpus, there was also a greater difference between the number of tokens inflected for the simple past by Anne and the adults in her corpus than between the number of utterances they produced. The adults tended to produce more utterances than Anne during the one-hour sessions recorded in English, however this difference in the amount of utterances produced cannot solely be used to account for the difference between the number of simple past forms used by Anne and that observed in her input. Proportionally to the number of utterances they produced, the adults in Anne's corpus systematically used more simple past forms than Anne.

Table 7.14 displays the most frequent forms inflected for the simple past in Anne's productions and in her input. The adults in Anne's corpus used each verb type seven times on average – forms that were used more than fourteen times were thus considered frequent. Anne used each verb type a little over five times on average and forms used more

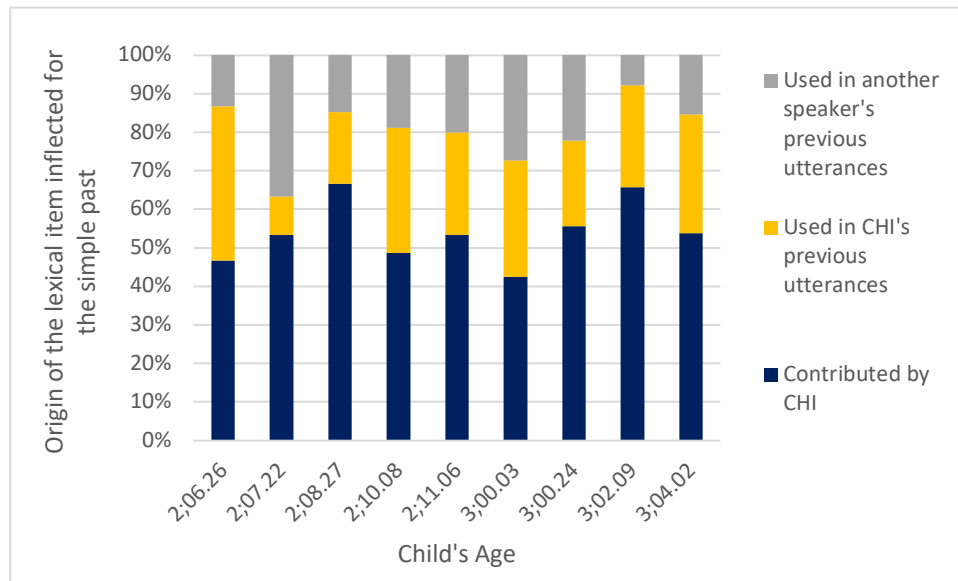
than eleven times were thus considered frequent. Once again, it confirms the predictions of the usage-based theories according to which children tend to inflect for the simple past the most frequent verbs inflected for it in their input. Indeed, all the most frequent forms used by Anne in the simple past were among the most frequent forms used by the adults in her corpus with simple past morphology.

	Input	Anne
Types (tokens)	to be (136)	to be (31)
	to do (64)	to do (52)
	to have (47)	
	to go (45)	to go (22)
	to say (37)	to say (11)
	to come (31)	
	to get (31)	to get (24)
	to make (24)	
	to like (21)	
	to give (18)	
	to think (14)	

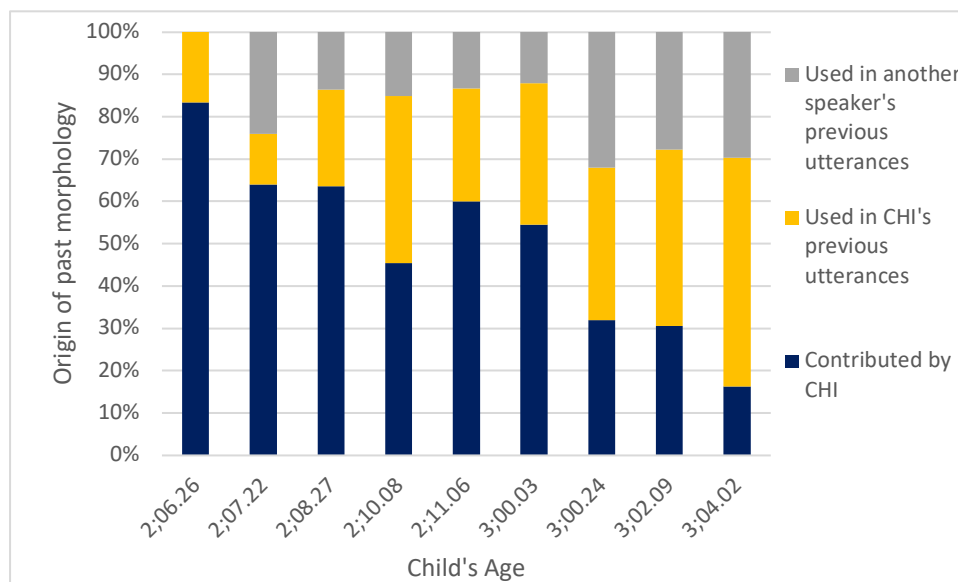
Table 7.14: Most frequent verb types inflected for the simple past in Anne’s productions and in her input (count within brackets) in English

The proportion of simple past forms either contributed to the interaction by Anne or replicated from her own or her interlocutor’s previous utterances was also computed in order to determine whether Anne used simple past morphology with different lexical items as the ones available to her in the interaction, and whether she initiated the use of past tense morphology over the period. This measure was computed exclusively on the simple past forms where the tense morpheme had been produced by Anne – I excluded from this count forms for which the morphology had been coded as omitted. The results show that from the first recording session, Anne used the simple past with lexical items that she had not taken up from her interlocutor’s previous utterances. This is illustrated by graph 7.8, which shows that among forms inflected for the simple past, lexical items she had either contributed or replicated from her own utterances were most frequent during all recording sessions. When inflecting verb forms for the simple past, she did not merely use lexical items available to her in her interlocutor’s previous utterances.

From the beginning of the period, Anne also readily contributed past morphology or replicated it from her own utterances more often than she took it up from her interlocutor’s utterances, as illustrated by graph 7.9. There was some variability in the proportion of past tense morphology that was coded as initiated by Anne, and there was a tendency for her to replicate simple past morphology from her interlocutor’s previous utterance more often at the end of the period than at the beginning. This can be interpreted as signaling her growing ability to align with the use of tenses in the interaction.



Graph 7.8: Among the simple past forms used by Anne, proportion of lexical items coded as contributed by the child or replicated from her own or her interlocutor's previous utterances



Graph 7.9: Among the simple past forms used by Anne, proportion of simple past morphology coded as contributed by the child or replicated from her own or her interlocutor's previous utterances

This is illustrated by a comparison between extracts 7.1.5 and 7.1.6. Extract 7.1.5 was taken from the first English recording session with Anne.

Extract 7.1.5.
Anne, 2;06.26
 NAN: what did you get?
 CHI: hum your friend **that**.
 NAN: I don't have it but what did you get?
 CHI: hum cat.
 OBS: you got a cat?
 NAN: +< was it for your hair?
 CHI: yeah.
 NAN: it's a little hair clip with a cat.
 NAN: and what else did you get?
 NAN: what are you wearing?
 CHI: **that**.
 %gpx: CHI heaves chest and points to her teeshirt.
 NAN: oh yeah that's what you chose but what is new?
 NAN: you show me.
 CHI: **that**.
 %gpx: CHI raises her leg and points to it.

In this extract, Anne's nanny questioned her about a gift that she had received on the same morning. Rather than aligning with her interlocutor's use of the simple past, at this stage Anne used a deictic demonstrative ("that", in bold in the transcription) alongside a pointing gesture towards her leg as well as the present tense, anchoring her productions in SpT. In comparison, extract 7.1.6 was taken from one of the last recording sessions in English when Anne was 3;02.09. Contrary to what was observed in extract 7.1.5, Anne now aligned with her interlocutor's use of past morphology to answer questions about past events. At the beginning of the extract, Anne's nanny told her mother about their day and Anne took up the simple past form "went" from her nanny's previous utterance, an irregular form in which the past morpheme [-ed] was not used. At the end of the extract, Anne used past morphology productively in a form coded as an overregularization ("goed"), which signaled her ability to use simple past morphology productively and to align with her interlocutor's use of tenses. Instances of overregularizations in Anne's productions are analyzed in more details in the next subsection.

Extract 7.1.6.
Anne, 3;02.09
 NAN: we went to ballet today.
 CHI: we **went** to ballet.
 MOT: oh that's nice.
 MOT: oh yes ballet there's a ballet.
 MOT: xxx.
 MOT: and what did you do at ballet?
 CHI: I **goed** upstairs not downstairs.
 MOT: [-mix] <qu'est+ce@f> [/] <qu'@f est+ce@f> [//] and what is there upstairs?
 CHI: my ballet class.

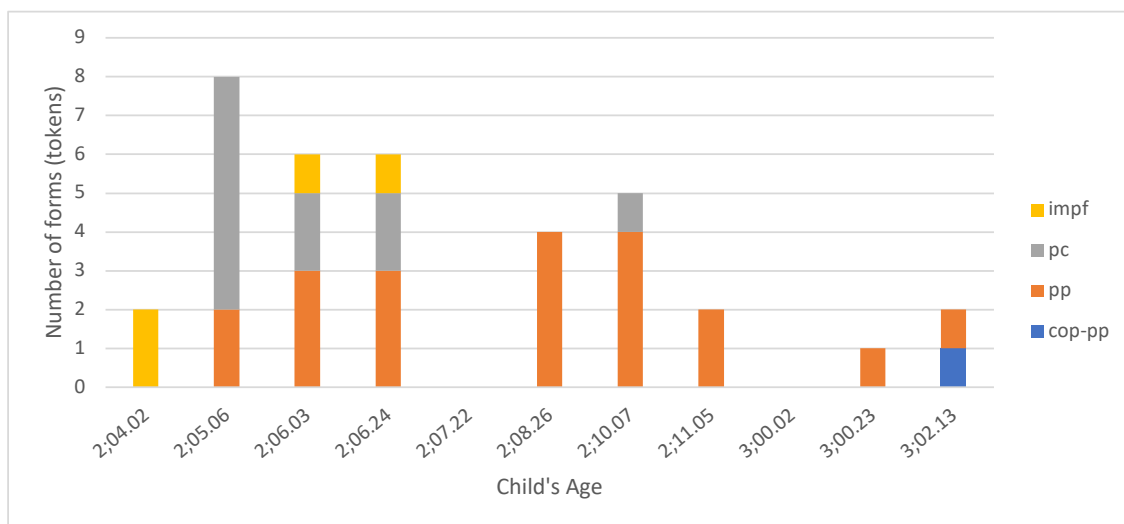
During the French sessions, Anne produced 1419 tense forms, out of which 1131 were in English. The proportion of English forms used during the French sessions grew steadily over the recording period – in the first session, 29% of the tense forms used by Anne were in English, while this proportion reached 80% during the fifth recording session in French and never dropped below this rate afterwards. This is consistent with what was observed in chapter 5, namely that Anne's use of French decreased over the period as the proportion of English and mixed utterances used during the French sessions increased. During the last recording session when Anne was 3;02.13, 99% of the tense forms she used during the sessions in French were in English. Table 7.15 gives the distribution of past tense forms used by Anne in French during each session, and the distribution of these forms in Anne's input over the period.

Anne	2;04.02	2;05.06	2;06.03	2;06.24	2;07.22	2;08.26	2;10.07	2;11.05	3;00.02	3;00.23	3;02.13	Adults
Past participles	0	3.8	4	3.2	0	2.2	2.6	1.7	0	0.6	1	1
<i>Passé composé</i>	0	9.4	2.8	2.1	0	0	0.6	0	0	0	0	7.1
<i>Imparfait</i>	2.5	0	0	1.1	0	0	0	0	0	0	0	4.3
Total (Pa. Tok)	2	8	5	6	0	4	5	2	0	1	2	957
Total	55	53	36	36	20	37	18	8	6	8	3	7979

Table 7.15: Percentage of forms bearing past morphology used by Anne during the French sessions

The values presented in the first three lines are given in percentages, to allow for a comparison between the distribution of past morphology in child and adult data. The last two lines give token counts first of the number of past tense forms and second of the total number of tense forms used in French. The distribution of the forms bearing past

morphology produced by Anne into the different coding categories is also given in graph 7.10, which displays the token count of adjectival participles (cop-pp), bare participles, *passé composé* and *imparfait* forms used by Anne during each session.



Graph 7.10: Proportion of bare participles (pp), past participles in copular constructions (cop-pp), *passé composé* (pc) and *imparfait* (impf) forms in Anne's productions in French

This graph shows that Anne did not produce forms bearing French past morphology during all the French sessions. She used bare past participles more consistently and more frequently than any other past tense form. Anne used only four *imparfait* forms over three sessions, and used only eleven *passé composé* forms over four recording sessions. There was a clear tendency for the number of French past tense forms used by Anne to decrease over the recording period, which is consistent with the observation made in chapter 5 that Anne's English gradually took over her French and became the language she used most during both the French and the English sessions.

Tables 7.16 and 7.17 focus on *passé composé* forms and bare past participles. They give the number of verb types and tokens bearing past perfective morphology in Anne's productions and in her input. These tables show that the low number of verb types and tokens inflected for the *passé composé* or used as bare participles in Anne's productions does not reflect her input – while the number of verb types and tokens used by Anne was low and decreased over the period, the adults in her corpus consistently used at least 20 different verb types and 40 different verb tokens inflected for the *passé composé* or used as bare participles during each session. Moreover, table 7.16 shows that as Anne tended to use fewer verb forms bearing past morphology, she also used fewer utterances in French during the sessions. Tables 7.16 and 7.17 also provide the number of utterances produced by Anne and the adults in her corpus during each of the one-hour sessions recorded in French. Across the period, adults in the corpus systematically produced more utterances than Anne. However, the difference in the number of past tense forms used by Anne and

the adults in her corpus cannot solely be explained by the difference in the number of utterances they produced – Anne produced fewer past tense forms relative to the number of utterances she used than the adults in her corpus, in all of the recording sessions.

Anne	2:04.02	2:05.06	2:06.03	2:06.24	2:07.22	2:08.26	2:10.07	2:11.05	3:00.02	3:00.23	3:02.13
Verb types	0	4	4	5	0	4	4	2	0	1	2
Verb tokens	0	8	4	5	0	4	4	2	0	1	2
Number of utterances	250	167	175	297	174	170	188	80	74	132	113

Table 7.16: Number of verb types and tokens bearing past perfective morphology in Anne’s productions during the French sessions

Anne	2:04.02	2:05.06	2:06.03	2:06.24	2:07.22	2:08.26	2:10.07	2:11.05	3:00.02	3:00.23	3:02.13
Verb types	27	28	20	27	22	24	41	24	26	20	23
Verb tokens	74	46	59	49	55	57	82	40	55	38	57
Number of utterances	541	538	413	564	623	455	430	385	323	303	288

Table 7.17: Number of verb types and tokens bearing past perfective morphology in Anne’s input during the French sessions

Table 7.18 displays the most frequent verb types found either inflected for the *passé composé* or used as past participles in Anne’s input and in her productions.

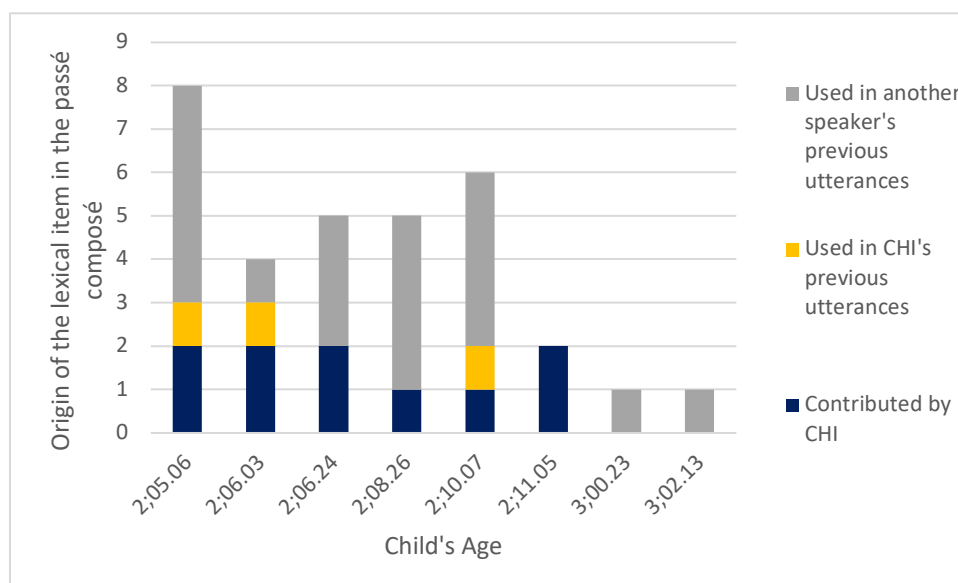
	Input	Anne
Types (tokens)	faire (99)	
	voir (53)	
	manger (26)	
	finir (26)	finir (7)
	avoir (26)	
	tomber (23)	tomber (7)
	mettre (22)	
	aller (16)	
	dire (15)	
	trouver (15)	
	réussir (13)	
	comprendre (13)	
	donner (11)	
perdre (9)		

Table 7.18: Most frequent verb types bearing past perfective morphology in Anne’s productions and in her input in French (count within brackets)

Although Anne used French past perfective morphology sporadically over the period,

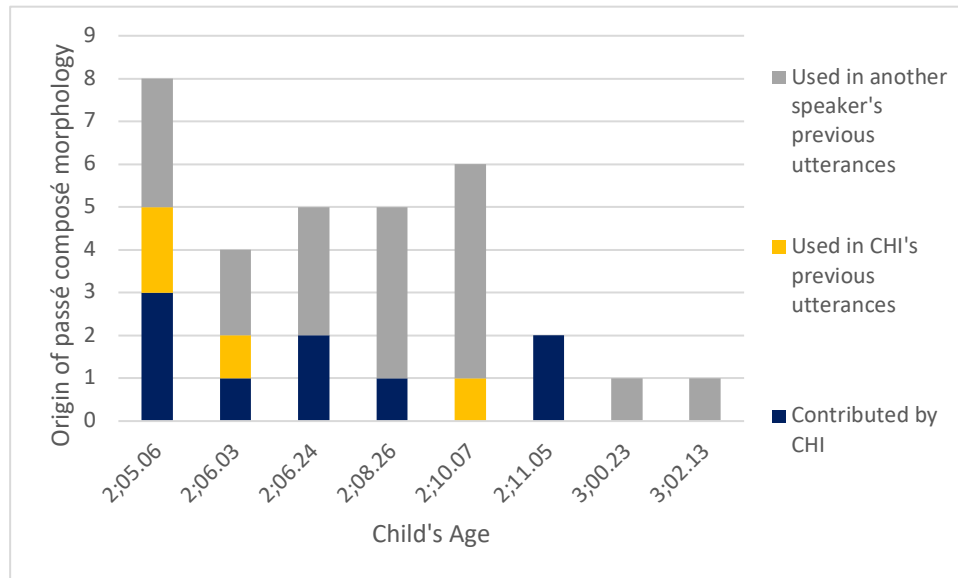
the predictions of the usage-based theories still held – the verb types Anne used most frequently with past morphology were also among the most frequent verb types inflected for the *passé composé* or used as past participles in her input.

Finally, the *passé composé* and bare participles used by Anne during the French sessions were coded as either contributed by the child or replicated from her own or her interlocutor's previous utterances. Given that Anne produced very few past perfective forms in French, a token count is given rather than percentages.



Graph 7.11: Among forms bearing perfective past morphology in Anne's productions in French, percentage of lexical items coded as contributed by the child or replicated from her own or her interlocutor's previous utterances

Graphs 7.11 gives the number of lexical items inflected for the *passé composé* or used as bare past participles either contributed by the child or replicated from her own or her interlocutor's previous utterances. Graph 7.12 gives the number of forms for which the past perfective morpheme used was coded as either contributed by the child or replicated from her own or her interlocutor's previous utterances. Graphs 7.11 and 7.12 only consider forms for which past perfective morphology had been produced by Anne – forms for which past morphology had been coded as omitted were excluded. Similar observations can be made on both graphs – among the forms inflected by Anne for the *passé composé* or used as past participles, most lexical items and tense morphemes were coded as replicated from her own or her interlocutor's previous utterances. By the end of the period, all the lexical items and past morphemes used by Anne were coded as replicated from her interlocutor's utterance. This suggests that Anne initiated the use of past perfective morphology in French less and less frequently over the period, as her English gradually took over.



Graph 7.12: Among *passé composé* forms used by Anne, proportion of *passé composé* morphology coded as contributed by the child or replicated from her own or her interlocutor's previous utterances

7.1.2 Proportion of target forms French and English and most frequent non-target realizations

One of the aims of this research is to investigate the influence of bilingual acquisition on the production of past tense forms. In particular, I question to what extent language dominance patterns identified in chapter 5 influence target realization of past forms, to determine whether cross-linguistic influence can be identified in the children's productions of past tense forms. Forms bearing past morphology were thus coded as either target or non-target. This coding only considered the verb phrase – syntactic deviations from the target, such as subject omissions, were coded separately and are not included in the results presented below. Moreover, the coding of past tense forms as target or non-target was determined relative to the adult productions in the corpora rather than to abstract grammatical norms. For instance, bare participles were used alone (with no subject or complements) by the adults in both corpora and in both languages. Although they could have been analyzed as verb phrases where the auxiliary had been omitted, they were thus not coded as non-target when they were used in similar distributional contexts by the children. Forms coded as non-target were further characterized – the type of deviation from the target form was qualified. The present section presents the results in French and in English, and the most frequent types of deviation from the adult target observed in child speech in both languages. The values presented below were computed on simple past forms in English as these were the past forms most frequently and consistently produced by both Anne and Sophie. The rate of target realizations of simple past forms was also

compared to that of present tense forms, which were the most frequent forms used by both children in English. In French, because both children and Anne in particular produced so few past tense forms, the analyses were conducted on all tense forms.

In English, 93% of the simple past forms used by Sophie were coded as target (178/191) and 7% were coded as non-target (13/191). This was a similar rate as what was found for present tense forms, as 97% of these forms was analyzed as target. Out of the 13 simple past forms coded as non-target, omission of past tense morphology accounted for over half of the deviations from target (7/13). This is consistent with the predictions of the constructionist accounts of language acquisition, which predicted that the low degree of saliency of past tense inflections in English would lead the children to omit morphology rather than produce non-target inflections. Forms coded as omissions of tense morphology included forms such as the form in bold in extract 7.1.7. In this extract, father and child were playing with toy cars, and Sophie's father started looking for the car he had been playing with. Sophie then produced the utterance "I throw it under", in which the verb "throw" should have been inflected for the simple past. This was confirmed both by the correction provided by her father in his next utterance ("I *threw* it") and by the fact that the utterance was meant to locate the situation <I throw the car> in the immediate past, as it had been completed by the time Sophie's utterance was produced.

Extract 7.1.7.

Sophie, 3;03.24

FAT: <where's min(e)> [//] where's the red one?

CHI: it's all mine anyway.

CHI: I **throw** it under.

%gpx: points in front of her, off camera.

FAT: I threw it.

CHI: I threw it far away.

%act: CHI goes to fetch the car off camera and gives it to FAT.

CHI: here you are.

The second most frequent deviation from target observed in Sophie's productions of past tense forms (3/13) was the omission of the auxiliary verb in interrogative constructions. Similar observations were made on non-target realizations of the English present tense, where the omission of third-person [-s] (13/52) and of the auxiliary verb in interrogative constructions (14/52) were respectively the second and first most frequent deviations from target observed in Sophie's productions.

Given the low number of past tense forms produced by Sophie in French over the period,

the proportion of non-standard forms was computed relative to all the forms produced by Sophie, as well as to past tense forms. Out of 2065 tense forms used by Sophie during the French sessions, 86 forms were coded as deviations from the target form. The analyses presented above as well as in chapter 5 suggested that Sophie was slightly dominant in English, although she used French consistently throughout the recording period. Indeed, there was more tense diversity in Sophie's productions in English than in French. The number of different types and tokens used in the simple past in Sophie's productions during the English sessions was also higher than the number of verb types and tokens she used as past participles or full-fledged *passé composé* forms in French. Moreover, the directionality of code-switching in Sophie's productions also suggested a dominance in English. Indeed, she used more English tense forms during the French sessions than she used French tense forms during the English sessions, which is consistent with the observation made in chapter 5 that Sophie used more mixed utterances or utterances in English during the French sessions. Given that her dominance pattern was skewed towards English, I wondered whether the deviations from target tense forms observed in Sophie's productions in French could be explained by cross-linguistic influence. The most frequent deviation from target (44/86) observed in Sophie's productions in French occurred in modal constructions (i.e. periphrastic forms including modality auxiliaries such as *pouvoir* or *vouloir* followed by infinitive forms of lexical verbs). Sophie tended to use modal auxiliaries followed by infinitive forms of lexical verbs rather than present tense forms, as in extract 7.1.8. The extract begins after Sophie had just told her mother that she would like to buy a princess dress, to which her mother answered that she already had one. She then asked her daughter whether she wanted to continue to play with playdough or whether she wanted to go to her room to show the observer her princess dress. The mother provided the modal periphrastic construction in her utterance (“*tu veux les montrer à Coralie ou tu veux continuer à faire pâte à modeler*”), a construction which Sophie took up using a present tense form of the lexical verb instead of an infinitive form (in bold in the transcription below).

Extract 7.1.8.

Sophie, 2;06.07

MOT: tu voudrais un costume mais tu en as un [NAME] il t'a donnée une robe de princesse. (*you want a costume but you have one NAME gave you a princess dress.*)

OBS: une robe de princesse. (*a princess dress.*)

MOT: +< et Ella elle en a une aussi que [NAME] lui a donnée alors vous avez toutes les deux une robe de princesse. (*and Ella has one as well that NAME gave her so you both have a princess dress.*)

MOT: tu veux les montrer à Coralie ou tu veux continuer à faire pâte à

modeler ? (*do you want to show them to Coralie or do you want to keep playing with playdough?*)

CHI: [-mix] je **veux continue** pâte à modeler or **regarde** la princesse. (*I want to continue playdough or look at the princess.*)

MOT: tu veux aller jouer au princesse ou pas ? (*do you want to go play princess or not?*)

CHI: [-eng] and after we do that we *can go* and my princess and we *can go* and Coralie *can do* the camera.

Such deviations could be explained by an influence of Sophie's dominant language on her non-dominant language. Indeed, English periphrastic modal constructions include modal auxiliaries followed by the base form of lexical verbs which are mostly formally identical to the present tense forms of such verbs (this is illustrated in the child's last utterance in extract 7.1.8, where Sophie used three modal constructions, in italics in the transcription). Sophie's tendency to use present tense forms in French modal periphrastic constructions could thus be analyzed as stemming from the influence of English.

Another frequent deviation from target observed in Sophie's productions in French was the omission of tense morphology (11/86) – these were instances where Sophie used infinitive forms instead of inflected forms in French. This is consistent with previous studies on French-English bilingual acquisition of tense forms, which predicted that French-English children dominant in English would tend to omit tense morphology more frequently in French. This is illustrated by extract 7.1.9 below, where Sophie was baking with her mother and the observer. Sophie was mixing the batter and produced the English utterance “I mix it”, using the present tense. When her mother asked her what the French equivalent was, Sophie used the infinitive form “*remuer*” (in bold in the transcription) rather than the target present form.

Extract 7.1.9.

Sophie, 3;00.05

CHI: [-eng] I mix it.

MOT: nan en français c'est quoi ? (*what is it in French?*)

CHI: je **remuer**. (*I mix.*)

MOT: re(mue). (*mix.*)

CHI: remuer. (*mix.*)

MOT: très bien. (*well done.*)

OBS: comme ça tu le refroidis en le remuant. (*that way when you mix it you cool it down.*)

In extract 7.1.9, Sophie produced the verb form “*remuer*” after her mother had asked her to translate her utterance in English into French. Her mother appears focused on the child’s ability to provide the translation equivalent, and praises her child on her use of proper semantics rather than correcting her use of morphology. Out of the 95 past tense forms produced by Sophie in French, only three were coded as non-target, two of which were instances where Sophie omitted person morphology in French.

In Anne’s English corpus, 82% of the past tense forms used by the child were coded as target (213/261). Out of the 53 forms that were coded as non-target in English, 34 were forms that should have been inflected for the past but for which past morphology was omitted. This is illustrated in extract 7.1.10, taken from the session when Anne was 2;07.22. In this extract, Anne was showing the observer the Christmas tree the family had decorated. The observer started asking Anne about whether she had made any decorations for the tree, to which Anne answered that she had not but that her brother, Thomas, had. The observer went on to asking Anne about which decorations had been made by Thomas, pointing to Christmas balls on the tree. Once Anne had identified which ball the observer was pointing to, she produced the utterance “that one hum Thomas *do* it”, in which the verb “do” should have been inflected for the simple past (in bold in the transcription).

Extract 7.1.10.

Anne, 2;07.22

OBS: did Thomas make this ball?

CHI: this ball?

OBS: no <the next> [//] next to that one.

CHI: this one?

OBS: no the big one next to it look.

CHI: that one?

NAN: no that one.

CHI: that one.

CHI: that one hum Thomas **do** it.

OBS: yeah he did it.

Such deviations from target occurred predominantly in the first recordings of the corpus, when Anne was aged between 2;06.26 and 2;10.08 (in these first four sessions, they accounted for 27 out of the 31 past tense forms coded as non-target). In the five remaining recording sessions, such deviations from target accounted for only 7 of the 20 forms coded as non-target. The second most frequent type of non-target forms used by Anne over the recording period were overregularizations – instances where Anne used the regular morpheme [-ed] with verbs for which the construction of the simple past follows an irregular

scheme. This is illustrated in extract 7.1.11, taken from the last recording session when Anne was 3;04.02. In this extract, she used the [-ed] morpheme with the irregular verbs “go” and “keep”, in bold in the transcription.

Extract 7.1.11.

Anne, 3;04.02

OBS: so the cats can go outside.

CHI: but the little one isn't allowed.

OBS: oh is it a girl or a boy the little one?

CHI: in fact we had two boys and now we had two girls and then somebody took a girl and took one girl then and another girl and one **goed** then.

OBS: okay.

CHI: and then we were trying to keep the last one so we **keeped** it.

Far from signaling a lack of proficiency, such non-target productions are usually interpreted as a sign of growing grammatical awareness. Indeed, they show the child's ability to analyze past-tense constructions as the association of a lexical stem and of past morphology and thus to use past morphology productively.

In French, Anne used 337 verb phrases out of which 30 were coded as non-target. As in Sophie's corpus, the most frequent deviation from target included omissions of tense morphology (10/30). Although it was not coded as non-target, Anne also tended to use mixed verb phrases more often than Sophie did (Sophie used four mixed verb phrases out of 2065 verb phrases used during the French sessions, while Anne used 12 mixed verb phrases out of 337 French verb phrases used over the period). At the beginning of the period, these verb phrases included periphrastic forms where one item would be in French and the other in English. For instance, she used copular constructions in which the copula would be in French and the past participle in English. The similarities between French and English regarding copular constructions – where both languages allow a copula to be followed by a past participle form – suggest a lexical borrowing rather than a morphological borrowing in this case. Anne was able to contribute the frequent copula form “*est*” in French, but accessed the lexical item “stuck” in English.

Extract 7.1.12.

Anne, 2;04.02

MOT: tu veux quoi ? (*what do you want?*)

MOT: bon on va [///] faut la faire cuire la saucisse. (*so we need to cook the sausage.*)

MOT: faut la faire cuire. (*we need to cook it.*)

CHI: [-mix] oh non **est stuck**. (*oh no is stuck.*)

MOT: +< tu me donnes pour faire cuire. (*give it to me to cook.*)

MOT: mais oui c'est coincé. (*yes but it's stuck.*)

CHI: [-eng] euh help me help.

MOT: oui Maman va l'ouvrir pour mettre dans la petite casserole pour cuire la saucisse. (*yes mummy is going to open it to put it in the small pan and cook the sausage.*)

Extract 7.1.12 however shows that after her daughter's mixed production, the mother provides the translation equivalent in French (in the utterance "*mais oui c'est coincé*"). This shows how the Anne's input scaffolds her bilingual development, even if appears to be more receptive than productive at this stage. By the end of the recording period, Anne used more constructional and morphological borrowings – either transferring constructions from one language to the other or borrowing morphological markers and integrating them to the other language by using them on stems from that language. In extract 7.1.13, Anne and the observer were talking about Anne's brother who was at the pony club at the time of recording.

Extract 7.1.13.

Anne, 2;10.07

OBS: qu'est-ce qu'il a thomas ? (*what is up with thomas?*)

CHI: [-eng] what is that?

OBS: il fait du poney ? (*is he ponyriding?*)

CHI: poney oui. (*pony yes.*)

CHI: poney club. (*pony club.*)

OBS: ouais. (*yes.*)

CHI: poney club. (*pony club.*)

OBS: il est au poney club. (*he is at the pony club.*)

OBS: hum et toi tu as fait du poney ? (*and do you ride ponies?*)

CHI: [-eng] no. (*no.*)

OBS: tu es déjà montée sur un poney ? (*have you ever ridden a pony before?*)

CHI: non. (*no.*)

OBS: jamais ? (*never?*)

CHI: [-mix] no long long time ago I **was montée** on the cheval at the école. (*no a long time ago I rode a horse at school.*)
 OBS: tu es montée sur un cheval déjà. (*you've ridden a horse before.*)

The observer used a *passé composé* form to ask whether Anne had ridden a horse before (“*tu es déjà **montée** sur un poney ?*”). In her answer, Anne mixed French and English on different levels – first, she used lexical items in French within her answer which was mostly in English – “*montée*”, which she takes up from her interlocutor’s previous utterances, as well as “*cheval*” and “*école*”, which she contributes to the interaction. Moreover, the lexical items “*cheval*” and “*école*” are both inserted into prepositional phrases which include grammatical words in English – the prepositions “on” and “at”, as well as the definite article. This may suggest that Anne is more able at this stage to productively use functional words in English than she is French. This is in part supported by the mixed verb phrase she used. Indeed, Anne’s utterance can also be described as mixed because she took up the *passé composé* construction and partially transferred it to English, producing the form “was *montée*”. She did not merely translate the form “*es montée*”, provided in her interlocutor’s previous utterances, but rather integrated it into the English tense system, by inflecting the auxiliary for the simple past as would be typical in English past constructions involving an auxiliary. Interestingly, although the observer provided her with a model for the *passé composé* in her previous utterance (“*tu es déjà **montée** sur un poney*”) Anne did not take up the form in her production. This may support the idea that she is not at this stage actively able to use the auxiliary “*être*” productively.

7.1.3 Comparison between Anne and Sophie and between Anne and Sophie and Anaé and Antoine

Both children used more finite forms in general and past forms in particular in English than they did in French. They also both used more English tense forms during the French sessions than they used French tense forms during the English sessions, suggesting that they were both dominant in English. However, this was much more marked in Anne’s data than in Sophie’s. Indeed, in Sophie’s data, 11% of the tense forms she used during the French sessions were in English, while the proportion of English tense forms used by Anne during the French sessions reached 80% overall². Sophie also used French consistently over the period and tended to resort to English during the French sessions less at the end of the recording period than at the beginning, while the reverse trend was observed in Anne’s productions. Her use of French decreased over the period, with English tense forms accounting for 29% of all verb phrases used during the first French session and 99% in the

²This count focuses on non-mixed utterances.

last recording session. Moreover, table 7.16 presented the number of utterances used by Anne in French during each session, showing that her use of French decreased overall, and not only proportionally to her use of English.

In English, simple past forms were the most frequent forms used with past morphology by both children (191/289 in Sophie's data and 261/307 in Anne's data). Anne used proportionally more simple past forms than Sophie – such forms accounted for 17% (261/1571) of all tense forms used by Anne during the English sessions and 11% of the tense forms used by Sophie over the period (289/2554). Simple past forms accounted for 15% of all tense forms used by the adults in Anne's corpus and 11% of the tense forms used by the adults in Sophie's corpus – Anne and Sophie thus both used simple past forms in proportions similar to the adults' in each corpus. Both children used simple past morphology most frequently with the verb types that were also inflected most frequently for the simple past in their input. Moreover, both children used simple past morphology productively over the period, with lexical items that they had not replicated from previous utterances. They were also able to initiate the use of simple past morphology as well as to align with their interlocutor's use of past morphology. However, two observations suggest that Anne used English simple past morphology more productively than Sophie during the period. First, there was a clear tendency for her to use more simple past forms (both in terms of verb types and tokens inflected for the simple past) over the period – she used both more forms than Sophie overall, and the number of forms she used during each session increased. On the contrary, there was more variability in the number of types and tokens Sophie inflected for the simple past. The second difference observed between the children's use of the simple past in English was linked to the types of non-target realizations of simple past forms in their productions. The most frequent non-target realizations of simple past forms in the productions of both children were omissions of past morphology. However, the second most frequent deviations from target forms identified in Anne's productions in English were overregularizations, which were not found in Sophie's corpus, and testify to the child's developing grammatical awareness (Tomasello, 2009). These two observations suggest that Anne used simple past morphology more productively over the period than Sophie.

The children also differed in their use of French past tense forms over the period. Indeed, although Sophie used past tense forms in French proportionally less than the adults in her corpus (past tense forms in French accounted for 4% of all tense forms used by Sophie against 12% in her input), she used these forms consistently throughout the recording sessions. She also used more full-fledged *passé composé* forms than she did bare past participles. On the contrary, Anne used *passé composé* and past participles only at the beginning of the period, and used past participles more frequently than she used full-fledged *passé composé* forms. As English gradually took over in Anne's productions, she used fewer past tense forms in French and the forms she used were mostly bare past participles.

In summary, Sophie used fewer past forms in English than Anne, but used French past tense forms more consistently over the period. Conversely, Anne's use of simple past forms in English developed over the period, while at the same time her use of past tense morphology in French decreased, as did her use of French overall. The slower rate of development of past tense morphology observed in Sophie's productions could thus be explained by the fact that she was acquiring both French and English past morphology. This seems to be confirmed by the fact that Anne's development of past morphology in English was faster than Sophie's especially in the second half of the recording period as she used English almost exclusively.

Chapter 5 (and in particular graph 5.5) showed that Sophie's MLU in French was close to that of the monolingual children studied in this work at similar ages, and in particular to Anaé's MLU values. Sophie's use of past tense forms in French will thus be compared to Anaé's use of past tense forms. Conversely, Anne's MLU was consistently lower than that of Anaé and Antoine and she used French much less than Sophie making it more difficult to compare her use of French past tense forms to that of Anaé and Antoine. An observation that can however be made on Anne's French data concerns the proportion of bare participles, which she used more frequently than she did full-fledged *passé composé* forms. There was a similar tendency for Antoine to use past morphology in bare past participle forms at the beginning of the recording period, although Anne and Antoine's development of past tense forms followed reverse trends. Indeed, from the session when Anne was 2;08.26, as she used French less and less, she also started to use bare past participles almost exclusively, producing only one *passé composé* form throughout the data. Conversely, the proportion of full-fledged *passé composé* forms used by Antoine grew steadily from the session when he was 2;01.28 onward, reaching 90% of the forms bearing past perfective morphology when he was 2;11.16 and never dropping below 80% from then on.

Several observations can be made to compare Sophie's use of past tense morphology to that of Anaé and Antoine. Although the number of verb types and tokens Sophie inflected for the *passé composé* tended to grow over the period, she used fewer *passé composé* forms (both in terms of verb types and tokens) than Anaé and Antoine. Moreover, the proportion of *passé composé* forms relative to the tense forms Sophie used over the recording period was consistently lower than that observed in her input. Conversely, the analyses presented in chapter 6 showed that Anaé used the *passé composé* in similar proportions as what was observed in her input (*passé composé* forms accounted for 6.3% of all the tense forms produced by Anaé, against 7.4% in her input). Although Sophie's use of past tense morphology differed quantitatively from what was observed for Anaé and Antoine in chapter 6, she appeared to follow a similar path of acquisition. Indeed, she used more past participles than she did *passé composé* forms in the first sessions, a trend which had reversed by the end of the period. Moreover, she used the *imparfait* only with a very low number of verb types, as did Anaé and Antoine at approximately the same

ages – both generalized the use of imperfective past morphology only around 4;00.

In summary, Anne and Sophie's use of present and past tense forms in English confirmed the predictions of the usage-based account of language acquisition – the present tense was the most frequent tense used by both children and adults in the corpora, and it was used in similar proportions by all participants. The simple past was the most frequent past form used by both the adults and the children in the corpora, and both children used it productively throughout the recording period. Moreover, the children tended to use it most frequently with the verb types most frequently inflected for the simple past in their input. Despite similar exposure patterns to their two languages (as reported in chapter 5), several differences were identified between Anne and Sophie's use of past forms in French and in English. The most striking difference in English was observed between the number of simple past forms used by Anne and Sophie – Anne used more simple past forms than Sophie, although both children used the simple past in similar proportions as the adults in their corpora. Conversely, Sophie used the simple past consistently less frequently than the adults in her corpus. Moreover, the children differed in the most frequent deviations from target identified in their production of simple past forms. During the first recording sessions, both children's non-target realizations of simple past forms mostly included omissions either of tense morphology or of the auxiliary in interrogative constructions. The former in particular is consistent with constructionist accounts of language acquisition, which predict that the low degree of salience of simple past morphemes will lead children to omit simple past morphology in the early stages of acquisition. In the second half of the recording period however, Anne started producing overregularizations, inflecting irregular verb stems with the regular morpheme [-ed] – in the last five recordings of the period, such deviations from the norm were the most frequent in Anne's productions, while Sophie did not produce any. An explanation for these differences in the use of simple past forms in English may lie in the acquisition path followed by the children in their two languages. Indeed, Anne gradually stopped using French during the recording period, producing fewer past tense forms in French. On the contrary, Sophie's use of French past tense forms in particular developed over the period, following the same path of acquisition as the monolingual children whose productions were analyzed in chapter 6 although at a different rate. It may be concluded that as Sophie developed two languages, her use of past forms in French and in English developed at a slightly slower pace than it would have had she been exclusively acquiring English tense morphology.

7.2 Tense forms and lexical aspect in French and English

This section aims at determining whether preferential associations between lexical aspect and past perfective and imperfective morphology are found in Sophie and Anne's input in both languages, and if so, whether the bilingual children under study would extract and use these frequent form-function pairings from their dual-language input. Cross-linguistic differences between the aspectuo-temporal systems of French and English may also yield different acquisition patterns of past tense-aspect morphology. In English, the simple past may be used to build either perfective or imperfective viewpoints. One of the factors that influence the interpretation of the grammatical aspect of simple past forms is lexical aspect – telic predicates inflected for the simple past are likely to be interpreted as perfective while the reverse is observed for atelic predicates. Contextual cues also play a role, and atelic predicates inflected for the simple past may yield perfective interpretations in particular in narrative contexts (Trevisi, 1996). The claim of the AH is thus that English monolingual children initially extract the associations between simple past morphology and telic predicates to build perfective aspect. The two most frequent past tenses used in oral French are the *passé composé* and the *imparfait*, which are respectively used predominantly to build perfective and imperfective viewpoints. Lexical aspect is thus less crucial in French in interpreting the grammatical aspect of an utterance, and might be less influential in the acquisition of ATAM morphology. The analyses presented in chapter 6 suggest that French adults in CDS did associate the *passé composé* predominantly with telic predicates, a tendency that was exaggerated in the children's productions especially in the first stages of acquisition. A possible explanation for this could be found not exclusively in the analysis of lexical aspect, but also in the analysis of the forms' temporal reference. Indeed, Anaé and Antoine used French perfective past morphology more frequently than the adults to refer to events completed in the past and whose results were tangible at SpT. The *imparfait* was associated predominantly with stative predicates by both children and adults in the corpora.

7.2.1 Associations between past morphology and lexical aspect categories in French and in English

All the verbal forms used as past forms by the children and the adults in the corpora were coded for lexical aspect in French and in English. Moreover, because present tense forms were the most frequent forms used by all participants, a third of these forms were also coded for lexical aspect. This was done in order to determine whether the associations identified in the productions of the adults and the children between lexical aspect and tense were specific to the past tense.

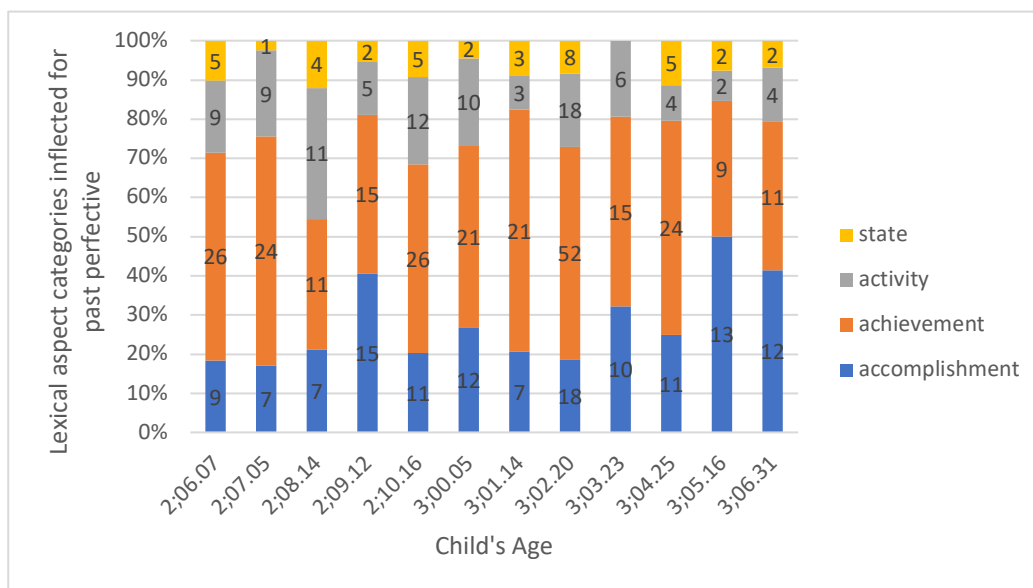
7.2.1.1 French data

In Sophie's corpus in French, 2762 forms were coded for lexical aspect in the productions of the adults, 62% of which were present tense forms (1227/1974), 26% were *passé composé* forms or bare past participles (519/1974) and 10% (188/1974) were *imparfait* forms. In the adults' productions in Sophie's corpus in French, the *plus-que-parfait* accounted for 2% (39/1974) of the tense forms coded for lexical aspect. However, because it was never used by Sophie, it is not commented on in detail in the analyses below. In Sophie's productions in French, 546 forms were coded for lexical aspect. Around 85% of these forms were present tense forms (464/546), 13% (73/546) were *passé composé* forms or bare past participles and 2% (9/546) were *imparfait* forms.

Table 7.19 displays the distribution of tense forms in French into the four lexical aspect categories in the productions of Sophie and the adults in the French corpus. It shows first that in the adults' productions in Sophie's corpus over the period 75% of the predicates bearing past perfective morphology (either *passé composé* or bare past participles) were telic predicates (accomplishments and achievements). Chi-square analyses were computed to determine whether these associations were significant or whether they could be attributed to chance. Chi-square values confirmed that adults used *passé composé* and bare participles significantly more often with telic predicates than with atelic predicates ($\chi^2(1) = 125.29$, $p < 0.00001$).

Sophie		% Accompl.	% Achiev.	% Activ.	% State	Total Tok.
Child	<i>Passé composé</i>	23.3 (17)	63 (46)	12.3 (9)	1.4 (1)	73
	Present	5 (23)	6.1 (28)	13.6 (63)	75.4 (350)	464
	<i>Imparfait</i>	(0)	11.1 (1)	22.2 (2)	6.7 (6)	9
Adult	<i>Passé Composé</i>	25.4 (132)	49.1 (255)	17.9 (93)	7.5 (39)	519
	Present	6.3 (77)	7.6 (93)	16.9 (207)	69.3 (851)	1228
	<i>Imparfait</i>	3.2 (6)	1.6 (3)	14.9 (28)	80.3 (151)	188
	<i>Plus-que-parfait</i>	35.9 (14)	30.8 (12)	20.5 (8)	12.8 (5)	39

Table 7.19: Distribution of past tense forms and of a sample of present tense forms across lexical aspect categories in French in Sophie's corpus (token count within brackets)



Graph 7.13: Distribution of lexical aspect categories among verb forms bearing past perfective morphology in Sophie's input in French

Graph 7.13 gives the distribution of *passé composé* forms and bare participles across the lexical aspect categories over the period in Sophie's input. It shows that the adults in Sophie's corpus used perfective past morphology with all the lexical aspect categories in all the recording sessions. As what was observed in the productions of the adults in the monolingual corpora studied in chapter 6, the distribution of *passé composé* and bare participles across lexical aspect categories in Sophie's input was stable over the period. The main variation concerns the proportion of accomplishment predicates among forms bearing past perfective morphology, which was higher during the last two sessions than in the rest of the recordings.

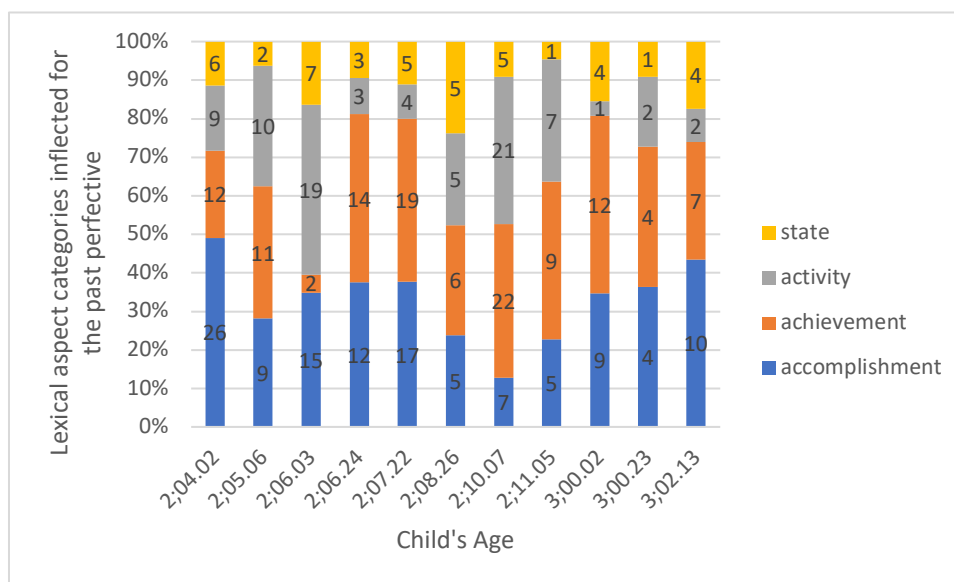
In Anne's corpus in French, 1617 forms were coded for lexical aspect in the productions of the adults, 64% of which were present tense forms (1029/1617). Full-fledged *passé composé* and past participles accounted for 22% of the forms coded for lexical aspect (362/1617) and *imparfait* forms for 13% (218/1617). These proportions were very close to that observed in the productions of the adults in Sophie's corpus. *Plus-que-parfait* forms were seldom used by the adults – they accounted for less than 0.4% (5/1617) of the past tense forms used over the period. The *plus-que-parfait* was also never used by Anne, and is thus not commented on in the analyses presented below. As explained in the first section of the present chapter, Anne used French less and less over the recording period, as her English gradually took over. Only 87 tense-aspect forms were coded for lexical aspect in Anne's productions in French, out of which 34% were *passé composé* forms or bare participles (30/87), 61% were present tense forms (53/87) and 5% were *imparfait* forms (4/87).

Table 7.20 considers the tense forms used in Anne’s corpus – it gives the distribution of the French past tense forms and of the present tense forms coded for lexical aspect into the four categories. In the adults’ productions in Anne’s corpus, 66% of the predicates bearing past perfective morphology (noted *passé composé*) were telic predicates. Chi-square values were computed to determine whether these associations were significant, which was verified – the adults associated past perfective morphology significantly more with telic than with atelic predicates ($\chi^2(1) = 37.71, p < 0.00001$).

Anne		% Accompl.	% Achiev.	% Activity	% States	Total Tok.
Child	<i>Passé composé</i>	13.3 (4)	83.3 (25)	6.7 (2)	0 (0)	30
	Present	0 (0)	15.1 (8)	17 (9)	68.0 (36)	53
	<i>Imparfait</i>	0 (0)	0 (0)	75 (3)	25 (1)	4
Adult	<i>Passé composé</i>	32.8 (119)	33.3 (121)	25.3 (92)	8.5 (31)	362
	Present	10.5 (108)	5.6 (58)	15.2 (156)	68.7 (706)	1029
	<i>Imparfait</i>	6.4 (14)	0.9 (2)	26.1 (57)	69 (150)	218
	<i>Plus-que-parfait</i>	40 (2)	60 (3)	0 (0)	0 (0)	5

Table 7.20: Distribution of past tense forms and of a sample of present tense forms across lexical aspect categories in French in Anne’s corpus (token count is given within brackets)

Graph 7.14 gives the distribution of forms bearing past perfective morphology into the lexical aspect categories in each recording session.



Graph 7.14: Distribution of lexical aspect categories among verb forms inflected for the perfective past tense in Anne’s input in French

It shows that there was more variability in the associations between past perfective morphology and telic predicates in Anne’s than in Sophie’s input. There was one session in

particular when Anne was 2;06.03 where her mother used the *passé composé* predominantly with atelic predicates, reversing the trend observed in the other recording sessions.

As what was observed in Anaé's corpus in chapter 6, the variation in the proportion of *passé composé* forms used with activity predicates during the session when Anne was 2;06.03 can be explained by considering the adults' communicative goal and the activities conducted during the session. Indeed, this particular recording exceptionally took place on a Sunday night rather than during the day, because the family's timetable that week prevented the organization of a recording session at another time. Perhaps because of this scheduling, most of the session does not record the participants engaging in an activity together. Rather, the first half of the recording session records Anne playing with toys on her own while the mother attempts to elicit speech from her daughter, who does not react. In the second half of the recording, the mother and her children are recorded while they are preparing dinner. At the end of the recording, the mother commented on the fact that Anne has not been very talkative during the session, and starts trying to elicit sentences from her daughter. She does so by asking her to talk about the day they had just spent, using many activity predicates inflected for the *passé composé* (in bold in the transcription of extract 7.2.1 below).

Extract 7.2.1 begins with her mother asking Anne about whether she had used her scooter, a question to which she knew the answer should be yes. After Anne answered in the negative, her mother played along and continued asking Anne questions about the scene, using an activity predicate inflected for the *passé composé* (the verb “*marcher*” in an intransitive construction). Anne then produced an utterance in which the syntax was incomplete with regard to target adult syntax (“*a porté*”, in which Anne provided only the verb phrase and none of the verb's arguments). The mother interpreted this utterance as meaning that Anne had carried her father home, which led her to take up this activity predicate inflected for the *passé composé* and to repeat it several times in disbelief.

Extract 7.2.1.

Anne, 2;06.03

MOT: t'as fait de la trottinette Anne ? (*did you ride your scooter Anne?*)

CHI: non. (*no.*)

MOT: non ? (*you didn't?*)

MOT: comment ça non ? (*what do you mean no?*)

OBS: ba quand tu es arrivée je t'ai vu sur la trottinette. (*when you arrived I saw you on your scooter.*)

CHI: oui. (*yes.*)

OBS: alors je ne comprends plus rien moi. (*I don't understand anything*)

anymore.)

MOT: tu faisais de la trottinette ou c'est Papa qui faisait de la trottinette ? *(were you riding your scooter or was daddy riding your scooter?)*

CHI: Papa trottinette. *(daddy scooter.)*

MOT: c'est Papa qui faisait de la trottinette et Anne elle faisait quoi ? *(daddy was the one riding the scooter and what was anne doing?)*

CHI: elle marchait. *(she was walking.)*

MOT: ah tu **as marché**. *(you walked.)*

CHI: non non marché. *(no no walked.)*

CHI: a porté. *(carried.)*

MOT: ah t'**as porté Papa** ? *(did you carry daddy?)*

MOT: Anne **a porté papa**. *(Anne carried daddy.)*

CHI: oui. *(yes.)*

MOT: Anne **a porté papa** ? *(did Anne carry daddy?)*

MOT: ah bon ? *(did she.)*

CHI: mh mh.

MOT: c'est vrai ? *(really?)*

MOT: il était lourd papa ? *(was he heavy daddy?)*

CHI: mh.

MOT: ah bon. *(really.)*

MOT: tu crois que si je demande à papa il va dire que c'est Anne qui l'**a porté** ? *(If I ask daddy do you think he will say Anne carried him?)*

CHI: mh mh.

MOT: bon d'accord. *(alright then.)*

Extract 7.2.1 also provides insight into how the adult input contributes to shaping the child's productions to match the adult target. Indeed, at the start of the extract, Anne used mostly short, verbless utterances, which the mother expanded into utterances which more closely resembled the adult target. This is for instance illustrated in the utterances "CHI: *Papa trottinette* / MOT: *c'est Papa qui faisait de la trottinette et Anne elle faisait quoi ?* / CHI: *elle marchait.*", where the mother reformulates the child's utterance using adult syntax, providing at the same time a model for the child's next utterances – in her answer, Anne refers to herself by taking up the third-person pronoun "elle" used by her mother to refer to her. She also takes up imperfective morphology as she aligns with her mother's use of the *imparfait*. This extract thus illustrates how children acquire language through interaction with mature speakers, who provide a model for their productions, though constant reformulation and expansion of the children's utterances.

Overall, there was a tendency for the adults in both corpora to use past perfective morphology in French predominantly with telic predicates. Table 7.21 summarizes the

percentage (token count within brackets) of perfective past morphology used with telic predicates in child and adult data in Sophie and Anne’s corpora. Chi-square analyses were computed on the data first to determine whether Anne and Sophie used perfective past morphology significantly more with telic predicates than with atelic predicates. The results were significant for both children (Sophie: $\chi^2(1) = 51.95$, $p < 0.00001$, Anne: $\chi^2(1) = 22.53$, $p < 0.00001$) – both Anne and Sophie associated the *passé composé* significantly more frequently with telicity than with the other lexical aspect categories.

	Child data	Adult data
Sophie corpus	92 (63)	75 (387)
Anne corpus	93 (29)	66 (240)

Table 7.21: Percentage (token count) of perfective past morphology used with accomplishments and achievements in Anne and Sophie’s corpora in French

Next, chi-square values were computed to determine whether, as predicted by the Prototype Account, the children exaggerated the tendency identified in their input, i.e. whether the children initially overused the most frequent associations found in their input between past perfective morphology and telic predicates. A significant difference was also found between the proportion of perfective past tense forms used with telic predicates in the productions of the children and of the adults in both corpora (Sophie: $\chi^2(1) = 10.886$, $p < 0.001$; Anne: $\chi^2(1) = 31.9266$, $p < 0.00001$) – both children associated perfective past morphology to telic predicates even more frequently than the adults. This is similar to what was observed in Anaé and Antoine’s corpora in chapter 6. It is also consistent with the predictions of the Prototype Account – both Anne and Sophie’s use of perfective past morphology predominantly with telic predicates can be tied back to frequent associations observed in their input, which they used almost exclusively in the first stages of acquisition.

I then considered only achievement predicates, as the Aspect Hypothesis predicts that children would initially overuse perfective past morphology with achievements. Table 7.22 summarizes the percentage (token count within brackets) of perfective past morphology used with achievement predicates in child and adult data in Sophie and Anne’s corpora. There was a significant tendency for the adults to use the *passé composé* more frequently with achievement predicates than with the other categories of lexical aspect (Anne: $\chi^2(3) = 58.23$, $p < 0.00001$, Sophie: $\chi^2(3) = 194.83$, $p < 0.00001$). As what was found in their input, both children used perfective past morphology significantly more frequently with achievement predicates than with activity, accomplishment or state predicates (Sophie: $\chi^2(3) = 70.65$, $p < 0.00001$; Anne: $\chi^2(3) = 49.01$, $p < 0.00001$).

The chi-values presented above highlight that the children and the adults showed a similar tendency to use perfective past morphology more frequently with achievements than with the other categories of lexical aspect. I then computed chi-square values to determine whether there was a significant difference between the adults’ and the children’s rates of

	Child data	Adult data
Sophie corpus	63.5 (46)	49 (255)
Anne corpus	80 (25)	33 (121)

Table 7.22: Percentage (token count) of perfective past morphology used with achievement predicates in the Anne and Sophie’s French corpora

association of perfective past morphology with achievement predicates. This was verified for both Anne and Sophie (Sophie: $\chi^2(3) = 11.3741$, $p < 0.01$; Anne: $\chi^2(3) = 26.313$, $p < 0.00001$) – both children used French perfective past morphology predominantly with achievement predicates and did so significantly more frequently than the adults in their corpora. The bilingual children under study globally used past perfective morphology like the two monolingual children whose productions were studied in chapter 6. All four children overused perfective past morphology with telic predicates, and with telic and punctual predicates in particular in the first stages of development. This is an important finding, as it shows that the bilingual children under study were able to identify and extract frequent form-function pairings from their dual-language input. It also suggests that in the initial stages of acquisition, these two bilingual children’s use of past tense-aspect morphology was qualitatively similar to what was observed for monolingual children, even in their non-dominant language in which they had reached different levels of fluency. The next section focuses on the generalization of past tense-aspect morphology in French and English, to determine whether Anne and Sophie followed the same path in generalizing French past perfective morphology to other types of predicates as the French monolingual children whose productions were analyzed in chapter 6.

Tables 7.19 and 7.20 gave the distribution of imperfective past and present tense forms across lexical aspect categories in the speech of the adults and the children in both corpora. Similar trends were identified in the adult data – in the adults’ productions in Sophie’s corpus, 80% of the predicates inflected for the imperfective past tense and 69% of the predicates inflected for the present tense were stative predicates; in Anne’s corpus in French, 69% of the predicates inflected for the *imparfait* and for the present tense were stative predicates. Chi-square analyses confirmed that these associations between present and imperfective past morphology and stative predicates were significant – the adults used the imperfective past tense predominantly with atelic predicates (Sophie: $\chi^2(1) = 153.72$, $p < 0.00001$; Anne: $\chi^2(1) = 163.59$, $p < 0.00001$), and even more frequently with stative predicates than with the three other lexical aspect categories (Sophie: $\chi^2(3) = 314.77$, $p < 0.00001$; Anne: $\chi^2(3) = 242.5$, $p < 0.00001$). This was also the case for the present tense, which was most frequently used by the adults with stative predicates in both corpora (Sophie: $\chi^2(3) = 1318.01$, $p < 0.00001$; Anne: $\chi^2(3) = 1064.61$, $p < 0.00001$). This is also a similar trend as what was observed in the productions of the adults in the monolingual corpora studied in chapter 6. The chi-square analyses conducted on the children’s use of present tense forms yielded that both children largely reproduced the linguistic behavior of

the adults, using present tense morphology predominantly with stative predicates (Sophie: $\chi^2(3) = 634.55, p < 0.00001$; Anne: $\chi^2(3) = 50.47, p < 0.00001$).

As explained in the first section of the present chapter, neither Anne nor Sophie used the imperfective past tense productively during the period – they respectively used only four and nine verb forms inflected for the *imparfait* over the period, and imperfective morphology was used by the children with a very low number of verb types. The distribution of imperfective past tense forms across lexical aspect categories in the children’s productions (displayed in tables 7.19 and 7.20) should thus be interpreted with caution. Three of the four forms inflected for the imperfective past by Anne were activity predicates, which could be interpreted as a deviation from the preferential association between the *imparfait* and stative predicates observed in her input. However, all three activity predicates inflected by Anne for the *imparfait* were forms that were replicated from her interlocutor’s previous utterances, and thus which cannot be interpreted as forms produced productively by Anne. This is illustrated in extract 7.2.2.

Extract 7.2.2.

Anne, 2;04.02

MOT: il **faisait** quoi le bébé singe ?

CHI: +< [-eng] hold.

CHI: hold.

MOT: +< il se cachait ?

CHI: hold.

MOT: <ah il se tenait c’était> [///] le bébé singe se tenait à la maman ?

MOT: oui ?

CHI: [-eng] euh sleepy.

MOT: ah il dormait.

MOT: qui dormait ?

MOT: c’était le bébé le papa ou la maman singe qui dormait ?

CHI: +< maman.

MOT: maman singe dormait, comme ça.

CHI: oui comme ça.

CHI: et le papa singe, il **faisait** quoi ?

In this extract, Anne used an activity predicate inflected for the *imparfait* (in bold in the transcription). However, the form was first provided by the child’s mother, in the first utterance of the extract. Moreover, in the rest of the interaction, the mother consistently provided imperfective morphology which she used with four different verb types on the

whole (“*faisait*”, “*cachait*”, “*tenait*”, “*dormait*”). Similar observations can be made on Sophie’s use of imperfective past tense forms – out of nine *imparfait* forms used over the period, six were stative predicates. The three remaining imperfective past tense forms were forms analyzed as at least partly replicated from another speaker’s previous utterance.

7.2.1.2 English data

In Sophie’s corpus in English, 2226 forms were coded for lexical aspect in the productions of the adults, of which 51% were present tense forms (1139/2226), 27% were simple past forms (599/2226), 9% were present progressive forms (204/2226). Around 5% of the forms coded for lexical aspect were modal auxiliaries inflected for the simple past (113/2226), 6% were present perfect forms (125/2226) and around 2% were past progressive forms (34/2226). Finally, past perfect forms and bare past participles accounted each for less than 0.5% of the forms used by the adults (respectively 4/2226 and 8/2226). In Sophie’s productions, 775 forms were coded for lexical aspect – 54% were present tense forms (419/775), 23% were simple past forms (178/775) and 16% were present progressive forms (123/775). Modal auxiliaries inflected for the simple past and present perfect forms each accounted for around 3% of the forms coded for lexical aspect (21/775 and 22/775 respectively). Past progressive forms and bare past participles each accounted for a little over 1% of the forms coded for lexical aspect (11/775 and 8/775 respectively).

Table 7.23 displays the distribution of tense forms in English in the four lexical aspect categories in the productions of Sophie and the adults in her English corpus.

		% Accompl. (tok.)	% Achiev. (tok.)	% Activ. (tok.)	% State (tok.)	Total Tok.
Sophie	Sim. past	29.2 (50)	35.1 (60)	15.2 (26)	20.5 (35)	171
	Simp. past (mod.)	0 (0)	0 (0)	4.8 (1)	95.2 (20)	21
	Pr. perf.	22.7 (5)	63.6 (14)	4.5 (1)	9.1 (2)	22
Child	Pa. perf.	0 (0)	0 (0)	0 (0)	0 (0)	0
	Pa. prog.	9.1 (1)	9.1 (1)	81.8 (9)	0 (0)	11
	Pr.	2.1 (9)	3.8 (16)	5.3 (22)	88.8 (372)	419
	Pr. prog.	27.6 (34)	9.8 (12)	55.3 (68)	7.3 (9)	123
	PP	0 (0)	100 (8)	0 (0)	0 (0)	8
Adult	Sim. past	23.0 (138)	24.9 (149)	21.2 (127)	30.9 (185)	599
	Simp. past (mod.)	0 (0)	1.8 (2)	5.3 (6)	92.9 (105)	113
	Pr. perf.	29.6 (37)	35.2 (44)	25.6 (32)	9.6 (12)	125
	Pa. perf.	50 (2)	25 (1)	0 (0)	25 (1)	4
	Pa. prog.	14.7 (5)	2.9 (1)	82.4 (28)	0 (0)	34
	Pr.	4.1 (47)	3.8 (43)	7.1 (81)	85.0 (968)	1139
	Pr. prog.	20.1 (41)	9.8 (20)	62.3 (127)	7.8 (16)	204
PP	0 (0)	100 (8)	0 (0)	0 (0)	8	

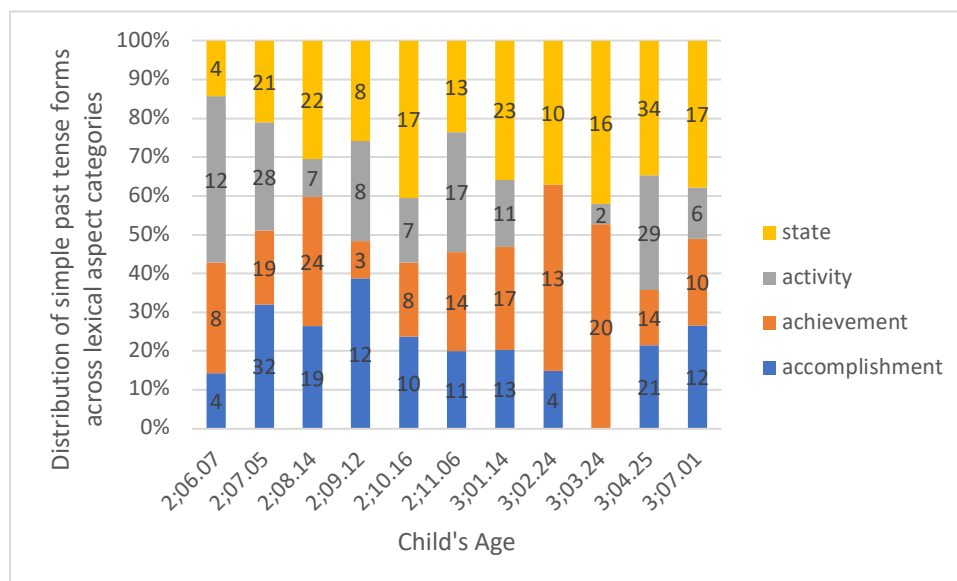
Table 7.23: Distribution of past and present tense forms across the lexical aspect categories in Sophie’s English corpus (token count within brackets)

Table 7.23 shows that although present and past tenses were used with all lexical aspect categories by the adults in the corpus, they were not uniformly distributed across lexical

aspect categories. The simple present tense was mostly associated to stative predicates by the adults in Sophie's corpus ($\chi^2(3) = 2188.98, p < 0.0001$), while the past and present progressive were mostly used with activity predicates by the adults in the corpus ($\chi^2(3) = 213.05, p < 0.0001$). Finally, the adults in Sophie's corpus used the perfect tenses (past and present perfect forms were grouped because of the low number of past perfect forms used by the adults over the period) predominantly with telic predicates ($\chi^2(1) = 11.79, p < 0.005$).

The simple past was the past form most frequently used in child and adult data. The following analyses on the associations between past morphology and lexical aspect thus focus primarily on forms bearing simple past morphology. Contrary to the predictions made by the Prototype Account, table 7.23 shows that the adults in Sophie's corpus did not tend to use the simple past predominantly with telic predicates – out of 599 simple past forms used by the adults 287 were telic predicates, and 312 were atelic predicates. Stative predicates in particular were frequently inflected for the simple past by the adults in the corpus (185/599 simple past forms were stative predicates). These results can be explained by considering the number of different verb types inflected for the simple past in the four lexical aspect categories considered. Indeed, the category of stative predicates was the one where the adults used the lowest number of verb types (12 different stative verb types were inflected for the simple past against 45 verb types in the category of achievements). Within these stative verb types, the verb “be” was by far the most frequent verb inflected for the simple past by the adults (130/185). If the verb “be” is excluded from the count of stative predicates inflected for the simple past, the results show a clear tendency for the adults to inflect mostly telic predicates for the simple past ($\chi^2(1) = 23.507, p < 0.00001$). When excluding the verb “be” from the count of stative predicates bearing simple past morphology, there was also a significant difference in the rates of association of the simple past with achievement predicates ($\chi^2(3) = 46.1301, p < 0.00001$).

Graph 7.15 provides the distribution of simple past forms across lexical aspect categories for each recording session in the productions of the adults in Sophie's corpus. It shows that the simple past was used across lexical aspect categories by the adults during almost all recording sessions. A comparison between graphs 7.15 and 7.13, which detailed the distribution of *passé composé* forms used by the adults in Sophie's corpus into the lexical aspect categories, shows that the distribution of simple past forms in English across lexical aspect categories was more variable than what was observed for the *passé composé*. Indeed, perfective past morphology in French was mostly used by the adults with telic predicates in all the recording sessions, while simple past morphology was used across lexical aspect categories. Whereas the *passé composé* was used to build past perfective reference regardless of the lexical aspect of the predicate it was used with, the simple past was used by the adults in Sophie's corpus predominantly with an imperfective value when used with stative predicates – 88% of the stative predicates inflected for the simple past were analyzed as imperfective (163/185). Telic predicates were mostly used with simple



Graph 7.15: Distribution of lexical aspect categories among verb forms inflected for the simple past in Sophie's input in English

past morphology to build perfective reference (282/285).

In the productions of the adults in Anne's corpus in English, 1409 forms were coded for lexical aspect in the productions of the adults, of which 46% (642/1409) were simple present forms, 14% were present progressive forms (193/1409), and 33% simple past forms (467/1409). These forms also included modal auxiliaries inflected for the simple past (53/1409, or 4%), present perfect forms (36/1409 or 2%) and past progressive forms (17/1409 or 1%). In Anne's productions, 653 forms were coded for lexical aspect – 37% were simple past forms (240/653), 42% were simple present forms (274/653), 18% were present progressive forms (116/653). The forms coded for lexical aspect also included modal auxiliaries inflected for the simple past (around 1% or 8/653), present perfect forms (around 1%, or 5/653), past progressive forms (around 1%, or 5/653) and past participles (around 1%, or 5/653). Table 7.24 gives the distribution of past and present tense forms across lexical aspect categories in Anne's corpus in English.

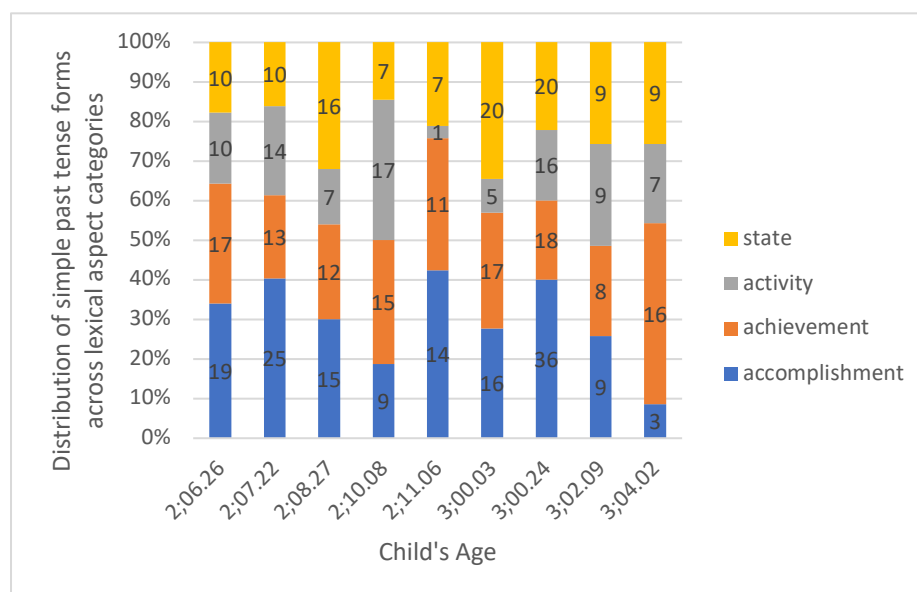
		% Accompl. (tok.)	% Achiev. (tok.)	% Activity (tok.)	% State (tok.)	Total Tok.
Anne	Sim. past	19.6 (47)	47.5 (114)	12.9 (31)	20 (48)	240
	Sim. past (mod.)	0 (0)	0 (0)	12.5 (1)	87.5 (7)	8
	Pr. perf.	0 (0)	20 (1)	20 (1)	60 (3)	5
Child	Pa. prog.	20 (1)	0 (0)	60 (3)	20 (1)	5
	Pr.	4.0 (11)	9.5 (26)	8.4 (23)	78.1 (214)	274
	Pr. prog.	12.9 (15)	7.8 (9)	79.3 (92)	0 (0)	116
	PP	20 (1)	80 (4)	0 (0)	0 (0)	5
Adult	Sim. past	31.3 (146)	27.2 (127)	18.4 (86)	23.1 (108)	467
	Sim. past (mod.)	1.9 (1)	1.9 (1)	5.8 (3)	90.4 (47)	52
	Pr. perf.	17.1 (6)	34.3 (12)	31.4 (11)	17.1 (6)	35
	Pa. prog.	5.9 (1)	0 (0)	94.1 (16)	0 (0)	17
	Pr.	3.7 (24)	6.2 (40)	10.1 (65)	79.9 (513)	642
	Pr. prog.	18.1 (35)	7.8 (15)	72.5 (140)	1.6 (3)	193
	PP	0 (0)	100 (2)	0 (0)	0 (0)	2

Table 7.24: Distribution of past and present tense forms across the lexical aspect categories in Anne’s English corpus (token count within brackets)

As what was observed in Sophie’s corpus, the values displayed in table 7.24 show that the tense forms used by the adults in Anne’s corpus were not uniformly distributed across lexical aspect categories. The adults in Anne’s corpus used the present tense predominantly with stative predicates ($\chi^2(3) = 1037.56$, $p < 0.0001$). The present and past progressive tenses were mostly used with activity predicates ($\chi^2(3) = 282.69$, $p < 0.0001$). Contrary to what was observed in Sophie’s corpus, Anne’s parents did not associate perfect tenses predominantly with telic predicates ($\chi^2(3) = 0.0286$, $p = 0.8657$). Like in Sophie’s corpus, the most frequent past form used by the adults during the English sessions was the simple past. Chi-square values were computed in order to determine whether the adults in the corpus used it predominantly with telic predicates, as predicted by the Prototype Account. Contrary to what was observed in Sophie’s corpus, this prediction was verified in Anne’s corpus ($\chi^2(1) = 13.36$, $p < 0.0005$) – the adults used the simple past more frequently with telic predicates than with atelic predicates. There was also a significant difference in the rate of association of the simple past with achievement predicates ($\chi^2(3) = 16.98$, $p < 0.005$) – the adults in Anne’s corpus used the simple past more often with achievement predicates than with any other lexical aspect category.

Graph 7.16 displays the distribution of simple past forms across lexical aspect categories during each recording session. It shows that the simple past was used with all the categories of lexical aspect during all the sessions, to a greater extent than the *passé composé*. As what was observed in Sophie’s corpus, the adults in Anne’s corpus used the simple past with stative predicates to build imperfective reference – 83% of the stative predicates inflected for the simple past were used with an imperfective value, while telic predicates inflected for the simple past were used mostly to build perfective reference (268/273).

The next prediction made by the Prototype Account is that the children would extract



Graph 7.16: Distribution of lexical aspect categories among verb forms inflected for the simple past in Anne's input in English

	Child data	Adult data
Sophie corpus	64.3 (110)	48 (287)
Anne corpus	67.1 (161)	58.5 (273)

Table 7.25: Percentage (token count) of simple past used with telic predicates

these frequent associations from their input and use them exclusively in the first stages of acquisition. I thus questioned whether Anne and Sophie would treat the associations between the English simple past and telic predicates as prototypical form-function pairings, and use the simple past predominantly to build perfective reference in the first stages of acquisition. Table 7.25 summarizes the percentage (token count within brackets) of simple past forms used with telic predicates in child and adult data in Anne and Sophie's corpora.

Chi-square values were calculated in order to determine whether the children associated simple past morphology with telicity significantly more than the adults in their corpora. This was verified for both children, although the tendency was more marked for Sophie than it was for Anne (Sophie: $\chi^2(1) = 19.645$, $p < 0.00001$; Anne: $\chi^2(1) = 9.393$, $p < 0.05$). The difference between Anne's rate of association of the simple past and telic predicates and what was observed in her input was less clear-cut than the one identified for Sophie, which can be explained by the fact that the adults in Anne's corpus tended to associate the simple past more frequently to telic predicates than the adults in Sophie's corpus. The results confirm the predictions of the Aspect Hypothesis, but Sophie's results question the Prototype Account as she associated the simple past predominantly with telic predicates although the adults in her corpus did not. This may be explained by

the fact that, as explained above, the large number of stative predicates inflected for the simple past may be biased by the fact that the adults used the verb “be” extremely frequently. I argue that the association between telic predicates and the simple past in Sophie’s productions may also be entailed by the temporal functions with which this form was used in the children’s early productions, analyzed in the last section of the present chapter.

I then considered achievement predicates, to determine whether there was a tendency for the children to inflect them predominantly for the simple past. Table 7.26 summarizes the percentage (token counts within brackets) of association between the simple past and achievement predicates in child and adult data in Anne and Sophie’s recordings.

	Child data	Adult data
Sophie corpus	37.6 (67)	25 (150)
Anne corpus	27 (127)	47.5 (114)

Table 7.26: Percentage (token count) of simple past used with achievement predicates

Chi-square values show that both Anne and Sophie used the simple past more frequently with achievement predicates than the adults in their corpus (Sophie: $\chi^2(3) = 18.628$, $p < 0.001$; Anne: $\chi^2(3) = 30.703$, $p < 0.00001$). This is consistent with the prediction made by the Aspect Hypothesis that children will use simple past morphology in English predominantly with achievements at least in the first stages of development. As what was observed in the French monolingual corpora and in Sophie’s and Anne’s productions in French, these results do not point to lexical aspect as the sole trigger of acquisition of ATAM morphology – if telicity were the main feature guiding the acquisition of ATAM morphology, there should be no difference between the class of achievements and accomplishments.

Moreover, it is worth noting that the undergeneralization observed in both children’s productions was restricted to past morphology. Although preferential associations existed in the adults’ productions between the present tense and stative predicates, as the chi-square values provided above showed, the children did not associate the present tense with stative predicates significantly more than the adults in the corpus (Sophie: $\chi^2(3) = 5.4534$, $p = 0.141453$; Anne: $\chi^2(3) = 3.547$, $p = 0.314717$). Similarly, although in both children’s input, progressive morphology was used predominantly with activity predicates, no significant difference was observed between the children’s and the adults’ rates of association of progressive morphology with activity predicates (Sophie: $\chi^2(3) = 2.695$, $p = 0.441078$; Anne: $\chi^2(3) = 1.169$, $p = 0.760449$). This suggests that lexical aspect may not be the sole trigger of acquisition of tense-aspect morphology – if it were, it could be expected that it would impact the acquisition of all tense-aspect forms, present forms included. Rather, I argue that this may point to the role played by the temporal functions served by simple past forms in child and adult speech, which is analyzed in the last section of this chapter.

7.2.2 Generalization of past perfective morphology in French and simple past morphology in English

Before turning to the analysis of the temporal functions served by past forms in child and adult data in the corpora, the next question concerns the generalization of *passé composé* and simple past forms across lexical aspect categories. Because the children used very few *imparfait* forms, the analyses focus on the perfective past tense in French. In English, the most frequent past form used by the children was by far the simple past. Anne used no past perfect forms and used only five past progressive forms and seven present perfect forms over the period. Sophie used more present perfect forms (twenty-two over the recording period), but used them mostly with achievement predicates (14/22 present perfect forms were used with achievement predicates). The analyses conducted on the generalization of past tense morphology presented above thus focus on the children's use of simple past morphology in English.

7.2.2.1 Generalization of the perfective past tense in French

Chapter 6 showed that Anaé and Antoine generalized the use of past perfective morphology across lexical aspect categories over the recording period. The previous section highlighted similarities in the way Anne and Sophie used past perfective morphology in French, associating it mostly with telic predicates and with achievements in particular. Like Antoine and Anaé, the bilingual children under study used frequent associations found in their input in their two languages. I wondered next whether Anne and Sophie followed a similar acquisition path as Antoine and Anaé, i.e. whether they generalized French perfective past morphology across lexical aspect categories over the recording period. The first section of the present chapter showed that some of the *passé composé* or bare participle forms used by the children were also found in their interlocutor's previous utterances. An analysis of the lexical aspect of the predicates where past perfective morphology had been coded as replicated from another speaker's utterance shows that during the first two recording sessions, Sophie used the perfective past tense with achievement, accomplishment and activity predicates, but initiated the use of past perfective morphology only with achievement predicates. Extract 7.2.3 gives an example of an activity predicate inflected for the *passé composé* by Sophie during the second recording session (in bold). In this extract, mother and child were reading a sticker activity book. The mother started by reading the guidelines and making sure her daughter had understood what she was supposed to do. In doing so, she used an activity predicate inflected for the *passé composé* ("*a grandi*") which Sophie took up in her last utterance. Sophie however did not replicate it identically from her mother's utterance, as she used the first-person form of the auxiliary instead of the third-person form used by her mother. This signals the linguistic elaboration underlying Sophie's production of the form, beyond mere imitation of her interlocutor's utterances.

Extract 7.2.3.

Sophie, 2;07.05

MOT: place les autocollants qui montrent Paul en train de grandir. (*place the stickers which show Paul growing up.*)

MOT: alors ça doit être le petit garçon qui grandit sûrement. (*it must be the little boy growing up.*)

MOT: regarde bien les images observe **tout ce qui a grandi** en même temps que lui. (*look at the pictures carefully and decide everything that has grown along with him.*)

MOT: alors est+ce+que tu comprends ? (*do you get it?*)

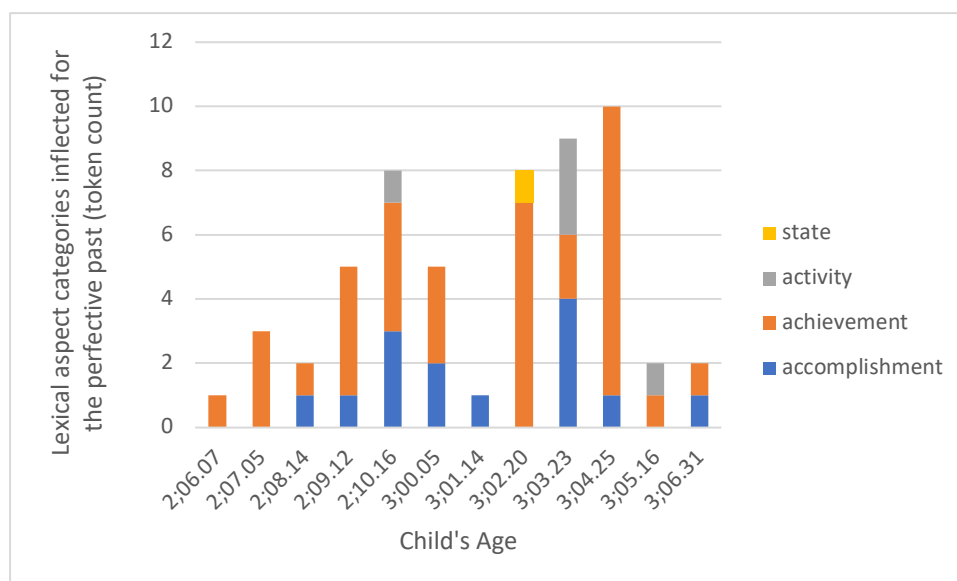
MOT: tu vois il va falloir que tu mettes des autocollants avec un petit garçon puis nan peut-être un bébé puis un petit garçon puis un jeune garçon et puis un adulte à peu près. (*see you will have to place stickers with a little boy wait no maybe a baby then a little boy then a young boy then an adult almost.*)

MOT: tu vois comme quelqu'un qui **a grandi**. (*see, like someone who has grown up.*)

CHI: oui comme moi j'**ai grandi** aussi. (*yes I've grown up as well.*)

In order to determine the generalization path of past perfective morphology, only the forms where the morphology had been coded as contributed by the children were considered. Graph 7.17 gives the distribution of forms bearing past perfective morphology across lexical aspect categories in Sophie's productions during each recording session. Given the high degree of variability in the number of verb forms inflected by Sophie for the *passé composé*, the values are displayed as token counts rather than percentages.

Graph 7.17 shows that except for the two last recording sessions, there was a tendency for the number of past perfective forms used by Sophie during each session to increase, although the number of forms used in each session varied greatly. Considering the generalization of *passé composé* morphology, Sophie used past perfective morphology productively exclusively with achievement predicates in the first two recording sessions, before she generalized it to accomplishment predicates, and only later to activity and states, following the predictions of the Aspect Hypothesis. This was also similar to the generalization path followed by Anaé. However, there was a high degree of variability in the associations Sophie made between past perfective morphology and lexical aspect – the session when Sophie was 3;04.25 was the session when she used the highest number of past perfective forms, which were all telic predicates. Moreover, comparing Sophie and Anaé's use of tense-aspect morphology shows that Sophie generalized the use of perfective morphology across lexical aspect categories later than Anaé, and to a much lesser extent. Indeed,



Graph 7.17: Distribution of lexical aspect categories among verb forms inflected for the perfective past tense in Sophie's productions in French

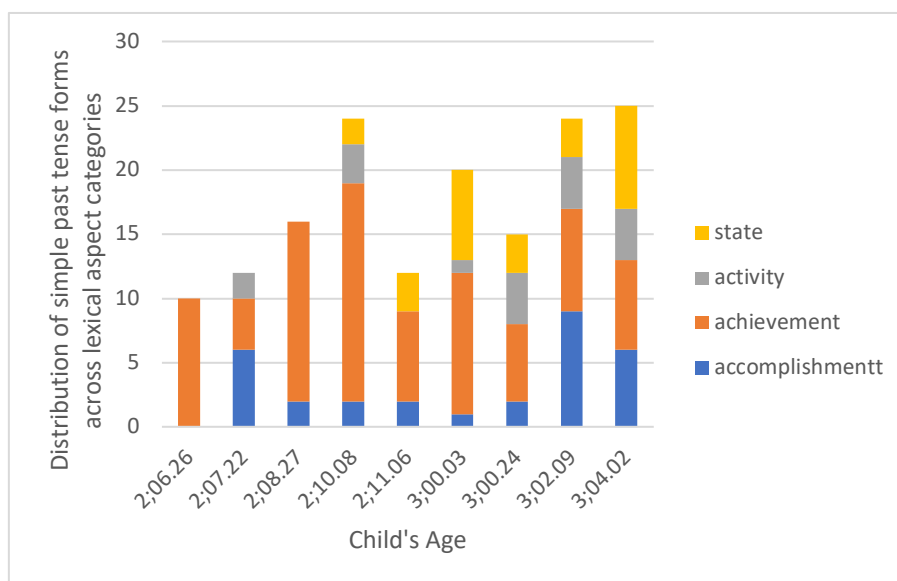
Anaé used past perfective morphology productively with activity predicates first during the session when she was 2;03.30, while Sophie did not do so until she was 2;10.16. Anaé also used past perfective morphology with accomplishments consistently (in all recording sessions) from the session when she was 2;00.00 onward, whereas Sophie started using past perfective morphology with accomplishments when she was 2;08.14, and did not use such associations in all the following sessions. In summary, both children followed similar paths in the generalization of past perfective morphology, using it first predominantly with achievement predicates, then with accomplishments and finally with activities and states. However, despite the fact that they had similar MLU values over the period, Anaé used the *passé composé* with a greater variety of lexical aspect categories sooner and in greater proportions than Sophie.

The previous sections showed that Anne's use of French decreased over the period, with her ultimately using almost exclusively English during the French sessions. This was reflected in her creative uses of past perfective morphology in French – she only produced 12 *passé composé* or bare participle forms where the past morphology was coded as initiated by Sophie or replicated from her own utterances. Moreover, she did not generalize the use of past perfective morphology over the period – throughout the recording period, she associated past perfective morphology almost exclusively with achievement predicates (10/12 of the past perfective forms in which she had contributed perfective past morphology were achievement predicates).

7.2.2.2 Generalization of the simple past in English

The Aspect Hypothesis predicts that children will associate the simple past to telic predicates predominantly in the first stages of acquisition, and that as the number of forms inflected by the children for the simple past increases, they will gradually generalize its use to other lexical aspect categories. Different trends were observed in the productions of Anne and Sophie.

The number of simple past forms used by Anne in English increased over the period – she used the simple past more consistently at the end of the period than she did during the first recording sessions.



Graph 7.18: Distribution of simple past forms across lexical aspect categories in Anne's productions in English (token count)

Graph 7.18 shows that as Anne used more simple past forms during the English sessions, these forms also became more evenly distributed among the lexical aspect categories – the proportion of telic predicates among the forms Anne inflected for the simple past tended to decrease as she used the simple past gradually more with states and activities over the recording period. During the first recording session I analyzed, Anne used the simple past productively exclusively with telic predicates, as in extract 7.2.4.

Extract 7.2.4.

Anne, 2;06.26

CHI: Daddy's sleeping.

NAN: Daddy's sleeping really?

NAN: are you sure?
 CHI: yeah.
 CHI: xxx.
 OBS: what?
 CHI: Daddy's sleeping.
 OBS: Daddy's sleeping oh that's why you whisper.
 NAN: so we don't wake him up.
 CHI: Daddy **woke up**.
 FAT: hu good morning.

In this extract, Anne left the kitchen where she had been with the observer and her nanny to go see her father who was in another room on the same floor. She first came back to the room to tell her nanny and the observer that her father was sleeping, and went back to the other room as if to check after her nanny had asked her whether she was sure. When she came back, she repeated the utterance “Daddy is sleeping”, this time whispering. She then left the room once more and could be heard from the other room saying “Daddy woke up”, inflecting for the simple past the telic predicate provided in her nanny’s previous utterance in a base form. At the end of the period, Anne used the simple past productively with atelic predicates, as illustrated in extract 7.2.5.

Extract 7.2.5.

Anne, 3;00.00

CHI: see if I <do> [//] put like that makes +...

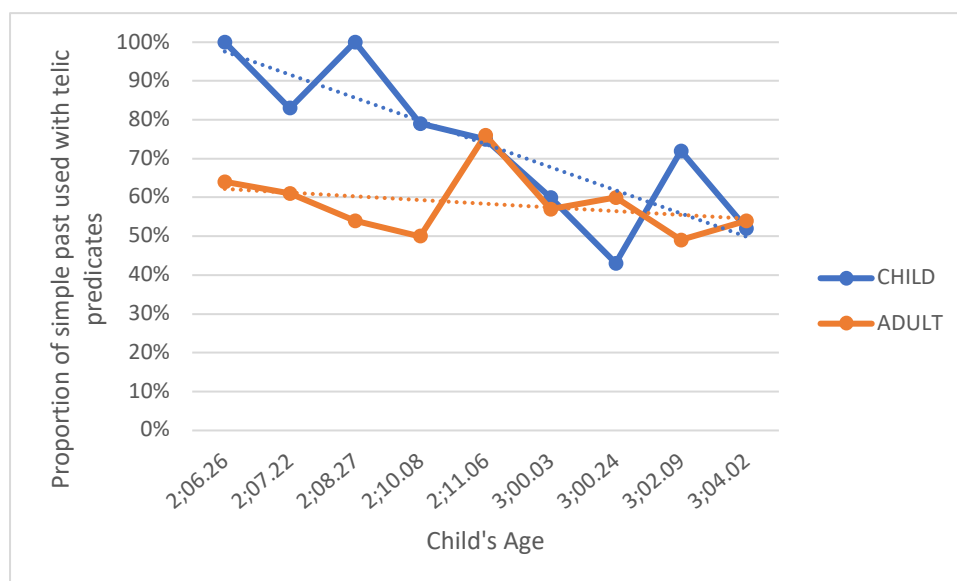
FAT: www.

FAT: because you're just very clever.

CHI: when I **was** a little little baby you <put> [//] put me on your shoulders.

FAT: yeah I did and sometimes when you're bigger as well until I was broken.

In this extract, Anne was playing with a doll she had gotten on her birthday a few days before, while the observer and Anne’s father were talking about differences between Anne and her older brother’s language development. As she played with the doll, Anne sat the doll on her head which seemed to trigger her asking her father about when he used to carry her on his shoulders – she thus initiated the use of past morphology with the verb “be”, to build past imperfective reference.



Graph 7.19: Percentage of telic predicates among the forms inflected for the simple past over the period

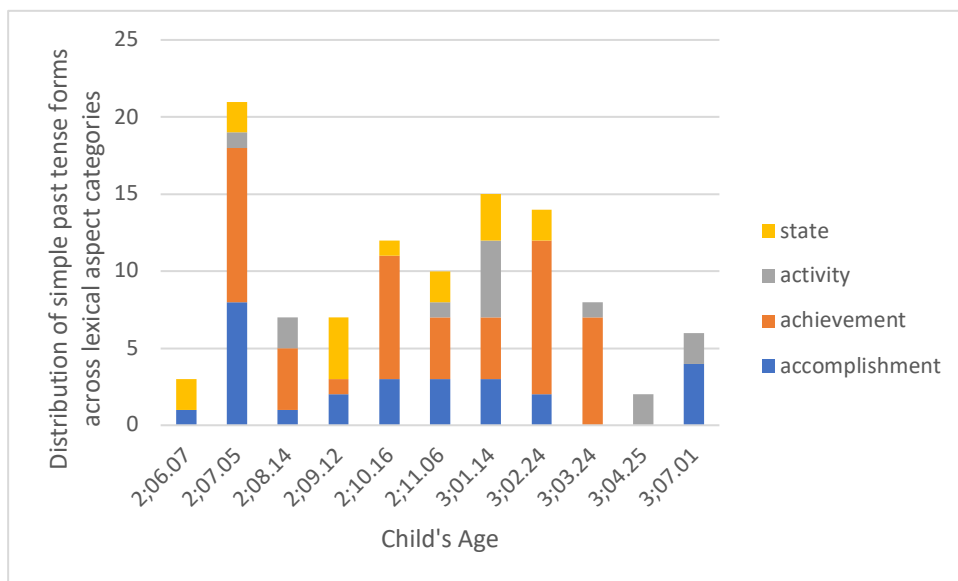
Graph 7.19 displays the percentage of simple past morphology used with telic predicates in each of Anne’s recording sessions. A linear regression was computed to yield the trend of child and adult data over the period (dotted lines in graph 7.19). This trend confirms what was stated above, namely that Anne used the simple past with telic predicates proportionally less at the end of the recording period than at the beginning. It also shows that the adult trendlines shows less variability than what was observed for the children, and that Anne’s use of simple past forms with telic predicates tended to get closer to that of the adults in the corpus over the period. Anne’s use of simple past morphology throughout the recording sessions is thus consistent with the predictions made by the Aspect Hypothesis – she initially restricted the use of the simple past to telic predicates, and as she used the simple past more and more frequently, she generalized its use to other lexical aspect categories.

Sophie’s use of past forms during the recording sessions in English was much more variable than Anne’s – whereas Anne used simple past morphology productively more frequently at the end of the recording period than at the beginning, this tendency was less clear in Sophie’s productions. The Sophie tended to use past morphology when it was produced in her interlocutor’s previous utterances more frequently than Anne in all the recording sessions. In extract 7.2.6, taken from the session when Sophie was 2;07.05, all but one of the simple past forms used by Sophie were forms that were used in her father’s previous utterances. This extract began with the father asking Sophie what she had done during the day using the verb “do” inflected for the simple past, which Sophie took up in her answer. The forms that Sophie replicated from her interlocutor’s previous utterances were excluded from the analysis of the generalization of simple past morphology over the

period.

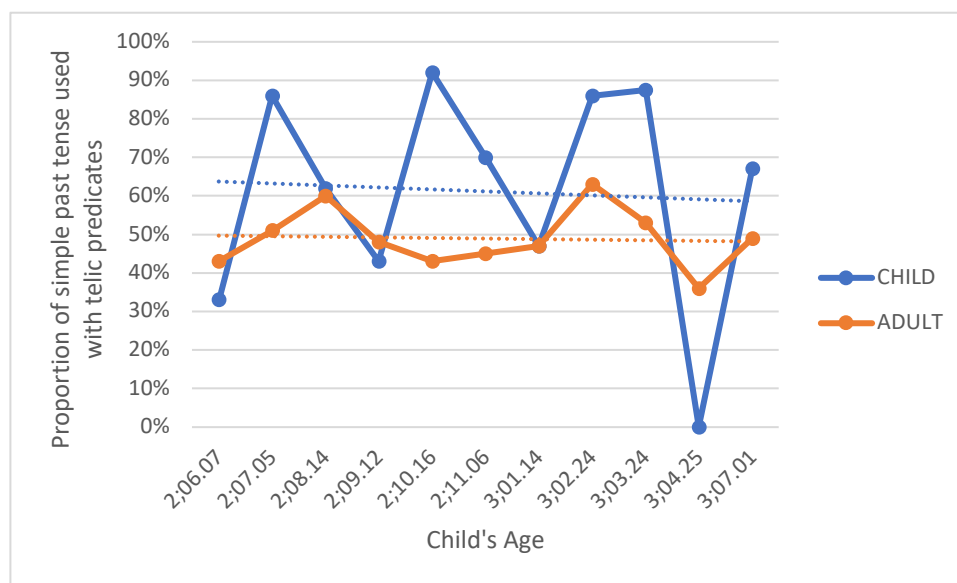
Extract 7.2.6.
Sophie, 2;07.05
 FAT: what did you do today sophie?
 CHI: I **did** something nice.
 FAT: what was it?
 CHI: hum surprise.
 CHI: I forgot to do playdough with coralie today.
 FAT: you forgot?
 CHI: yes forgot.
 FAT: did you not do <coralie> [//] playdough with coralie?
 CHI: no.
 OBS: yes we did a little bit before dad came.
 FAT: so you did a bit.
 CHI: [-mix] <I> [/] I **did** école avec coralie.

In extract 7.2.6, the form in bold (“did”) were analyzed as initiated by Sophie’s father, and replicated by the child. However, the form “forgot” was analyzed as initiated by Sophie, as it was not used by her interlocutor in his previous utterances.



Graph 7.20: Distribution of simple past forms across lexical aspect categories in Sophie’s productions in English (token count)

Graph 7.20 gives the distribution of simple past forms across lexical aspect categories (token count). It shows first that Sophie used fewer past forms than Anne in English. While Anne consistently used at least twenty past forms in the last four recording sessions, and never used fewer than ten in each session, there were several sessions when Sophie used very few simple past forms productively. Moreover, the sessions during which Sophie used few simple past forms were not exclusively found at the beginning of the recording period, but rather were distributed throughout the period. Moreover, there was more variability in the types of predicates she inflected for the simple past. For instance, she used the simple past with stative predicates very early on during the recording period but did not do so consistently – in the last three recording sessions, she used the simple past exclusively with non-stative predicates (activity, achievement and accomplishment predicates). Graph 7.21 displays the percentage of simple past forms used with telic predicates by Sophie and the adults in her corpus in each recording session. It illustrates the variability with which Sophie associated the simple past to telic predicates, and shows that her use of the simple past with telic predicates was consistently higher than what was observed in the productions of the adults in her corpus.



Graph 7.21: Percentage of telic predicates among the forms inflected for the simple past over the period in Sophie's productions in English

Contrary to what was observed in Anne's corpus, the linear regression computed on adult and child data in Sophie's corpus show that the child's rates of association of the perfective past with telic predicates was roughly stable over the period – there was a slight tendency for it to decrease although to a much lesser extent than what was observed in Anne's productions. There was thus not a clear tendency for Sophie's use of the simple past to get closer to what was observed in her input over the period.

The differences observed between the two children in the rates of association of past

morphology with telic predicates over the period were confirmed by chi-square analyses computed separately on the first and the second half of the recording sessions. Indeed, the results showed that Anne associated the simple past to telic predicates significantly more frequently than the adults in her corpus only during the first five recording sessions. No significant difference was observed between Anne's productions and the adult data in the last four recordings of the period (Period 1: $\chi^2(1) = 21.35$, $p < 0.00001$; Period 2: $\chi^2(1) = 0.0334$, $p = 0.854989$). This suggests that by the end of the recording period, Anne used simple past morphology with telic predicates in similar proportions as what was observed in her input. Conversely, Sophie's use of the simple past with telic predicates differed from her input throughout the recording period. A significant difference was found between Sophie's productions and her input with regard to the proportion of simple past forms used with telic predicates in both the first and second half of the recording period (Period 1: $\chi^2(1) = 15.92$, $p < 0.0001$; Period 2: $\chi^2(1) = 5.83$, $p < 0.05$). However, the different p values obtained for both periods shows that the difference between Sophie's productions and her input was less marked during the second half of the recording period, suggesting a slight tendency for her to use the simple past with telic predicates in more similar proportions as what was observed in her input.

In summary, Anne and Sophie's use of past morphology was consistent with the predictions of the Aspect Hypothesis. In French, Anne and Sophie used perfective past morphology predominantly with telic predicates. As predicted by the Prototype Account, the children exaggerated a trend which was identified in their input. Like the monolingual children whose productions were studied in chapter 6, Anne and Sophie used most frequently the associations most consistently found in their input between past perfective morphology and telic predicates, even in their non-dominant language. However, Anne and Sophie differed in the generalization of the *passé composé* across lexical aspect categories. As Anne used French less and less, she used perfective past morphology exclusively with achievement predicates. Conversely, Sophie followed the same generalization path as Anaé, but did so at a slower rate and less consistently. In English, the adults in both corpora used the simple past across lexical aspect categories to build perfective and imperfective reference. In Sophie's corpus, there was no clear tendency for the adults to associate the simple past more frequently with telic predicates. On the contrary, stative predicates were frequently inflected for the simple past. However, these included fewer different verb types as what was observed in the other lexical aspect categories – the verb “be” was over-represented among the stative predicates inflected for the simple past by the adults in Sophie's corpus. The adults in Anne's corpus used the simple past predominantly with telic predicates, and with achievement predicates in particular. Despite these differences in their input, both children associated the simple past to telic predicates and to achievements in particular more frequently than what was

observed in their input. Finally, the children did not follow exactly the same path in generalizing the use of the simple past across lexical aspect categories. Anne, who used more verbs in the simple past and used them more consistently than Sophie, also generalized the use of the simple past to atelic predicates earlier than Sophie. By the end of the recording period, the proportion of simple past forms she used with telic predicates was no longer significantly different from the proportion observed in her input. Conversely, it took longer for Sophie to generalize the use of the simple past across lexical aspect categories, and she still associated the simple past to telic predicates significantly more frequently than the adults in her corpus at the end of the period. However, the statistical analyses conducted on the data suggest a slight tendency for her use of the simple past to get closer to what was observed in her input at the end of the recording period.

7.3 Temporal reference of past tense forms in French and English

As in chapter 6, the analysis of the temporal reference of past tense forms was conducted with several aims. First, I wished to determine whether Anne and Sophie used past morphology with the same functions as the ones identified in adult speech in English and in French. I also wished to compare Sophie's use of past tense forms in French with that of Anaé and Antoine. After showing in previous sections that Sophie used fewer past tense forms than Anaé at similar ages despite close MLU values, I wished to determine whether her use of past tense morphology also seemed to be qualitatively impacted by dual-language learning, i.e. I wondered whether Sophie restricted past tense forms to specific functions longer than the monolingual children whose productions were studied in chapter 6.

7.3.1 Temporal reference of past forms in English

English was Anne and Sophie's dominant language throughout the period. It is also the language in which they used past morphology most frequently and consistently. The most frequent past form used by the children was the simple past. Neither children used past perfect forms during the recording period. This can be explained by the low frequency of past-perfect forms in the children's input – past perfect forms accounted for around 0.4% of the forms bearing past morphology in Sophie's input (4/968) and 0.2% in Anne's input (1/643). This low proportion of past perfect forms in the children's input yields support to the claim of usage-based theories of language acquisition presented in chapter 3, according to which references fully displaced from speech time (SpT) were unfrequent in CDS (Tomasello, 2009). Indeed, the past perfect allows speakers to locate a situation

relative to a secondary orientation point located prior to SpT – it thus entails building temporal reference fully displaced from SpT. Both children also used past-progressive forms less frequently and consistently than they used the simple past, which reflected a tendency observed in their input. Past progressive forms accounted for 4% of the past forms used in both child and adult data in Sophie’s corpus (36/968 in the productions of the adults, 11/289 in Sophie’s productions). In Anne’s corpus, past progressive forms accounted for around 4% of the forms bearing past morphology in the adults’ productions (24/643) and 2% of the forms used by Anne with past morphology (5/307). Adults and children alike used such forms predominantly to build imperfective past reference.

Finally, present perfect forms accounted for around 6% of the forms used with past morphology by the adults in Anne’s corpus (36/643) and only around 2% in Anne’s productions (5/307). It accounted for around 12% of the forms bearing past morphology in Sophie’s input (1113/968) and around 8% in Sophie’s productions (22/289). In Sophie’s input, present perfect forms were predominantly used to refer to the past (107/113 present perfect forms were used to refer to the past), and only punctually to build future or atemporal reference (6/113 and 1/113 forms respectively). In Sophie’s productions, the present perfect was used almost exclusively to locate situations in the immediate past (20/22). It was also punctually used to build future reference (2/22). Present perfect forms were more frequent in Sophie’s input than in Anne’s, and were also used slightly more frequently by Sophie than by Anne. Moreover, the different functions with which the present perfect were used by the children can be explained by analyzing the functions such forms served in their input. The present perfect is generally analyzed as a form used to present events as having current relevance – the event is located prior to SpT but is presented as extending into SpT, which entails different representations of situations depending on their temporal features. Atelic predicates inflected for the present perfect will likely be construed as having started prior to SpT and extending into SpT, whereas telic predicates inflected for the present perfect are used to locate completed situations prior to SpT and to focus part of the situations’ posttime – the situation is presented as having yielded a result at SpT. In the adults’ productions in Sophie’s corpus the present perfect was predominantly used with telic predicates which had yielded a tangible, observable result at SpT, and could thus be analyzed as referring both to the situation located prior to SpT and to its posttime (50 of the 113 inflected for the present perfect in Sophie’s input were used to focalize a past situation and its present, tangible result). This is the case in extract 7.3.1, taken from the end of the eighth session when Sophie was 3;02.04.

Extract 7.3.1.

Sophie, 3;02.24

CHI: where’s my little bag pink?

CHI: <little bag pink> [/] little bag pink.
 FAT: where's your little pink bag?
 CHI: yeah.
 FAT: I don't know.
 FAT: am I sitting on it?
 FAT: nope.
 CHI: no.
 FAT: did you leave it in the other room?
 CHI: no.
 CHI: I'll find it.
 CHI: no I can't find it anywhere.
 CHI: [-mix] I just have <this> [/] this sac+à+dos@f.
 CHI: [-mix] sac+à+dos@f, that.
 FAT: hey Ella **has found** your pink bag.

In this extract, Sophie was playing with her father and sister. At one point during the session, Sophie started asking for her bag, leading her father and sister to help her look for it. When her sister found it, the father produced a present perfect form (in bold in the transcription) to comment on the sister having found it. This session is one where the observer was not present, and the camera angle does not allow us to see the two children at the exact moment when the utterance is produced, but a moment later the sister walks back into the frame carrying the pink bag in her hand. The predicate “Ella has found your pink bag” can thus be analyzed as locating the situation prior to SpT as well as focalizing part of its posttime, i.e. its present result at SpT.

Sophie used few present perfect forms overall, but used them mostly with this function – to focalize the tangible result of an event located prior to SpT (15/20), as illustrated by extract 7.3.2.

Extract 7.3.2.

Sophie, 2;07.05

FAT: let's try it.

FAT: I don't even know what you're supposed to do with it.

CHI: Dad <why> [/] <why> [/] <why> [/] why do it?

OBS: last time [NAME] said it was broken but +...

FAT: oh is it?

FAT: maybe xxx.

CHI: why Mummy said it's broken?

FAT: that's a good question Sophie and I don't know the answer to it.
 CHI: why Mummy **has broken** it Coralie?

At the beginning of the extract, Sophie had handed a toy phone to her father, who tried to make it work. The observer then said that the mother had told her earlier that it was broken, using the past participle “broken” in a copular construction, which Sophie took up in her next utterance. As her father did not answer her question, Sophie turned to the observer and used a present perfect form which was analyzed as referring to a past event, as well as focalizing the present, tangible result of this event. In Anne’s input, around 30% of present perfect forms were telic events inflected for the present perfect in order to signal the situation as fully completed prior to SpT and to focalize its present result (11/36 present perfect forms were used with that function). This was thus not the main function with which the adults in Anne’s corpus used present perfect forms. Anne used the present perfect with only five tokens and three verb types over the period, mostly to locate atelic predicates prior to SpT, and to signal the situation as having current relevance. For instance, she frequently inflected the verb “to see” for the present perfect (three out of five verb tokens in the present perfect were the forms “have seen”), to ask her nanny or the observer whether they had met some of her friends, and thus whether they knew them (hence the current relevance value). The differences in both the frequency with which the children used present perfect forms and the functions with which such forms were used can thus be explained by comparing the way the adults in both corpora used these forms.

I now turn to the analysis of the temporal reference of forms found in the simple past in Anne and Sophie’s productions, which was the past form used most frequently and consistently by both children. A difference was noted in the previous sections between Anne and Sophie’s use of past forms – Anne used simple past morphology more consistently than Sophie, and in more similar proportions as what was observed in her input. Her use of simple past morphology with verbs belonging to different categories of lexical aspect also steadily developed to resemble her input over the period, a tendency that was less marked in Sophie’s data.

Simple past forms were coded as building either atemporal reference, future reference, reference to an indefinite past time or to the immediate past. When possible, the temporal reference of past forms was coded by relying on close analysis of the video recordings; when this was not possible, it was coded by relying on the interactive context, and in particular on parental interpretation of the form. I distinguished between modal auxiliaries and lexical verbs inflected for the simple past because these served different temporal functions in child and adult data – modal auxiliaries were most frequently inflected for the simple past by the adults to build atemporal reference, while lexical verbs were most frequently inflected for the simple past to build past reference. Finally, simple past forms were also

coded to identify the forms used to refer to events that had yielded a tangible result at SpT – this was done in order to determine whether the children used the simple past in early stages of acquisition predominantly to locate completed events in the past when they had yielded tangible results at SpT. It has been argued that children’s earliest uses of verb forms in the past were at least partly anchored in SpT, which could explain the children’s tendency to use the simple past with telic predicates, i.e. predicates that entail a change-of-state and were thus likely to have yielded a tangible result at SpT.

Most of the simple past forms used by the children and the adults were used to build reference to the past. As mentioned above, I distinguished between forms that were used to refer to the immediate past, i.e. to an event that had occurred immediately prior to SpT, and forms that referred to a more distant, or indefinite past. In extract 7.3.3, all the past forms in bold were coded as referring to the immediate past.

Extract 7.3.3.

Sophie, 2;10.16

CHI: [-mix] it’s all clean maintenant@f.

FAT: it’s all clean?

CHI: yeah.

FAT: why **was** it dirty?

CHI: no it **was** wet.

CHI: so I **washed** it.

The simple past forms used in extract 7.3.3 were produced as Sophie and her father were getting ready to start baking. The extract begins as Sophie hands a towel to her father after having wiped the kitchen counter. The simple past allowed the speakers to locate the situations <it be dirty>, <it be wet> and <I wash it> immediately prior to SpT. However, only the last simple past form used by Sophie was coded as having yielded a result observable at SpT – the counter being ready-for-use after Sophie had wiped it with the towel. Anne also used several past forms which were coded both as referring to the immediate past and as having yielded a present result at SpT, as illustrated by extract 7.3.4. In this extract, Anne was playing with a toy car while sitting at a table with her nanny and the observer.

Extract 7.3.4.

Anne, 2;10.08

CHI: like this, it open and then shuts.

OBS: oh that's nice.
 NAN: it opens and shuts.
 CHI: yes.
 OBS: and can you open the boot like this?
 OBS: oh wow.
 CHI: I **shut** it.
 %sit: CHI looks at the toy car.
 CHI: I **shut** it.
 %sit: CHI turns to observer.
 OBS: yes you shut it.
 CHI: closed.
 %sit: CHI has just closed the trunk of the car after she had opened it again.

She started by showing the observer how the trunk of the car could be opened and closed, then opened the trunk once more and commented on the action she had just carried out while looking at the shut trunk, as illustrated by image 7.1. She then looked at the observer and repeated the utterance “I shut it” which was taken up by the observer. Anne then opened the trunk again before shutting it once more and turning to the observer, producing the adjectival form “closed” to comment on the present result of the action she had just carried out.



Image 7.1: Screenshot of the video recording of Anne (2;10.08) when she produced the simple past forms “shut” (extract 7.3.4)

Moreover, both children also inflected predicates for the simple past to locate them

in the distant or the indefinite past. In extract 7.2.5 (used first in the second section of the present chapter and reproduced below), Anne used two simple past forms to locate two situations prior to SpT (in bold in the transcription below). The situations <I be a baby> and <you put me on your shoulders> did not occur in the immediate past and had yielded no tangible result at SpT.

Extract 7.2.5.
Anne, 3;00.00
 CHI: see if I <do> [//] put like that makes +...
 FAT: www.
 FAT: because you're just very clever.
 CHI: when I **was** a little little baby you <**put**> [//] **put** me on your shoulders.
 FAT: yeah I did and sometimes when you're bigger as well until I was broken.

As explained in section 2, in this extract Anne was playing with a doll which she held by her feet and rocked back and forth until the doll landed on top of her head. Anne kept the doll there for a few seconds and gazed at it, as illustrated by image 7.2.



Image 7.2: Screenshot of the video recording of Anne (3;00.00) when she produced the simple past forms “was” and “put” (extract 7.2.5)

Anne seems to associate the situation at SpT, where she had the doll on her head, to a past situation disconnected from SpT. This situation, where Anne was carrying her doll in a manner similar to the way she had herself been carried by her father may be what triggered Anne’s recollection, which she shared with her father using the past forms in

bold in the transcription. To some extent, Anne's use of these past forms to break from SpT was thus at least in part initiated by the situation at SpT. However, they were not analyzed as focalizing a tangible result of the situation located in the past – both forms were coded as locating the situations <I be a little little baby> and <you put me on your shoulders> prior to SpT, without focalizing any present result.

Both children also used simple past forms to build atemporal reference although in different proportions – Sophie used many more past forms with an atemporal value than Anne. These most frequently included past forms as well as the modal auxiliary “will”, and were used mostly in situations of pretend-play or pretend-reading, as was the case in extract 7.3.5.

Extract 7.3.5.

Sophie, 3;03.24

CHI: Daddy I **was** shopkeeper +/.

OBS: +< bye.

FAT: should you say goodbye to the customer?

CHI: bye.

CHI: Daddy?

FAT: yeah.

CHI: I'll be the shopkeeper and you'll be the help okay.

FAT: okay.

In this extract, Sophie, her father and the observer were engaged in a pretend-play situation where one of the participants would pretend to be the shopkeeper and the others would pretend to be clients or helps in the shop. At the beginning of the extract, Sophie used the past form “was” to build irrealis rather than past reference. Lexical verbs inflected for the simple past coded as building atemporal reference were also used by the children and the adults in reading activities, where the simple past was used for narrative purposes rather than to build temporal reference. Finally, modal auxiliaries were inflected for the simple past mostly to build atemporal reference. Sophie in particular built atemporal reference mostly by inflecting modal auxiliaries for the simple past (out of the 33 past forms Sophie used to build atemporal reference, 20 were modal auxiliaries). In extract 7.3.6, the modal auxiliary inflected for the simple past by Sophie was used to signal a modal rather than a temporal break – after her father suggested that he take her to school the next morning, Sophie used the periphrastic forms “*could go*” and “*(could) have*” to build atemporal reference.

Extract 7.3.6.
Sophie, 3;04.25
 FAT: if it rains Soph' I can take you in the car because I'm not working until later on tomorrow.
 CHI: yeah.
 CHI: we **could go** to Café then and **have** a cupcake.
 FAT: 0 [=! laughs].

Table 7.27 gives the temporal reference of simple past forms in the adult and child data in Sophie and Anaé's corpora. In addition to the coding categories described above, simple past forms were also occasionally used by the children and the adults to build future or present reference. These are grouped in the table below because of the low number of forms used with these temporal functions by the adults and the children in the corpora. The present section focuses on the simple past forms building atemporal or past reference, distinguishing among the latter between forms referring to the immediate past time and those referring to an indefinite or distant past time. For each child, the temporal reference of simple past forms is given in percentages (the last column gives the token count) for the entire period (which includes nine recordings for Anne and eleven for Sophie) as well as for first half of the period (Phase 1, which included six recordings for Sophie and five for Anne) and the second half of the period (Phase 2, which included five recordings for Sophie and four for Anne). This analysis was conducted in order to determine whether there were differences in the way the children and the adults used simple past morphology to build temporal reference over the period.

Sophie		% OTH	% ATP	% PA	% PA-IMM	% PA-IMM (R)	Total Tok.
Child	Entire period	1	17	37	24	21	191
	Phase 1	0	25	33	23	19	100
	Phase 2	2	0	41	25	23	91
Adult	Entire period	1	23	52	18	6	712

Anne		% OTH	% ATP	% PA	% PA-IMM	% PA-IMM (R)	Total Tok.
Child	Entire period	1	3	52	15	28	261
	Phase 1	1	7	44	11	38	124
	Phase 2	2	1	59	20	19	137
Adult	Entire period	0	14	57	20	9	520

Table 7.27: Temporal reference of the simple past in adult and child data in Sophie and Anne's corpora

The adults in the corpora mostly differed in the proportion of simple past forms they

used with atemporal reference. The adults in Sophie's corpus used the simple past to build atemporal reference more often than the adults in Anne's corpus. This is mostly linked to two differences identified between the two corpora. First, the proportion of modal auxiliaries inflected by the adults for the simple past differed in the corpora – such forms accounted for 16% of the total number of past forms used in Sophie's input (113/712), while they accounted for only 10% of the past forms used in Anne's input (52/520). The situations in which the children were recorded may also explain the difference in the proportion of simple past forms used by the adults in both corpora to build atemporal reference. Many of the past forms building atemporal reference in Sophie's input were forms used by her father during reading sessions, where past forms were used to build atemporal reference – they were used not to refer to the past but rather to organize events in the narrative. This is illustrated in extract 7.3.7.

Extract 7.3.7.

Sophie, 2;07.05

FAT: on **went** the mouse through the deep [=! read] +//?

CHI: dark wood.

FAT: a snake **saw** the mouse [=! read] +//?

CHI: and the mouse **looked** good.

FAT: where are you going to [=! read] +//?

CHI: little mouse.

FAT: come for a [=! read] +//?

CHI: feast in my underground house.

In this extract, father and child are reading a book which they are used to reading together. The father suggested reading the book after he had mentioned the book's character and the observer had said that she had never heard of it. The reading activity turned into a two-participant performance as Sophie and her father fell back into roles they had visibly had before – the story is written in rhymes and the father adds rhythm, reading it as if it were a song and regularly pausing in the narrative and looking at his daughter for her to complete his sentences. This led both Sophie and her father to use past forms which were coded as atemporal.

Anne and her caregivers were not recorded during reading sessions very often, but were frequently recorded playing board games, or playing with toy cars – consequently, they often used verb forms in the past to refer to actions carried out in the past as part of the game, rather than to build fictive reference. This is illustrated in extract 7.3.8

Extract 7.3.8.

Anne, 2;10.08

OBS: let's try with another car than the taxi.

OBS: because the taxi is not really good is it?

OBS: it keeps losing so let's try with this one.

NAN: are you ready?

OBS: go.

NAN: oh they both **crashed**.

OBS: they crashed into each other.

CHI: let's try and win.

OBS: okay.

NAN: your racing car **crashed**.

CHI: oh no [=! laughs].

In this extract, the child, her nanny and the observer were playing with toy cars around a table. They pushed the cars so that they would either crash or roll off the table. At the beginning of the extract, the observer and the child each pushed a car, making them crash into each other, an event which the nanny commented on by using the past forms “crashed”. These forms (in bold in the transcription) were thus coded as building reference to the immediate past rather than atemporal reference – the simple past was used to locate the situation <they crash> as having been completed prior to SpT rather than to build fictive reference. These differences in the children’s input were reflected in their use of simple past morphology to build atemporal reference, as Sophie used simple past forms to build atemporal reference more frequently than Anne – around 23% of the simple past forms used by Sophie over the entire recording period were used to build atemporal, fictive reference against only 3% of the total number of simple past forms used by Anne.

The proportion of past forms used to build reference to a distant (or indefinite) past time were similar in both children’s input (52% in Sophie’s input and 59% in Anne’s input). The adults also used the simple past to locate situations in the immediate past without focalizing a tangible result at SpT in similar proportions (18% of simple past forms were used with this temporal function in Sophie’s input against 20% in Anne’s input). Finally, the adults in both corpora used simple past forms to locate in the immediate past situations that had yielded a tangible result at SpT (6% in Sophie’s input and 9% in Anne’s input). Several differences were identified in the temporal functions served by the simple past forms analyzed in child and adult data. The most striking difference was a strong tendency for both children to use simple past morphology to locate situations in the immediate past – both children used the simple past with this function significantly more often than the adults in their corpus throughout the recording period (Sophie: $\chi^2(3) = 32.73$,

$p < 0.00001$; Anne: $\chi^2(3) = 29.95$, $p < 0.00001$) – both children used the simple past more frequently than the adults in their corpora to refer to situations that had just occurred and that they had thus witnessed occurring, whether they had yielded a tangible result at SpT or not. Moreover, both children also used simple past morphology to locate in the immediate past events that had yielded a tangible result at SpT, and did so more frequently than the adults in both corpora (Sophie: $\chi^2(4) = 50.21$, $p < 0.00001$; Anne: $\chi^2(4) = 68.15$, $p < 0.00001$). This function was served in the adults' productions predominantly by present perfect and simple past forms, which were used to a similar extent. The children however used few present perfect forms over the period.

These two differences between adult and child data remained significant for both children over the period, although there was a tendency for Anne and Sophie to use the simple past to refer to the distant past more often in the second half of the recording period than in the first. Table 7.27 shows that this tendency was especially marked in Anne's data. At the end of the recording period, Anne used the simple past more often to locate situations in the distant past than in the immediate past – in the second half of the recording period, 59% of the past forms she used served to locate situations in the distant past, approximating the proportions observed in adult data (where 57% of simple past forms were used with this function). Anne used more simple past forms to locate situations in the distant past in the second half of the recording period, and she tended to use simple past morphology less often to locate situations that had yielded a tangible result in the immediate past. In other words, as Anne's use of the simple past developed over the period, she also used it more and more often to locate situations in the past regardless of whether these situations had just occurred or whether they had yielded a tangible result at SpT. Although this tendency was less clear in Sophie's corpus, she also used the simple past to build reference to a distant or indefinite past more frequently during the second half of the period than during the first (in the first phase, only 33% of the simple past forms Sophie used referred to a distant or indefinite past, against 41% in the second half of the recording period). The diversification of the temporal functions served by the simple past forms used by Anne is illustrated in extract 7.3.9.

Extract 7.3.9.

Anne, 3;04.02

CHI: now we've got cat flap.

OBS: cat flap downstairs?

OBS: oh yes I saw it downstairs.

OBS: so the cats can go outside.

CHI: but the little one isn't allowed.

OBS: oh is it a girl or a boy the little one?

CHI: in fact we **had** two boys and now we **had** two girls and then somebody **took** a girl and took one girl then and another girl and one **goed** then.
 OBS: okay.
 CHI: and then we were trying to keep the last one so we **keeped** it.

This extract, taken from Anne’s last recording session in English, illustrates her creative use of simple past morphology at the end of the period. In this extract, she initiated the use of the simple past to build past reference fully displaced from SpT, i.e. to refer to situations located in the past that had not just occurred and whose results were not tangible at SpT. She also used the simple past with predicates that differed in terms of their inherent temporal features – she inflected both stative predicates (“had two boys” and “keeped it”) as well as achievement predicates (“took a girl” and “goed”) for the simple past. As noted in the first section of the present chapter, her use of overregularizations (“keeped” and “goed”) also testifies to her growing grammatical awareness – she uses the [-ed] morpheme productively to signal a temporal break.

7.3.2 Temporal reference of French perfective past tense forms used in adult and child data during the French sessions

Because of the very low number of imperfective past tense forms used by Anne and Sophie in French, I analyzed only the temporal reference of French forms bearing past perfective morphology (either full-fledged *passé composé* or bare past participles). This was done in order to identify differences in the temporal functions served by these forms in child and adult data in French, to investigate whether the temporal functions of *passé composé* forms and bare past participles used by Anne and Sophie could explain the preferential associations between perfective past morphology and telic lexical aspect categories identified in child speech. Like in chapter 6, past participles used in copular constructions were excluded from the analyses presented below, as the temporal reference of these constructions was determined by the copula rather than by the past participle. In both child and adult data, some past tense forms were analyzed as building reference to the present time, i.e. they were analyzed as having an adjectival rather than a temporal function. Past participles in particular were used with this function, i.e. to refer to a present state rather than to focalize the past temporality of an event. This interpretation was supported by contextual cues, as illustrated in extract 7.3.10.

Extract 7.3.10.
Anne, 2;10.07

OBS: ils sont comment les cheveux ? (*how is the hair?*)
 CHI: [-eng] what?
 OBS: comment ils sont les cheveux ? (*how is the hair?*)
 CHI: [-eng] wet.
 OBS: mouillés ? (*wet?*)
 CHI: oui. (*yes.*)
 OBS: mouillés. (*wet.*)
 CHI: oui **mouillés**. (*yes wet.*)
 CHI: so <I> [//] nanny put the towel on.

In this extract, the form “*mouillés*” which the child takes up from her interlocutor’s previous utterance has an adjectival value rather than a temporal one – it is not used to comment on a past action but rather exclusively on its present result. Among the forms which were coded as referring to the past time, I distinguished between the ones used to locate situations in the immediate past and those used to locate situations in a more distant past.

Extract 7.3.11.

Anne, 2;08.26

OBS: parce-que c’est plus noel c’est fini. (*because it’s not christmas anymore, christmas has passed.*)

CHI: **fini** oui. (*passed yes.*)

CHI: [-mix] now not noel.

OBS: oui c’est plus noel et est+ce que tu veux me montrer ce que le père noel t’a apporté ? (*right it’s not christmas anymore and do you want to show me what santa claus brought you?*)

CHI: hum <book> [//] one book.

CHI: little book for little +/.

OBS: il t’a apporté quoi ? (*what did he bring you?*)

CHI: +, [-eng] babies.

OBS: j’ai pas compris. (*I didn’t get that.*)

CHI: [-mix] **apporté** little@f babies@e bookses@e.

In extract 7.3.11, Anne replicated two past participle forms from her interlocutor’s previous utterance (in bold in the transcription). The first form “*fini*” was taken up from a copular construction, and coded as having an adjectival rather than a temporal function.

Indeed, it was not used to refer to an action that had been carried out prior to SpT but rather to a present state – Christmas being over at the time of recording (the session took place on January 16). Anne took up a second past participle (“*apporté*”) from a *passé composé* form provided in her interlocutor’s previous utterance. This bare past participle was coded as building reference to the distant past rather than to the immediate past, as it was used to locate a situation that had been completed well before SpT, rather than in the moments preceding the form being used.

Among the forms used to locate situations in the immediate past, I further distinguished between forms analyzed as locating a situation prior to SpT as well as focalizing part of its posttime (a tangible result at SpT) and those that were analyzed as exclusively focusing a past situation. The past participle forms used by the observer and the child in extract 7.3.12 (“*attrapé*”) were analyzed as focalizing both the past situation as well as part of its posttime, or result at SpT.

Extract 7.3.12.

Sophie, 2;07.05

CHI: moi, je joue avec ça. (*I’m playing with that.*)

OBS: tu joues au ballon ? (*are you playing ball?*)

CHI: ouais. (*yes*)

OBS: tu veux m’envoyer le ballon je l’attrape ? (*do you want to throw me the ball so I catch it?*)

%sit: CHI and OBS start sending the ball back and forth.

OBS: attrapé. (*caught (it).*)

CHI: **attrapé.** (*caught (it).*)

Finally, perfective past tense forms were also used sporadically in child and adult data to build either future or atemporal reference. Because these were unfrequent values in the corpora, the present section focuses on the *passé composé* forms or bare past participles used to build either exclusive reference to the past or to build past reference as well as to focalize the events’ present result. The recording period was not split into two phases in French for several reasons. First, neither Anne nor Sophie used perfective past tense forms more consistently or frequently at the end of the period than at the beginning. Anne gradually used French less and less over the period, which resulted in fewer perfective past tense forms being used at the end of the period than at the beginning. Sophie used perfective past morphology throughout the period, but with a high degree of variability – the number of forms she used in each session varied greatly throughout the period. Moreover, she used significantly fewer past tense forms during the last two sessions, which would

have biased a comparison between the first and the second half of the recording period. Finally, she did not generalize the use of past perfective morphology across lexical aspect categories as consistently as the monolingual children whose productions were studied in this work. Contrary to Antoine and Anaé, there was no significant difference in Sophie's use of past perfective morphology with different types of predicates at the beginning and at the end of the period. The analysis of the temporal functions of the forms used with perfective past morphology by Sophie and to a lesser extent by Anne was thus conducted on the entire recording period.

Table 7.28 gives the temporal reference of the forms bearing past perfective morphology in child and adult data in both corpora over the recording period. As explained above, this section mostly focuses on the forms which were produced by the children to refer to the past, as this was the most frequent function of the past tense forms used by Anne and Sophie. I will also address the percentage of forms found in Anne's productions which were analyzed as having an exclusively present orientation, as it was both significantly higher than the one obtained for Sophie and close to the percentage of forms produced by Anne to build distant past reference. The adults in both corpora used past perfective morphology to locate situations in the distant past time (coded "pa") in similar proportions – 49% of the *passé composé* forms and past participles used by the adults in Sophie's corpus and 52% of those used by the adults in Anne's corpus served to locate situations in the distant past. The adults in both corpora also used past perfective morphology to locate situations in the immediate past in similar proportions – 46% of the *passé composé* or bare participle forms produced by the adults in Sophie's corpus and 41% of those produced by the adults in Anne's corpus were used to locate situations in the immediate past. The adults in Anne's corpus used past perfective morphology more frequently to build atemporal reference than the adults in Sophie's corpus (respectively 3% and 6% of the *passé composé* and past participle forms produced by the adults in Sophie's and Anne's corpora were used with this function). Conversely, the adults in Sophie's corpus used past perfective morphology to locate situations prior to SpT and focalize their result at SpT more often than what was observed in the productions of the adults in Anne's corpus – 21% of the forms bearing past perfective morphology in the productions of the adults in Sophie's corpus and 14% of those used by the adults in Anne's corpus were coded as both locating a situation in the immediate past and focusing its present result.

Despite these differences in the children's input, similar tendencies were observed in the children's productions. The most striking similarity was the proportion of forms bearing perfective past morphology produced by the children both to locate situations in the immediate past and focus part of their posttime, or present results. Around 60% of the *passé composé* and bare past participles used by Sophie and Anne were used with this temporal function, a proportion significantly different from what was observed in adult data. Moreover, both children also produced past perfective morphology much less frequently than the adults to locate situations in the distant (or indefinite) past.

Sophie	% PR	% FUT	% ATP	% PA	% PA-IMM	% PA-IMM (R)	Total Tok.
Child	3	4	1	12	19	60	73
Adult	2	0.2	3	49	25	21	520
<hr/>							
Anne	% PR	% FUT	% ATP	% PA	% PA-IMM	% PA-IMM (R)	Total Tok.
Child	13	0	3	16	3	65	31
Adult	0.3	1	6	52	27	14	351

Table 7.28: Temporal reference of the perfective past tense in adult and child data in Sophie and Anne’s corpora

Anne and Sophie differed slightly in the functions with which they used past perfective morphology – Anne used more forms bearing past perfective morphology with an adjectival value, with an exclusively present orientation while Sophie used more forms to locate situations in the immediate past without focusing their present result. Both children’s early uses of past perfective morphology in French appear to be rooted in SpT. Anne, who used past perfective morphology much less than Sophie, and did so mostly at the beginning of the recording period (27 of the 31 *passé composé* forms or bare past participles Anne produced over the period were used during the first five sessions), used *passé composé* forms and past participles either with an adjectival value or to comment on a past event which had yielded tangible results at speech time. Sophie, who used perfective past morphology more consistently than Anne, used it predominantly either to locate situations in the immediate past and focalize their present result, or to locate situations that had just been completed prior to SpT.

The differences between the functions served by forms perfective past morphology in Sophie’s and Anne’s productions may explain the differences observed in the children’s rates of association between past perfective morphology and lexical aspect categories relative to that of the adults in their corpora as well as to the productions of the French monolingual children studied in chapter 6. Indeed, both Anne and Sophie used *passé composé* and past participle forms more frequently than the adults either with an adjectival value, to refer to SpT, and to locate situations in the immediate past and focalize their present result. This can explain the children’s tendency to use past perfective morphology with telic predicates significantly more often than the adults throughout the period – such predicates entail a change-of-state and thus a resulting state at SpT, which can in turn be focalized by a past participle or *passé composé* form. Contrary to Anaé and Antoine, Sophie did not widely generalize the use of past perfective morphology across lexical aspect categories. She also did not use past perfective morphology to refer to the distant or indefinite past in similar proportions as the monolingual children studied in chapter 6. The analysis presented above of the temporal reference of forms bearing perfective past

morphology in the speech of Anne and Sophie in French confirmed the trends observed in the first and second sections of the present chapter, namely that the children followed the same path of development as the monolingual children under study, although at different rates. Both children's early uses of perfective past morphology appeared to be initially rooted in SpT, whether they were used with a non-finite, adjectival value to comment on a present state or with a temporal function, to locate situations in the immediate past when these had yielded a tangible result at SpT. The predicates first used with perfective past morphology by the children in the corpora were thus likely to be telic, as such predicates entail a change-of-state, and thus naturally allow speakers to focalize their resulting state.

The present section analyzed the associations between past morphology and temporal reference in French and in English in child and adult data in both corpora. It aimed at determining whether Anne and Sophie used the past forms available to them in their input with the same temporal functions as the ones identified in adult speech. This was done with several goals in mind. First, I wished to determine how the children's bilingual acquisition impacted the functional development of past morphology in their two languages. Then, I also wished to determine whether the preferential associations between tense morphology and lexical aspect observed in the children's productions could be explained by the temporal functions served by these forms. An important difference between Sophie and Anne lies in their use of their two languages – Anne gradually stopped speaking French during the period whereas Sophie used her two languages consistently, although she used French to a lesser extent than English. In both of their languages, the children first produced the forms that were most frequently provided to them in their input, and associated them with the most frequent functions they were served in adult data. This was supported for instance by the analysis of the children's use of present perfect forms, as differences between both the frequency and the temporal functions with which the children produced such forms were tied back to differences observed in their input. It suggests that children acquiring two languages follow similar acquisition paths as monolingual children, extracting frequent form-function pairings from their input and using these frequent associations first. In English, the previous sections showed that Anne produced more simple past forms than Sophie, and tended to generalize simple past morphology across lexical aspect categories in the second half of the period. The temporal functions served by the simple past forms she used over the period also tended to get closer to the distribution observed in her input – in particular, she used the simple past to locate situations in the distant past more frequently in the second half of the recording period, mirroring her input. Conversely, Sophie's use of simple past forms was more frequently anchored in SpT – she produced simple past forms to locate situations in the immediate past and to focalize the present result of past events more often than the adults in her corpus

throughout the period. Previous sections also showed that she did not generalize the simple past across lexical aspect categories as clearly as Anne did, suggesting a correlation between the temporal function served by simple past forms and the types of predicates simple past morphology was associated with. In French, although Anaé and Sophie's MLU values were very close at similar ages, Sophie did not diversify the functions served by perfective past morphology at the same rate as Anaé. She used perfective past morphology less frequently than both Anaé and the adults in her corpus to refer to the distant past, using it more frequently to locate predicates in the immediate past and to focalize their result at SpT. Moreover, Sophie appeared to diversify the functions with which she used simple past morphology in English before she produced French perfective past forms with more diverse temporal functions, suggesting that she developed her use of past tense forms with a greater variety of temporal functions at different rates in her two languages.

This chapter studied the productions of two French-English bilingual children in order to determine the impact of dual-language acquisition on the emergence of ATAM morphology, by analyzing the link between the children's and the adults' use of past tense-aspect morphology in both languages. The children's language dominance pattern was identified by analyzing tense diversity, the directionality of code-switching and the non-standard forms produced by both children. This showed that there was more diversity in the finite verb forms used by the children in English, and that both children produced more verb forms in the past in English than they did in French. Moreover, the children relied on English more frequently during the French sessions than they did on French during the English sessions, suggesting that they were both dominant in English. This might explain the non-target past tense forms produced by both children in French. Indeed, whereas previous findings on the acquisition of French had suggested that saliency of tense morphology would lead children to make more commission than omission errors in French, the most frequent deviation from standard forms identified in the productions of both children included omissions of tense morphology. This was interpreted as a sign of cross-linguistic influence from English to French. Both children predominantly used past tense-aspect morphology with telic predicates, although only the adults in Anne's corpus used such associations predominantly. This contradicts the claim made by the Prototype Account, which suggested that children initially overuse the most frequent form-function pairings identified in their input. I argue that the preferential associations observed in the speech of both children between past morphology and telic predicates may be explained by the temporal functions served by these forms. Indeed, both children used past tense-aspect morphology in French and in English more frequently than the adults in their corpora to build past reference at least partly rooted in SpT – to locate in the past either situations that they had witnessed being completed in the moments leading up to SpT or situations that had yielded a tangible result at SpT. The restriction of past verb forms to these temporal functions in the early productions of the children may explain why they both used past morphology predominantly with telic predicates, which imply a shift from an initial state to a resulting state and thus naturally lend themselves to focalize the post-state of a situation. This was supported by the analysis of the generalization path of simple past morphology identified in Anne's productions in English – as Anne gradually used the simple past across lexical aspect categories, she also used it more and more frequently to locate situations in the distant or indefinite past. Finally, the comparison between Sophie and Anaé's use of past morphology in French suggests that the acquisition of past morphology by bilingual children follows the same path as monolingual children. In French, her non-dominant language, Sophie appeared to follow the same acquisition path as Anaé although her use of past tense-aspect morphology did not develop at the same rate. In English, a

comparison between Anne and Sophie's use of simple past morphology also suggests that bilingual language use may impact the children's rate of acquisition of tense-aspect morphology. Indeed, Anne, who used only English consistently throughout the period also generalized the use of simple past morphology sooner than Sophie – by the end of the period, Anne used simple past forms across lexical aspect categories and with temporal functions that approximated the functions identified in her input while Sophie's use of simple past morphology still significantly differed from her input.

Chapter 8

Later development of ATAM morphology: bilingual children's use of tense-aspect morphology in narrative discourse

In this chapter, I analyze the narrative productions of the children recorded as part of the *Brunet* corpus. Six children were recruited; three were living in London at the time of recording, and three were living in Paris. The study was conducted in order to determine the impact of language dominance factors, of narrative abilities and of task-type effects on the children's use of past tense-aspect forms in narrative discourse.

Language dominance effects were considered in order to determine whether they impacted the use of tense-aspect morphology in the narrative productions of children in later stages of linguistic development as much as what was observed in the spontaneous productions of the two bilingual children whose productions were analyzed in chapter 7. It has been shown in the literature that children's narrative development is in part related to their use of tense-aspect morphology (Berman and Slobin, 2013; Bamberg and Reilly, 2014). I questioned whether this would be the case for all the bilingual children under study in their two languages, or whether children who had reached later stages of narrative development in their dominant language would also produce more complex narratives in their non-dominant language. Finally, I predicted that different types of narrative tasks may yield differences in the children's use of tense-aspect morphology and attempted to identify these task-types effects.

The children's narrative productions were recorded in three different settings and during two recording sessions set approximately a year apart. In the first setting, the children were asked to narrate the story of a wordless picture book as they went through the pages.

It was used to yield third-person narratives partly linked to the situation of utterance, as it was based on the pictures which the children saw while they were narrating. In the second setting, they participated in a narrative retell task – the children were asked to retell the story of a short video clip after having watched it. It was aimed at eliciting third-person narratives fully displaced from the situation of utterance and was expected to be cognitively harder for the children. Moreover, it was expected that it might yield the use of more past tense-aspect forms used to locate events prior to SpT rather than to organize them in a narrative. The third setting was a spontaneous discussion between the interviewer and the child, which aimed at yielding personal narratives. These were defined as the narrative of any past event, regardless of length.

This chapter is divided into two main sections: the first section of the chapter is dedicated to the structural description of the children’s narrative productions in the three different settings in both of their languages, during the two recording sessions. As explained in chapter 3, I used Applebee’s narrative stages to analyze the children’s narrative development on the macro-structural level, based on their productions in the first setting. Table 8.1 was initially presented in chapter 3 and is replicated below. It presents the names of the five narrative stages identified by Applebee (1978) along with the main characteristics I used to analyze the children’s productions in their two languages. In conducting the structural analysis of the children’s productions, I focused on their ability to include story grammar episodes (a setting, an initiating event, mention of the characters’ reactions and of their effect, a conclusion and a resolution) into a coherent production, on their use of temporal and causal connectors to organize events in their narrative as well as on their ability to maintain focus on an overarching theme or character.

Stage	Age	Description
1: Heaps	[2;00–3;00]	Description of actions or events, no apparent organization. Frequent topic/perspective switches.
2: Sequences	[3;00–4;00]	Labeling of events, connected to a central character or theme somewhat arbitrarily. No plot.
3: Primitive narratives	[4;00–4;06]	Appearance of three story grammar episodes (initial event, action, consequence). No clear ending.
4-5: Focused and unfocused chains	[4;06–5;00]	Emergence of cause/effect relationships and additional reliance temporal relationships although plot is weak (poor cohesion, ending difficult to understand). Frequent focus shifts in stage 4, resolved in stage 5 (clear focus on character or central theme).
6: True narratives	[5;00–7;00]	Include five story grammar elements, clear ending. Logical sequencing of events according to temporal organization, clear plot and motivations.

Table 8.1: Applebees’ Narrative stages (1978)

The second section of this chapter focuses on the use of past tense-aspect morphology in the children's productions. I first compare the children's use of tense-aspect forms in the three settings, in order to identify dominance or task-type effects. I then turn to the functions served by the finite forms used by the children in the narrative tasks. In narrative discourse, past tense-aspect morphology may be used both to order events relative to a narrative timeline, as well as to serve grounding functions. Grounding refers to a distinction that is often used in studies on narrative discourse between foreground clauses and background clauses (Bamberg, 2011). Foreground clauses move the narrative forward. They tend to report events that are "actually occurring in the narrative world, as opposed to being merely talked of, expected or hypothesized" (Dry, 1983). On the contrary, background clauses evaluate or elaborate on events reported in foreground clauses (Hopper, 1979; Bamberg, 2011). They provide supportive material, rather than relating main events. As children's proficiency rises, so does the number of background clauses they use in oral narratives (Bamberg, 2011; Berman and Slobin, 2013). This section thus analyzes children's use of finite forms to serve these two functions, i.e. to order events temporally and hierarchically. It also investigates the link between the children's use of past tense-aspect morphology and their narrative abilities in their two languages (Bamberg and Reilly, 2014). I wondered in particular whether the children used past tense-aspect forms with the same functions in their two languages during both recording sessions. Finally, section 8.2.4 provides a summary of the interactions identified between the children's use of tense-aspect morphology, their narrative development and their language dominance pattern.

8.1 Structural analysis of the children's narrative productions in both their languages

This chapter addresses the link between the children's developing narrative abilities, the task presented to them and their use of tense-aspect morphology in both of their languages. I investigate in particular the children's ability to produce a coherent narrative in the same setting in their two languages, despite differences in the linguistic means at their disposal.

This is meant to question first whether narrative competence may be transferred from one language to another, as well as the extent to which children can provide coherent narrative productions despite differences in their linguistic abilities.

The present section thus describes the structure of the children's narrative productions in their two languages in the three settings they were recorded in during the two recording sessions.

8.1.1 Description of the settings and of the visual media used to elicit narratives

8.1.1.1 Setting 1: narrative task based on a wordless picture book

The children were first recorded as they were asked to narrate the story of a picture book. Two different books were used to elicit narratives in French and in English, both taken from picture books written by Mercer Mayer and part of the Frog Collection¹. The book used in the English sessions included 28 pictures, and the book used in the French sessions contained 24 pictures.

The children were all asked to flip through the pictures once before going back to the beginning to tell the story. They were given a choice between either holding the book and turning the pages themselves or letting the interviewer do it. I was assisted in the recording sessions in English by interviewers, who elicited the children's productions while I operated the camera. These interviewers were encouraged to let the children narrate on their own as much as possible, but to provide backchannelling if they saw the children were struggling with the task – this was done in order to counterbalance the effect of putting the children in an intimidating setting, in which the children were familiar neither with their interlocutor nor with the tasks.

The first task was the one in which the children produced the longest and most developed narratives. The description of the children's productions thus relied on Applebee's narrative stages (Applebee, 1978). I considered in particular the children's ability to include story grammar episodes, to sequence these episodes and to link them with one another using the appropriate cohesive ties.

The analysis of the children's inclusion of the necessary story grammar episodes focused on five episodes identifiable in the two wordless picture books used to elicit the productions in French and in English – the setting, the initiating event, the characters' reactions, the resolution and the conclusion. These are described in table 8.2. It shows in particular that the story grammar unit which contained the highest number of episodes was the characters' reactions – this corresponded to the bulk of the narrative, and it was expected that this unit would yield the highest number of clauses in the children's productions. The initiating event and its resolution were shorter units – they each corresponded to only two pictures in the wordless picture books used during the French and English sessions. However, they are central to the structure of children's narratives – children's ability to include an initiating event in their narrative is what distinguishes the third stage of narrative acquisition from the first two stages described by Applebee (1978). The inclusion of a resolution and a conclusion in their narrative productions is what distinguishes the

¹In French, the task was based on the story called *Frog where are you?*, written by Mercer Mayer and first published in 1969; in English it was based on the story called *A boy, a Dog, a Frog, and a Friend*, written by Mercer and Marianna Mayer and first published in 1971.

	Setting	Initiating event	Character's reactions	Resolution	Conclusion
Picture number (French)	1	2-3	4-21	22-23	24
Picture number (English)	1-2	3-4	5-25	26-27	28
Description of the narrative events (French)	A boy and a dog have caught a frog which they are keeping in a jar.	The frog escapes from the jar while the boy and the dog are sleeping.	The boy and the dog look for the frog; first by calling it out the window, then across the woods where they encounter several animals (bees, a mole, an owl, a deer).	The boy and the dog hear noises behind a log and realize it is their frog, who has found a partner and had children.	The boy and the dog leave with one of the smaller frogs, waving goodbye to the frog family.
Description of the narrative events (English)	A boy is fishing with his dog and his frog.	The boy catches something too heavy for him to pull out and falls into the water.	The boy and his friends realize that a turtle has caught their fishing rod. They try to get it back. The dog gets bitten by the turtle, who ends up in the water. She turns belly up, leading the boy to take her to shore and start digging a hole to bury it.	The turtle wakes up and reaches for the fishing rod again. The boy and his friends notice the turtle is alive and rejoice that she is not dead after all. They take the turtle in their arms.	The boy, the dog, the frog and the turtle walk away together as friends.

Table 8.2: Description of the story grammar units identified in the wordless picture books used to elicit narratives (first setting)

stage of True Narratives – the last stage described by Applebee (1978) – from the first five stages.

8.1.1.2 Setting 2: short video-clip retell

In the second setting, children were asked to retell the story of a short wordless video clip immediately after having watched it. This task was used in order to compensate for the pitfalls of the first narrative setting. I predicted that the second setting would be less likely to prompt descriptive productions than the first one, in which the children could rely on a visual medium to tell their narrative. However, previous studies have also suggested that this task was more cognitively demanding for the children, and I predicted that this might lead the children to produce shorter narratives. I wondered whether in the second

	Setting	Initiating event	Character's reactions	Resolution	Conclusion
Description of the narrative events in "Jerry and the egg" (2'39")	A bird is knitting in her nest, she checks her watch and leaves the nest after having put up a sign.	The egg starts moving and falls off the nest. During its fall, the egg goes through a spider web, lands on a flower then on a blade of grass which leads it into Jerry's house. The egg rolls into the bed where Jerry is sleeping and wakes him up.	Jerry wakes up; the egg hatches and a woodpecker comes out. The woodpecker starts pecking away at Jerry's furniture and house (a dresser, a lamp and a wall). Jerry catches the bird by the beak and gestures for him to stay put while he fetches a cracker. As Jerry is feeding him by hand, the woodpecker eats the cracker up and pecks at Jerry's arm. Jerry sets himself free and sits on a wooden stool which the bird pecks away at. Jerry is mad after falling on the ground and takes the bird out of his house.	As he walks into the garden, Jerry notices the nest on top of a branch and decides to return the bird to its nest.	Jerry sets the bird back in its nest, covers it up with a blanket and waves goodbye before walking back to his house.

Table 8.3: Story grammar units in the video clip used to elicit narrative retell productions in French

setting, where the children could not rely on any visual medium, differences would be observed in the story grammar units they included in their narrative productions in their two languages. I also questioned whether the same task-type effects would be identified in the children's two languages. Both clips were extracted from Tom and Jerry cartoons, and they both lasted a little over two and a half minutes. The video clips used to elicit narratives in the second setting are accessible here: https://drive.google.com/drive/folders/141jdqHMPDX6rTtpHS938zvwpqxc9_MFr?usp=sharing. They were selected for their similar length as well as because they both depicted sequenced and repetitive events. The story grammar units included in each video clip are described in tables 8.3 and 8.4. In this setting, the children produced narratives that were usually short and omitted story grammar units, leading the interviewer to question the children further so that they would elaborate.

8.1.1.3 Setting 3: spontaneous interview

The interview setting was used to yield personal narratives – the children were asked about past events. The questions were adapted to the time of the recording – if the recording took place not long after the holidays, the children were asked about their vacation; if not, the children were asked about their past week or week-end. It was expected that in these types of narratives, the children would use more diverse syntax and tense-aspect forms, because narrating a past event is less cognitively demanding than telling an unfamiliar

	Setting	Initiating event	Character's reactions	Resolution	Conclusion
Description of the narrative events in "Tom, Jerry and the fish" (2'45")	Tom is cooking a goldfish in a frying pan.	As Tom is about to gulp down the fish, Jerry hits Tom with a frying pan and gets Tom to open his mouth so he can steal the fish. The fish jumps in a cup full of water Jerry is holding.	Jerry runs through a radiator and a mouse hole; Tom squeezes through behind him. Jerry holds out an iron to stop Tom. Tom gets a pistol and shoots the cup and steals the fish. Tom tries to roast it over a fire. Jerry upends a bucket onto Tom's head and runs away with the fish. Tom snaps the carpet and sends the fish into the toaster. Tom is preparing a fish sandwich; Jerry sticks his tail in the clothes roller and Tom gets flattened. Tom holds a saucepan above Jerry's hole and captures the fish upon Jerry's return. He moves a cabinet in front of the hole and goes to the kitchen. Jerry takes an alternate road and finds Tom cooking, the fish underneath his foot. Jerry substitutes Tom's tail for the fish and a dynamite stick for the carrot Tom is about to chop. Tom sees his tail turning red and realizes the dynamite stick he has added to the pot is about to explode. He runs outside and braces for the explosion.	Once the explosion has passed, Tom is relieved to see that only part of his tail has been burnt. He opens the door to go back inside and realizes the porch he is standing on has been blown away and he is speeding away from earth.	Tom is flying away from the earth which is seen getting smaller and smaller.

Table 8.4: Story grammar units in the video clip used to elicit narrative retell productions in English (extract from Jerry and the Goldfish, 1951)

story like the ones the children were asked to narrate in the first and second settings. However, several factors impeded the collection of personal narratives. First of all, the spontaneous interview took place at the end of the session. This was done purposefully, because I wanted the longer and more cognitively straining tasks to occur at the start of the recording. The pitfall of this was that by the time we began the spontaneous interview, the children had already participated in two narrative tasks and were less involved in the interaction. This translated into them not expanding on their answers, leading the interviewer to try to make them more at ease. This often shifted the focus from trying to elicit personal narratives to trying to elicit speech. In these cases, the types of questions sometimes led the children to answer with habitual statements rather than to narrate past events. In future projects, I will also pay closer attention to training the interviewers – in particular, I think it would be very useful to recruit children with whom the recording settings could be tested, in order for the interviewers to get a sense of the task and of their role before the actual recording sessions took place.

In this chapter, I focus on portions of the interview setting in which the children produced personal narratives. Topic-switches were analyzed as marking the beginning of a different personal narrative. These were mostly short in the youngest children's productions and were longer in the older children's productions, as predicted in the literature.

8.1.2 Description of Lucas' productions in the three settings

Lucas is the oldest child of the *Brunet* corpus. He lived in London, and the analysis of his language choices presented in chapter 5 suggested that he was dominant in English at the time of recording. Lucas' narrative productions were first recorded in French, when he was 6;04 and then in English when he was 6;06. A year later, his narrative productions were recorded once again in the same order, in French when he was 7;05 and in English when he was 7;08.

8.1.2.1 First setting: wordless picture book

During both French sessions, Lucas held the book in his hands and turned the pages himself. During the first English session, the interviewer held the book while Lucas turned the pages, whereas in the second English session Lucas held the book and turned the pages himself.

During the first recording session, Lucas produced more utterances in English in the first setting, and also used longer utterances in English than in French. He used 27 utterances in his production in French against 47 utterances in his narrative in English. His MLU in English was 8.2 whereas his MLU in French was 6.8. This was consistent with

Lucas' dominance pattern – it was expected that he would produce longer narratives in his dominant language.

Lucas' first narrative productions in French and in English both contained the three initial story grammar units – the setting, the initiating event and at least part of the characters' reactions, as illustrated by extracts 8.1.1 and 8.1.2.

Extract 8.1.1.

Lucas, 6;04 – Setting 1 (French, first session)

Link to video: https://drive.google.com/file/d/1YgGTD0wdcmiGXrCSPqswE8_HgspnawAG/view?usp=sharing

1YgGTD0wdcmiGXrCSPqswE8_HgspnawAG/view?usp=sharing

CHI: ++ il était un petit garçon avec un chien et une +//. (*a little boy with a dog and...*)

INT: si tu connais pas le mot tu peux l'appeler comme tu veux. (*if you don't know this word you can call it what you want.*)

INT: tu peux lui donner un nom. (*you can give it a name.*)

CHI: pierre.

INT: d'accord. (*alright.*)

INT: quand tu penses que tu as fini cette page tu peux tourner (.) et continuer l'histoire. (*when you are done with this page you can turn it and continue your story.*)

CHI: et après il a fait dodo. (*and then he slept.*)

CHI: et le [//] pierre est sauté de le jar@s. (*and pierre jumped out of the jar.*)

CHI: et après il a réveillé. (*and then he woke up.*)

CHI: et il a dit oh non où est pierre ? (*and he said oh no where is pierre?*)

CHI: et il a cherché pour pierre. (*and he looked for pierre.*)

Extract 8.1.1 also illustrates a number of characteristics of Lucas' narrative production in French during the first recording session. Lucas was prompted to use the phrase “*il était une fois*” – he was asked if he knew how stories started in French and was provided with the beginning of the phrase (“*il était...*”). Lucas did not use the full phrase, suggesting that he might be less familiar with narrative productions in French than in English. Indeed, extract 8.1.2 shows that Lucas used the phrase “once upon a time” spontaneously to begin his narrative. Extract 8.1.1 also shows Lucas struggling with vocabulary items in French – he stopped during his first utterance, visibly not able to retrieve the noun “*grenouille*” in French. Later on, he filled another lexical gap in French by relying on English, using the word “jar” for its translation equivalent “*bocal*”. Conversely, extract 8.1.2 shows that Lucas did not rely on French in his narrative in English, supporting the observation made

in chapter 5 that Lucas' dominant language was English at the time of recording. Another difference between Lucas' productions in French and in English during the first recording session was linked to prosody. First, his speech was less fragmented in English than it was in French – in French, Lucas paused more often within segments. Lucas' productions was also more monotone in French than in English, where his intonation pattern was more characteristic of the prosody typical of child narratives. In English, Lucas marked the end of utterances by a falling contour and more frequently reset his pitch at the beginning of new utterances; conversely, in French, the prosodic contours of his utterances were less marked.

Extract 8.1.2.

Lucas, 6;06 – Setting 1 (English, first session)

Link to video: <https://drive.google.com/file/d/1Nkq0iHuzgxUa36DM9xAr-aVjL-Z519aY/view?usp=sharing>

1Nkq0iHuzgxUa36DM9xAr-aVjL-Z519aY/view?usp=sharing

CHI: once upon a time there was a boy who was fishing for some fish.

CHI: and then it was really hard to pull out.

CHI: then he nearly hurt himself.

CHI: and then he spl- [///] he went forward.

CHI: then he splashed himself into the water.

CHI: and the dog and the frog came to get him (.) and rescue him.

CHI: and he said look it's the turtle (.) <who has the book> [///] who has our anchor.

CHI: **so** let's go and get it now.

Extracts 8.1.1 and 8.1.2 also illustrate several linguistic similarities between Lucas' narrative productions in French and in English during the first recording session.

Lucas used similar temporal connectors to present the events in sequence in his two languages: “*et*” and “*et après*” in French, and “and” and “and then” in English. The use of “and” or “then” to connect events in a narrative is typical of children's narratives around five years old, a time when they also start using more causal connectors and more complex sentences (Berman and Slobin, 2013). In English, Lucas also used the connector “so”, whereas he used no causal connector in French. Another difference lies in the way Lucas used pronouns and maintained referential chains in English and in French. Extract 8.1.1 includes frequent focus shifts in French – Lucas shifts the focus from the boy to the frog getting out of the jar and back to the boy waking up to find his frog gone. A characteristic of these focus shifts in French was that they were not made explicit by clear referential chains – the antecedent of the pronoun “*il*” (in bold in the extract) was ambiguous. In English, his narrative was more consistently focused on the boy, presented as the main character.

In terms of story grammar units, Lucas' first narrative productions in French and in English included mention of a setting, of an initiating event, and of the characters' plan or initial motivation. Moreover, they also included at least some of the characters' reactions to the initiating event. However, both lacked a clear ending – Lucas mentioned the ending in his productions in his two languages, but he did not clearly present the ending as a resolution of the initiating event. This is illustrated by extracts 8.1.3 and 8.1.4, which were taken from the end of Lucas' narratives in French and in English during the first recording session. As shown in extract 8.1.3, in his first narrative production based on a wordless picture book in French, Lucas mentioned part of the ending, although it was provided in fragmented units.

Extract 8.1.3.

Lucas, 6;04 – Setting 1 (French, first session)

Link to video: https://drive.google.com/file/d/1YgGTD0wdcmiGXrCSPqswE8_HgspnawAG/view?usp=sharing

CHI: et il a être dans le [/] l'eau. (*and then he was in the water.*)

CHI: et après il a dit à le chien il est là (.) pierre. (*and then he told the dog pierre is here.*)

CHI: au-revoir pierre. (*bye pierre.*)

CHI: au-revoir le famille. (*bye family.*)

In this extract, Lucas mentioned the resolution of the story – the boy and his dog finding their frog – although the link between this episode and the previous ones was not made explicit. It appears in this extract that Lucas has understood the overarching plot of the narrative, namely that the child and his dog did not find just any frog, but rather found the one that had escaped at the beginning of the story. However, he did not mention that the story ended with the boy and his dog leaving with one of the frogs, which completes the resolution of the initiating event. In short, he did not fully tie the ending back to the initial event, which weakened the plot of his narrative overall.

Extract 8.1.4 is taken from the end of Lucas' narrative production based on the wordless picture book in English during the first session. It shows similarities in the ways Lucas handled the end of his narrative production in his two languages.

Extract 8.1.4.

Lucas, 6;06 – Setting 1 (English, first session)

Link to video: <https://drive.google.com/file/d/1Nkq0iHuzgxUa36DM9xAr-aVjL-Z519aY/view?usp=sharing>

CHI: and then he said oh no the turtle has died.
 CHI: and they yyy +//.
 CHI: and they liked it.
 CHI: and [/] and they [//] and the [/] and the boy killed him.
 CHI: and after um the frog was really angry of the dog.
 CHI: and [/] and the boy was angry of the dog and the frog was angry of the [/] of the boy.
 CHI: and the boy walked away with the turtle.
 CHI: and the frog followed him.
 CHI: and the dog did not really like it.
 CHI: and then he changed his mind and he did not take the turtle.
 CHI: and he took all of his friends.
 CHI: and then he dug some place for the turtle to live.
 CHI: and then he was awake again.
 INT: mhmh.
 CHI: and he said oh you are just a little turtle.
 CHI: and everybody was happy again.
 CHI: and they jumped him up [/] up and down.
 CHI: they were all happy.
 CHI: and they all walked home.

This extract shows that the resolution was slightly more developed in Lucas' production in English, but that he still did not clearly tie the ending back to the initiating event. In particular, because Lucas did not build on the characters' motivations, it was unclear in Lucas' narrative how the ending was related to the initiating event. During the first recording session, the narratives produced by Lucas in English and in French in the first recording setting were analyzed as Narrative Chains, in Applebee's terminology – his narrative in French was analyzed as an Unfocused Chain due to the frequent focus shifts, and his narrative in English was analyzed as a Focused Chain.

Lucas' narrative productions were recorded a year later in the first setting using the same wordless picture books, when he was 7;05 in French and 7;08 in English. Although he still tended to use shorter utterances in French, he used almost the same number of utterances in his two languages – he produced 48 utterances with a MLUw of 9.8 in English, and 41 utterances in French, with a MLUw of 7.2.

During the second session, Lucas once again did not use the phrase "*il était une fois*" in French, whereas he used the phrases "once upon a time" and "they lived happily ever after" in English. This suggests once again that he was more familiar with the narrative genre in English than he was in French. Regardless, his narrative productions evolved in

terms of narrative structure in both of his languages. In addition to the initial narrative units he included in his first narratives in French and in English (the setting, the initiating event, the characters' reaction), Lucas now also included a resolution and a conclusion. These were not solely mentioned but also tied back more clearly to the initiating event, making for a stronger plot overall. Extract 8.1.4 is taken from the end of Lucas' second narrative production in the first setting in French.

Extract 8.1.5.

Lucas, 7;05 – Setting 1 (French, second session)

Link to video: <https://drive.google.com/file/d/1TXxas4W8mgRANNOV95Ax7NQpYyri0WaM/view?usp=sharing>

1TXxas4W8mgRANNOV95Ax7NQpYyri0WaM/view?usp=sharing

CHI: ah regarde je entends des grenouilles. (*look I can hear frogs.*)

CHI: sh le garçon a dit à le chien. (*sh the boy said to the dog.*)

CHI: il a monté. (*he climbed.*)

CHI: et après il a vu une +//. (*and then he saw a...*)

%sit: CHI gets mixed up in the pages and ends up opening the book in the middle.

INT: regarde tu en étais là tu te rappelles ? (*look you were there, remember?*)

INT: il monte [//] il a monté +... (*he climbed...*)

CHI: il a monté. (*and then he climbed.*)

CHI: et après il a vu deux grenouilles. (*and then he saw two frogs.*)

CHI: et après il a vu des bébés grenouilles. (*and then he saw baby frogs.*)

INT: mh.

CHI: um le garçon a pris le grenouille. (*the boy took the frog.*)

CHI: et après il a pas partir um. (*and then he did not leave.*)

CHI: il dit au revoir le famille de grenouilles. (*he said goodbye to the frog family.*)

Contrary to what was observed in his first production, Lucas' second narrative in French included an explicit resolution – the child hearing the frogs and finding the frog surrounded by baby frogs – as well as a partial conclusion – the child leaving with one of the frogs and waving the family goodbye. In this sense, his narrative production during the second session in French was more complex than during the first session. In both sessions however, Lucas produced non-standard past verb forms in French, which are usually found in the speech of younger monolingual children (Parisse et al., 2019). These included forms in which the child selected non-target forms either of the auxiliary or of the lexical verb, or both (“*il a pas partir*”). At a similar age in English, Lucas used past verb forms in a target-like way. This can be explained by Lucas' reduced exposure to French, a language

which he used on a daily basis mainly to interact with his mother. It can reasonably be assumed that he was thus exposed to less tense-aspect forms in French, in less varied situations, and with fewer interlocutors than in English.

Extract 8.1.6 is taken from the end of Lucas' narrative production on the wordless picture book during the second recording session, and illustrates Lucas' target use of past verb forms in English.

Extract 8.1.6.

Lucas, 7;08 – Setting 1 (English, second session)

Link to video: https://drive.google.com/file/d/1hbK26bDc0LsgdQpN_mFS1Ako_ZmBb8Si/view?usp=sharing

CHI: they decided to dig whilst the tortoise was still dead.

CHI: but no the tortoise was just tricking the others.

CHI: he [/] he walked across <the pale> [/] the pale sand.

CHI: and held a stick with the frog and the dog looking at the tortoise launching off.

CHI: but he was actually a very nice tortoise.

CHI: he was just warning them.

CHI: he was just warning them from the [///] to be safe from the sharks in the river.

CHI: so they decided to raise the [/] <the frog> [///] the tortoise.

CHI: <and they> [///] and the tortoise decided to go back home peacefully and soundly.

CHI: and they lived happily ever after.

Despite these differences in the proportion of target forms he used in his two languages, Lucas' narratives in French and in English shared similar characteristics.

His production in the first setting in English included not only a mention of the final episodes, but also explanations to tie the final events to the rest of the plot, as well as a conclusion that included comments on the characters' motivations. In extract 8.1.6, Lucas' ability to comment on the characters' motivations was linked to his ability to backtrack in his narrative, to explain the characters' actions in light of the resolution.

Lucas' second narratives based on the wordless picture book in French and in English were analyzed as True Narratives, in Applebee's terminology. Indeed, they both focused on a central character, and included all story grammar episodes – the setting and initiating event, as well as the characters' reactions and attempts at resolving the situation and finally a resolution and conclusion. Lucas was thus able to include all five story grammar

episodes and to build a coherent plot overall in both of his languages despite unequal linguistic means to do so. During the second session in English, he used more syntactically complex sentences in the first setting than he had both during the French sessions and in the first session in English. This was consistent with the predictions made for children between seven and nine years old (Berman and Slobin, 2013). He used causal and temporal connectors, as well as more adverbs than he had used during the first recording session, as illustrated by extract 8.1.7.

Extract 8.1.7.

Lucas, 7;08 – Setting 1 (English, second session)

Link to video: https://drive.google.com/file/d/1hbK26bDcOLsgdQpN_mFS1Ako_ZmBb8Si/view?usp=sharing

CHI: **and** the dog was licking its paw with the frog staring at him harshly.

CHI: **until** +//.

CHI: the dog's tail was in the pond **until** something was on it.

CHI: <it was> [/] it was something small.

CHI: **and then** the dog drowned.

CHI: **before** the dog drowned the frog <leaped up on the> [///] leaped up and decided to find him.

CHI: **and** he **finally** caught the tortoise off <from the> [/] from the (.) dog's tail.

CHI: he leaped onto his leaf **and then** the dog was **still** in the water.

CHI: **but** the boy decided to take off his [/] his clothes to get in the water to save the dog.

INT: mhmh.

CHI: **when** he had finished the [///] jack [/] jack put [///] decided to put on his clothes.

CHI: and the frog looked in the water.

In addition to the coordinating conjunctions “and” and “and then”, which Lucas had used predominantly in his first narrative production in English, he also used the subordinating conjunctions “before” and “when” to head adverbial clauses, as well as more temporal adverbs in his second production in English than in the first (in bold in the extract). This diversification of temporal connectors and adverbs was not observed to the same extent in his productions in French, although his second narrative in French was characterized by a higher degree of syntactic complexity relative to his first production. This is illustrated in extract 8.1.8.

Extract 8.1.8.

Lucas, 7;05 – Setting 1 (French, second session)

Link to video: <https://drive.google.com/file/d/1TXXas4W8mgRANNOV95Ax7NQpYyri0WaM/view?usp=sharing>

CHI: **quand** le chien et le garçon fait dodo la grenouille a s'enlève [/] enlevé de le um bol. (*when the dog and the boy sleep the frog came out of the bowl.*)

INT: oui (.) du bol oui. (*of the bowl yes.*)

CHI: **et quand** le garçon a réveillé <le mat-> [//] ce matin. (*and when the boy woke up this morning.*)

CHI: il [/] il [/] il a dit oh non il est où mon grenouille ? (*he said oh no where is my frog?*)

CHI: il a cherché partout mais il a pas trouvé. (*he looked everywhere but did not find it.*)

CHI: il a dit grenouille tu es où (.) dehors ? (*he said frog where are you, outside?*)

During the first recording session in French, Lucas had used simple clauses, coordinated by the conjunction “*et*”. In the second recording session, he used adverbial clauses in French, not merely to order events sequentially but also to present events as co-occurring. However, he did not use temporal adverbs as consistently in French as he did in English.

8.1.2.2 Second setting: narrative retell

During the first recording session, Lucas’ spontaneous productions on the narrative retell task were short in both of his languages, although it was slightly longer in English than in French – his narrative included eight utterances in English and five utterances in French. They are both reproduced in full in extracts 8.1.9 and 8.1.10.

Extract 8.1.9.

Lucas, 6;04 – Setting 2 (French, first session)

Link to video: https://drive.google.com/file/d/1EUqFfzcG-65uj67gOE_Knp5_aSGMwG-B/view?usp=sharing

1EUqFfzcG-65uj67gOE_Knp5_aSGMwG-B/view?usp=sharing

CHI: um il a [/] il a um le bébé [//] le grand (.) a dit um quoi um mange pour dix minutes. (*he um the baby the big one um said what, eat for ten minutes.*)

CHI: et après c’est [/] c’est tombé et +//. (*and then it fell.*)

MOT: qui est tombé ? (*who fell?*)
 CHI: le bébé. (*the baby.*)
 CHI: et après il est <dans le> [/] dans le chambre de jer- [//] de [/] de tom. (*and then he is in tom's room.*)
 CHI: <et après il a> [/] après il <a met> à la place de le bébé. (*and then he put it in the baby's spot*)
 CHI: et il a marché à la maison. (*and then he walked home*)

Extract 8.1.9 shows that Lucas' narrative production in French included a setting, an initiating event and the story's resolution. It did not include a mention of the characters' reactions, which made up the bulk of the video clip he had watched. Moreover, his narrative retell of the video clip during the first session in French was characterized by unclear referential chains, as Lucas used the third-person pronoun “*il*” to refer to the two characters of the clip indistinctly. In extract 8.1.9, it was used to refer to Tom in the last two utterances and to refer to the other character in the first utterances of his narrative. Finally, Lucas' production in French in the second setting also included more hesitation markers and repetitions than what was observed in his production in English (reproduced in extract 8.1.10).

Extract 8.1.10.
Lucas, 6;06 – Setting 2 (English, first session)
Link to video: https://drive.google.com/file/d/1FSY9hT05mR3p4Tl78T1__6-T6UoQj4r4/view?usp=sharing
 CHI: tom wanted the fish to eat.
 CHI: but the mouse is very kind.
 CHI: so he tried to get back to his home.
 CHI: and then he was turning all different shapes.
 CHI: and then he took him every time.
 CHI: then (.) [/] then [/] then [//] <and he> [/] and he took the (.) fish from him.
 CHI: <and then> [/] and then tom was alright.
 CHI: and he had the fish home.
 CHI: the end.

Lucas also required less elicitation in the second setting in English than he did in French. Moreover, while Lucas had used exclusively the temporal connectors “*et*” and “*et après*” in French, he used the causal connector “*but*” in his production in English to

mention the character's mental state as a justification for subsequent narrative events – he commented on the mouse being kind to explain why she tried to save the fish from Tom. Finally, his production in English included more story grammar units than his production in French – it included a setting, an initiating event, the characters' reactions as well as a partial resolution and a conclusion. However, similarly as in French, Lucas mentioned the events in his narrative without explicitly tying them to one another. For instance, Lucas mentioned the fact that Tom was alright although he had not narrated the episode which could have entailed that he would not be (the house blowing up). Similarly, Lucas' utterance "he was turning all different shapes" is difficult to make sense of, as Lucas did not mention Tom squeezing through narrow places to chase Jerry and the fish.

During the second recording session a year later, Lucas' narrative production in French in the second setting was roughly the same length as his production during the first session, while his narrative retell in English was much longer in the second session than in the first. The second narratives Lucas produced in the second setting in French and in English are reproduced in full in extracts 8.1.11 and 8.1.12.

Extract 8.1.11.

Lucas, 7;05 – Setting 2 (French, second session)

Link to video: <https://drive.google.com/file/d/11CNdWr4nMHYxHiNpYs50cIbzjNdCHI8h/view?usp=sharing>

CHI: um une petite fois il y a une coq. (*a little time there was a rooster.*)

CHI: et le coq a eu une petite (.) mh oeuf. (*and the rooster laid a small egg.*)

INT: oui très bien. (*yes right.*)

CHI: et le oeuf a craqué. (*and the egg cracked.*)

CHI: dans le oeuf [/] oeuf il y a eu une toute petite oiseau. (*in the egg there was a tiny tiny bird.*)

CHI: l'oiseau a été [///] a [/] a [/] a tourné beaucoup beaucoup beaucoup. (*the bird turned many many times.*)

CHI: et après il est [//] il a vu une [/] une euh +//. (*and then he saw a...*)

INT: l'autre animal c'est ça une souris ? (*the other animal right, a mouse?*)

CHI: 0.

%gpx: CHI nods.

INT: oui ? (*yes?*)

CHI: une souris. (*a mouse.*)

CHI: um le souris a [/] a [/] a dit ah bonjour. (*the mouse say oh hello.*)

CHI: et après le oiseau a [/] a fait comme ça xxx. (*and the bird went like this.*)

%gpx: CHI mimicks a woodpecker pecking away.

CHI: c'est fini. (*that's it.*)
 INT: oui tu te rappelles ce qu'il +/ ? (*yes and do you remember what he...*)
 CHI: non non et aussi il a met le oiseau <dans le> [/] dans le +... (*no no also he put the bird in the...*)
 INT: comment on appelle ça ? (*how is that called?*)
 INT: dans son nid. (*in his nest.*)
 CHI: dans le lit. (*in his bed.*)
 CHI: et après il a couvrir. (*then he covered it.*)
 INT: oui oui. (*yes right.*)
 CHI: et après il a parti à la maison. (*then he went home.*)

Extract 8.1.11 shows that Lucas produced eleven utterances in his second narrative retell in French, which included a mention of the setting, the initiating event as well as the characters' reactions and part of the resolution of the story. His second narrative retell in French thus included more story grammar units than the one he had produced during the first session. Moreover, these story grammar units contained more utterances and were more detailed than in Lucas' first production – for instance, the setting in Lucas' second narrative included a mention of the egg, and of a small bird coming out of it when it hatched. However, Lucas had difficulties ordering the events that made up the video clip – for example, he narrated the egg hatching before he mentioned its fall, although these events occurred in the reverse order in the clip. Finally, the story grammar units he mentioned were not systematically tied back to the initiating event or to each other, and the plot of his narrative was thus still weak. There was less referential ambiguity in his second production in French – Lucas used fewer pronouns and more noun phrases to introduce referents and maintain the reference in subsequent mentions than he had during the first session. However, his narrative retell in French during the second session still included more hesitation markers (“*um*”) and repetitions than his production in English, which is reproduced in extract 8.1.12.

Extract 8.1.12.

Lucas, 7;08 – Setting 2 (English, second session)

Link to video: https://drive.google.com/file/d/1jcZnE8XVhHL9aASBFeSzkR_J0m2gk5eN/view?usp=sharing

CHI: once upon a time there was a fish that cats really like.

CHI: but (.) the mouse did not like the [/] <the cat> [/] the cat eating the (.) fish.

CHI: so he decided to make nasty tricks (.) to him.

CHI: and he still did not give up.
CHI: he went through a trumpet and ended up like a water bottle.
CHI: and then [/] and then they went through a hole.
CHI: but still he did not give up and turned as round as a tunnel.
CHI: and then this was the nastiest trick the mouse had thought oh I know what we can do <we can put the tail into the> [//] we can swap the fish for the tail.
CHI: and then I can put the dominic <into the> [/] <into the> [/] into the frying pan.
CHI: and then his tail would burn.
CHI: <and then he decided he would> [///] and then his tail got burned.
CHI: and the house exploded.
CHI: and the doorway was up.
CHI: and he was still on the doorway.
CHI: and he was floating away from earth into outer space.

Extract 8.1.12 shows that Lucas' narrative retell during the second recording session in English was both longer and more complex than his production during the first recording session. It included fifteen utterances and five story grammar units – a setting, an initiating event, the characters' reactions, a resolution and a conclusion. Lucas' second narrative retell in English thus mentioned more narrative episodes, which he was better able to link to each other, making the plot stronger.

As he was older and had received more exposure to the narrative genre, Lucas was better able to deal with the cognitive load of the narrative retell task and could focus more on the narrative organization of his production rather than primarily on remembering and ordering the events which made up the video clip.

This is supported by his use of the phrase “once upon a time” during the second narrative retell task in English. Interestingly, Lucas had used the phrase in the first narrative setting in English during both recording sessions, suggesting he had been exposed to narrative productions in English frequently enough to know characteristics of the genre. During the first English session however, he did not use the phrase “once upon a time” in the retell setting. This suggested that in the first recording session, he may have focused his attention more on the cognitive demands on the task – remembering the events that made up the clip he had watched and ordering these events in a coherent retell – than on the narrative organization of his production. Moreover, the difference between the number of story grammar units included by Lucas in his productions in French and in English were more marked in the second narrative setting than in the first one. In the second setting, which was more cognitively demanding than the first, Lucas had more

difficulty producing a coherent narrative in his non-dominant language. The interaction that followed Lucas' spontaneous production in French during the second recording period showed that Lucas remembered the events of the video clip he had watched, but that he was not initially able to order them into a coherent and complete story in French. In his non-dominant language, he required more elicitation and scaffolding in order to relate the narrative episodes, and he did not systematically tie them back to the rest of the plot.

8.1.2.3 Third setting: personal narrative

During the first recording session in English, Lucas was very lively and eager to talk at first, and gradually grew less interested in the task. This was difficult to handle for the interviewer, who did not seem at ease and thus heavily relied on the document I handed out to all the interviewers, which included indications of possible topics to talk about with the children.

Lucas produced eight personal narratives in the first session in English, ranging in length from two to six utterances. In this session, he was asked about his holidays, about his past week in school and about his previous night. Extract 8.1.13 provides one of the personal narratives produced by Lucas in the first session.

Extract 8.1.13.

Lucas, 6;06 – Setting 3 (English, first session)

Link to video: https://drive.google.com/file/d/1PMu9CEE7sp81_TRgbhck_6f2Sb0AMsr1/view?usp=sharing

INT: okay (.) and then you went back from paris to school and did you go to [///] what did you do?

CHI: I just stayed home.

CHI: and I played football for ages.

CHI: then I lost my ball.

CHI: then I found it again.

This extract illustrates the simple syntax used by Lucas in the third setting in English – contrary to what was expected, the spontaneous narrative setting did not yield more complex productions, even in his dominant language. This can be explained by Lucas' fatigue state, which resulted in him not being involved in the interaction.

In French, Lucas produced two personal narratives during the first session, which included six and eight utterances respectively. He told me first about Christmas, and then about a fall he had had earlier that day. This narrative is reproduced in extract 8.1.14 below.

Extract 8.1.14.

Lucas, 6;04 – Setting 3 (French, first session)

Link to video: https://drive.google.com/file/d/1TyGk1SVGpMchSHDt0Mu3qcHEj_BmWkFT/view?usp=sharing

INT: qu'est-ce qu'il s'est passé ? (*what happened?*)

CHI: j'ai tombé avec mon scooter@s. (*I fell with my scooter.*)

INT: ah ouais ? (*did you?*)

CHI: mhmh.

INT: mais comment ? (*how did that happen?*)

CHI: j'ai scoté et après j'ai tombé. (*I scooted and I fell.*)

CHI: et j'ai pleuré. (*and I cried.*)

INT: ben oui. (*I bet.*)

CHI: parce+que +/. (*because...*)

CHI: et après on a couru à la maison avec mon papa. (*and then my dad*

and I ran home.)

INT: oui et après ? (*right and then what?*)

CHI: et après on a met l'eau sur ma bouche. (*and then we put water on my mouth.*)

CHI: et on a resté avec l'eau sur ma bouche. (*and we kept my mouth in the water.*)

CHI: et après j'ai met le vasaline sur ma bouche. (*and then I put vaseline on my mouth.*)

A comparison between Lucas' personal narratives in French and in English shows more instances of translanguaging in French than in English. In extract 8.1.14, Lucas borrowed the noun “scooter” from English and integrated it phonetically into his production in French in his first utterance. Interestingly, he also used the word “scooter” as a verb in French, integrating it at the morphological level as well – he used it in the *passé composé*, showing his ability to use this tense creatively in French.

During the second recording session in English, he produced three personal narratives, all on the topic of school. These narratives included six, eight and two utterances respectively – on the whole, the personal narratives he produced in English were thus longer in the second recording session than in the first. However, although he was talkative during the task, he tended to produce more generic statements about school rather than actually narrating past events. This is illustrated in extract 8.1.15, where Lucas was telling the interviewer about the clubs he attended in school.

Extract 8.1.15.

Lucas, 7;08 – Setting 3 (English, second session)

Link to video: [https://drive.google.com/file/d/](https://drive.google.com/file/d/10vBqHzysLMJCwEeeA4JJ8boml2ZgLNHqa/view?usp=sharing)

[10vBqHzysLMJCwEeeA4JJ8boml2ZgLNHqa/view?usp=sharing](https://drive.google.com/file/d/10vBqHzysLMJCwEeeA4JJ8boml2ZgLNHqa/view?usp=sharing)

CHI: <and one of them is> [//] and one of them is football club where you play football and you are allowed to do training and matches.

CHI: uh and there is drama (.) which I used to go to.

CHI: <and you> [//] and we had to do like this.

%gpx: CHI pinches his nose with his thumb and index.

CHI: and we had to find which voice it was.

CHI: so you sit on a chair and then you turn around.

This extract also shows that Lucas used more complex syntax in his second personal narrative in English – he used subordinate clauses instead of only simple clauses, and also used causal connectors instead of solely using temporal connectors.

In the second recording session in French, he produced three personal narratives – he narrated a time when he helped his parents with cooking, then he talked about the day his little sister was born and finally he told me about the first time his sister ate solid food, which had happened on the day of the session. These three narratives included from six to thirteen utterances. One of the personal narratives Lucas produced during the second session in French is provided in extract 8.1.16.

Extract 8.1.16.

Lucas, 7;05 – Setting 3 (French, second session)

Link to video: [https://drive.google.com/file/d/](https://drive.google.com/file/d/1XWizmJvVcKw0Bn-_kjeIv8jD1lgJ_iwf/view?usp=sharing)

[1XWizmJvVcKw0Bn-_kjeIv8jD1lgJ_iwf/view?usp=sharing](https://drive.google.com/file/d/1XWizmJvVcKw0Bn-_kjeIv8jD1lgJ_iwf/view?usp=sharing)

CHI: um et aussi aujourd'hui um <j'ai fait> [//] jaja a mangé um du potatoe@s mais pas juste comme ça. (*and also today jaja ate potatoe but not just like that.*)

CHI: on a mis du lait dedans. (*we mixed it with milk.*)

CHI: et après on a mets dans ce quelque chose. (*and then we put it in a thing.*)

CHI: et après on a fait comme. (*and then we did like.*)

INT: ça a fait un gros bruit ? (*and it made a loud noise?*)

CHI: oui. (*yes.*)

CHI: et après c'est tourné très bien. (*and then it turned really well.*)

CHI: et après jaja a mangé. (*and then jaja ate.*)

A comparison between Lucas' personal narratives in French and in English during the second recording period shows that his production in English was more syntactically complex than his production in French, in which he relied on simple syntax, using exclusively simple clauses. He also used more translanguaging in French than he did in English – in both recording sessions, Lucas borrowed lexical items from English into French whereas he did not use French during the English sessions.

Table 8.5 summarizes the main structural and linguistic characteristics of Lucas' productions in the three settings. It suggests possible task-type effects – the picture book setting yielded more structurally complex narratives in Lucas' two languages, despite differences in the syntactic complexity of his productions in English and in French. Lucas' productions in the first setting also evolved similarly in his two languages between the two recording sessions. The second setting was cognitively more demanding and yielded both shorter and less coherent narratives, as Lucas tended to list the episodes he remembered rather than to tie them into a coherent plot. The spontaneous setting did not yield more complex productions, which may be explained by Lucas' general fatigue state. The comparison between the two recording sessions also suggest stronger dominance effects in the second setting. In particular, there was more evolution between his two retell productions in English than what was observed in French, both in terms of linguistic and structural complexity.

8.1.3 Description of Arthur's productions in the three settings

Arthur was 5;06 during his first narrative session in French, and 5;09 during his first narrative session in English. He was recorded in both of his languages again approximately a year later – he was 6;08 during the second session in French and 7;01 during the second session in English. Chapter 5 showed that Arthur was rather balanced in his use of and exposure to his languages. Indeed, both Arthur's parents were French native speakers and French was thus the main language spoken inside the home. Arthur was living in London at the time of the recording, and English was the main language he spoke and was exposed to outside the home. In terms of Arthur's language choices during the recording sessions, he used mostly French during the family dinners I recorded, but exclusively used the language of the session during the narrative sessions.

8.1.3.1 First setting: wordless picture book

Arthur produced more utterances during the session in English than he had during the session in French, but produced longer utterances in French than in English (during the first recording sessions, he used 40 utterances in English with a MLUw of 6.6, and 24 utterances in French with a MLUw of 9.1).

Lg and Age	S	Macrostructure (Number of utterances and SG units included)		Linguistic means		Narrative stage	
		N1	N2	N1	N2	N1	N2
FR 6;04 -	1	27 utt. (MLUw 6.8) - Setting, Initiating event, Character's reactions - Frequent focus switches	41 utt. (MLUw 7.2) - Setting, Initiating event, Character's reactions, Resolution, partial conclusion	- Temporal connectors - Ambig. reference - Simple syntax - Translang.	- Temporal conn. - Complex syntax	Unfocused chain	True narrative
	2	5 utterances - Setting, initiating event, resolution	11 utt. - Setting, initiating event, Character's reactions, partial resolution	- Simple syntax - Temporal connectors - Ambig. Reference	- Simple syntax - Temporal connectors - Clear reference		
	3	2 pers. narr. (6 to 8 utt.)	3 pers. Narr. (6 to 13 utt.)	- Simple syntax - Translang.	- Simple syntax - Translang.		
EN 6;06 -	1	47 utt. (MLUw 8.2) - Setting, Initiating event, Character's reactions	48 utt. (MLU 9.8) - Setting, Initiating event, Character's reactions, Resolution	- Simple syntax - Temporal conn. - Few causal conn. - Narrative prosody	- Complex syntax - Temporal and causal conn.	Focused chain	True narrative
	2	8 utt. - Setting, initiating event, characters' reactions, partial resolution	15 utt. - Setting, Initiating event, Character's reactions, Resolution, Conclusion	- Simple - Temporal and causal connectors	- Complex syntax - Temporal and causal conn.		
	3	8 pers. narr. (2 to 6 utt.)	3 pers. narr. (2 to 8 utt.)	- Simple syntax	- Complex syntax - Temporal and causal conn.		

Table 8.5: Main structural and linguistic characteristics of Lucas' productions in the three settings in his two languages (dominant in English)

During all the sessions, Arthur held the book in his hands. Contrary to Lucas, Arthur used the phrase “*il était une fois*” when prompted to do so in the sessions in French; in English, the interviewer did not prompt him to use the phrase “once upon a time” and he did not do so spontaneously.

Arthur’s first narrative production in the first setting in French included the initial story grammar episodes – the setting, the initiating event, the characters’ reactions as well as the result of these attempts. Moreover, his first narrative production in French did not include focus switches – his narrative focused on the characters Arthur identified as the main characters of the story. This is shown in extract 8.1.17, which corresponds to the end of Arthur’s first narrative based on a wordless picture book in French.

Extract 8.1.17.

Arthur, 5;06 – Setting 1 (French, first session)

Link to video: https://drive.google.com/file/d/1JT1EjQV57NYQGGzYU6tAsy94_1JnQIcm/view?usp=sharing

1JT1EjQV57NYQGGzYU6tAsy94_1JnQIcm/view?usp=sharing

CHI: et après il trouve pas sa grenouille dans où il a regardé *alors le chien il regarde.* (and then he can’t find his frog where he looked so the dog looks.)

CHI: et après [/] et après tous les abeilles vient. (and then all the bees come.)

CHI: et après c’est [//] ils vont après le chien. (and they go after the dog.)

CHI: et après le garçon repart par le trou de un arbre. (and the boy goes back to a hole in a tree.)

CHI: et après il y a un hibou (.) il a poussé le petit garçon. (and an owl pushed the little boy.)

CHI: et le chien il se fait toujours couru par les abeilles. (and the dog is still being chased by the bees.)

CHI: et le petit garçon il monte un rocher. (and the little boy climbs up on a rock.)

CHI: et après il monte un cerf. (and then he climbs up on a deer.)

CHI: et le chien court avec le cerf. (and the dog runs with the deer.)

CHI: et après le cerf laisse le petit garçon et le chien tomber (.) dans la rivière. (and then the deer lets the little boy and the dog fall.)

CHI: et après il tombe et après il va au dessus d’un morceau de bois. (and then they fall and then he goes over a log.)

CHI: et après il trouve la grenouille [/] la grenouille. (and then he finds the frog.)

CHI: et après c’est tout. (and that’s it.)

This extract illustrates several aspects of Arthur’s first narrative production in French.

It shows in particular that his narrative included some mention of causal relationships (in italics in the extract), and a basic temporal ordering of events which relied mostly on the use of the connector “*et après*”; this is typical of narratives produced by children his age (Berman and Slobin, 2013). Extract 8.1.17 also shows that his production was characterized by a low degree of syntactic complexity, as Arthur used mostly simple clauses. Finally, the extract illustrates the absence of a clear resolution to his narrative – Arthur mentioned the child finding his frog (“*et après il trouve la grenouille*”), but did not tie this final episode back to the initiating event to conclude his plot. Arthur’s first narrative production in the first setting in French was analyzed as a Focused Chain, in Applebee’s terminology.

In the first English session, Arthur’s production on the wordless picture book was also focused on the main characters. It included a setting, an initiating event and at least some of the characters’ reactions to this event. This is illustrated in extract 8.1.18, which is taken from the beginning of Arthur’s production.

Extract 8.1.18.

Arthur, 5;09 – Setting 1 (English, first session)

Link to video: https://drive.google.com/file/d/1o1vCUG9Nic0XS74S8JAY1_N7pf0bkSwI/view?usp=sharing

CHI: the boy was fishing with the dog and the frog [>].

INT: right [<].

CHI: he did think he got something.

INT: yes.

CHI: it was really heavy.

CHI: he fell into the (.) river.

CHI: it was a turtle.

INT: so he [/] he [/] he got a turtle okay [/] okay [>].

CHI: yes [<].

CHI: the dog was angry with the turtle.

CHI: the turtle bit the dog.

INT: yes.

CHI: the boy tried to pull off the turtle from the dog’s paw.

CHI: and he could not.

Arthur’s narrative did not include comments on the characters’ motivations. This is illustrated in extract 8.1.19, which includes the end of Arthur’s first narrative production in the first setting in English. Arthur mentioned that the turtle tried to take the fishing rod in the end, but did not identify this as the turtle’s main motivation throughout

the narrative. Although Arthur mentioned the ending, the absence of comments on the characters' motivations contributed to weaken the plot overall. Moreover, although Arthur mentioned the final events of the narrative, he did not tie the ending back to the initiating event to make for a coherent resolution and conclusion.

Finally, Arthur was more hesitant in the English session than in the French session – during the French session, Arthur produced his narrative without long pauses, whereas in English he took more time to determine what he wanted to say. This led the interviewer to provide more frequent backchannelling, as illustrated in extracts 8.1.18 and 8.1.19.

Extract 8.1.19.

Arthur, 5;09 – Setting 1 (English, first session)

Link to video: https://drive.google.com/file/d/1o1vCUG9Nic0XS74S8JAY1_N7pf0bkSwI/view?usp=sharing

CHI: the turtle goes on his back.

INT: yes okay.

CHI: and the turtle had fun on his back *while the boy is digging a hole.*

CHI: and the boy did bury a flower in the hole.

CHI: and the turtle got back on his feet.

CHI: and was going to get the fishing rod.

INT: yes really good.

CHI: and the turtle got the fishing rod.

CHI: and the boy lifted the turtle up.

INT: alright.

CHI: and they walked back home.

Whereas Arthur had used mostly simple clauses in his production in French, extract 8.1.19 shows that he used more complex syntax in English, in particular using adverbial clauses. However, this did not translate into him producing a more complex narrative in terms of the story grammar units he included in his production. Rather, the narrative structure of his productions in his two languages was similar – both were analyzed as Focused Chains in Applebee's terminology. Similar comments can also be made on Arthur's prosody in his productions in French and in English. In both languages, Arthur was intimidated by the setting, and spoke in a low voice. Moreover, his productions were monotone in both languages during the first narrative session – he seemed to focus his attention on finding what to say in his narrative more than on fully taking on a storyteller role.

Arthur was 6;08 during the second narrative session in French and 7;01 during the second narrative session in English. He used 27 utterances in his narrative in English with

a MLUw of 8.1 and used 34 utterances in his narrative in French, with a MLUw of 7.5. There was thus less difference between the length of his narrative productions in his two languages in the second session than in the first one.

The narratives he produced in his two languages also included story grammar units that he had omitted during the first recording session, as well as a greater focus on the characters' motivations. Extract 8.1.20 is taken from the beginning of Arthur's second production in French on the wordless picture book. It includes the initiating event as well as part of the characters' reactions. It illustrates how, in his second production, Arthur consistently referred to the characters' motivations – looking for their frog – throughout the narrative. It also illustrates the higher degree of syntactic complexity observed in his second narrative production in French.

Extract 8.1.20.

Arthur, 6;08 – Setting 1 (French, second session)

Link to video: https://drive.google.com/file/d/1NR5x9Jift5G_5cLvNTwkbNzQdl8GCbVM/view?usp=sharing

CHI: **quand ils se sont réveillés** ils ont vu que la grenouille s'est échappée. (*when they woke up they saw that their frog had escaped.*)

CHI: ils ont regardé partout. (*they looked everywhere.*)

CHI: et le chien a regardé dans um le bol. (*and the dog looked in the bowl.*)

CHI: mais il était pas là. (*but he wasn't there.*)

CHI: et il s'était coincé sa tête. (*and he had stuck his head.*)

CHI: il a [//] ils ont regardé dehors. (*they looked outside.*)

CHI: et il a tombé en bas de la vitre. (*and he fell down the window.*)

CHI: et après il a cassé le bol. (*and then he broke the bowl.*)

CHI: le garçon était pas content avec le chien. (*and the boy was not happy with the dog.*)

CHI: ils ont commencé à crier où es-tu grenouille ? (*they started shouting frog where are you?*)

CHI: et après le chien regardait pour la grenouille dans une +... (*and then the dog looked for his frog in a....*)

CHI: mh je sais pas. (*I don't know.*)

INT: c'est une ruche. (*it's a bee hive.*)

CHI: dans une ruche. (*in a bee hive.*)

CHI: et le petit garçon regardait dans la trou de une taupe. (*and the little boy looked in a mole hole.*)

CHI: mais la taupe aimait pas **donc xxx elle a mordu le garçon**. (*but the mole did not like that so she bit the little boy.*)

INT: aie. (*ouch.*)

CHI: après le chien a fait par accident a fait la ruche tomber. (*then the dog accidentally made the hive fall.*)

CHI: et tous les abeilles venaient pour lui attaquer **pendant que le garçon était en train de regarder dans un tronc d'arbre.** (*and all the bees came to attack him while the little boy was looking in a tree trunk.*)

Whereas he had used mostly simple clauses in his first production in French, he used more complex clauses during the second recording session. These included embedded adverbial clauses contributing temporal and causal information to the narrative (in bold in extract 8.1.20).

Finally, extract 8.1.20 also shows traces of lexical and syntactic cross-linguistic influence from English to French, as Arthur used syntactic structures borrowed from English in his French narrative. These included the verb phrase “*était pas content avec le chien*”, which can be analyzed as a direct translation of the structure “was not happy with the dog”, as well as the causative verb phrase “*a fait la ruche tomber*”, which follows the syntactic structure of English causative constructions, with the post-verbal argument placed between the causative verb and the infinitive, whereas in French the infinitive directly follows the causative verb and precedes the post-verbal argument. Finally, the influence of English can also be noted in direct translations of lexical items – Arthur used the verb “*regarder pour*” in French instead of the verb “*chercher*”, most likely because he used a direct translation of the English verb “to look for”.

Similarly as what was observed in Lucas’ productions, the story grammar units newly included in Arthur’s second narrative production in the first setting were mainly located at the end of his narrative. In addition to the setting, the initiating event and the characters’ reactions, Arthur now mentioned the resolution in both of his languages. Extract 8.1.21 is taken from the end of Arthur’s second narrative production in French.

Extract 8.1.21.

Arthur, 6;08 – Setting 1 (French, second session)

Link to video: https://drive.google.com/file/d/1NR5x9Jift5G_5cLvNTwkbNzqdl8GCbVM/view?usp=sharing

CHI: après il a y allé dans la rivière. (*and then he went in the river.*)

CHI: et il a poursuivi um un tronc d'arbre. (*and he chased a tree trunk.*)

CHI: ils ont entendu des grenouilles. (*they heard the frogs.*)

CHI: et ils ont regardé à l'autre côté et ils ont trouvé les grenouilles. (*and they looked on the other side and found the frogs.*)

CHI: et il a monté de l'autre côté. (*and he climbed to the other side.*)
 CHI: **il a dit au revoir.** (*he said goodbye.*)
 CHI: **et il a pris la grenouille qui était à lui.** (*and he took the frog which was his.*)

This extract includes the final story grammar units, which he had not included in his narrative during the first session – the boy taking back the frog he had lost at the beginning of the story (in bold in extract 8.1.21). The plot was stronger in Arthur's second narrative in French, as it focused more clearly on the characters' motivations as well as on the resolution of the narrative. This was also observed in English, where Arthur's second narrative production was both structurally and syntactically more complex than the first narrative he produced in the first setting. Extract 8.1.22 includes the beginning of Arthur's second narrative in English; it includes the same story grammar units as in extract 8.1.18 (the setting and the initiating event).

Extract 8.1.22.

Arthur, 7;01 – Setting 1 (English, second session)

Link to video: https://drive.google.com/file/d/1_jBmIVB9FzEW8w3jXsJKTUUdGoiWe03i/view?usp=sharing

CHI: a boy was fishing.

CHI: he um [///] it was very hard to pull the (.) fishing rod.

CHI: **then suddenly** he fell in.

CHI: his dog and his frog jumped in.

CHI: **when he got out** he realized a tortoise had the end of his fishing rod.

CHI: the dog was angry with the tortoise.

CHI: the tortoise bit the dog's leg.

CHI: the boy tried to pull the dog away from the tortoise.

CHI: but the tortoise held on and went back for the pond.

Comparing the two extracts shows that Arthur produced more complex utterances during the second recording session in English than he did during the first. This is visible first in the length of the utterances he used, as well as in the amount of detail he included in his narrative – he mentioned for instance where the turtle bit the dog, as well as the episode where the frog and the dog jumped after the boy into the river, both elements he had omitted in his first narrative.

Second, Arthur used more diverse linguistic devices to organize the events in his narrative. In his first production in English, the temporal ordering of events was managed in part through the use of conjunctions as well as through the sequential nature of speech – the events were organized temporally mostly by the fact that the utterances narrating them naturally followed each other. In other words, the order in which Arthur produced the utterances which made up his narrative mirrored the order of the events they reported. In the second recording session, the temporal organization of events relied more frequently on the use of adverbs and adverbial clauses (in bold in extracts 8.1.22 and 8.1.23).

Extract 8.1.23.

Arthur, 7;01 – Setting 1 (English, second session)

Link to video: https://drive.google.com/file/d/1_jBmIVB9FzEW8w3jXsJKTUUdGoiWe03i/view?usp=sharing

CHI: **then all of a sudden** the tortoise caught him again (.) on the tail.

CHI: **then** the dog fell into the pond again.

CHI: and you could only see his leg.

CHI: the boy was [//] disdressed himself.

CHI: and then redressed himself.

CHI: *(be)cause he saw the dog was going back to him on the shore.*

CHI: **then** he saw the tortoise rising up on the [/] on the water.

CHI: it looked like she was dead.

CHI: but she was not.

CHI: **then** um the boy with his stick um grabbed uh the tortoise to shore.

CHI: the dog was staring at the frog.

CHI: **then** the boy took the tortoise and he dug a hole.

CHI: **then** the tortoise um stopped faking.

CHI: and xxx.

CHI: and got up xxx.

CHI: and the boy was happy and his dog.

Extract 8.1.23 also illustrates Arthur's growing ability to order events logically rather than merely chronologically, as shown by his use of the modifying clause headed by "because" (in italics in extract 8.1.23). The greater syntactic complexity identified in Arthur's second production in English is characteristic of later stages in narrative development. Arthur's second narrative productions based on a wordless picture book in his two languages were analyzed as True Narratives. Indeed, they both focused on the central characters' actions and reactions, and included all story grammar units. Moreover, Arthur's second narrative productions in his two languages included comments on the characters' motivations, which strengthened the plot.

Finally, it is interesting to note that punctual cross-linguistic influence of French on English can also be identified in Arthur's second narrative in English. The lexical items "disdressed himself" and "redressed himself" used by Arthur instead of the more typical phrases "to take his clothes off" and "to put his clothes on" can be analyzed as direct translations of the French verbs "*se déshabiller*" and "*se rhabiller*". This supports the claim that Arthur was rather balanced in his use of his two languages, as traces of cross-linguistic influence were identifiable in his productions in both French and English.

8.1.3.2 Second setting: narrative retell

In the first recording session in French, Arthur produced six utterances spontaneously in the second setting, which are included in extract 8.1.24.

Extract 8.1.24.

Arthur, 5;06 – Setting 2 (French, first session)

Link to video: <https://drive.google.com/file/d/1wboMGF1QGyh-Vie2KuMk860rQ0e8Y4gV/view?usp=sharing>

CHI: il y a un oiseau qui pond un oeuf. (*there's a bird who lays an egg.*)

CHI: et après l'oeuf il tombe de l'arbre. (*and then the egg falls from the tree.*)

CHI: et après ça va dans une maison de une souris. (*and then it goes into a mouse's house.*)

CHI: et après le oiseau il man- [/] il mange tout. (*and the bird eats everything.*)

CHI: et après +/. (*and then.*)

INT: l'oiseau il mange tout ? (*the bird eats everything.*)

MOT: il mange tout quoi il mange l'oeuf [>] ? (*what does he eat does he eat the egg?*)

CHI: euh [<].

CHI: il fait des trous et puis après +/. (*he makes holes and then.*)

MOT: il fait des trous dans quoi ? (*what does he make holes in?*)

CHI: dans la maison. (*in the house.*)

CHI: et après +//. (*and then.*)

MOT: et il vient d'où cet oiseau ? (*where does the bird come from?*)

CHI: de le nid de le oiseau qui l'a pondu. (*from the nest of the bird who laid it.*)

CHI: et après la souris met le oiseau dans le lit [//] dans le nid encore. (*and then the mouse puts the bird back in the bed.*)

Extract 8.1.24 shows that Arthur's first production on the narrative retell task in French included a setting, an initiating event, the characters' reactions and a resolution – Arthur produced a narrative with an identifiable although basic plot. Like in the first setting, Arthur did not comment on the characters' motivations – he narrated the main events which made up the video clip, but did not mention the characters' mental state or goals. Extract 8.1.24 also shows that Arthur mostly used the temporal connector “*et après*” to order the events sequentially, and used simple syntax throughout his narrative. This was once again similar to what was observed in the first setting in French.

The main structural difference between Arthur's first productions in the two settings was linked to length. Indeed, he produced a longer narrative in the first setting, when he could rely on the visual stimulus provided by the picture book, than in the retell task when he had to narrate events with no visual support.

Extract 8.1.25 is taken from the beginning of Arthur's first production in English in the narrative retell setting. It shows that he produced a longer narrative in English than in French in this setting, but that he also required more scaffolding. Indeed, his general attitude was more hesitant, which led the interviewer to use more backchannelling.

Extract 8.1.25.

Arthur, 5;09 – Setting 2 (English, first session)

Link to video: https://drive.google.com/file/d/18tVj28N1m1Fgj_5XCF9zprJswZJuXxSu/view?usp=sharing

CHI: uh basically tom was cooking a fish.

INT: yeah?

CHI: and jerry came and took the fish.

CHI: and slammed the pan into his face.

INT: right.

CHI: and then takes jerry to catch the fish.

INT: yes.

CHI: and he [//] jerry went under the radiator.

CHI: and tom went through the radiator.

INT: this was quite funny right [>].

CHI: <and he> [<] got into a shape.

INT: yes.

CHI: and then he went (.) somewhere else.

CHI: and then he got into that shape.

INT: right.

CHI: and then into another shape.

INT: yes.

CHI: and then (.) uh I do not remember.

Extract 8.1.25 shows that Arthur spontaneously included a setting, an initiating event and part of the characters' reactions in his narrative. However, before he reached the final story grammar units, he expressed difficulties remembering the events in the clip. From then on, elicitation was required from the interviewer in order for him to relate the rest of the narrative events. Spontaneously, he would thus have omitted the resolution and conclusion of the narrative, not producing a comprehensive, identifiable plot. In the utterances he produced spontaneously (i.e. without elicitation), Arthur also used simple syntax, and organized the events temporally by using the temporal connector "and then" and the conjunction "and". This was analyzed as a consequence of the second setting being more cognitively demanding for the children. The fact that Arthur expressed difficulties with remembering all of the events in the clip suggests that having no visual stimulus to rely on impacted Arthur's ability to include the necessary story grammar units. This is supported by the analysis of the second half of his first production in English in the retell setting, which was obtained through direct elicitation from the interviewer. Indeed, it shows that Arthur was able to narrate the episodes when prompted to do so by the interviewer. This is illustrated in extract 8.1.26.

Extract 8.1.26.

Arthur, 5;09 – Setting 2 (English, first session)

Link to video: https://drive.google.com/file/d/18tVj28N1m1Fgj_5XCF9zpRJswZJuXxSu/view?usp=sharing

INT: yes and he had something as well.

CHI: a carrot.

INT: was it a carrot [/ /] it was a carrot?

CHI: uh and the fish.

INT: yes and I think he got dynamite.

CHI: uh +...

INT: or was it not dynamite [>]?

CHI: <no> [<] it was jerry.

INT: ah it was +...

INT: my mistake.

INT: it was jerry.

CHI: and tom was going to put the fish into the pan.

INT: yes.

CHI: and jerry got the dynamite.

CHI: and replaced it by the carrot.

CHI: and got the fish and replaced it by his tail.

INT: exactly and then +...

CHI: +, then.

%gpx: CHI lifts both his arms, hands open mimicking the explosion

INT: so many things oh my god.
 CHI: uh tom ran because it was boiling hot in the pan.
 INT: yes.
 CHI: and then the dynamite exploded.
 CHI: then he flew into the air into the space.

Extract 8.1.26 illustrates Arthur's ability to narrate the episodes he had originally omitted, showing that he remembered the events that made up the short video clip he had watched. The beginning of the extract shows that he was even able to correct the interviewer and reaffirm the order in which the events had occurred in the clip. This suggests that Arthur's initial difficulty was not solely linked to him not remembering the events but rather to the cognitive load of the task, which implied both remembering the narrative episodes and reorganizing them into a coherent narrative.

During the second recording sessions in French and in English, Arthur produced longer and more complex narratives in the second setting. This suggested that, similarly as Lucas, it was easier for Arthur to deal with the cognitive load represented by the narrative retell task during the second recording phase than during the first.

His second narrative in French was made up of twelve utterances, which included a mention of the setting, the initiating event, the characters' reactions and the resolution. It is reproduced in extract 8.1.27.

Extract 8.1.27.

Arthur, 6;08 – Setting 2 (French, second session)

Link to video: <https://drive.google.com/file/d/1BctEgcztDpTM2Nv7dksVHRwLZMbQqfdh/view?usp=sharing>

CHI: donc une maman était en train de pondre un oeuf (.) um **pendant qu'elle était en train de tricoter.** (*so a mum was laying an egg while she was knitting.*)

CHI: après elle l'a laissé **parce que elle voulait chercher à manger.** (*then she left it because she wanted to go get something to eat.*)

CHI: après l'oeuf a tombé. (*then the egg fell.*)

CHI: et c'est allé dans la maison de une souris. (*and it went into a mouse's house.*)

CHI: après um la souris elle a poursuivi la [//] um l'oeuf. (*then the mouse chased the egg.*)

CHI: et ça a cassé l'oeuf. (*and it broke the egg.*)

CHI: après il a vu que c'était un oiseau. (*then he saw it was a bird.*)

CHI: et ça a commencé à casser tout. (*and it started breaking everything.*)
 INT: et comment il cassait tout ? (*how did he break everything?*)
 CHI: avec son bec. (*with his beak.*)
 CHI: il mangeait tout. (*he ate everything.*)
 CHI: il a mangé le mur une chaise une lampe et des tiroirs. (*he ate the wall, a chair, a lamp and drawers.*)
 INT: oui. (*right.*)
 CHI: et après il était pas content la souris. (*then the mouse was not happy.*)
 CHI: **donc il l'a ramené où c'était** avant. (*so he brought it back where it was before.*)

Extract 8.1.27 shows that Arthur spontaneously produced a more complete narrative, including the main story grammar units, which made the plot clearly identifiable. Moreover, he used more complex syntax in his second narrative, in particular to order events not just temporally but also causally – he used a temporal adverbial clause to order events relative to each other as well as a causal adverbial clause to motivate the characters' actions (in bold in the transcription above). He was also more autonomous during the second recording session than during the first. This could be linked either to an effect of age, suggesting that the challenge presented by the task of narrative retelling was harder to deal with at a younger age, or an effect of task-familiarity, as in the second session Arthur had already participated in the task once.

Arthur also produced a longer and more thorough narrative in the retell setting during the second session in English, mentioning most of the episodes that made up the video clip over thirty-seven utterances. He was moreover able to do so with less scaffolding, requiring only punctual intervention from the interviewer, when he looked for lexical items. Extracts 8.1.28 corresponds to the beginning of Arthur's second narrative in English. It includes the mention of the setting, the initiating event, and the characters' first reactions.

Extract 8.1.28.

Arthur, 7;01 – Setting 2 (English, second session)

Link to video: <https://drive.google.com/file/d/1aZe3ULrQDGKyLRTPeu5ghowCtqs36-sn/view?usp=sharing>

CHI: so the cat was cooking fish.

CHI: then the mouse tried to catch the fish.

CHI: (be)cause she wanted to save him.

CHI: and then um so he bashed um the pan <on tom's head> [//] on the cat's head.

CHI: and then she um caught the fish.

CHI: then she went through [///] under the radiator.
 CHI: tom went through.
 CHI: and he got the shape of the radiator.
 CHI: then <he went> [//] the mouse went through a hole.
 CHI: and then tom also went through the hole.
 CHI: then he went into the shape of the hole.
 CHI: and them um he put uh a pan over <the hole> [///] another hole.
 CHI: and then um the fish uh went into the pan.
 CHI: he closed it.
 CHI: and then he started cooking.
 CHI: and then uh jerry um was uh wanted to save it.
 CHI: and so she um started chasing tom.

Arthur used the temporal connectors “and then” to order the events temporally and used conjunctions such as “because” and “so” to order them causally. In addition to relating the events, Arthur also commented on the characters’ state of mind and on their motivations, which he had not done during the first recording session; this is typical of later stages of narrative development. His ability to retell the events in greater detail may be linked to age and to developing cognitive abilities, as well as to a greater degree of familiarity with the task – at this stage, Arthur had participated in narrative retell tasks three times in the course of a year.

In the second recording session in English, Arthur focused on retelling the video clip in as much detail as he could provide, focusing less on the overall narrative structure of his production. For instance, he did not use the phrase “once upon a time” or its French equivalent, which he had used in his narrative productions in the first setting. This may be explained by the greater cognitive load of the narrative retell task – being so involved in remembering and rendering the events in order without visual help may have focused all of Arthur’s attention.

8.1.3.3 Third setting: personal narrative

In the first session in French, Arthur was not very eager to participate in the spontaneous interview. He produced only one personal narrative about Christmas, which included only four utterances. The rest of his production in the spontaneous setting was made up either of one-word answers or of generic statements about school and extracurricular activities. The personal narrative he produced in French during the first recording period is reproduced in extract 8.1.29.

Extract 8.1.29.

Arthur, 5;06 – Setting 3 (French, first session)

Link to video: https://drive.google.com/file/d/15pyoJ4GucWuY7-C_M9cb1tdRswuFIq-A/view?usp=sharing

CHI: j'étais dans ma maison +... (*I was in my house.*)

INT: ok.

CHI: et xxx.

CHI: euh j'ai fait ma liste de cadeaux. (*and I wrote my wish list of presents.*)

CHI: et après je va dormir. (*and then I go to bed.*)

CHI: et après **quand c'était le matin** j'ai ouvrir mes cadeaux. (*and then when it was morning I opened my presents.*)

Although the personal narrative he produced was quite short, it relied on more complex syntax than the narratives he produced in the two other settings. In particular, he used adverbial clauses to locate events relative to one another (in bold in extract 8.1.29).

In the recording session in English, Arthur seemed intimidated in all three settings, including during the spontaneous interview. He produced two personal narratives, about playing in the snow and on his trampoline a few days earlier (the video may be accessed by clicking the following link: https://drive.google.com/file/d/1UsDInIP--_OqgeM816BGHlxvzmX1UwvF/view?usp=sharing). These included respectively three and one utterances. The shortest personal narrative consisted of an adverbial *when*-clause and a main clause. In the first sessions in French and in English, Arthur thus produced structurally similar personal narratives in both of his languages – these were short but relied on more complex syntax than his productions in the two other settings.

During the second recording session, Arthur was less intimidated by the three settings, either because he was older or because he was more familiar with the process. He produced more personal narratives in the second recording session than in the first in both of his languages. During the second session in French, he produced six personal narratives ranging from three to fourteen utterances. Extract 8.1.30 shows Arthur engaging more spontaneously in the interaction than during the first session.

Extract 8.1.30.

Arthur, 6;08 – Setting 3 (French, second session)

Link to video: <https://drive.google.com/file/d/1XQLn4I0jpdSYzn0vPdNwtBfG7Q61GpyJ/view?usp=sharing>

INT: c'était les vacances là il y a pas longtemps [>]. (*you were on holidays*

not long ago.)

CHI: oui [\leq]. (*yes.*)

INT: oui ? (*yes?*)

CHI: j'ai allé au maroc à marrakech. (*I went to morrocco to marrakesh.*)

INT: ah oui ? (*did you?*)

CHI: on a y allé plein d'endroits. (*we went to lots of places.*)

CHI: on a y allé dans un hôtel qui était froid. (*we went to a hotel which was cold.*)

INT: qui était froid ? (*which was cold?*)

CHI: oui. (*yes.*)

INT: c'est vrai ? (*really?*)

CHI: il était pas de portes. (*there were no doors.*)

INT: ah bon ? (*really?*)

CHI: oui. (*yes.*)

CHI: donc c'était comme une entrée +... (*so it was like a hall.*)

INT: oui. (*yes.*)

CHI: et pas de porte. (*and no door.*)

In the second recording session in English, Arthur produced three personal narratives about his holidays and about what he had done on the day before. These narratives were short – they included one and three utterances. This was explained mostly by the type of questions asked by the interviewer, which yielded short, verbless answers or generic statements rather than personal narratives. However, even when he was asked about past events, Arthur tended to produce generic statements whose value was analyzed as descriptive rather than narrative. This is illustrated by extract 8.1.31.

Extract 8.1.31.

Arthur, 7;01 – Setting 3 (English, second session)

Link to video: <https://drive.google.com/file/d/1ui1BNturJzqYkxNxd9BfKKLWwWgjSRo4/view?usp=sharing>

INT: uhuh so tell me more about that trip to turkey that you just went to.

CHI: so we went to this sort of club.

INT: mhmh.

CHI: um parents are allowed.

CHI: and then this mini club.

CHI: and children go to there while their parents are going to do their walk.

INT: mhmh.

CHI: then they come back it takes an hour.

In extract 8.1.31, Arthur started narrating a trip to Turkey he had taken with his family. He went on to talk about the club he had gone to with his family and produced generic utterances to describe how a typical day at the club was spent. This was frequent in Arthur's second session in English, and can be explained by the type of questioning as well as by the habitual stance he took on the events he narrated rather than by the child's linguistic abilities.

Table 8.6 summarizes the main characteristics of Arthur's productions in the three settings, in his two languages. Comparing his productions in the three settings suggests task-type effects – the second narrative setting was more demanding and yielded less complex narratives than the first. The personal narratives Arthur produced were shorter but syntactically more complex than his productions on the two narrative tasks. Arthur's productions in the two recording sessions also illustrate an effect of age or familiarity with the tasks – he produced systematically longer and more complex narratives in all three settings during the second recording session than during the first. Moreover, traces of cross-linguistic influence were identified in his productions in his two languages, on the syntactic and lexical levels.

8.1.4 Description of Oliver's productions in the three settings

Oliver was the youngest child living in London at the time of recording. He was 3;11 during the first recording session in French and 4;02 during the first recording session in English. He was recorded again a year later – he was 5;01 during the second recording session in French and 5;03 during the second recording session in English. The analysis of Oliver's language choices and language exposure patterns presented in chapter 5 showed that Oliver was dominant in English at the time of the recording.

8.1.4.1 First setting: wordless picture book

It has been shown in the literature that children under 5;00 generally provide descriptions of isolated pictures rather than true narratives – they tend not to organize events temporally and often fail to discuss the story's overarching theme (Bamberg, 2011; Berman and Slobin, 2013). I thus expected that Oliver would find it more difficult to produce a coherent narrative at least during the first recording session than Arthur and Lucas. I also wondered whether there would be more differences between his narrative productions

Lg and Age	S	Macrostructure (Number of utterances and SG units included)		Linguistic means		Narrative stage	
		N1	N2	N1	N2	N1	N2
FR 5;06	1	24 utt. (MLUw 9.1) - Setting, Initiating event, Characters' reactions - Focus maintained	34 utt. (MLUw 7.5) - Setting, Initiating event, Characters' reactions, conclusion, resolution	- Simple syntax - Temporal and causal conn.	- Complex syntax - Temporal and causal conn. - Cross-linguistic influence (E to F)	Focused chain	True narrative
	2	6 utt. - Setting, Initiating event, characters' reactions, partial resolution	12 utt. - Setting, Initiating event, characters' reactions, resolution	- Simple syntax - Temporal conn.	- Complex syntax - Temporal and causal conn.		
	3	1 pers narr. (4 utt.)	6 pers. Narr. (3 to 14 utt.)	- Complex syntax	- Complex syntax		
EN 5;09 - 7;01	1	40 utt. (MLUw 6.6) - Setting, Initiating event, characters' reactions - Focus maintained	27 utt. (MLUw 8.1) - Setting, Initiating event, characters' reactions, resolution	- Simple syntax - Temporal conn.	- Complex syntax - Temporal and causal conn. - Cross-linguistic influence (F to E)	Focused chain	True narrative
	2	10 utt. - Setting, Initiating event, characters' reactions, partial resolution	37 utt. - Setting, Initiating event, Characters' reactions, conclusion, resolution	- Simple syntax - Temporal conn.	- Complex syntax - Temporal and causal conn.		
	3	2 pers. Narr. (1 to 3 utt.)	3 pers. Narr. (1 to 3 utt.)	- Complex syntax			

Table 8.6: Main structural and linguistic characteristics of Arthur's productions in the three settings in his two languages (balanced bilingual)

in his two languages at such early stages of his narrative development than what was observed for children in later stages of their narrative development.

During the first recording session, Oliver used fewer and shorter utterances in his narrative production in French than he did in English. He produced 29 utterances in the first setting during the first recording session in French, with a MLUw of 4.8, against 38 utterances during the first recording session in English, with a MLUw of 6.6. In the second recording session, he produced substantially more utterances in the first setting during the session in French, although these were still shorter than the utterances he used in English – he produced 58 utterances in French, with a MLUw of 3.8. In the second recording session in English, he produced 31 utterances in the first narrative setting, with a MLUw of 5.8.

In the first recording session in French, Oliver was not holding the book or turning the pages himself. He was hesitant in his narrative, and his mother, who was present during the recording, frequently asked him to elaborate on his productions. Oliver's first narrative production in the first setting in French included a mention of the setting, the initiating event and the characters' reactions, although spontaneously he did not systematically link story grammar units back to the central theme of the story. However, his mother's incentive to expand on his productions made clear the fact that Oliver had understood the core of the story, including the initiating event (the frog escaping) as well as its overarching theme – the boy and the dog looking for their frog.

Extract 8.1.32.

Oliver, 3;11 – Setting 1 (French, first session)

Link to video: https://drive.google.com/file/d/1MWaw38Mmc_B8tnP419F4CWpFGAjVSIMy/view?usp=sharing

CHI: un petit garçon prendre une grenouille et mets lui dans un pot pour lui pas sortir (.) dans la nuit. (*a little boy takes a frog and puts it in a jar so that it would come out during the night.*)

INT: tu me dis quand je tourne (.) je tourne ? (*let me know when you want me to turn the page do you want me to turn it?*)

CHI: oui. (*yes.*)

INT: ok et alors après ? (*alright and then what?*)

CHI: lui parti de là. (*he left from there*)

CHI: et après le lendemain matin lui voit le **frog@s** parti. (*and after on the next morning he sees the frog gone.*)

MOT: qu'est-ce qu'il fait [/] qu'est-ce qu'il fait ? (*what does he do?*)

CHI: euh lui euh [/] lui cherche partout. (*he searches everywhere.*)

CHI: et lui dit **froggie@s**. (*and he says froggie.*)

MOT: qu'est-ce qu'il se passe ? (*what happens?*)

CHI: lui faire un calin à son chien. (*he hugs his dog.*)

Extract 8.1.32 includes the first story grammar units – the setting, the initiating event and part of the characters’ reactions. It shows that the narrative episodes were sequentially ordered by the use of the conjunction “*et*”, not unlike what was observed in Oliver’s first production in English, which is analyzed below. Moreover, it shows that Oliver did not use the phrase “*il était une fois*” in French. He also did not comment on the characters’ motivations, nor did he make explicit causal relationships between the events he included in his narrative. Moreover, Oliver’s first production in the first setting in French did not include a clear ending – he labeled the final events, but failed to tie these back to the overarching theme of the story. This is typical of the stage of Primitive Narratives.

Finally, extract 8.1.32 shows that Oliver punctually used lexical items in English in his production in French (in bold in the extract). Oliver borrowed the term “frog” from English into French and used it instead of the term “*grenouille*” in French, despite having used the French term in his first utterance. This could suggest that Oliver’s use of borrowings in his non-dominant language was influenced not solely by his knowledge of the lexical items but also by the cognitive load of the task he was involved in.

In the first recording session in English, Oliver did not hold the book, but started turning the pages by himself from the middle of his narrative onward. The first setting was intimidating for Oliver even in his dominant language. His production was hesitant, and required scaffolding from the interviewer, who regularly offered positive reinforcement and occasionally encouraged the child to go on by asking him what was happening in the pictures. Extract 8.1.33 was taken from the beginning of Oliver’s production based on the wordless picture book during the first recording session in English.

Extract 8.1.33.

Oliver, 4;01 – Setting 1 (English, first session)

Link to video: <https://drive.google.com/file/d/1dpnszp2zY9Nqq9fNfsb8jqpRhw4-0q88/view?usp=sharing>

CHI: A boy and a dog and a frog and (.) a bee (.) +...

INT: yes.

CHI: +, flied away.

INT: mhmh and here?

CHI: and the little boy was fishing fish.

CHI: but he got a tortoise.

INT: what [/] what happens?

CHI: he felled in the water +...

CHI: +, the little boy.
 CHI: the tortoise has got it.
 INT: yes and what happened?
 CHI: the frog swam away.
 INT: okay (.) and then?
 CHI: a dog xxx and the little boy was far away.
 CHI: and they jump- [///] and the frog jumped in the water.
 CHI: and they [//] the dog *still* was hurting.
 CHI: and he gotten away.
 CHI: but the tortoise got with him gone away.

Oliver's production was consistent with the predictions of the literature – at 4;02, he produced a narrative in which the events were sequentially ordered. Extract 8.1.33 shows that the temporal ordering of events in Oliver's narrative in English relied both on the use of the coordinating conjunctions “and” and “but”, as well as on the sequential order of his utterances – the utterances Oliver produced followed the order of the events they narrated. Oliver also punctually used temporal adverbs, which allowed him to depart from a purely sequential ordering of events. In extract 8.1.33 for instance, the adverb “still” allows him to present an event as ongoing, and thus as co-occurring with other events. Oliver's narrative production in the first setting in English contained a setting, an initiating event, and the characters' ensuing reactions. However, Oliver did not mention the resolution of the story. Moreover, he did not comment on the characters' motivations, which weakened the plot of his narrative – the events were seldom explicitly tied back to the overarching theme of the story. Finally, extract 8.1.33 illustrates the interviewer's use of backchannelling, triggered by Oliver's hesitant production. Contrary to Arthur and Lucas, Oliver also tended to rely on the pictures – he pointed to the open book as he narrated the events, and sometimes mimed the actions he was relating. Oliver's narrative production in English was analyzed as a Primitive Narrative in Applebee's terminology.

In the second recording session in French, Oliver turned the pages himself. He took up and completed the phrase “*il était une fois*”, which he had not done in his first narrative production. This can be interpreted as a sign of his increased familiarity with the narrative genre in French. He also seemed much less hesitant than during the first recording session, although he used onomatopoeia and gestures more frequently than he did in his first narrative production on the wordless picture book. His comprehension and retelling of the story was mediated by his own body, as he either pointed to himself or to the book or mimed the characters' actions. This is illustrated by the secondary lines (signaled by the % sign) in extract 8.1.34. The joint use of gestures and speech has been identified in the literature as central to the narrative productions of both children and adults, although adults tend to use gestures to served more different purposes than children (Colletta,

2009). Oliver mostly used representational gestures, which is characteristic of children's narratives in the earlier stages.

Extract 8.1.34.

Oliver, 5;01 – Setting 1 (French, second session)

Link to video: <https://drive.google.com/file/d/17IMu9MeGR77YW9BSpEevngArBiCcqm4C/view?usp=sharing>

17IMu9MeGR77YW9BSpEevngArBiCcqm4C/view?usp=sharing

CHI: et après lui vu les abeilles ohoh. (*and then he saw the bees.*)

CHI: chut. (*sh.*)

%gpx: CHI puts his index to his mouth.

INT: qu'est-ce qu'ils font là tu crois ? (*what do you think they are doing there?*)

CHI: 0.

%sit: CHI screams.

INT: oui. (*yes.*)

INT: et comment on dit ça ? (*and how do you say that?*)

INT: il +...

%sit: CHI screams.

CHI: il [/] il crie comme ça. (*he shouts like that.*)

INT: oui oui. (*right right.*)

INT: et puis là ? (*and there?*)

CHI: il regarder dans là. (*he looks in there.*)

CHI: et après lui fait mal (.) à son nez. (*and then he hurts his nose.*)

%gpx: CHI points to his nose.

INT: aïe aïe aïe. (*ouch.*)

CHI: et après le chien vu les abeilles et lui dit ohoh. (*and then the dog saw the bees and said ohoh.*)

%sit: CHI makes noise to imitate the dog panicking.

The first and second narratives he produced in French were similar in terms of the story grammar units he mentioned – his second narrative included the setting, the initiating event, as well as the characters' reactions. However, Oliver did not include discussion of the characters' motivations and did not provide a clear resolution tied back to the initiating event. His mention of the last narrative event in the story – the boy finding the frog family and taking a frog back with him – was fully disconnected from the beginning of his narrative. His productions in French were also syntactically similar in the two sessions – they relied on simple syntax, including temporal connectors used to present events sequentially (mostly “*et*” and “*et après*”).

During the second recording session in English when he was 5;03, Oliver did not seem eager at first to participate in the narrative task. As during the previous sessions, he was asked to look at the pictures once so he would be familiar with the story in its entirety before he started to narrate it. Oliver started telling the story while flipping through the pages, which might explain his reluctance to go through the narrative again once he had seen all the pictures once. He did go on to produce a narrative, but did so in a low voice which made his narrative sometimes hard to hear and frequently led the interviewer to ask him to repeat what he had just said (the video is accessible by clicking the link: <https://drive.google.com/file/d/1inqorB9eQUCed69CpJgAWmUlvftjgquE/view?usp=sharing>). As he narrated the final pages of the book and seemed eager to end the task, the rhythm of Oliver's speech accelerated.

Despite these signs that Oliver was reluctant to participate, he produced a narrative which included a setting, an initiating event and the characters' reactions. As in his first production in English, and similarly to his second production in French, he mentioned the ending but did not clearly tie it back to the overarching theme of the story. His narrative productions in the second session were analyzed as Primitive Narratives in his two languages – they included sequentially ordered events with a clear focus on the central character. However, he mentioned neither a clear ending and resolution, nor the characters' motivations. It is likely that the absence of clear signs of narrative development in the macro-structural analysis of Oliver's productions was a consequence of his reluctance to participate in the tasks.

8.1.4.2 Second setting: narrative retell

The narrative retell setting was particularly challenging for the younger children in the corpora; they required close scaffolding, especially in their non-dominant language. In the first recording session in French, Oliver spontaneously produced only one utterance, which focused on the end of the short clip he had just watched, as illustrated in extract 8.1.35.

Extract 8.1.35.

Oliver, 3;11 – Setting 2 (French, first session)

Link to video: <https://drive.google.com/file/d/1cV30UiewxfyrAzDfsyhxb7Mhak40glxc/view?usp=sharing>

CHI: uh lui met le petit poussin dans le nid. (*he puts the small chick in the nest.*)

INT: un petit poussin dans le nid et alors [>] ? (*a little chick in the nest and then?*)

CHI: oui [<]. (*yes.*)

CHI: c'est tout [>]. (*that's it.*)

His mother encouraged him to say more, leading him to produce several utterances to retell the story of the clip he had watched. However, Oliver's retell remained fragmented in terms of narrative organization – he answered his mother's questions, but did not organize his production into a clear and coherent story grammar. In particular, he did not mention either the setting of the story or the initiating event, which made the plot of the story difficult to understand.

Extract 8.1.36.

Oliver, 3;11 – Setting 2 (French, first session)

Link to video: <https://drive.google.com/file/d/1cV30UiewxfyrAzDfsyhb7Mhak40glxc/view?usp=sharing>

CHI: et jerry c'est le petit oiseau xxx mets lui dans son nid. (*and jerry it's the little bird xxx puts him in his nest.*)

MOT: ça c'est à la fin mais il était pas dans son nid directement. (*that's the ending but he wasn't in his nest straight away.*)

MOT: qu'est-ce qu'il s'est passé avec l'oeuf qu'est-ce qu'il a fait l'oeuf ? (*what happened with the egg what did the egg do?*)

CHI: euh le oeuf craquer. (*the egg cracked.*)

MOT: et tout de suite ou d'abord il est +... (*straight away or did he first...*)

CHI: lui marcher dans un oeuf. (*he walked in an egg.*)

CHI: et après lui craquer dans **jerry's@s maison**. (*and then cracked in jerry's house.*)

MOT: d'accord [>]. (*alright.*)

INT: <ah ah oui> [<]. (*right yes.*)

INT: et après ? (*and then?*)

MOT: est-ce qu'il était bien dans sa maison ou il faisait des bêtises ? (*was he good in the house or did he behave badly?*)

CHI: lui manger tout son maison. (*he ate the whole house.*)

INT: ah et alors ? (*oh and so?*)

CHI: euh le petit [///] lui a mis le petit oiseau dans son lit après. (*he put the little bird in his bed after that.*)

In his first production in French, Oliver used simple syntax, and the temporal adverb “(et) après”, which he produced once spontaneously and once after the interviewer used it to elicit speech. He used similar linguistic devices to order events in his productions in the first two settings.

Moreover, Oliver used a syntactic borrowing in his production in French – he used the English possessive construction in French (in bold in the extract), associating the name

of the character inflected for the progressive with a French common noun (“*maison*”). Translanguaging was unidirectional in Oliver’s productions – he borrowed lexical items or constructions from English into French but did not use French in his productions in English. This supports the claim that he was dominant in English at the time of recording.

As predicted in the literature, the combination of age and dominance factors impacted Oliver’s ability to produce a comprehensive and coherent narrative even more in the second setting than in the first. This is illustrated by extract 8.1.37, which provides Oliver’s production on the narrative retell task in English during the first recording session. It includes only the utterances Oliver produced with little or no elicitation.

Extract 8.1.37.

Oliver, 4;01 – Setting 2 (English, first session)

Link to video: <https://drive.google.com/file/d/1yPKva40v4GpG160EuSPKcjC3851x5jyL/view?usp=sharing>

CHI: he was cooking a fish.

CHI: and then jerry took him out of the pan.

CHI: but the cat swallowed him already and the [/] and the +...

CHI: jerry opened the mouth then the fish run out into the cup.

CHI: and then they both went into the house.

CHI: and then bang (.) the cup broke.

CHI: *until* there was nothing left on the earth.

CHI: only (.) no houses.

CHI: only water.

INT: and?

CHI: uh and then it was the end.

Extract 8.1.37 shows that Oliver produced eight utterances spontaneously in the first narrative retell task he participated in in English, against only one in French. Moreover, Oliver’s first narrative retell in English mentioned the setting, the initiating event, as well as some of the characters’ reactions and part of the resolution. However, because these units were not explicitly linked to each other or tied back to the characters’ motivations, the plot of his narrative was difficult to retrieve.

In English, which was Oliver’s dominant language at the time, the structure of his narrative productions on the wordless picture book and on the retell tasks was similar, despite differences in length. Oliver omitted the final story grammar units in his narrative productions in the first and second settings. In particular, he did not narrate the resolution of the story, although he mentioned its conclusion in both settings. This suggests that Oliver may have had difficulties either identifying or narrating the overarching theme of

the two stories he was asked to tell – to include the resolution in his narrative would have implied being able to tie it back to the initiating event, in order to explain how it was finally resolved by the characters’ (re)actions. In both settings, he also organized events sequentially by relying on similar temporal connectors. He mostly used the adverbial “and then” in the first two settings, and also punctually used adverbs to present events as ongoing (“until” in extract 8.1.37, in italics in the transcription).

In French, Oliver produced a longer narrative during the second recording session and required much less scaffolding to do so. Similarly to what was observed in the first narrative task, Oliver used onomatopoeia and gestures to refer to the characters’ actions, which led the interviewer and his mother to ask him to verbalize his production. This is illustrated by extract 8.1.38, which includes the setting and initiating event of Oliver’s narrative.

Extract 8.1.38.

Oliver, 5;01 – Setting 2 (French, second session)

Link to video: https://drive.google.com/file/d/10JIHo_5r8CJM85EPuWK3KfmgaczC3Jya/view?usp=sharing

CHI: une fois il y avait un maman oiseau qui était dessus un oeuf. (*once there was a mummy bird who was on top of an egg.*)

CHI: qui tricotait. (*who was knitting.*)

%gpx: CHI gestures with his hands as if knitting.

CHI: et après boing. (*and then boing.*)

%sit: CHI throws himself back.

INT: qu’est-ce que c’était ça ? (*what was that?*)

CHI: et après elle a vu xxx et elle s’envolait. (*and then she saw xxx and she flew away.*)

%sit: CHI makes a hand gesture to imitate wings flapping.

CHI: et l’oeuf tombait [>]. (*and the egg was falling.*)

INT: la maman [<] ? (*the mummy.*)

MOT: oliver oliver oliver sois xxx et parle [>]. (*oliver be xxx and talk.*)

CHI: et dessus un +/. (*and on top of it.*)

MOT: qu’est-ce qui est tombé ? (*what fell.*)

CHI: le [/] le oeuf. (*the egg.*)

MOT: ah okay.

CHI: et après boing dessus un feuille. (*and then boing on a leaf.*)

CHI: et après boing dessus une fleur. (*and then boing on a flower.*)

CHI: et après xxx dessus une (.) oeuf [>]. (*and then xxx on top of an egg.*)

INT: ah oui [<]. (*right yes.*)

CHI: et après va aller dans la maison. (*and then going to go in the house.*)

CHI: et la souris vu. (*and the mouse saw.*)
 INT: il est allé dans la maison de la souris alors ? (*he went into the mouse's house then?*)
 CHI: oui et le souris dormait comme ça. (*yes and the mouse was sleeping like that.*)
 %sit: CHI lies down, closes his eyes and snores.

The rest of his narrative included the mention of the characters' reactions to the initiating event as well as part of the resolution of the story. Once again, Oliver did not mention the characters' motivations, which made it difficult to understand the resolution of his narrative. In his second retell production in French, Oliver used simple syntax, producing simple clauses and relying on the adverbial “*et après*” and the coordinating conjunction “*et*” to order events sequentially.

Oliver also produced a longer narrative retell in the second recording session in English than he had in the first session. Although he did not narrate all the narrative episodes which made up the video clip, his narrative retell included a setting, an initiating event and the characters' reactions as well as a resolution. Oliver's narrative retell production during the second English session is provided in extract 8.1.39.

Extract 8.1.39.

Oliver, 5;03 – Setting 2 (English, second session)

Link to video: <https://drive.google.com/file/d/1e-Z0tikmN0ws8KE0-tTtoYmUgtaTUJKE/view?usp=sharing>

CHI: <he was> [<] cooking a fish.

INT: what are the characters?

CHI: the fish [///] the baby fish [///] the adult fish got aten.

CHI: and [/] and [/] and the cat ate the adult fish.

CHI: and then the mouse saved it.

CHI: and then [>] +/.

INT: <so the cat> [<] was trying to eat the fish.

CHI: and then xxx he found an idea.

CHI: bec- and then he went in a pipe.

CHI: and then he [/] he came out [>].

INT: yes [<].

CHI: and then he just went into the kitchen.

CHI: and then he [/] he xxx took the fish out.

CHI: and then he gave him a bomb.

CHI: and then he was cutting [>] +/.

INT: <who did> [/] who did [<] ?
 CHI: the mouse.
 CHI: <and then he> [/] and then <he jus-> [//] he was cutting it.
 CHI: and then he putted his tail in.
 CHI: <and then he> [/] and then he burned his tail.
 CHI: and then bang.
 CHI: and then he launched up into the space.
 INT: yes.
 INT: alright [>].
 CHI: <and then> [<] he banged into the sun.

Extract 8.1.39 shows that Oliver used simple syntax in English – as in French, he produced simple clauses and relied on the temporal connector “and then” to order events in his narrative. Oliver did not mention causal relationships between events in his production. However, he started presenting events not only sequentially but also as co-occurring, mostly through the use of finite verb forms.

Comparing his productions in the first and second recording sessions in his two languages confirms the impact of age and possibly of familiarity with the task on the children’s ability to produce coherent narratives in the retell task – like the other children I recorded in London, Oliver produced a more comprehensive narrative retell in the second recording session than in the first.

8.1.4.3 Third setting: personal narrative

Oliver had trouble staying focused throughout the two sessions he participated in in his two languages. After participating in the two narrative tasks, he disengaged from the interaction and showed signs of fatigue.

During the first session in French, he produced three personal narratives about Christmas and his return to school. These included four and three utterances each and were characterized by the use of simple syntax (a video extract including the first personal narrative he produced in French is accessible by clicking the following link: <https://drive.google.com/file/d/10soiK1YeyqqUr06FR7B1FvL0bydDajqj/view?usp=sharing>). A year later during the second session in French, he produced more personal narratives ranging from two to five utterances each (a video extract including the first personal narrative he produced in French is accessible by clicking the following link: https://drive.google.com/file/d/1dd_uMmcoy5p9gU8RDeNFsPjjs1zjgfp8/view?usp=sharing). The personal narratives he produced in the two sessions included simple, declarative syntax.

During the first session in English, he produced four personal narratives, about his holidays, his Easter egg hunt and his weekend. These narratives included between five and ten utterances each. This suggested it was easier for Oliver to engage in the interview session in English, perhaps because it was less straining for him to participate in the narrative sessions in his dominant language, which entailed that he was less fatigued by the end of the session. It could also be explained by the fact that English was the language in which he had experienced the events he was narrating, making them easier to access in that language. However, the personal narratives he produced in English were not more syntactically complex than the ones he produced in French – they relied on simple syntax and included simple coordinated clauses. In the second session in English, Oliver produced only two personal narratives made up of two utterances each. He had trouble focusing during the session, which was already visible in his narrative productions in the two first settings. This made the interviewer's task more difficult and shifted her focus from eliciting narratives of past events to eliciting speech, by asking questions which yielded generic, descriptive answers instead of personal narratives.

Table 8.7 summarizes the linguistic and structural characteristics of Oliver's productions in the three settings, in his two languages. They highlight interactions between dominance and task-type effects – the second setting was particularly challenging for Oliver and yielded shorter productions, especially in his non-dominant language. Oliver also produced shorter personal narratives during the first session in French, suggesting it was easier for him to participate in the task in his dominant language, perhaps because it was the language in which he had experienced the events he narrated. Oliver's productions also highlight the impact of age and narrative development on the linguistic resources used by the children in the three settings – Oliver used more deictic pointings and representational gestures in his productions than the older children in the study, suggesting that gestural and verbal resources were used jointly by Oliver to participate in cognitively demanding tasks.

8.1.5 Description of Julian's productions in the three settings

Julian was the oldest child I recorded in Paris. He was 5;05 during the first recording session in French and 5;07 during the first recording session in English. His family moved to the Sultanate of Oman between the two recording sessions, and I thus had to record his second narrative productions in French and in English only a few days apart during the summer holidays. He was 6;10 during the second recording sessions in both of his languages. Julian's language choices during the family dinner and the narrative sessions presented in chapter 5 suggested that he was fairly balanced in his use of his two languages.

Lg and Age	S	Macrostructure (Number of utterances and SG units included)	Linguistic means	Narrative stage									
FR 3;11	1	29 utt. (MLUw 4.8) - Setting, initiating event, characters' reactions - No overarching theme	58 utt. (MLUw 3.8) - Setting, initiating event, characters' reactions	- Simple syntax - Temporal conn. - Translang.	- Simple syntax - Temporal conn. - Deictic pointing and iconic gestures	Primitive narrative	Primitive narrative						
						2	1 utt. - Resolution	- Setting, initiating event, partial resolution - No overarching theme	- Simple syntax - Temporal conn. - Translang.	- Simple syntax - Temporal conn.			
											3	3 pers. narr. (3 to 4 utt.)	7 pers. narr. (2 to 5 utt.)
	EN 4;02	1	38 utt. (MLUw 6.6) - Setting, initial event, characters' reactions, partial resolution - No overarching theme	31 utt. (MLUw 5.8) - Setting, initial event, characters' reactions - No overarching theme	- Simple syntax - Temporal conn. - Deictic pointing and iconic gestures	- Simple syntax - Temporal conn. - Deictic pointing and iconic gestures	Primitive narrative	Primitive narrative					
							2	8 utt.	- Setting, initiating event, characters' reactions, partial resolution	- Simple syntax - Temporal conn.	- Simple syntax - Temporal connector		
												3	4 pers. Narr. (5 to 10 utt.)
5;03													

Table 8.7: Main structural and linguistic characteristics of Oliver's productions in the three settings in his two languages (dominant in English)

8.1.5.1 First setting: wordless picture book

During the first recording session in French, Julian produced 31 utterances with a MLUw of 7.5, while in English he produced 25 utterances with a MLUw of 7.8. During the second recording session in French, he produced 25 utterances, with a MLUw of 7.8; in English, he used 31 utterances with a MLUw of 7.5. During both recording sessions, the narratives he produced in the first setting were thus very close in length.

In the first recording session in French, his general attitude and interaction with the book as a physical object suggested his involvement in the task. Indeed, he held the book and turned the page himself, and used the phrase “*il était une fois*” to begin his narrative. Julian’s prosody was also typical of narrative productions. It was characterized by a falling contour at the end of his utterances and systematic pitch resets at the start of new utterances. Extract 8.1.40 was taken from the beginning of Julian’s first narrative production based on the wordless picture book in French.

Extract 8.1.40.

Julian, 5;05 – Setting 1 (French, first session)

Link to video: https://drive.google.com/file/d/17zVSEg0cUH7QYI10htn7MJR_MrJTrN-f/view?usp=sharing

CHI: il était une fois +... (*once upon a time...*)

INT: très bien. (*very good.*)

CHI: +, un petit garçon avec un chien avec sa grenouille. (*a little boy with a dog with his frog*)

CHI: et quand la grenouille grandit et que demain matin il la voyait plus. (*and when the frog grew up and that tomorrow morning he could not see it anymore*)

CHI: le chien avait la boîte dans sa figure. (*the dog had the box on his face*)

CHI: et le petit garçon s’habillait. (*and the little boy was putting his clothes on*)

CHI: le chien et le petit garçon disaient grenouille où es-tu grenouille où es-tu ? (*the dog and the little boy said frog where are you frog where are you?*)

CHI: le chien tombait. (*the dog fell.*)

CHI: et le garçon rattrapa le chien. (*and the boy caught the dog.*)

CHI: et cria grenouille où es-tu ? (*and yelled frog where are you?*)

CHI: woof woof où es-tu ? (*where are you?*)

CHI: il chercha dans le (pe)tit trou. (*he looked into the small hole.*)

CHI: ohoh qui est là ? (*who’s there?*)

CHI: et le chien a trouvé les petites abeilles (.) qui l'a chassé le chien.
(and the dog found the little bees who chased the dog.)

CHI: et que le petit garçon regardait si sa grenouille elle était pas là. *(and the little boy looked to see if his frog wasn't there.)*

This extract shows that Julian's narrative focused on well-identified central characters (the boy and his dog). It also shows that the events were organized sequentially by the use of different finite verb forms, and of the coordinating conjunction "et". His narrative production was moreover characterized by the use of complex syntax, including adverbial clauses to locate events as co-occurring and relative clauses to describe the characters. Finally, extract 8.1.40 includes the mention of the setting, the initiating event, and the subsequent reactions from the characters, although Julian seemed to have misunderstood the frog leaping out of the jar as the frog growing up. Julian thus included the initial story grammar units in his narrative. However he did not make the ending explicit – he commented on the final events but did not narrate a logical resolution of the initiating event. His narrative was thus analyzed as a Focused Chain, in Applebee's terminology. This stage of narrative development is the stage expected to be reached at Julian's age.

Julian was more introvert in the first recording session in English than he was in French. Although he participated in the session, he spoke in a very low voice and with a monotone prosody. This can be explained by considering Julian's experience with narrating or reading stories in both of his languages. Indeed, his parents reported that although he attended a bilingual school, he was signed up in the French reading group, which suggests he may have had more experience with reading stories in French than in English. Despite differences in his involvement in the task in his two languages, there was no significant difference in the structural complexity of his productions in French and in English. This is illustrated in extract 8.1.41, which includes the beginning of Julian's first narrative production in the first setting in English.

Extract 8.1.41.

Julian, 5;07 – Setting 1 (English, first session)

Link to video: <https://drive.google.com/file/d/1BwVeVQIiT1nuhfzLy-E9HALuHPGLBkPW/view?usp=sharing>

CHI: once upon a time a little boy was fishing.

INT: mhmh.

CHI: and he got a fish.

INT: okay.

CHI: and then the fish pull [/] pull.

CHI: and he pull harder the fish.

CHI: he fall down in the water.
 INT: oh yeah.
 CHI: and his friends.
 CHI: and then he saw a turtle <when he> [/] <when he> [/] when he came out.
 INT: mhmh yeah the turtle (.) what about the turtle?
 CHI: 0.
 %gpx: CHI shrugs.
 INT: let us see okay?
 CHI: and then he [//] they had a fight with the dog and the turtle.
 CHI: then the turtle bite the dog.
 INT: oh yeah.
 CHI: <and then he> [//] and then the little boy pull on his dog.
 CHI: and then he pulled and then he got him but the turtle was still on the dog.

Extract 8.1.41 includes the first story grammar units identified in Julian's narrative in English. Like in French, Julian's first narrative in the picture book setting in English included mention of the setting, the initiating event, and the characters' reactions. Although Julian produced narrative utterances to describe the final events, he did not clearly tie the ending back to the beginning of the story, which is typical of children's chain narratives. Because the focus of his production was maintained on the boy and his friends throughout his narrative, it was labeled a Focused Chain, in Applebee's terminology. His narrative productions were thus structurally similar in his two languages in the first recording sessions, despite differences in his general attitude towards the task. This extract also shows syntactic similarities between Julian's productions in French and in English, mostly with regards to the linguistic means used to order events sequentially. In particular, Julian relied on the temporal connectors "and" and "and then" to order events, as well as on adverbial clauses to locate events relative to one another.

In the second recording session in French, Julian was also very comfortable with the task, suggesting that he had had enough experience with narrative discourse in French to take on the role of the narrator and produce a story without outside assistance. Similarly to what was observed in his first production, his prosody was characteristic of child narratives. Extract 8.1.42 is taken from the beginning of Julian's second production in the first setting in French.

Extract 8.1.42.

Julian, 6;10 – Setting 1 (French, second session)

Link to video: <https://drive.google.com/file/d/1BwVeVQIiT1nuhfzLy-E9HALuHPGLBkPW/view?usp=sharing>

CHI: quand le petit garçon dormait (.) la grenouille faisait très attention de pas réveiller le petit garçon. (*when the boy was sleeping the frog was very careful not to wake the little boy up.*)

CHI: le lendemain le petit garçon se raperçoit que sa grenouille était partie. (*the next day the boy realizes his frog was gone.*)

CHI: il chercha [/] il chercha mais le chien metta sa tête dans le bol. (*he looked and looked but the dog put his head in the bowl.*)

CHI: xxx.

CHI: xxx.

CHI: et le chien essaya de xxx +... (*the dog tried to xxx.*)

CHI: +, de aboyer. (*to bark.*)

CHI: et le petit garçon dit grenouille grenouille. (*and the little boy said frog frog.*)

CHI: le chien tomba. (*and the dog fell.*)

CHI: et le petit garçon le grondait. (*and the little boy was scolding him.*)

CHI: et le chien apercevait des abeilles. (*and the little boy saw bees.*)

CHI: il coura vers les abeilles. (*he ran towards the bees.*)

CHI: et [/] quand le petit garçon apercevait un animal. (*and when the little boy noticed another animal.*)

CHI: oups oups oups il a fait tomber le nid de toutes les abeilles. (*oops he made the bees' nest fall.*)

CHI: <et il coura> [/] <et il coura> [/] et il coura. (*he ran and ran and ran.*)

CHI: et le petit garçon lui chercha la grenouille. (*and the little boy looked for the frog.*)

Extract 8.1.42 shows that Julian used complex syntax to order events in his narrative, using both relative clauses to characterize the characters and adverbial clauses to locate the events relative to each other. Moreover, there was no significant difference in the type of narrative he produced in the first and second sessions – he mentioned all story grammar units but did not tie all of them back to the main story-line. The ending in particular was still unclear, which was mostly linked to the fact that Julian did not tie back the resolution of his story to the characters' initial motivations. His narrative production was thus also analyzed as a Focused Chain in Applebee's terminology.

Julian was much more engaged during the second recording session in English than during the first session – he spoke louder and appeared more at ease. This may be explained by several factors. First, the family had moved to the Sultanate of Oman during the previous year, which shifted his language exposure and use towards English. Because

he attended an American school in Oman, it may be expected that he had gained more experience in reading activities and thus felt more comfortable with the task. Moreover, as explained above, Julian's second narrative sessions in French and in English were recorded in a span of two days, because of the difficulty to find a time when the family would be in Paris after their move to Oman. Having participated in the session in French on the day before, Julian was also more familiar with the tasks during the English session, which may have made him feel more comfortable. Extract 8.1.43 is taken from the beginning of Julian's production based on the wordless picture book in English during the second session.

Extract 8.1.43.

Julian, 6;10 – Setting 1 (English, second session)

Link to video: https://drive.google.com/file/d/1xRxFNOU_Qy1EIhap39nWaWqYeRhq82Aj/view?usp=sharing

CHI: once upon a time there was a little boy that was [/] that was fishing.

INT: mhmh.

CHI: wow he did not knew there was fish there.

CHI: the fish was so big (.) and the frog.

CHI: hi frog.

CHI: but when the dog say hi frog he pushed the boy in the water.

CHI: and the dog fell.

CHI: and the fish ran off.

CHI: and he [///] oh and that was because of the turtle.

CHI: and the dog was angry.

CHI: but then the turtle bite him.

CHI: the frog was happy because he did not like really the little boy.

CHI: and he stole it.

No significant difference was observed between the number of story grammar units he mentioned and the way he tied them to each other in his first and second narrative productions in English. He included a setting, an initiating event, as well as the characters' reactions to his narrative, but only described the final pictures of the book without providing a clear resolution to the story. His production was thus once again analyzed as a Focused Chain – it maintained the focus on the central characters and included both temporal and some causal relationships between events, but the plot was not strongly developed. In particular, the characters' motivations were not clearly stated, and the ending remained unclear. The main difference between Julian's two narratives in English had to do with the mention of the characters' emotional responses to the events in the narrative. This showed his growing ability to make inferences about the characters' state of mind, which is characteristic of narrative development in children.

8.1.5.2 Second setting: narrative retell

Julian's first production on the retell task in French included thirteen utterances, which are reproduced in extract 8.1.44.

Extract 8.1.44.

Julian, 5;05 – Setting 2 (French, first session)

Link to video: <https://drive.google.com/file/d/1e3NZpsobrjwirwR0f7CpY5oS7uxcTYdm/view?usp=sharing>

CHI: eh ben une maman oiseau à bec. (*well a mummy bird.*)

CHI: eh ben il a laissé son bébé. (*well he left her baby.*)

CHI: il est parti donner à manger [///] il est parti tuer à manger. (*he left to kill something to eat*)

CHI: et après l'oeuf s'en va. (*and then the egg left.*)

CHI: et après il a roulé chez tom et jerry. (*and then he rolled to tom and jerry's house.*)

INT: ah ouais. (*right.*)

CHI: et il a explosé. (*and he exploded.*)

CHI: et jerry regarda. (*and jerry looked.*)

CHI: xxx un bébé oiseau à bec. (*a baby bird.*)

INT: ouais. (*right.*)

CHI: et (.) il a coupé le mur. (*and he cut into the wall.*)

CHI: et après il a coupé le pain. (*and he cut the bread.*)

CHI: et coupé la chaise. (*and cut the chair.*)

CHI: après revenu chez lui. (*then he came home.*)

CHI: après fini. (*and then done.*)

Extract 8.1.44 shows that in his first narrative retell in French, Julian mentioned the setting, the initiating event, several of the characters' reactions to the initiating event as well as a partial resolution. The resolution was analyzed as incomplete because Julian omitted to mention the characters' motivations – in extract 8.1.44, he mentioned the bird going back to its nest but did not mention why or how.

Extract 8.1.44 also shows that Julian used more simple syntax in the narrative retell task than he did in the wordless picture book setting in French. His production in the second setting included only simple clauses, temporally ordered by the use of the connectors “*et*” and “*et après*”. This supports the claim that the greater cognitive load represented by the retell task may yield less complex productions than the task based on a wordless picture book. Moreover, Julian did not use the phrase “*il était une fois*” to start his narrative in French, while he had used it spontaneously in the first narrative setting, which may

suggest that he was more focused on remembering the events that made up the clip than on the narrative organization of his production. This may also be explained by Julian's familiarity with the two narrative settings. Indeed, it is likely that Julian participated in more narrative activities based on a book than on a video clip, which could have entailed that he set himself in a narrative mode more spontaneously in the first setting than in the second one.

Similarly to what was observed in the first narrative setting, Julian appeared less at ease in the second setting in English. This resulted in him spontaneously producing a much shorter narrative than the one he had produced in French. Extract 8.1.45 provides the narrative retell produced by Julian in English during the first recording session.

Extract 8.1.45.

Julian, 5;07 – Setting 1 (English, first session)

Link to video: https://drive.google.com/file/d/1Z60i2IHsZ9FFHrrLi4gNV_VA9jsB93UP/view?usp=sharing

CHI: once upon a time tom wanted to eat fish.

CHI: but then jerry took the fish.

INT: mhmh.

CHI: and (.) after they fight for it.

CHI: and [/] <and then uh> [/] and then tom went to space.

His prosody in English was also less typical of the narrative genre – he spoke in a lower voice, with monotonous intonations, and was more hesitant overall. As suggested above, this may be explained by his lesser experience with the narrative genre in English than in French, which would result in him being less confident, especially when put in an unfamiliar and cognitively more demanding setting. However, extract 8.1.45 shows that Julian included the same story grammar units in his productions in his two languages – a setting, an initiating event, the characters' reactions and a partial resolution. He also spontaneously used the phrase “once upon a time” in his narrative retell in English. This suggests that despite him seeming more intimidated by the task in English, he was able to produce a coherent though short narrative and to rely on his knowledge of the narrative genre to participate in the narrative retell task in his two languages.

During the second recording session in French, Julian produced a narrative retell of roughly the same length as the one he had produced during the first session. It is reproduced in full in extract 8.1.46.

Extract 8.1.46.

Julian, 6;10 – Setting 2 (French, second session)

Link to video: https://drive.google.com/file/d/1S0H3V61_QZqMMvhHDr66-LN7fdlsnPpa/view?usp=sharing

CHI: une fois madame rouge+gorge avait un oeuf en [//] et elle était en train de tricoter. (*once mrs. robin had an egg and was knitting.*)

CHI: une fois elle partait au loin pour aller chercher à manger. (*once she left far away to fetch something to eat.*)

CHI: mettait un panneau pour pas qu'il vienne. (*put a sign for him not to come.*)

CHI: mais l'oeuf xxx il allait bouger [/] bouger [/] bouger. (*but the egg was going to move.*)

CHI: et sorta du nid tomba. (*it left the nest and fell.*)

CHI: mais il ne se casse pas. (*but did not break.*)

CHI: mais quand il était arrivé chez jerry (.) jerry ne le voulait plus. (*but once he had arrived jerry did not want him anymore*)

CHI: et il a fait retourner dans son nid. (*and made him go back to his nest.*)

INT: oui. (*right.*)

CHI: et après il alla chez lui. (*and then he went home.*)

Extract 8.1.46 shows that his narrative included a setting, an initiating event, part of the characters' reactions and a resolution. The main difference between his two narrative productions in French was linked to how developed each story grammar unit was, and to the way he linked the narrative episodes to the overarching theme of the narrative. In his first narrative production in French, he retold in greater length the characters' reaction, which made up the bulk of the video clip he had watched. In his second narrative production, he focused less on the actual events in the narrative, but included mentions of the characters' motivations and aims which is typical of later stages of narrative development. The final utterances in his production in particular made for a more complete resolution which strengthened the plot of his narrative. Julian also used more complex syntax in his second narrative retell in French, as he used adverbial clauses both to order events relative to one another and to mention the characters' motivations.

In English, the main difference between his two productions was linked to his general attitude towards the narrative – he was more at ease during the second recording session. This could be linked to his greater familiarity with the task, which he had participated in on the day before in French. However, it could also be explained by a greater experience with producing narratives in English, linked to the change in his pattern of language

exposure and use. Extract 8.1.47 provides Julian's second narrative retell in English.

Extract 8.1.47.

Julian, 6;10 – Setting 2 (English, second session)

Link to video: <https://drive.google.com/file/d/133ExDdeSMCOPZsSDgkH5LftMigJSujat/view?usp=sharing>

CHI: so once upon a time a cat had a fish.

CHI: and almost wanted (to) eat it.

CHI: but the mouse he took it from him with tricks.

CHI: and the cat he was so so so big *that he could not really go through.*

CHI: but how can he?

CHI: he did go through.

CHI: and he got smoshed smoshed.

CHI: and then he was gross.

CHI: he was big and fat after that.

CHI: and so the f- [//] he boiled and he boiled the fish.

CHI: the fish was still alive.

CHI: and the mouse got him.

CHI: and the cat he went in space.

This extract shows that Julian's narrative production on the retell task during the second English session was much longer than his production in the first session. It also relied on more complex syntax – he used a relative clause (in italics in the extract), which allowed him to mention causal relationships between the events in his narrative rather than solely ordering the events temporally.

However, despite greater syntactic complexity in the second session, the overall structures of his two retell narratives were similar. They both included mentions of the setting, the initiating event, at least part of the characters' reactions and a partial resolution. The main difference between his two narratives in English was identified not in the number of story grammar units he included in his production, but rather in the amount of detail he gave on the characters' reactions to the initiating event. In the first session, he merely mentioned that the characters fought for the fish, while in the second session he was able to mention more specific events that had occurred in the clip and to order them into his narrative.

Despite his second narrative being more comprehensive than the first, both were still less developed than the narrative he had produced on the first task. This can be explained by the higher cognitive demand of the second task, in which the children had to both

remember the events they had watched in the cartoon and order them back into their own productions without being able to rely on visual cues.

8.1.5.3 Third setting: personal narrative

Julian produced two personal narratives in French in the interview setting during the first recording session (the first personal narrative produced by Julian is accessible by clicking the following link: <https://drive.google.com/file/d/1QdDCR4tIZkpSuSQYpclFtv3lcqrfI00S/view?usp=sharing>). One was about his holidays in Brittany and the other about a fire drill that had occurred at school. They were of similar length – the first consisted of five utterances and the second of six utterances. Moreover, both personal narratives included exclusively simple coordinated clauses in answer to the interviewer’s elicitation – contrary to what was expected, the spontaneous setting did not yield more complex productions than the two narrative settings.

In the second recording period, Julian produced three personal narratives in the interview setting. The first one was about a zip line activity he had done while on holidays, the second one about a play-date with one of his friends and the third about a goal he had scored during a football match. These were longer than the personal narratives he produced in the first session – the first one consisted in seventeen utterances, the second included five utterances and the third included twelve utterances. They were also produced more spontaneously – Julian required little elicitation from the interviewer to narrate these past events. Finally, Julian’s personal narratives in the second recording session were also characterized by greater syntactic and tense complexity, as illustrated in extract 8.1.48.

Extract 8.1.48.

Julian, 6;10 – Setting 3 (French, second session)

Link to video: <https://drive.google.com/file/d/1W67y0C0Fbcn-3mesEz6TjCHiyG7y23Tf/view?usp=sharing>

CHI: euh il y avait juste quelqu’un sur un corner +... (*there was only one person on the corner.*)

INT: oui. (*yes.*)

CHI: +, *qui avait frappé la passe* euh non [>] (*who had hit the ball uh no.*)
+...

INT: oui [<]. (*yes.*)

CHI: euh à quelqu’un il l’avait passé à moi. (*someone had passed me the ball.*)

CHI: j’étais sur la ligne. (*I was on the line.*)

CHI: et le goal il avait pas vu il était comme ça et j’ai shooté. (*and the*

goal keeper had not seen and he was like that and I kicked the ball.)

CHI: et <il a fait ça> [//] il a fait comme ça. *(he did this.)*

CHI: et but. *(and goal.)*

INT: trop bien. *(great.)*

INT: tout le monde était trop content dans ton équipe ? *(and everyone on the team was really happy?)*

CHI: ah oui. *(oh yes.)*

CHI: en plus il y en a un qui s'appelait xxx et je pense que c'est lui **qui déservait@s le meilleur but**. *(and there was one whose name was xxx and I think he deserved best goal.)*

CHI: mais le coach avait dit que c'était moi **qui avais marqué le meilleur but**. *(but the coach said it was me who had scored the best goal.)*

As shown in extract 8.1.48, Julian's personal narratives in the second recording session included relative clauses (in bold in the extract), which he used to characterize the participants and to order the events in his narrative. He tended to use longer utterances in the first and third setting than he did in the narrative retell task, confirming that the second setting was particularly challenging.

Finally, the personal narratives he produced in the second recording session showed signs of cross-linguistic influence from English to French; in extract 8.1.48, this was illustrated by the borrowing of the verb "deserve" which Julian integrated into the French system at the phonetic and morphosyntactic levels. This borrowing was not interpreted as a sign of language dominance mostly because Julian also used borrowings from French in his personal narrative in English; rather, this was explained by the fact that English was the language in which Julian had experienced the event he recounted, which led him to rely on English to talk about it.

In English, Julian was particularly intimidated during the first recording session, in all three settings. He produced two personal narratives, which consisted of three utterances each, the first about his holidays in Brittany and the second about his past week in school. He mostly used simple syntax, producing simple, coordinated clauses. This may be explained by the length of the session – Julian might have been tired out by the two narrative tasks which made him less willing to engage in interaction in the last setting.

In the second recording session, Julian was much more engaged in the interaction and produced many more personal narratives, which were also much longer. The first one was triggered by the short cartoon Julian was asked to watch and retell – it reminded Julian about a time during the summer when he had caught a fish with his friend on the beach. This first personal narrative included 29 utterances and was spontaneously contributed by Julian. The second personal narrative he produced was elicited by the interviewer, and

made up of 21 utterances used to relate the time when Julian did a zip line in Corsica. He then produced two shorter narratives (made up respectively of 8 and 7 utterances), about his activities with his cousins during the summer. Finally, he produced a personal narrative made up of 21 utterances to tell the interviewer about an allergic reaction he had had during the summer which had forced him to go to the hospital. This narrative is in part reproduced in extract 8.1.49.

Extract 8.1.49.

Julian, 6;10 – Setting 3 (English, second session)

Link to video: https://drive.google.com/file/d/1p39ZI_WUn1gK1s0gGbugsRb0fvMF97N1/view?usp=sharing

CHI: no it was at the you know **urgences@s** [/] **urgences@s**.

INT: mhmh.

CHI: so I saw actually there was somebody that cut his tongue at the pool.

INT: ouch.

CHI: yes.

CHI: and also so I saw somebody with **menottes@s** you know.

CHI: like +...

%gpx: CHI puts his wrists together as if in handcuffs.

CHI: he did not xxx but I saw him go away because he was already [/] already here when we were here.

CHI: and so +...

CHI: +, so we could not even go see <the house of ajaccio> [///] the house of napoleon.

CHI: because we were wanted to go there.

CHI: because we went to a **resto@s**.

%com: CHI pronounces the lexical item *resto* in an English accent.

Extract 8.1.49 shows that Julian produced his personal narrative spontaneously, and that it included complex syntax. In particular, Julian used relative and adverbial clauses in his personal narrative, like he did in the first setting.

It also shows that like what was observed in his production in French, Julian borrowed lexical items from French with different degrees of integration into the French phonetic system (in bold in the transcription). The first two lexical items he borrowed from French, the nouns “*urgences*” and “*menottes*” were most likely used by Julian to fill a lexical gap in English – he probably did not have access to the English equivalents and thus used the French words accompanied by a gesture to make the meaning of the words explicit. Neither nouns were phonetically integrated into English, contrary to the second lexical

item he borrowed from French (“*resto*”, in his last utterance). This may be explained by the fact that the word “restaurant” exists in both French and English – Julian might thus have considered that the abbreviation often used in French could also be used in English, and he thus fully integrated it into the English phonological system.

Table 8.8 summarizes the observations made on the structural and linguistic characteristics of Julian’s productions. The comparison between his productions in French and in English during the first session highlights the impact of narrative experience on Julian’s general attitude towards the narrative tasks. Julian seemed more at-ease during the session in French, which may be explained by the fact that he attended a French reading group in school. After a year spent in Oman in an American school, Julian’s attitude towards the tasks was similar in both of his languages. Julian’s productions also highlight task-type effects, in particular in the second setting. Indeed, Julian tended to use more simple syntax in the narrative retell task than in the two other settings. Age or familiarity with the task also influenced Julian’s narrative performance in the second setting – he produced more complex narrative retells in his two languages in the second recording session than in the first. Finally, Julian’s productions in French and in English in the third setting illustrate the complementarity principle – what Julian had lived through in one of his languages was likely to be narrated using lexical items from that language.

8.1.6 Description of Emma and Charlotte’s productions in the three settings

Emma and her twin sister Charlotte were the youngest children I recorded in Paris. They were 3;11 during the first recording session in French, and 4;10 during the second recording session in French. They were 4;11 during the recording session they participated in in English – neither children participated in the first session in English which was organized when they were 4;02. Their dominant language was French – it was the language which they used most consistently during the family dinners as well as the language to which they received more exposure at the time of recording, as shown in chapter 5.

8.1.6.1 First setting: wordless picture book

Neither Emma nor Charlotte participated in the narrative task in English during the first recording session. Only Emma participated in the first task during the first session in French, but her production required constant elicitation, and did not include organized story grammar units. This is illustrated in extract 8.1.50 below, taken from the beginning of her production on the wordless picture book during the first recording session in French.

Lg and Age	S	Macrostructure (Number of utterances and SG units included)		Linguistic means		Narrative stage	
		N1	N2	N1	N2	N1	N2
FR 5;05 - 6;10	1	31 utt. (MLU _w 7.5) - Setting, initiating event, characters' reactions - Focus maintained	25 utt. (MLU _w 7.8) - Setting, initiating event, characters' reactions - Focus maintained	- Complex syntax - Temporal conn. - Narrative prosody	- Complex syntax - Temporal and causal conn. - Narrative prosody	Focused chain	Focused chain
	2	2 pers. Narr. (5 to 6 utt.)	3 pers. Narr. (5 to 17 utt.)	- Simple syntax	- Complex syntax - Temporal and causal conn. - Translang.		
EN 5;07 - 6;10	1	25 utt. (MLU _w 7.8) - Focus maintained - Setting, initiating event, characters' reactions	31 utt. (MLU _w 7.5) - Focus maintained - Setting, initiating event, characters' reactions	- Complex syntax - Temporal conn.	- Complex syntax - Temporal and causal conn. - Narrative prosody	Focused chain	Focused chain
	2	2 pers. Narr. (3 utt. Each)	5 pers. Narr. (8 to 29 utt.)	- Simple syntax	- Complex syntax - Temporal and causal conn. - Translang.		

Table 8.8: Main structural and linguistic characteristics of Julian's productions in the three settings in his two languages (balanced bilingual)

Extract 8.1.50.

Emma, 3;11 – Setting 1 (French, first session)

Link to video: <https://drive.google.com/file/d/1aTZHD2ykpxybaUAQqUuIiW2fqLpA6L90/view?usp=sharing>

CHI: il appelle sa mummy@s. (*he calls his mummy.*)

INT: oui ok et puis là ? (*right and there?*)

CHI: mummy@s.

INT: oui ben qu'est-ce qu'il s'est passé là ? (*yes what happened there?*)

CHI: la grenouille (.) [/] la grenouille elle était coincée +... (*the frog was stuck.*)

INT: oui. (*yes.*)

CHI: +, dans [/] l'herbe. (*in the grass.*)

INT: tu penses que c'est sa grenouille alors voyons voir. (*do you think that's his frog well let's see.*)

INT: donc il continue lui hein. (*so he goes on right.*)

CHI: oui. (*yes.*)

INT: oui. (*yes.*)

CHI: il continue dans l'arbre. (*he goes on in the tree.*)

INT: ben oui et qu'est-ce qu'il s'est passé avec le chien ? (*yes and what happened to the dog?*)

CHI: il monte sur l'arbre il a pas le droit [<]. (*he climbs up the tree he's not allowed to.*)

INT: oui [<] (*yes.*)

INT: et là ? (*and there?*)

CHI: il se bascule +... (*he is swinging.*)

This extract shows Emma frequently switching the focus of her narrative – her first utterance described the actions of the little boy, the main character of the story. When the interviewer encouraged her to continue her production, she switched the focus of the narrative to the frog without making the link between the two characters explicit.

This extract also illustrates Emma's difficulties in producing a coherent narrative on her own – frequent elicitation from the interviewer was required for Emma to keep going. When she did continue, she merely labeled the participants' actions, rather than presenting them as part of a coherent plot.

She used simple syntax, producing exclusively simple clauses. Because her narrative consisted only in the labeling of events or actions, and did not focus on a central theme, it was analyzed as a Heap Narrative, in Applebee's terminology. This corresponds to the first stages of narrative development.

In the second recording session, Emma started her narrative by focusing on its main character, however she also started narrating a different story than the one depicted in the story book, as shown in extract 8.1.51.

Extract 8.1.51.

Emma, 4;10 – Setting 1 (French, second session)

Link to video: <https://drive.google.com/file/d/1Lgb4Dws5D7yIrocMim1xVTG0cWPwXPJZ/view?usp=sharing>

1Lgb4Dws5D7yIrocMim1xVTG0cWPwXPJZ/view?usp=sharing

CHI: il était une fois une petite fille s'appelait otilie. (*once upon a time a little girl was named otilie.*)

CHI: et c'était ma copine. (*and she was my friend.*)

INT: c'est vrai ? (*really?*)

INT: et qu'est-ce qu'il lui arrivait alors ? (*and what happened to her then?*)

CHI: et dans la nuit en dessous le lit il y avait un monstre. (*and during the night there was a monster under the bed.*)

INT: tu ne veux pas raconter cette histoire là ? (*don't you want to tell me this story?*)

CHI: non. (*no.*)

INT: okay.

INT: alors vas y j'écoute ton histoire. (*go on then I'm listening to your story.*)

CHI: elle se réveilla. (*she woke up.*)

INT: tu ne veux pas te redresser un petit peu pour la caméra ? (*do you want to sit straight for the camera?*)

CHI: non. (*no.*)

INT: xxx [>].

CHI: <réveilla> [<]. (*woke up.*)

CHI: et après qu'est-ce qu'il se passait ? (*and then what happened?*)

CHI: tous les trucs se tom- [//] étaient tombés. (*everything had fallen to the ground.*)

CHI: les bottes +... (*the boots.*)

CHI: qu'est-ce qu'il fait là ? (*what is he doing here?*)

At the beginning of her narrative, Emma took herself as the anchor-point for the story she chose to narrate, describing the main character as being her friend (“*et c'était ma copine*”). From the middle of the extract onward, as Emma started narrating a story closer to the one depicted in the picture book, her production also became more hesitant. From then on, she frequently questioned the interviewer and expressed her hesitation as

to what was happening in the story, as shown at the end of extract 8.1.51 as well as in extract 8.1.52.

Extract 8.1.52.

Emma, 4;10 – Setting 1 (French, second session)

Link to video: <https://drive.google.com/file/d/1Lgb4Dws5D7yIrocMim1xVTG0cWPwXPJZ/view?usp=sharing>

CHI: ben il a descendu après il l'a porté. (*well he came down and carried (him).*)

INT: oui. (*yes.*)

CHI: il était fâché. (*he was mad.*)

INT: oui. (*yes.*)

CHI: là il dit ohé ohé. (*he said hey.*)

CHI: je crois qu'il y a +//. (*I think there is.*)

CHI: ah.

INT: ah.

CHI: c'est des abeilles. (*there are bees.*)

CHI: alors qu'est-ce qu'ils font là les abeilles ? (*so what are the bees doing there?*)

CHI: elles sont en train de grito- grito- grignoter quelque chose ou quoi là [>] ? (*are they nibbling at something or?*)

INT: <ah bon> [<] ? (*are they?*)

CHI: ah c'est leur maison. (*that is their house.*)

CHI: c'est leur maison [>]. (*it's their house.*)

INT: oui [<] je crois que c'était leur maison oui. (*I think it was their house yes.*)

CHI: c'est leur maison regarde. (*it's their house, look.*)

CHI: parce qu'ils vont là après ils vont tous là. (*because they go there then they all go there.*)

Although Emma used more temporal and causal connectors in her second narrative production in French, this did not immediately translate into a more coherent narrative organization. Even in the second recording session, the task was challenging for Emma, and her narrative consisted mostly in a description and labeling of events. This was in particular linked to the fact that she did not identify the initiating event of the story. The main consequence of this was that the characters' reactions to the initiating event were not tied back to this event – rather than organizing the events into a coherent plot, Emma thus mostly labeled the characters' actions without making the link between their actions explicit.

Charlotte's production in French during the second recording session, when she was 4;10, resembled Emma's narrative in the first session. Indeed, she required close scaffolding, and her production consisted mostly of a labeling of events. Moreover, it did not revolve around a central theme and Charlotte frequently tied back the events she described to her own experience, as illustrated in extract 8.1.53. In this extract, she described the setting and the characters depicted on the pictures rather than actually narrating a story. There was no sign throughout her production of a central theme or organization of her narrative.

Extract 8.1.53.

Charlotte, 4;10 – Setting 1 (French, second session)

Link to video: <https://drive.google.com/file/d/1FfiiuQ8f-cRbYRbRHRPMDk0us59a9lGF/view?usp=sharing>

INT: par exemple c'est qui les personnages là ? (*so let's see who are the characters there?*)

CHI: le petit garçon [>]. (*the little boy.*)

INT: oui [<] c'est tout ? (*is that it?*)

CHI: non le chien et le crapaud. (*no the boy and the toad.*)

INT: mhmh.

INT: et qu'est-ce qu'ils font là ? (*and what are they doing here?*)

CHI: oh c'est une petite chaise. (*it's a little chair.*)

CHI: oh c'est un grand lit il arrive pas à [/] à monter. (*oh it's a big bed he can't go on it.*)

INT: parce qu'il est trop petit ? (*because he is too small?*)

CHI: ben oui. (*well yes.*)

CHI: moi il est grand et j'arrive. (*mine is big and I can do it.*)

Finally, Charlotte's production based on a wordless picture book during the second recording session was also unfinished. Indeed, around the middle of the story, she started asking for the story to be read to her and eventually stopped narrating altogether. Because it was not completed, Charlotte's production in the first setting was not analyzed as a narrative production in Applebee's terminology.

Both children participated in the narrative task in English only during the second recording period. Once again, their productions shared a number of characteristics, which are illustrated in extract 8.1.54.

Extract 8.1.54.

Emma, 4;11 – Setting 1 (English, second session)

Link to video: https://drive.google.com/file/d/1Yq17JTE1W9eRUARF_5R9Cu5DMNmVtunw/view?usp=sharing

CHI: <the dog> [/] the dog sleeping like that.

CHI: [-mix] and the [/] the grenouille@s wanted to [/] to [/] to [/] to [/] to [///]to do what +..?

CHI: +, to wake him up.

CHI: and the turt- [///] the dog wanted not wake him up.

INT: okay.

CHI: [-mix] <and the> [/] and the grenouille@s now is upset.

INT: mhmh.

CHI: [-mix] the grenouille@s +...

INT: so what was the boy doing here?

CHI: now <the dog> [/] the dog wanted to sleep like this.

CHI: and xxx wanted to walk.

CHI: <and the dog> [///] and the boy wanted to pick some flowers.

Both children had difficulty with the task and required close scaffolding. Moreover, their narrative productions were characterized by frequent perspective shifts, as the children did not clearly focus on central characters or a central, overarching theme. For this reason, and because they did not include an identifiable highpoint, Emma's narrative production in English was analyzed as a Heap Narrative, in Applebee's terminology. Another characteristic of this stage found in Emma's productions and illustrated in extract 8.1.54 was the focus on the characters' emotional state. Instead of narrating events, extract 8.1.54 shows that Emma focused on describing the characters' mental states, which is characteristic of earlier stages of children development.

Charlotte did not include a mention of the setting or the initiating event in her production in English in the first setting. The beginning of her production was descriptive rather than narrative – she labeled the characters depicted but did not mention their actions. Charlotte only started labeling the events in the narrative when prompted to do so by the interviewer. This is illustrated in extract 8.1.55.

Extract 8.1.55.

Charlotte, 4;11 – Setting 1 (English, second session)

Link to video: <https://drive.google.com/file/d/1ZCzPAmshLH07e-cRW4gVBe1tE2suEliU/view?usp=sharing>

CHI: he bite um the dog.
 INT: the tortoise bit the dog.
 INT: yes and after that?
 INT: what did the boy do?
 CHI: um he take the dog.
 INT: mhmh.
 CHI: now he jump in the water.
 CHI: now he back in the house.
 CHI: now he is back uh he is xxx.
 CHI: he is in the water he is.

In this extract, Charlotte mentioned the events which made up part of the story, but only did so after close elicitation from the interviewer. The last four utterances displayed in extract 8.1.55 were produced with less direct elicitation from the interviewer, but they consisted in descriptions of the characters. Charlotte's narrative in English was also analyzed as a Heap Narrative.

8.1.6.2 Second setting: narrative retell

Emma did not produce a coherent narrative on the retell task in the first recording sessions in French and in English. In the first French session, rather than narrating the story spontaneously, she reacted to elicitation from the interviewer – mostly to name the characters and label some of the events that took place. Even when prompted by the interviewer, the utterances she used were not organized as a narrative production – there was no plot or central characters, but rather isolated mentions of events and characters of the story. She did not participate in the narrative task in English during the first recording session.

In the second session, she was more autonomous in her production in French, although she omitted many narrative episodes. She started her narrative with the phrase “*il était une fois*” but stopped after having mentioned the setting of the story. Elicitation from the interviewer was then required for her to continue her production, and although she mentioned some of the narrative episodes that made up the story, she had trouble ordering the events into a coherent narrative. As a result, it was difficult to identify a clear plot in her production.

Extract 8.1.56.

Emma, 4;10 – Setting 2 (French, second session)

Link to video: https://drive.google.com/file/d/1hZ_n4e5nBJE98_

SFCB19Q04JHtobg6te/view?usp=sharing

CHI: ben il était une fois une petite maman [>] +... (*once upon a time a little mummy.*)

INT: je vais m'asseoir avec toi. (*I'm going to sit with you.*)

CHI: +, et qu'est-ce qu'il se +... (*and what...*)

INT: qu'est-ce qu'il se passait après ? (*what happened then?*)

CHI: et il y avait un bébé euh [>]. (*there was a baby.*)

CHI: et après qu'est-ce qu'elle a fait ? (*and what did she do next?*)

CHI: elle a recouvert son bébé [>]. (*she covered her baby up.*)

INT: oui [<]. (*yes.*)

CHI: et après elle était allée dans quelqu'un d'autre maison et après +... (*and then she went into someone else's house and then...*)

INT: la maman elle a fait ça ? (*the mummy did that?*)

CHI: oui. (*yes.*)

CHI: non mais le bébé [>]. (*no the baby did.*)

INT: <oui le bébé> [<]. (*right the baby did.*)

CHI: quand il a craqué. (*when he cracked.*)

The reception of her narrative was made difficult by several factors illustrated in extract 8.1.56.

First of all, Emma was hesitant as to which episodes she would narrate, which led her to break the narrative chain of events to ask herself what the characters had done or what had happened in the clip. Then, Emma used ambiguous referential chains, as she often used the same pronoun with different antecedents. In extract 8.1.56, she used the third-person singular pronoun “*elle*” to refer to two of the characters in the story subsequently (the mother bird and her chick, which she called “*le bébé*”). The antecedent of the pronoun is all the more difficult to retrieve as she used the feminine pronoun “*elle*” to take up a masculine noun phrase (“*le bébé*”), leading the interviewer to prompt her to clarify the referential chain. Finally, Emma also omitted narrative episodes or mentioned them in a different order than the one in which they had occurred in the clip. Her last utterance in extract 8.1.56 was thus interpreted as a reference to part of the initiating event in the narrative – the egg hatching in Jerry’s house after having fallen from its nest. However, because she had not mentioned the egg before, this episode was hard to tie back to the rest of her narrative. This was typical of Emma’s productions in the retell task in the second recording session.

During the second session in English, Emma expressed her difficulty to remember the events in the narrative, leading the interviewer to ask her questions to help her relate the events that made up the video clip, as illustrated in extract 8.1.57.

Extract 8.1.57.

Emma, 4;11 – Setting 2 (English, second session)

Link to video: https://drive.google.com/file/d/1icREeNdJwR31Lw1QP6_yoTpv8-XfZ0YN/view?usp=sharing

CHI: um I don't remember.

INT: <so the cat was cooking> [//] was trying to cook the fish.

CHI: yes.

INT: what did the mouse do?

CHI: the [/] the mouse uh take the fish and délivrer@s.

CHI: and after <the cat> [/] the cat don't know where the fish is gone and after the [/] the [/] the [/] the [/] the [/] the +...

CHI: +, um the cat's tail (.) went in the pan and after it was all wet.

CHI: and after the film it was finished.

This extract includes the highest number of utterances produced by Emma without intervention from the interviewer. It corresponds to the end of Emma's production on the retell task. Extract 8.1.57 shows that Emma ended her narrative on a highpoint, as she did not include a resolution or conclusion in her story.

Charlotte only participated in the retell task in the second recording session in English, when she used six utterances in response to elicitation from the interviewer, but did not produce a coherent narrative. This is illustrated in extract 8.1.58.

Extract 8.1.58.

Charlotte, 4;11 – Setting 2 (English, second session)

Link to video: <https://drive.google.com/file/d/1XhiDsG0yk9GpoHgPY4x67LSotAyOUjRs/view?usp=sharing>

CHI: xxx the fish and the mouse.

INT: yes and what happened?

CHI: and he was eating it.

INT: the cat was eating what?

CHI: no the cat was eating the fish.

INT: he was trying to eat the fish yes and so what happened?

CHI: [-mix] she [//] the mouse was tapping@s the cat.

INT: mhmh yes what more do you remember?

CHI: xxx.

CHI: the cat xxx.

This extract shows that she tended to label the events and characters rather than produce a narrative with a clearly identifiable plot. By the end of the extract, she produced unintelligible utterances in a very low voice, and stopped participating in the task shortly after that.

8.1.6.3 Third setting: personal narrative

Emma struggled with narrating personal events in the third setting. During the first recording session in French, she was prompted by the interviewer to talk about a show she had gone to see with her class, and from then on she started narrating fictive episodes rather than personal narratives. She produced one narrative episode about her holidays, but it was also difficult to determine whether it was a past event or an event she had made up. This is illustrated by extract 8.1.59.

Extract 8.1.59.
Emma, 3;11 – Setting 3 (French, first session)
Link to video: https://drive.google.com/file/d/1c26dLkT_MK4IC3rt05RlxyJAC1RvqrWA/view?usp=sharing
 CHI: et j'étais avec mes parents pas avec ma mamie. (*and I was with my parents not with my grandma.*)
 INT: pas avec ta mamie [>]. (*not with your grandma.*)
 CHI: <ma mamie>[<] elle était dans la maison avec mon papi. (*my grandma was in the house with my grandpa.*)
 INT: d'accord et qu'est+ce que tu faisais avec tes amis et tes parents ? (*alright and what did you do with your friends and your parents?*)
 CHI: **ben on disait qu'**ils étaient [///] mon papa il était fâché parce+que on passe [///] il était énervé parce-que j'ai tapé ma soeur. (*well let's say my father was angry because I had hit my sister.*)

In this extract, Emma used the phrase “*on disait que*”, a phrase frequently used by children in French to build fictive reference, suggesting that she might have been making up the episode. Regardless, this extract showed that Emma used more complex utterances in the third setting than in the first one in her dominant language – in particular, she used causal adverbial clauses in the interview setting, which she did not use in the other narrative settings during the first session.

In the second recording session in French, Emma only used four utterances that could be analyzed as part of two personal narratives, although these were very short and mostly taken up from the interviewer's previous utterances. She was asked about her first day in

school, and took up most of the interviewer's verb phrases to confirm that she had started school again. Later on in the interview, as she was showing the interviewer a jigsaw puzzle, she mentioned that she had done it before, producing another very short personal narrative. She was not very engaged in the interaction overall. Once again, this may be explained by the length of the session and the order in which the tasks were proposed to the children. The interview came last in the recording session, and it was difficult for Emma to remain focused throughout the session.

Charlotte, who was reluctant to participate in the second task in both of her languages, produced more personal narratives than her sister did during the second recording session in French, although she did not produce them only during the interview – she produced one personal narrative during the first task, when she was looking at the pictures of the wordless picture book used in the narrative task. It is reproduced in extract 8.1.60 below.

Extract 8.1.60.

Charlotte, 4;11 – Setting 3 (French, second session)

Link to video: https://drive.google.com/file/d/1rrtcsA-rCuULu20kX_DBeyDpgr3mRIR1/view?usp=sharing

CHI: j'ai peur des abeilles elles piquent [>]. (*I'm scared of bees they can sting you.*)

INT: <moi aussi j'ai> [<] peur des abeilles. (*I'm scared of bees too.*)

CHI: et en plus au parc **quand j'étais petite** ils m'ont piquée et j'étais allée de suite à la maison [>]. (*and also I was in the park when I was little and I got stung and I went to my house right away*)

INT: non [<] ? (*really?*)

INT: ben oui tu t'es déjà fait piquer moi je me suis jamais fait piquer. (*oh you got stung I never did.*)

CHI: moi je m'est fait piquer. (*I got stung.*)

CHI: **parce-que j'ai embêté.** (*because I bothered (them).*)

The personal narrative in extract 8.1.60 was the longest personal narrative spontaneously produced by Charlotte during the second recording session in French. It was also the most syntactically complex – in this extract, Charlotte used coordinated simple clauses as well as temporal and causal adverbial clauses (in bold in the extract).

Charlotte produced two other personal narratives in the second recording session in French, both including less than five utterances each and relying on simple, coordinated clauses. One of these personal narratives was about children in her class who had misbehaved, while the other was about how she had fallen and hurt her leg. The latter, as well as the personal narrative displayed in extract 8.1.60, were both triggered by tangible

elements at SpT. Indeed, the narrative displayed in extract 8.1.60 was triggered by the bees pictured on one of the pages of the picture book, while the narrative relating her fall was triggered by her feeling the mark it had left on her leg. When Charlotte spontaneously narrated past events, these could be analyzed as being at least partially anchored in SpT.

The children only participated in the interview setting in English during the second recording session. In the first recording session, Charlotte did not participate at all in English, and Emma only participated in the first task – the session was too long for her at this age.

Emma produced one personal narrative in the recording session in English, which was made up of two utterances and triggered by the interviewer's elicitation (the video is accessible by clicking the following link: https://drive.google.com/file/d/10FVf-DF8-dzSmB4V1KLqwkT4EYP_Iiez/view?usp=sharing). In the rest of the recording in the third setting, she used mostly the present tense to build generic reference.

Charlotte produced one personal narrative in the second recording session in English, although it was also very short – it was made up of three utterances, including one which was fully replicated from the interviewer's previous utterance (the video is accessible by clicking the following link: <https://drive.google.com/file/d/1echXrIZt3ydQzawr0qu51My23dyrz8fj/view?usp=sharing>).

Tables 8.9 and 8.10 summarize the analyses of Emma and Charlotte's productions in the three settings and highlight the effect of dominance and task-type effects on the children's narrative productions in their two languages. Emma's first production in French illustrated Applebee's first stage of narrative development. She did not participate in the session in English. This suggests an interaction between dominance and narrative development effects on her ability to participate in narrative tasks, whereby it might be even more challenging for children in the earliest stages of development in their dominant language to produce narratives in their non-dominant language.

Then, age and task-type effects on the linguistic complexity of the children's productions were also identified, especially in their dominant language. Comparing Emma's productions in the two recording sessions shows that she used more complex syntax in the second recording session, in particular using more temporal and causal connectors. Both children also used more complex syntax in the third setting – Emma and Charlotte were both likely to use more complex syntax when relating personal events than when participating in the two first narrative tasks, which were cognitively more demanding.

Lg and Age	S	Macrostructure (Number of utterances and SG units included)		Linguistic means		Narrative stage	
		N1	N2	N1	N2	N1	N2
FR 3;11 - 4;10	1	- Labeling of events and characters - Frequent focus switches	- Labeling of events - Focus on central character - Self as anchor-point	- Simple syntax - No temporal relation	- Simple syntax - Emergence of temporal and causal conn.	Heap	Heap
	2	- No plot or central character	- Setting	- Simple syntax - Ambig. reference	- Simple syntax - Temporal and causal conn.		
	3	1 pers. narr. (3 utt.)	2 pers. narr. (2 utt. each)	- Complex syntax - Temporal and causal conn.	- Complex syntax		
EN 4;11	1	/	- Labeling of events and characters - Frequent focus shifts	/	- Simple syntax - Temporal conn.	/	Heap
	2	/	- Labeling of events - Narrative ended on a highpoint	/	- Simple syntax - Temporal conn.	/	
	3	/	1 pers. narr. (2 utterances)	/	- Simple syntax	/	

Table 8.9: Main structural and linguistic characteristics of Emma's productions in the three settings in her two languages (dominant in French)

Lg and Age	S	Macrostructure (Number of utterances and SG units included)		Linguistic means		Narrative stage	
		N1	N2	N1	N2	N1	N2
FR 4;10	1	/	- Labeling of events and characters - Frequent focus switches - Self as anchor-point	/	- Simple syntax - No temporal conn.	/	N/A
	2	/	/	/	/	/	/
	3	/	3 pers. Narr. (2 to 4 utt.)	/	- Complex syntax - Temporal and causal conn.	/	
EN 4;11	1	/	- Labeling of events and characters - No overarching theme	/	- Simple syntax - No temporal conn.	/	Heap
	2	/	- Labeling events and characters - No overarching theme	/	- Simple syntax - No temporal conn.	/	
	3	/	1 pers. Narr. (3 utt.)	/	- Simple syntax - No temporal conn.	/	

Table 8.10: Main structural and linguistic characteristics of Charlotte's productions in the three settings in her two languages (dominant in French)

This section provided a structural description of the children's productions in the three settings in both of their languages, as well as comments on the internal complexity of the children's productions, which are summarized in table 8.11. This was done to identify possible task-type effects, as well as effects of the children's bilingualism on their ability to produce coherent narratives in their two languages. In all of the children's productions, similar task-type effects were identified. The children's productions in the first narrative setting were structurally and syntactically more complex than their productions in the second setting. This was explained by the heavier cognitive load presented by the second task. It was expected that the spontaneous interview setting might yield more complex productions, however this was not always the case. This was linked to the fact that the interview setting was the last one in which the children participated. In the first recording sessions especially, all the children had difficulties staying focused throughout, and they tended to be less engaged in the interaction by the time we got to the interview setting. This led them to provide short answers often used to build habitual rather than past reference. All the older children produced more complex and longer productions in the second setting in the second session than they had in the first session. This was less clear-cut with the youngest children of the study (Oliver, Charlotte and Emma).

Similar comments were made on the children's bilingualism. In the first setting, when the children participated in both of their languages, their productions in their two languages were structurally similar. They included the same story grammar units, although these were sometimes more detailed in the children's dominant language. This suggests that the children were able to order their narrative productions around the same story grammar episodes in both of their languages when they could rely on a visual stimulus such as the wordless picture book to produce their narrative. In the second narrative setting, where the children had to retell a narrative without any visual help on, there were more differences between their productions in their two languages, especially when the children were clearly dominant in one of their languages. This is shown for instance when comparing Lucas' and Julian's productions in both of their languages – Lucas was dominant in English at the time of the recording and structural differences were clearly identified in his productions in French and in English in the narrative retell task. On the contrary, Julian's bilingualism was analyzed as rather balanced. Despite differences in the length of his productions in the second setting, his productions in French and in English included the same story grammar units.

	Lg - Age	Setting	Macrostructure		Linguistic means		Narr. stage	
			N1	N2	N1	N2	N1	N2
Lucas (E)	FR 6;04 - 7;05	1	3 SG Units	4 SG Units	Simple syntax. Temporal conn.	Complex syntax. Temporal conn.	4	6
		2	3 SG Units	4 SG Units	Simple syntax. Temporal conn.	Simple syntax. Temporal conn.		
	EN 6;06 - 7;08	1	3 SG Units	4 SG Units	Simple syntax. Temporal and causal conn.	Complex syn- tax. Temporal and causal conn.	5	6
		2	4 SG Units	5 SG Units	Simple syntax. Temporal and causal conn.	Complex syn- tax. Temporal and causal conn.		
Oliver (E)	FR 3;11 - 5;01	1	3 SG Units	3 SG Units	Simple syntax. Temporal conn. Iconic gestures.	Simple syntax. Temporal conn. Iconic gestures.	3	3
		2	1 SG Units	3 SG Units	Simple syntax. Temporal conn.	Simple syntax. Temporal conn.		
	EN 4;02 - 5;03	1	3 SG Units	3 SG Units	Simple syntax. Temporal conn. Iconic gestures.	Simple syntax. Temporal conn. Iconic gestures.	3	3
		2	3 SG Units	3 SG Units	Simple syntax. Temporal Conn.	Simple syntax. Temporal Conn.		
Arthur (B)	FR 5;06 - 6;08	1	4 SG Units	5 SG Units	Simple syntax. Temporal and causal conn.	Complex syn- tax. Temporal and causal conn.	5	6
		2	3 SG Units	4 SG Units	Simple syntax. Temporal conn.	Complex syn- tax. Temporal and causal conn.		
	EN 5;09 - 7;01	1	3 SG Units	5 SG Units	Simple syntax. Temporal and causal conn.	Complex syn- tax. Temporal and causal conn.	5	6
		2	3 SG Units	5 SG Units	Simple syntax. Temporal conn.	Complex syn- tax. Temporal and causal conn.		
Julian (B)	FR 5;05 - 6;10	1	3 SG Units	3 SG Units	Complex syntax. Temporal conn. Narr. Prosody.	Complex syntax. Temporal and causal conn. Narr. prosody	5	5
		2	3 SG Units	3 SG Units	Simple syntax. Temporal conn.	Complex syn- tax. Temporal and causal conn.		
	EN 5;07 - 6;10	1	3 SG Units	3 SG Units	Complex syntax. Temporal conn.	Complex syn- tax. Temporal and causal conn. Narrative prosody	5	5
		2	4 SG Units	4 SG Units	Temporal conn. Simple syntax.	Complex syn- tax, temporal and causal conn.		
Emma (F)	FR	1	0 SG Unit	0 SG Unit	Simple syntax. No temporal conn.	Simple syntax. Few temporal and causal conn.	1	1
		2	0 SG Unit	1 SG Unit	Simple syntax. No temporal conn.	Simple syntax. Temporal conn.		
	EN	1	/	0 SG Unit	/	Simple syntax. Temporal conn.	/	1
		2	/	0 SG Unit	/	Simple syntax. Temporal conn.		
Charlotte (F)	FR	1	/	0 SG Unit	/	Simple syntax. No temporal conn.	/	
		2	/	/	/	/	/	
	EN	1	/	0 SG Unit	/	Simple syntax. No temporal conn.	/	
		2	/	1 SG Unit	/	Simple syntax. No temporal conn.	/	

Table 8.11: Summary of the structural and linguistic characteristics of the children's productions in the three recording settings and in the children's two languages

8.2 Verb and tense diversity and analysis of finite forms in French and in English

The aim of this chapter is to reflect on the link between the children's narrative abilities in different settings, their language dominance patterns and their use of tense-aspect morphology.

The previous section provided a structural description of the children's productions in the three settings, and suggested that age factors and language dominance patterns play a role at different levels in the children's ability to integrate the necessary story grammar episodes in their productions and to provide a coherent if not exhaustive narrative. I focus in this section on the children's use of finite forms in their two languages, and in particular on their use of past tense-aspect morphology to order events in their productions both temporally and hierarchically. I wondered whether the bilingual children under study would use past tense-aspect morphology as frequently in narrative discourse as in spontaneous discourse, and whether the children who had reached later stages of narrative development were also the children who used past tense-aspect morphology with the narrative functions they usually serve in French and in English.

Finite verb forms are used in narrative productions with a temporal ordering function, to present narrative events as occurring in a sequence, or as co-occurring. Appropriate use of tense-aspect morphology is also what enables narrators to backtrack in their production rather than to produce clauses which mirror the order of the events they narrate. Tense-aspect morphology is also used to order events hierarchically, to ground events in discourse. In this sense, it allows narrators to distinguish between foreground clauses, which convey narrative content, and background clauses, which are used to provide background information, often linked to the narrator's evaluative stance on the narrated events.

Differences exist in the distribution of past tense-aspect morphology in background or foreground clauses in French and in English. Children producing narratives in French generally associate the *passé composé* to the foreground, while the *imparfait* is used in background clauses alongside the present tense. In English, as children start including more background clauses into their narratives, they also tend to use simple past morphology more often with an imperfective value, to signal events as backgrounded. Because the English simple past is more plurifunctional in narrative discourse than the *passé composé* and the *imparfait* respectively, I also wondered whether it would take longer for the children under study to use it with its full range of functions in their narratives. Finally, previous studies have suggested that in the earliest stages of narrative development, children tend to use telic and punctual predicates in the foreground, and use mostly stative predicates in the background, and that, as their narrative abilities develop, children use more diverse types of predicates in the foreground and in the background. I wondered whether children having reached different narrative stages would differ in the way they

associated past tense-aspect morphology to lexical aspect categories in the foreground and in the background, and whether a similar evolution would be observed in their two languages. The distribution of tense forms in background or foreground clauses as well as their association with lexical aspect categories are studied in the next section, which focuses on the functions served by the past tense-aspect forms used by the children in the narrative settings.

8.2.1 Tense and verb type diversity: comparison between the three settings and the family dinners in the children's two languages

One of the aims of this section is to question the impact of discursive context on the production of past tense-aspect forms by bilingual children in their two languages. I conducted a study of the children's narrative productions to highlight the need to consider different discursive situations to provide a full picture of the development of tense-aspect forms in the speech of bilingual children.

Tables 8.12 and 8.13 give the number of finite forms used by the children in their two languages during the two narrative sessions (N1 and N2) and during the family dinners (DI) I recorded as well as the proportion of the different forms used during the narrative settings and the family dinners. Table 8.12 presents the results for English and table 8.13 for French.

Rec. Sess.	Finite forms (tok.)			Verb types			% Simple present			% Simple past			% Prog.			% Others		
	DI	N1	N2	DI	N1	N2	DI	N1	N2	DI	N1	N2	DI	N1	N2	DI	N1	N2
Lucas	121	162	161	61	59	59	76	25	37	18	66	55	3	7	7	3	3	1
Arthur	22	115	119	9	38	51	91	49	35	/	43	60	5	7	4	4	3	1
Oliver	25	108	123	7	37	46	88	10	37	4	75	49	8	5	8	/	9	4
Julian	70	92	297	24	37	92	84	30	43	10	66	52	/	/	3	4	3	2
Emma	29	/	72	8	/	18	97	/	51	3	/	38	/	/	1	/	/	8
Charlotte	16	/	49	11	/	23	75	/	47	19	/	12	6	/	27	/	/	14

Table 8.12: Children's use of verb forms in English during the narrative sessions and the family dinners

These two tables show that all the children but one produced more finite verb forms during the narrative sessions than they did during the family dinners recorded, in their two languages. Emma, the youngest child recorded in Paris, produced more French finite forms during the family dinners than she did during the narrative sessions in French. However, she used more different verb types during the narrative sessions than she did during the family dinners. Moreover, her narrative productions included proportionally more forms bearing past tense-aspect morphology than she used during the family dinners. This was the case for all the children in their two languages, except for Charlotte in English, her non-dominant language at the time of recording. Indeed, Charlotte used proportionally

Rec. Sess.	Finite forms (tok.)			Verb types			% Present			% <i>Passé composé</i>			% <i>Imparfait</i>			% <i>Passé simple</i>		
	DI	N1	N2	DI	N1	N2	DI	N1	N2	DI	N1	N2	DI	N1	N2	DI	N1	N2
Lucas	57	60	135	61	24	36	28	22	30	3	75	68	/	3	1	/	/	/
Arthur	104	74	130	30	33	47	64	66	18	13	15	50	5	16	30	/	/	/
Oliver	57	54	100	22	31	36	26	49	24	9	10	25	/	3	18	/	/	/
Julian	6	86	527	3	38	90	83	30	61	/	35	9	/	23	17	/	9	3
Emma	178	141	134	36	45	39	78	46	51	10	16	21	8	35	16	/	1	2
Charlotte	85	/	102	22	/	39	74	/	67	11	/	15	1	/	11	/	/	/

Table 8.13: Children’s use of verb forms in French during the narrative sessions and the family dinners

more simple present forms during the narrative session in which she participated in English than during the family dinner. This may be explained by the descriptive nature of her productions – as explained in the previous section, during the narrative session in English, Charlotte’s productions labeled the events more than she actually narrated them.

The children’s tendency to use more past tense-aspect forms in the narrative sessions than in their spontaneous productions is also visible when considering their use of the French *imparfait*. It was shown in previous chapters that the *imparfait* was used later than the *passé composé* by the French monolingual and French-English bilingual children whose productions I studied. This may be explained by its functional complexity – it is used by adults in spontaneous discourse with two main functions, to build either past temporal reference or modal reference. In narrative discourse and in particular in children’s narratives, the *imparfait* is used more unilaterally to signal events as backgrounded. It could thus be expected that it would be used sooner by the children in their narrative productions than in spontaneous discourse. This was verified for all the children I recorded – they all used the *imparfait* proportionally more during the narrative sessions than they did during the family dinners I recorded. This was moreover especially true for Lucas and Oliver, who were identified as dominant in English at the time of the recording. Indeed, neither of them produced *imparfait* forms during the family dinners, but they both used the *imparfait* in the narrative settings, although to a lesser extent than the children identified as dominant in French or as balanced bilinguals. Lucas’ use of the *imparfait* to present events as backgrounded is illustrated in extract 8.2.1, where the form in the *imparfait* is in bold.

Extract 8.2.1.

Lucas, 6;04 – Setting 1 (French, first session)

CHI: et il a dit oh non où est pierre ? (*and he said oh no where is pierre?*)

CHI: et il a cherché pour pierre. (*and he looked for pierre.*)

CHI: il a dit où t’es pierre ? (*he said where are you pierre?*)

CHI: et après le chien a tombé. (*and then the dog fell.*)
 CHI: et après il a cassé le jar@s. (*and then he broke the jar.*)
 CHI: il a dit où es-tu Pierre ? (*he said where are you pierre?*)
 CHI: et après il a vu c'**était** dans le jardin mais c'est pas +//. (*and then he saw it was in the garden but it's not...*)
 CHI: et après le ch(ien) il a dit oh non c'est pas bon. (*and then the dog said oh no that's not good.*)

These observations on the children's tendency to use past tense-aspect morphology in narrative settings more frequently than they did during the family dinners recorded confirms the need to consider different discursive contexts to provide a faithful account of bilingual children's acquisition of past tense-aspect morphology, taking into account the full range of functions with which children use past verb forms in their two languages.

8.2.2 Comparison between the three settings: task-type and dominance effects on the children's use of past tense-aspect morphology

As explained above, the aim of this study was to determine how language dominance, narrative development and task-type effects interacted with the use of tense-aspect morphology by the bilingual children whose narrative productions were recorded.

Table 8.14 presents the number of finite forms used by the children during the two narrative sessions recorded a year apart (N1 and N2) and in the three narrative settings (labeled 1/2/3). The letter used within brackets next to the children's names signals their dominant language ("E" stands for English, "F" for French and "B" for balanced).

Setting	English						French					
	N1			N2			N1			N2		
	1	2	3	1	2	3	1	2	3	1	2	3
Lucas (E)	73	31	58	73	22	66	32	13	15	53	16	65
Arthur (B)	40	32	43	35	37	47	28	6	34	39	16	70
Oliver (E)	40	13	53	33	17	50	26	11	17	40	24	49
Julian (B)	33	14	44	46	15	44	25	11	37	36	13	136
Emma (F)	/	/	/	26	9	17	30	16	72	68	15	25
Charlotte (F)	/	/	/	19	6	15	/	/	/	24	/	68

Table 8.14: Number of finite forms used by the children in the two recording periods, in the three settings and in their two languages

Tables 8.15 and 8.16 present the percentage of the most frequent forms used by the children in the three settings during the two narrative sessions. Table 8.15 focuses on the

Setting	% Simple present						% Simple past						% Prog.					
	N1			N2			N1			N2			N1			N2		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Lucas	21	16	35	10	23	73	70	71	59	80	68	23	7	13	4	10	5	5
Arthur	35	13	84	3	/	83	43	78	16	89	92	13	20	3	/	9	5	/
Oliver	2	/	17	3	6	78	76	89	72	76	71	18	7	11	2	18	18	2
Julian	6	21	38	13	7	50	85	79	60	76	87	46	6	/	/	7	/	3
Emma	/	/	/	12	22	65	/	/	/	69	56	24	/	/	/	4	/	/
Charlotte	/	/	/	32	/	53	/	/	/	5	17	27	/	/	/	42	83	/

Table 8.15: Proportion of past and present forms used by the children in English in the three different settings and during the two narrative sessions (N1 and N2)

Setting	% <i>Passé composé</i>						% <i>Imparfait</i>						% <i>Passé simple</i>						% Present					
	N1			N2			N1			N2			N1			N2			N1			N2		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Lucas	65	77	93	70	75	66	6	/	/	/	/	/	/	/	/	/	/	/	28	23	7	25	25	32
Arthur	29	/	6	62	56	46	14	/	24	31	44	29	/	/	/	/	/	/	57	100	62	5	/	24
Oliver	13	/	11	24	22	18	/	33	/	17	26	16	/	/	/	/	/	/	70	67	17	27	9	20
Julian	8	82	41	6	8	9	48	/	16	39	38	18	28	9	/	36	23	/	12	2	38	14	15	60
Emma	23	13	13	16	53	16	13	44	42	21	33	4	/	/	1	3	/	/	63	38	33	56	/	56
Charlotte	/	/	/	8	/	18	/	/	/	/	/	16	/	/	/	/	/	/	/	/	/	92	/	54

Table 8.16: Proportion of past and present forms used by the children in French in the three different settings and during the two narrative sessions (N1 and N2)

forms used by the children in English and table 8.16 focuses on the forms used by the children in French. The analyses conducted below are based on the values presented in these three tables.

8.2.2.1 Task-type effects

Setting 1: Wordless picture book

The first and third settings in which the children were recorded were the ones which yielded the longest productions in the children's two languages, regardless of their dominance patterns. The difference observed between the picture book and the narrative retell settings can be explained by the fact that in the former, the children could rely on the picture book to tell the story – the pictures they were asked to narrate were available as they were narrating, and provided a frame for their production.

Another task-type effect identified in the first setting was predicted in chapter 3 – it was expected that the narrative task based on a wordless picture book might lead the children to describe the pictures, using more present verb forms than in the narrative retell setting. This was the case for some of the children whose productions were recorded, in particular the children who were in the earliest stages of narrative development.

During the first recording session in French, Emma and Oliver, who were the youngest children recorded in the *Brunet* corpus and were also in the early stages of narrative

development (see section 1), used present tense forms predominantly in their production in the first setting during the first recording session. This effect was identified for both children in French, despite different dominance patterns – Oliver was dominant in English and Emma was dominant in French at the time of recording. I argue that the similarities in their use of tense forms in their production in the picture book setting can at least partly be explained by the children’s early stage of narrative development. Charlotte also produced narratives typical of the earliest stages of narrative development – the first section of this chapter showed that her productions in the three tasks were descriptive rather than narrative. In her two languages, she also most frequently used present tense forms in the picture book setting.

However, this task-type effect was not solely observed in the productions of the youngest children or of the children who were in the earliest stages of narrative development. It was also linked to the child’s attitude towards the task, as well as to the type of elicitation used by the interviewer. Arthur, whose narrative productions suggested he had reached a later stage of development than Oliver, Charlotte and Emma, also used mostly present tense forms in his first production on the wordless picture book, in his two languages. This appeared to have been triggered by the use of simple present morphology by the interviewer. Indeed, as Arthur had trouble narrating the story, the interviewer was eager to both elicit speech and make him more comfortable, and assisted him by using simple present forms to encourage him to rely on the pictures to narrate a story.

Extract 8.2.2.

Arthur, 5;09 – Setting 1 (English, first session)

CHI: the boy ran and the dog swam to the other side of the river.

INT: right okay.

INT: what happens here?

%act: INT points to the picture.

INT: so let’s see they were here what **is** he **doing** here?

%act: INT goes back a page and points to the pictures.

CHI: he **is putting** his dog down.

Extract 8.2.2 shows Arthur aligning with his interlocutor’s use of finite verb forms – the interviewer used a present progressive form accompanied by a pointing gesture to ask Arthur what happened in the picture, and Arthur took up this form in his own production (in bold in the transcript). From then on, Arthur tended to use present tense forms more frequently than past tense forms, as he found it difficult to organize the events in his narrative and produced more and more descriptive utterances. This was also the case in

his production in the first setting in French, supporting the interpretation that this use of the present tense was linked to the nature of the task and of the type of elicitation used by the interviewers.

Extract 8.2.3.

Arthur, 5;06 – Setting 1 (French, first session)

CHI: et après le garçon il **était** pas content avec le chien parce-que le pot **s'est cassé**. (*and then the boy was angry with the dog because the jar was broken.*)

CHI: euh après je sais pas. (**and then I don't know.**)

INT: tu sais pas ce qu'ils font là [$>$] ? (*you don't know what they're doing here?*)

CHI: non [$<$]. (*no*)

INT: le petit garçon (.) ça on sait pas (.) alors on peut continuer. (*the little boy we don't know so let's go on*)

%act: CHI turns the page.

CHI: en fait le petit garçon regarde toujours pour sa grenouille. (*actually the little boy is still looking for his frog.*)

%act: CHI comes back to the page he has just skipped.

INT: ah peut-être oui [$>$]. (*he might be yes.*)

CHI: il [$<$] regarde. (*he's looking.*)

Extract 8.2.3 illustrates the shift in Arthur's production, between the start of his narrative where he used mostly *passé composé* and *imparfait* forms (in bold in the first utterance) and the end of his narrative, where he produced mostly present tense forms. This shift in Arthur's use of tenses might also be linked to the cognitive load represented by the task – like in the first English session, Arthur switched to the present tense when he had difficulty finding what he wanted to narrate.

Moreover, it is worth mentioning that not all of the present tense forms used by the children signaled a descriptive rather than a narrative production. Lucas' use of the French present tense for example was linked to the narrative arch of the story – because the story was about a boy looking for his frog, several pictures showed the character calling his frog, which led Lucas to use direct speech in the present tense. This is illustrated by extract 8.2.1, used first above and reproduced below.

Extract 8.2.1

Lucas, 6;04 – Setting 1 (French, first session)

CHI: et il a dit oh non où **est** pierre ? (*he said oh no where is pierre?*)

CHI: et il a cherché pour pierre. (*and he looked for pierre.*)

CHI: il a dit où t'**es** pierre ? (*and he said where are you pierre?*)

CHI: et après le chien a tombé. (*and then the dog fell.*)

CHI: et après il a cassé le jar@s. (*and then he broke the jar.*)

CHI: il a dit où **es** tu Pierre ? (*he said where are you pierre?*)

CHI: et après il a vu c'était dans le jardin mais c'est pas +//. (*and then he saw it was in the garden but it's not...*)

CHI: et après le ch(ien) il a dit oh non c'**est** pas bon. (*and then the dog said oh no that is not good.*)

Lucas' use of the present tense in the first setting may thus also be analyzed as an effect of the type of task he was engaged in, and in particular of the nature of the visual stimulus used to elicit a narrative.

Another impact of the first setting on the use of tense morphology was observed in Oliver's production in English, especially in the first recording session. Oliver was the youngest child dominant in English in the *Brunet* corpus, and his production of past-tense forms showed that he was in the process of acquiring past tense-aspect morphology in English. The wordless picture book task was the setting in which he produced the highest number of non-target forms, as illustrated in extract 8.2.4.

Extract 8.2.4.

Oliver, 4;01 – Setting 1 (English, first session)

CHI: and left him behind (.) with this.

%sit: CHI points at the picture where the stick is on the ground.

CHI: he was bringing that.

%sit: CHI points at the previous picture where the boy is carrying the stick.

CHI: **threw** him at that.

CHI: until more far and then they **digged** a hole.

CHI: and then they **putted** a flower inside.

This can be explained by the degree of freedom left to the children in each setting with regard to their choice of verb types. Indeed, in the narrative retell and in the interview

settings, the children were more free to decide which verbs they wanted to use than in the wordless picture book, where they had to rely on the pictures to narrate a story.

In English, the non-target forms most frequently produced by Oliver were over-regularizations, as illustrated in extract 8.2.4 where these forms are in bold. Such non-target forms testify to the child's growing grammatical awareness, as they show that he used the past morpheme productively, rather than using simple past forms as unanalyzed wholes.

Frequent non-target forms in Oliver's production in the first setting in English also included bare past participles, used in distributional contexts where a finite form would have been expected. Oliver used bare participles in these contexts predominantly in the first narrative setting, with two different verbs: "to go" and "to get", as illustrated in extract 8.2.5 in which the past participle forms are in bold.

Extract 8.2.5.

Oliver, 4;01 – Setting 1 (English, first session)

CHI: and the tortoise **gotten** in the water.

CHI: the frog jumped where he is.

CHI: he jumped off that and **gone** there.

%gpx: CHI points to the river bank on which the frog is pictured climbing.

CHI: and they were **gone** out of the water.

This use of bare past participles was analyzed as a task-type effect. Indeed, Oliver consistently used these forms in the first setting to comment on an event which had yielded a result depicted on the pictures. Extract 8.2.5 includes utterances used to depict the tenth and eleventh picture of the book used in the first setting, which are reproduced in image 8.1. In this extract, the form "**gotten** in the water" was used to comment on the picture on the left hand-side, where the turtle was depicted as having landed in the water after having let go of the dog's paw. The other past participles in the extract were used to comment on the picture on the right hand-side, which showed the frog, the boy and his dog back on the bank of the river. Oliver thus used the past participle forms "**gone** there" to present the situation <they go there> as completed, and as having yielded a tangible result.

Setting 2: Narrative retell of a short video clip

The first effect of the narrative retell setting was to yield short productions, regardless of the children's language dominance. This was expected, as the narrative retell task represented a greater cognitive load than the first narrative setting. Indeed, it required

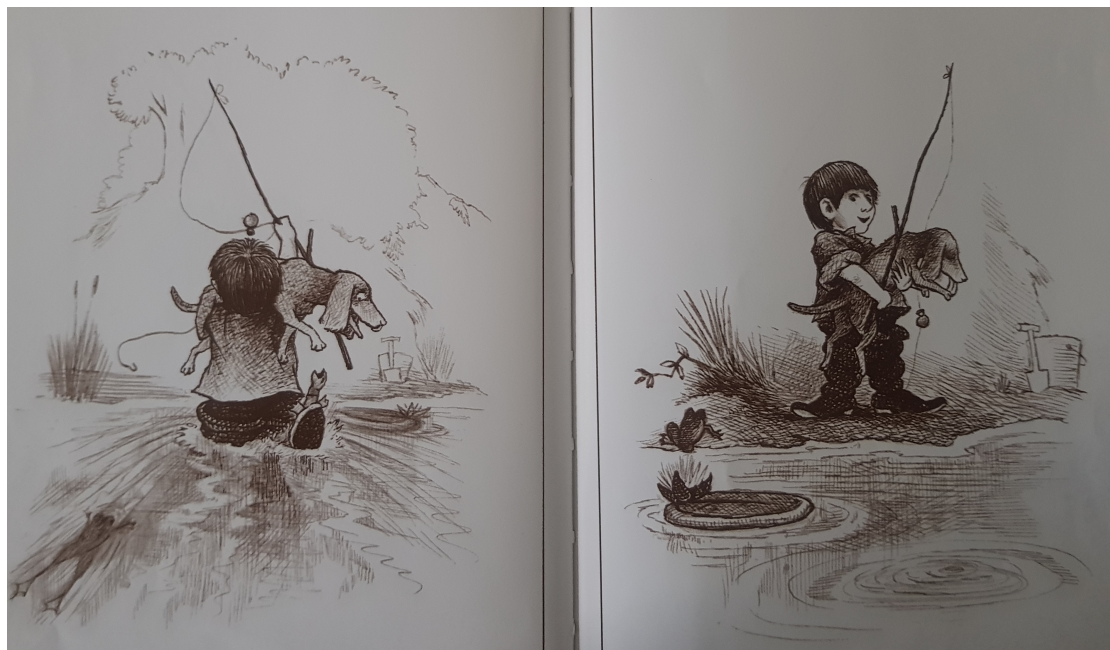


Image 8.1: The two pictures from *A boy, a dog and a friend* narrated by Oliver in extract 8.2.5

that the children both remember the events that made up the clip and order them in their production. Moreover, table 8.14 suggests that the children's ability to participate in the narrative retell task was also influenced by their narrative development – the second setting was especially challenging for Emma and Charlotte, who were the children whose productions in the first setting were more descriptive than narrative. Both children struggled to relate the events that made up the cartoon and elicitation was required in order for them to participate in the task.

The narrative retell setting also impacted the children's use of past tense-aspect morphology; two different effects were identified, which appeared to be influenced by the children's level of narrative development. First, as predicted in chapter 3, past tense-aspect forms were most likely to be used during the narrative retell task, as the children were asked to produce a narrative based on a clip they had just watched, i.e. which had ended just prior to SpT. Past tense-aspect forms in this setting thus served both temporal and narrative functions and their use was perhaps less dependent on the children's narrative abilities. This effect was most striking in the productions of the children in the earliest stages of narrative development. This is highlighted by Oliver's productions in the retell setting in English during both recording sessions – it was the setting in which he produced fewer present tense forms, suggesting that the retelling of events he had just watched in the video clip was more likely to trigger the use of past tense-aspect forms than the narrative setting based on a wordless picture book or the interview setting.

It was also expected that because the narrative retell represented a greater cognitive

load for the children, it would yield less complex productions. The previous section showed that this was verified for all the children on the structural and syntactic levels.

The greater cognitive load represented by the second setting also impacted tense diversity – the children used less diverse tense-aspect forms in the second setting than they did in the first and third settings. This effect was mostly visible in the productions of the children who had reached later stages in their narrative development, and who used more varied tense-aspect forms in the two other settings. It was for instance particularly striking in Julian's productions in French during the first recording session – in the first setting, he used *passé composé*, *imparfait*, *passé simple* and present tense forms to organize the events in his narrative. In the second setting, he did not use *imparfait* forms during the first recording session, and used mostly *passé composé* forms. The greater tense diversity in the forms used by Julian in the first narrative setting compared with the second one may be explained by several factors linked to the type of task he was engaged in. First, it may be linked to the child's greater familiarity with narrative tasks based on books than with narrative retell tasks, which might have made him more at-ease in the first setting than in the second one. It could also be explained by the greater cognitive load represented by the narrative retell task, which required that the children both remember the events that made up the clip and order them into their production.

Setting 3: Spontaneous Interview

The third setting in which the children were recorded was the setting most likely to be influenced by exterior factors. The organization of the narrative session meant that the children were recorded last in the third setting – this was intentional, as it was expected that the interview would be less cognitively demanding than the first two narrative settings. However, this resulted in the children being more fatigued and sometimes less eager to participate in the task, especially in their non-dominant language (this effect is described in more detail in the section dedicated to dominance effects).

The interview setting also yielded the opposite effect, especially with the older children who were more at ease and had less difficulty maintaining their attention on the tasks during the entire session. During the second recording session, Julian for instance produced a significantly higher number of clauses in both of his languages in the interview setting. The difference in the number of clauses he used was mostly linked to the nature of the tasks – the first and second setting required that Julian narrate a limited number of episodes whereas in the interview setting he could speak freely about as many topics as he desired. It may also be explained by Julian's greater experience with the narrative session, as he had already participated in a session a year before and was thus less intimidated. Finally, it could be a result of the time at which the session took place – because the family had moved away from France during the previous year, Julian was recorded during the summer holidays after he had come back from a vacation with this family. This might have made it easier for him to find topics to discuss during the narrative, as he might have had more

unusual experiences that he deemed worthy of mentioning.

The interview setting also tended to yield more diverse tense forms, but fewer past tense-aspect forms, in particular for the children who found it harder to stay focused throughout the session. Indeed, the children's reluctance to engage in the spontaneous interview often led the interviewer to try to put the child at ease and on eliciting speech rather than on eliciting past tense-aspect forms; they then tended to ask generic questions, to which the children were likely to answer using present tense forms with an habitual value.

8.2.2.2 Language dominance effect

Table 8.14 also highlights dominance effects in the number of finite forms produced by the children in their two languages in the different settings. All the children whose dominance pattern was clearly skewed towards one of their languages tended to produce more finite forms in that language. This was particularly striking in the spontaneous interview setting, which was expected to be less cognitively demanding for the children and thus to yield longer productions. This was generally the case in the children's dominant languages, in both recording sessions. However, during the first session, the children whose dominance patterns were clearly skewed towards one language produced fewer clauses in the interview setting than they did both in the first setting and in their dominant language. This was observed for Emma and Charlotte during the English session they participated in; it is also visible in the number of clauses produced by Oliver and Lucas during the first recording session in French. This was interpreted as an effect of language dominance on the children's ability to deal with the cognitive load of the three settings. Indeed, it may be that it was less challenging for the children to participate in the two first settings in their dominant language. They might thus have been less fatigued by the time we reached the interview setting and more likely to participate, which in turn led them to produce more clauses in that setting. The difference between the number of finite forms produced in the interview setting by Arthur and Julian, who were considered as fairly balanced in their use of their two languages, was less marked than the one observed for the other children of the *Brunet* corpus.

Finally, an effect of language dominance was identified in the proportion of target and non-target forms used by the children in their two languages. In French, Oliver for instance tended to use forms deprived of tense-morphology, as well as ambiguous forms, which could be interpreted either as past participles or as infinitive forms. Indeed, because the infinitive and past participle forms of verbs from the first conjugation group in French are homophones, and because the settings in which the children's productions were elicited did not allow to rely on parental interpretation of the form, it was difficult to decide how to code forms that resembled bare participles. This is illustrated in extract 8.2.6, where

the ambiguous verb form produced by Oliver is in bold.

Extract 8.2.6.

Oliver, 3;11 – Setting 3 (French, first session)

INT: qu'est+ce+que tu as fait à Noël ? (*what did you do for christmas?*)

CHI: euh moi [/] moi euh euh dormi et dormi et dormi [>]. (*I slept and slept and slept.*)

CHI: et après le jour de christmas@s me **réveiller** et moi ouvrir les cadeaux [>]. (*and then on christmas day I wake up and open my gifts.*)

INT: <tu as beaucoup dormi> [<]. (*you slept a lot.*)

CHI: et après moi ouvrir les cadeaux pour bébé el(oise). (*and then I open baby eloise's gifts*)

In extract 8.2.6, the form “*réveiller*” was coded as ambiguous as it could be interpreted either as an infinitive form or as a past participle. In this extract, it was difficult to rely on the context to interpret the form as either an infinitive or as a past participle – in his previous utterance, Oliver used the past participle “*dormi*” which could support the interpretation of “*réveiller*” as a past participle, however the following verb form used by Oliver was unambiguously an infinitive form (“*ouvrir*”), which in turn could support the interpretation of “*réveiller*” as an infinitive. The higher number of unambiguous infinitive forms than *passé composé* or bare past participles found in Oliver’s productions in the first recording session in French supports the interpretation of the ambiguous forms he produced at this stage as infinitive forms.

Table 8.17 shows all the children whose language dominance patterns were skewed towards one language were more likely to produce non-target forms in their non-dominant language than in their dominant language.

This was less striking in Emma’s productions – although she produced more target forms in French, her dominant language, she also produced a high proportion of target forms in English, her non-dominant language. This can be explained by the high number of forms that Emma directly replicated from her interlocutor’s previous utterances in this session.

8.2.3 Functions of finite forms used in the two narrative settings and distribution of lexical aspect categories

The first section of this chapter detailed the structure of the children’s narrative productions in the three settings, and in their two languages. I then provided an analysis of the

	% of target forms (FR)		% of target forms (EN)	
	N1	N2	N1	N2
Lucas (E)	68	78	97	97
Arthur (B)	80	82	96	96
Oliver (E)	53	55	78	80
Julian (B)	95	98	70	96
Emma (F)	93	97	/	85
Charlotte (F)	/	95	/	35

Table 8.17: Percentage of target forms produced by the children during the two recording sessions, in their two languages

children’s use of finite forms in the three settings, in order to identify possible task-type or dominance effects, as well as to reflect on the interaction between the children’s ability to produce coherent narratives and their use of finite forms in both of their languages. I aimed to show that bilingual children’s productions should be studied in different discursive contexts in order to provide a faithful account of their ability to use tense-aspect morphology in their two languages.

This is further supported by the analyses presented in this section, which focuses on the functions served by the past tense-aspect forms in French and in English in the children’s narrative productions. I consider in this section the clauses produced spontaneously by the children, i.e. produced with little or no elicitation from the interviewers.

Two main functions served by tense-aspect morphology in narrative discourse are addressed. I first look into the children’s hierarchical ordering of events in their narrative productions, focusing on their use of past tense-aspect morphology to signal events as either foregrounded or backgrounded, as well as on the distribution of lexical aspect in foreground and background clauses. Then, I address the children’s use of past tense-aspect forms to order the events temporally in their narrative productions. These analyses particularly emphasize the effects of dominance, task-type, as well as narrative development.

8.2.3.1 Use of tense-aspect morphology to order events hierarchically in narrative production: foreground and background clauses

Tables 8.18 and 8.19 provide the number of clauses produced by the children analyzed as foreground or background clauses, in the narrative setting based on a wordless picture book and in the narrative retell task, in the children’s two languages. Table 8.18 presents the values for French while table 8.19 presents the values for English. In both tables, as well as in the tables subsequently presented, a slash symbol was used to signal absence of data. These two tables are used below to reflect on possible language dominance and task-type effects on the children’s ability to present events as belonging either to the foreground

Setting	Count of foreground clauses				Count of background clauses			
	Book		Retell		Book		Retell	
Session	N1	N2	N1	N2	N1	N2	N1	N2
Lucas (E)	22	39	5	10	10	13	1	1
Arthur (B)	23	27	5	9	4	11	0	7
Oliver (E)	20	31	1	19	1	6	1	4
Julian (B)	19	28	10	10	6	8	0	3
Emma (F)	/	20	/	10	/	20	/	15
Charlotte(F)	/	6	/	/	/	5	/	/

Table 8.18: Count of foreground and background clauses in the children's productions in French

Setting	Count of foreground clauses				Count of background clauses			
	Book		Retell		Book		Retell	
Session	N1	N2	N1	N2	N1	N2	N1	N2
Lucas (E)	36	41	5	12	28	25	4	11
Arthur (B)	26	23	9	32	9	12	1	5
Oliver (E)	34	26	7	15	7	5	1	1
Julian (B)	26	21	3	11	4	22	1	4
Emma (F)	/	9	/	4	/	13	/	4
Charlotte (F)	/	9	/	5	/	5	/	0

Table 8.19: Count of foreground and background clauses in the children's productions in English

or to the background. I also considered the interaction between language dominance and task-type, by questioning whether the children were more influenced by the setting in their dominant or in their non-dominant language, if at all.

These two tables suggest that language dominance had a stronger effect on the children's use of foreground and background clauses in the first recording session than in the second session recorded a year later. Indeed, all the children systematically used more foreground and background clauses in their dominant language in the first recording session. In the second session, the difference in the number of foreground and background clauses used by the children in their two languages tended to decrease. It is likely that the children's developing narrative abilities as well as their greater familiarity with the two settings positively impacted their ability to include both background and foreground clauses in their narrative productions in their two languages, regardless of their dominance pattern.

Moreover, tables 8.18 and 8.19 suggest a possible task-type effect on the children's use of background and foreground clauses in French and in English. Indeed, in the retell

setting, the children consistently produced fewer clauses overall and fewer background clauses in particular than they did in the wordless picture book setting.

Comparing the children's narrative retell productions during the two sessions in their two languages, also shows an effect of language dominance – the children whose dominance patterns were skewed towards one of their languages tended to include more background clauses in the second recording session in that language. This suggests that the impact of the cognitive load represented by the narrative retell task was stronger and persisted longer in the children's non-dominant language, where they focused their attention more consistently on relating the narrative events which made up the clip rather than on providing background information.

Tables 8.20 and 8.21 below present the distribution of finite forms in the foreground and background clauses used by the children in English. As mentioned earlier, there are differences in how past tense-aspect morphology is used in background and foreground clauses in French and in English. In English, early stages of development are characterized by the use of simple present forms in the foreground, before children start using simple past forms predominantly in foreground clauses. Finally, as children's narrative abilities develop, the simple past should also be used more consistently in the background with an imperfective interpretation. At the same time, the children should gradually stop associating the foreground exclusively with telicity and the background with stativity, and start using the simple past in both the foreground and the background with all types of predicates, with perfective and imperfective values. I analyze below dominance and task-type effects on the children's use of past tense-aspect morphology to order their narrative hierarchically in English.

Setting	% Simple past				% Past progressive				% Present progressive				% Present				% Other			
	Book		Retell		Book		Retell		Book		Retell		Book		Retell		Book		Retell	
	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2
Lucas	97	95	80	83	0	5	20	8	0	0	0	0	0	0	0	0	3	0	0	8
Arthur	46	96	89	97	0	4	0	3	14	0	0	0	36	0	11	0	4	0	0	0
Oliver	82	81	100	87	3	14	0	13	0	0	0	0	0	0	0	0	15	5	0	0
Julian	88	90	100	100	0	5	0	0	4	0	0	0	4	0	0	0	4	5	0	0
Emma	/	56	/	50	/	0	/	0	/	0	/	0	/	0	/	0	/	44	/	50
Charlotte	/	0	/	20	/	11	/	80	/	56	/	0	/	0	/	0	/	33	/	0

Table 8.20: Distribution (%) of finite forms in foreground clauses in English

Setting	% Simple past				% Past progressive				% Present progressive				% Present				% Other			
	Book		Retell		Book		Retell		Book		Retell		Book		Retell		Book		Retell	
	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2
Lucas	50	52	75	55	10	8	0	0	4	8	0	0	32	12	25	45	4	20	0	0
Arthur	50	75	0	60	13	17	100	20	13	0	0	0	13	8	0	0	13	0	0	20
Oliver	43	40	0	0	29	40	100	100	0	0	0	0	14	20	0	0	14	0	0	0
Julian	75	64	0	50	25	0	0	0	0	5	0	0	0	32	100	50	0	0	0	0
Emma	/	85	/	50	/	0	/	0	/	8	/	0	/	8	/	50	/	0	/	0
Charlotte	/	20	/	/	/	0	/	/	/	0	/	/	/	80	/	/	/	0	/	/

Table 8.21: Distribution (%) of finite forms in background clauses in English

Tables 8.20 and 8.21 highlight similarities in the way children identified either as dominant in English or as balanced bilinguals used past tense-aspect morphology in the foreground and in the background.

The simple past was the most frequent form used in the foreground in the two recording sessions by all of these children, except by Arthur – the previous section showed that Arthur’s hesitation in the first setting during the first session led him to use mostly present tense forms.

Moreover, all the children identified as dominant in English used more diverse finite forms in the background than they did in the foreground – background clauses included simple past and simple and progressive present forms in the first session, while in the second session the children dominant in English tended to use more past forms (either simple or progressive) to signal events as backgrounded. Despite Arthur’s hesitation as to what to relate in his narrative and his use of simple present forms in the picture book setting in the first recording session, he used tense-aspect morphology to distinguish between background and foreground events in his production in English. His switch to the simple past at the end of his production, illustrated in extract 8.2.7, was analyzed as signaling a backgrounded event.

Extract 8.2.7.

Arthur, 5;09 – Setting 1 (English, first session)

CHI: the boy walks and [//] with the turtle in his hands and the frog and the dog.

CHI: and he stops.

INT: why [/] why do you say he stops?

CHI: uh there.

INT: yes and what happens here?

CHI: the turtle goes on his back.

INT: yes okay.

CHI: and the turtle **had** fun on his back (.) while the boy is digging a hole.

This extract shows Arthur using simple and progressive present forms to relate the main story-line of the picture book, in clauses analyzed as foreground clauses. Arthur switched to using a simple past form (in bold in the transcript) in what was analyzed as a background clause; this past tense form was initially used to report the narrator’s interpretation of the characters’ mental state, while in the same utterance Arthur used a present progressive form to describe the event depicted on the page – the boy digging a

hole in the ground. This suggests that although he was intimidated by the setting in the first recording session, he was able to use tense-aspect morphology to distinguish between the foreground and the background.

Finally, all the children who were dominant in English used proportionally more diverse past and present forms as well as more forms labeled “other” (in tables 8.20 and 8.21) in the background than in the foreground.

The diversity of finite forms used by the children in background clauses can be explained by the different functions these clauses served. Indeed, the English-dominant children used background clauses with three main functions in the first setting – to provide contextual information, such as locating the characters in space, to comment on the characters’ mental state as well as to report direct speech. On the contrary, Emma and Charlotte, who were the two children identified as dominant in French as well as the children who were in the earliest stages of narrative development at the time of the study used background clauses in English exclusively to provide contextual information or comment on the characters’ mental states, mostly using simple present and simple past forms.

In the first narrative setting, the children dominant in English used the simple past consistently in the foreground in both recording sessions. They also all used the simple past in background clauses, as expected in target narratives. The simple past was thus used by the English-dominant children with two functions – to order events in the foreground as well as to present events as backgrounded. On the contrary, the two children who were dominant in French used less diverse finite forms in the background. They also used the simple past in the foreground less consistently than the children dominant in English.

In the early stages of narrative development, children tend to use the simple past predominantly to locate telic, dynamic predicates in the foreground, yielding a perfective interpretation. As their narrative abilities develop, it is expected that children will use the simple past more and more consistently to locate stative predicates in the background, yielding an imperfective interpretation, before diversifying the types of predicates used in background and foreground clauses. I wondered whether dominance, narrative development or task-type effects would be identified in the children’s use of past tense-aspect morphology with different types of predicates in foreground and in background clauses. Tables 8.22 and 8.23 present the distribution of predicates belonging to the four categories of lexical aspect in the foreground and in the background in the two tasks and in the two recording sessions in English.

These tables show that the children who were dominant in English and who had reached later stages of their narrative development used predicates belonging to the four lexical aspect categories in the foreground. Conversely, Oliver, who was dominant in English but was identified as being in the early stages of his narrative development at the time of recording exclusively used telic predicates in foreground clauses in the first recording

Setting	% Achievements				% Accomplishments				% Activities				% States			
	Book		Retell		Book		Retell		Book		Retell		Book		Retell	
Session	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2
Lucas	31	56	60	58	39	15	20	17	25	22	20	8	5	7	0	17
Arthur	36	52	56	59	29	26	44	22	25	13	0	19	11	9	0	0
Oliver	65	29	57	60	21	48	29	20	15	24	0	20	0	0	14	0
Julian	42	38	33	18	12	19	33	27	23	19	33	18	23	24	0	36
Emma	/	60	/	75	/	40	/	0	/	0	/	0	/	0	/	25
Charlotte	/	44	/	20	/	23	/	40	/	33	/	40	/	0	/	0

Table 8.22: Distribution (%) of lexical aspect in foreground clauses in English

Setting	% Achievements				% Accomplishments				% Activities				% States			
	Book		Retell		Book		Retell		Book		Retell		Book		Retell	
Session	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2
Lucas	11	8	0	0	11	8	0	0	14	16	0	9	64	68	100	91
Arthur	0	0	0	0	13	0	100	0	25	17	0	40	63	83	0	60
Oliver	0	0	0	0	14	0	100	0	29	40	0	100	57	60	0	0
Julian	0	5	0	0	0	0	0	0	25	14	0	0	75	82	100	100
Emma	/	0	/	0	/	0	/	0	/	8	/	0	/	92	/	100
Charlotte	/	0	/	/	/	0	/	/	/	0	/	/	/	100	/	/

Table 8.23: Distribution (%) of lexical aspect in background clauses in English

session. Moreover, he used stative predicates exclusively in the background. On the contrary, Lucas, Julian and Arthur, who were either dominant in English or considered balanced bilinguals and had reached later stages of narrative development used activity and state predicates in the foreground along with telic predicates. They also used more diverse predicates in the background than Oliver, although they all associated the background predominantly with atelic predicates. This may be explained by the functions served by the background clauses he used. Indeed, he used them predominantly with functions likely to be expressed by stative predicates – to give contextual information, and in particular to locate characters in space, as well as to comment on the characters' mental state, interpreting the facial expressions drawn on the pictures. These functions are illustrated in extract 8.2.8 in which background clauses are in italics.

Extract 8.2.8.

Oliver, 4;01 – Setting 1 (English, first session)

CHI: he felled in the water +...

CHI: the tortoise got it.

CHI: the frog swam away.

CHI: a dog xxx and *the little boy was far away.*

CHI: ++ and they jump- [///] and the frog jumped in the water.

CHI: *and they [///] the dog still was hurting.*

CHI: and he gotten away.

The first background clause in italics in extract 8.2.8 was characterized as giving contextual information, while the second one was analyzed as commenting on the characters' mental state. Oliver at this stage associated the foreground to the features of telicity and dynamicity. As analyzed below, the restricted associations between the foreground and telicity and between the background and atelicity impacted Oliver's use of past tense-aspect morphology to locate predicates along a narrative time-axis. Tables 8.22 and 8.23 also show that Emma and Charlotte, who were dominant in French and who were in the early stages of their narrative development used predominantly telic predicates in the foreground, and almost exclusively stative predicates in the background.

Finally, I wondered whether the children's use of past tense-aspect morphology to present different types of events as either foregrounded or backgrounded was influenced by the type of task the children were engaged in.

Table 8.23, which presented the distribution of finite forms and of lexical aspect categories in background clauses in English, shows that the children dominant in English at the time of recording tended to use both less diverse finite forms and less different types of predicates in background clauses during the narrative retell task, especially in the first recording session. Lucas for instance used background clauses with less diverse finite forms and less various functions in the second setting than in the first one. These moreover included exclusively stative predicates – the verb “be” was the only verb he used in background clauses in the retell setting, to comment on the characters' mental states. Oliver, whose narrative abilities were less developed than Lucas' at the time of recording, was also influenced by task-type in his use of background and foreground clauses. Indeed, Oliver used background clauses more frequently and also more consistently in the narrative task where he could rely on a visual aid. In the narrative retell task, he used only one background clause in each session, at the beginning of his narrative. In the rest of his production, Oliver focused on narrating the events which made up the bulk of the story, rather than providing background information.

In their first narrative retell productions, English-dominant children in the corpus used past verb forms (either simple or progressive) almost exclusively to locate telic predicates in the foreground, which was analyzed as an effect of the greater cognitive load of the task. This impacted the temporal organization of the events, as interactions between tense and lexical aspect in the foreground in particular is central to children's ability to present events as ongoing or completed, and to order them in sequence or present them as co-occurring. It is further analyzed in the section devoted to the children's use of past tense-aspect morphology to organize narrative events temporally.

Children producing narratives in French generally associate the *passé composé* to the foreground, while the *imparfait* is used in background clauses alongside the present tense. Similarly to what was presented above for English, children originally restrict the foreground to telicity and mostly use stative predicates in the background, before they diversify the types of predicates they use in the foreground and in the background.

I wondered whether differences would be observed between the distribution of tenses in foreground and background clauses in the children's productions depending on their dominance pattern. I also wondered whether the same task-type effects would be identified, and in particular whether the narrative retell task would also yield less diverse finite forms in the children's productions in French. Tables 8.24 and 8.25 present the distribution of finite forms in French in foreground and background clauses in the two settings and the two recording sessions.

Setting	% <i>Passé composé</i>				% <i>Imparfait</i>				% <i>Passé simple</i>				% Present				% Other			
	Book		Retell		Book		Retell		Book		Retell		Book		Retell		Book		Retell	
Session	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2
Lucas	69	95	80	100	0	0	0	0	0	0	0	0	31	5	20	0	0	0	0	0
Arthur	35	89	0	100	0	11	0	0	0	0	0	0	65	0	100	0	0	0	0	0
Oliver	10	30	0	26	0	0	0	11	0	0	0	0	75	27	100	11	15	43	0	53
Julian	11	11	80	10	53	36	0	20	37	46	10	30	0	7	10	10	0	0	0	30
Emma	/	50	/	80	/	15	/	0	/	5	/	0	/	25	/	0	/	5	/	20
Charlotte	/	33	/	/	/	0	/	/	/	0	/	/	/	67	/	/	/	0	/	/

Table 8.24: Distribution (%) of finite forms in foreground clauses in French

Setting	% <i>Passé composé</i>				% <i>Imparfait</i>				% <i>Passé simple</i>				% Present				% Other			
	Book		Retell		Book		Retell		Book		Retell		Book		Retell		Book		Retell	
Session	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2
Lucas	10	0	0	0	20	0	0	0	0	0	0	0	70	77	100	100	0	23	0	0
Arthur	0	0	/	0	100	82	/	100	0	0	/	0	0	9	/	0	0	9	/	0
Oliver	0	0	0	0	0	100	100	100	0	0	0	0	100	0	0	0	0	0	0	0
Julian	0	0	/	0	33	50	/	100	0	0	/	0	50	38	/	0	17	13	/	0
Emma	/	0	/	0	/	45	/	100	/	0	/	0	/	50	/	0	/	5	/	0
Charlotte	/	0	/	/	/	0	/	/	/	0	/	/	/	100	/	/	/	0	/	/

Table 8.25: Distribution (%) of finite forms in background clauses in French

Tables 8.24 and 8.25 suggest that language dominance was not the main factor influencing the children's ability to use tense-aspect morphology to signal events as foregrounded and backgrounded in French. Indeed, in the wordless picture book setting, Lucas, who was dominant in English, used tense-aspect morphology to distinguish between foregrounded and backgrounded events. During the two recording sessions, Lucas thus used the *passé composé* predominantly in the foreground, and used present and *imparfait* forms to signal events as backgrounded. Despite less tense diversity in his productions in French than in English, Lucas used tense-aspect morphology to serve grounding functions in both of his languages. Moreover, he used different tense forms to serve different functions in background clauses – he used the present tense predominantly in direct speech, while he used the *imparfait* to give contextual information, exclusively with the verb “*être*”. Arthur used past tense morphology similarly as Lucas in his narrative productions in French, in

particular in the second recording session. At this stage, Arthur used the *imparfait* in the background and *passé composé* forms in foreground clauses. Despite different dominance pattern, Arthur and Lucas used tense-aspect forms similarly to signal events as foregrounded or backgrounded similarly in his two languages.

The differences identified in tables 8.24 and 8.25 between the children's use of tense forms in foreground and in background clauses appeared linked to experience with the narrative genre rather than to dominance patterns.

Indeed, Julian and Arthur were both identified as balanced bilinguals but differed with regard to their experience with the genre in French – they both participated in reading activities in French at home, but Julian was also part of the French reading group at school while Arthur attended an English-speaking school. This impacted their use of tense forms in French, especially in the foreground, where Julian used both *passé simple* and *passé composé* forms. Moreover, Lucas and Oliver, who were both identified as dominant in English at the time of recording, differed in their use of tense-aspect morphology in their narrative productions, suggesting that dominance factors may not impact the children's ability to participate in narrative tasks identically depending on their experience with the narrative genre in their two languages. Indeed, Lucas had reached a later stage of his narrative development, and used both background and foreground clauses in his non-dominant language, as he had done in his dominant language. Conversely, Oliver used both foreground and background clauses in his production in English, but spontaneously produced only foreground clauses in French during the first session. Extract 8.2.9 shows that the only background clause he produced was used in response to elicitation (in bold in the transcription below).

Extract 8.2.9.

Oliver, 3;11 – Setting 1 (French, first session)

CHI: et après le lendemain matin lui voit le frog@s parti. (*and then on the next morning he sees his frog gone.*)

MOT: qu'est-ce qu'il fait [/] qu'est-ce qu'il fait ? *and what does he do?*)

CHI: euh lui euh [/] lui cherche partout. (*he searches everywhere.*)

CHI: et lui dit froggie@s. (*and says froggie.*)

MOT: qu'est-ce qu'il se passe ? (*what's happening?*)

CHI: lui faire un calin à son chien. (*he hugs his dog.*)

MOT: mais pourquoi il (lui) fait un calin ? (*but why does he hug his dog?*)

CHI: **parce que lui aime son chien.** (*because he loves his dog.*)

MOT: ok.

CHI: et après les abeilles vient toutes partout. (*then all the bees come everywhere.*)

Moreover, Lucas predominantly used the *passé composé* in the foreground clauses he produced in his narrative in French. He thus used past tense-aspect morphology in a target-like way to signal events as foregrounded in both of his languages, regardless of dominance effects. On the contrary, the foreground clauses produced by Oliver in French during the first recording period included mostly simple present forms, although at this stage he used simple past morphology in the foreground in English. Oliver's use of tense-aspect morphology to organize his narrative productions thus seemed to be impacted by language dominance factors. In the second recording session Oliver used background clauses spontaneously, and used past tense forms more consistently in his narrative production in the first setting in French. He used the *imparfait* in background clauses, and started using the *passé composé* in foreground clauses.

Finally, narrative development impacted the children's use of past tense-aspect morphology to signal events as backgrounded or foregrounded. In the only narrative Charlotte produced in French (during the second recording session), no foreground or background clauses were identified. Indeed, Charlotte commented on the events in the narrative when prompted to do so by the interviewer, however she did not spontaneously order the events sequentially to produce a story – most of the clauses she uttered spontaneously were descriptive rather than narrative, and aimed at naming the characters and labeling events rather than narrating them, relying mostly on present tense forms, as illustrated in extract 8.2.10.

Extract 8.2.10.

Charlotte, 4;11 – Setting 1 (French, second session)

INT: et là qu'est-ce qu'il se passe ? (*and there what happens?*)

CHI: ils tombent. (*they fall.*)

INT: et là alors ? (*and what about there?*)

CHI: il y a des abeilles. (*there are bees.*)

INT: oui. (*right.*)

CHI: il y a une maison. (*and there is a house.*)

In her first production in French, Emma did not use tense-aspect forms to order events hierarchically, but rather to order them temporally. In her second production in the first setting in French, Emma started using more diverse tense forms, which allowed her to present events as either backgrounded or foregrounded. This is illustrated in extract 8.2.11, where Emma used the *passé composé* to narrate the events in the foreground, and *imparfait* forms in background clauses, to provide causal explanations for the events depicted on the pages.

Extract 8.2.11.

Emma, 4;11 – Setting 1 (French, second session)

INT: <en tout cas> [<] là qu'est-ce qu'il lui est arrivé là à otilie ? (*and so what happened to otilie?*)

CHI: ah il est plongé dans l'eau. (*he dived into the water.*)

INT: ah oui. (*right.*)

CHI: parce-qu'il avait pas de brassards. (*because he was not wearing armbands.*)

INT: parce-qu'il avait quoi ? (*because he had what?*)

CHI: il avait pas de brassards. (*he was not wearing armbands.*)

INT: ah il avait pas de brassards. (*ah he was not wearing armbands.*)

CHI: et xxx tombé profond après il s'est relevé. (*and xxx fell deep then he stood up*)

CHI: c'est parce-que [/] parce-que le chien il était euh sur sa tête de lui donc il était tombé profond. (*it's because the dog was on his head that's why he fell deep*)

This extract also illustrates the strong associations in Emma's production between the foreground, the *passé composé*, and telic events, while she tended to use mostly the *imparfait* and the present tense in the background with stative predicates. I wondered whether the children's use of predicates belonging to different lexical aspect categories in the foreground and in the background would be influenced by language dominance or narrative development effects.

Tables 8.26 and 8.27 present the distribution of lexical aspect categories in the foreground and background clauses in the children's productions in French, in the two settings and during the two recording sessions.

Setting	% Achievements				% Accomplishments				% Activities				% States			
	Book		Retell		Book		Retell		Book		Retell		Book		Retell	
Session	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2
Lucas	41	44	40	60	36	26	40	10	9	15	20	10	14	15	0	20
Arthur	39	48	0	33	22	15	100	44	39	33	0	11	0	4	0	11
Oliver	40	47	100	16	20	30	0	16	35	17	0	42	5	7	0	26
Julian	21	37	40	60	21	19	50	30	42	44	10	10	16	0	0	0
Emma	/	60	/	30	/	20	/	50	/	10	/	20	/	10	/	0
Charlotte	/	50	/	/	/	17	/	/	/	17	/	/	/	17	/	/

Table 8.26: Distribution (%) of lexical aspect in foreground clauses in French

The strong associations between the foreground and telicity and the background and stative predicates in Emma's productions in French illustrated in extract 8.2.11 were also

Setting	% Achievements				% Accomplishments				% Activities				% States			
	Book		Retell		Book		Retell		Book		Retell		Book		Retell	
Session	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2	N1	N2
Lucas	0	8	0	0	0	0	0	0	0	23	100	0	100	69	0	100
Arthur	0	9	/	0	0	0	/	29	0	18	/	14	100	73	/	57
Oliver	0	0	0	0	0	0	0	0	0	0	0	50	100	100	100	50
Julian	0	12	/	0	17	0	/	0	0	0	/	33	83	88	/	66
Emma	/	5	/	0	/	10	/	0	/	10	/	0	/	75	/	100
Charlotte	/	0	/	/	/	0	/	/	/	0	/	/	/	100	/	/

Table 8.27: Distribution (%) of lexical aspect in background clauses in French

found in Charlotte and Emma's productions in English, suggesting an effect of narrative development rather than of language dominance.

Table 8.26 moreover shows no clear language dominance effect in the distribution of predicates belonging to different lexical aspect categories in the foreground clauses used by children. In the book setting, Arthur, Lucas and Oliver used roughly the same proportion of telic predicates in foreground clauses, despite different dominance patterns.

Table 8.27 shows that in the first recording session based on a wordless picture book, the three of them also used exclusively stative predicates in background clauses in French. The main effect identified in the distribution of predicates belonging to different lexical aspect categories in French and in English appeared linked rather to the children's experience with the narrative genre. Indeed, Julian who was the child who was likely to have had more experience with the narrative genre in French, to which he was exposed both at home and at school, also associated the foreground less systematically to telicity than the other children under study. Conversely, Oliver and Charlotte were in the early stages of their narrative development in French, and they also used exclusively stative predicates in the background. The other children started using more diverse predicates in the background in the second recording period regardless of their dominance pattern, suggesting that the diversification of lexical aspect categories in the foreground and in the background was dependent on the development of their narrative abilities rather than influenced by dominance factors.

As in the children's productions in English, a task-type effect was identified in the children's use of foreground and background clauses in French as well as on their use of tense-aspect morphology to serve grounding functions.

As in English, the children identified as dominant in French or as balanced bilinguals used less diverse finite forms in the foreground and in the background in the narrative retell task than they did in the wordless picture book task, especially in the first recording session. It was mentioned earlier that Julian for instance used mostly *passé composé* forms in his retell production, which he used to signal events as foregrounded.

The children who were identified as dominant in English at the time of recording also

produced different narratives in the two settings, especially in the first session. Oliver and Lucas used both less background clauses and less diverse finite forms in the background in their narrative retell productions in French than they had in their productions based on the wordless picture book. Lucas, who had used *imparfait* forms to signal events as backgrounded in his production in the first setting used exclusively the present tense in the background in the narrative retell task. As mentioned in previous sections, the narrative retell task was particularly demanding for Oliver in French, and yielded a very short spontaneous production during the first recording session – Oliver spontaneously produced only one background clause and one foreground clause used to narrate the last event he had seen in the narrative, both in the present tense. In the narrative retell task, it was thus more difficult for Oliver to produce a narrative and to use tense-aspect morphology to ground events in discourse.

Finally, as what was observed in English, all the children associated the foreground with telic events and the background with atelic events even more in the narrative retell task than they did in the wordless picture book. This was especially true in the first recording session in French, and is commented on below, as it impacted the children's ability to organize events temporally in their narrative.

8.2.3.2 Use of tense-aspect morphology to order events temporally in narrative production

In addition to allowing narrators to present events as foregrounded or backgrounded, finite forms are also used to locate events along a narrative time-axis and to order them relative to one another. In the following paragraphs, I analyze how the children of the *Brunet* corpus used tense-aspect morphology with different types of predicates to order events temporally in their narrative. Here again, I am interested in determining the impact of language dominance, of task-type effects and of narrative development on the children's ability to use tense-aspect morphology to present more or less complex temporal relations between the events in their narrative. The first analyses presented below are based on the children's productions in the first setting. I then address possible task-type effects by analyzing the children's productions in the second setting.

Lucas and Oliver were both dominant in English at the time of recording, and differed in their narrative development – Lucas had reached later stages of his narrative development in both of his languages, while Oliver was still in the early stages of his narrative development. I wondered whether the tense-aspect forms they used in French and in English served the same functions in the two narrative settings in both of their languages. In English, from the first session onward, Lucas used simple past morphology to present complex temporal relationships between events – he used it to locate events relative to one another on a narrative axis, as well as to backtrack in time in his narrative, as illustrated

in extract 8.2.12.

Extract 8.2.12.
Lucas, 6;06 – Setting 1 (English, first session)
 CHI: and then another turtle came biting his tail.
 CHI: and the boy said oh no there is another turtle.
 CHI: and the boy said now we will not get this one **because he went under the water.**
 CHI: and the frog jumped all the way down to get him.
 CHI: and then he took off his clothes to go and get him.
 CHI: and then he was all naked.
 CHI: and then I am going to rescue him too.
 CHI: frog wait for me I am coming with you.
 CHI: and then he said oh no the turtle **has died.**

Extract 8.2.12 is taken from Lucas' first production in the first setting in English. The forms in bold were used by Lucas to backtrack in his narrative. The first form in bold is a simple past form used in a cause adverbial clause embedded in direct speech. The alternation between the tense of the reported speech and the tense of the adverbial is what allowed Lucas to backtrack in time. In the second form in bold, Lucas used a predicate inflected for the present perfect in order to locate it prior to the event he had just mentioned. At this stage, Lucas presented the events in the foreground as completed. A year later, Lucas also presented the events in his narrative both as ongoing and co-occurring in English.

This ability to present complex temporal relationships between narrative events seemed influenced by language dominance in Lucas' productions, especially in the first recording session. Indeed, in the first session, Lucas reported the events in his narrative in foreground clauses in the *passé composé*, which was used to order the events sequentially, i.e. in the first recording session, the order of the narrative clauses in Lucas' production in French followed the order of the narrated events. In the second recording session however, Lucas used the alternation between tense forms in his non-dominant language to present events as occurring simultaneously, as illustrated in extract 8.2.13.

Extract 8.2.13.
Lucas, 7;05 – Setting 1 (French, second session)
 CHI: il y a un petit fois une garçon avec le chien a eu une grenouille xxx.

(a little boy with his dog had a frog)

CHI: mhmh.

CHI: **quand le chien et le garçon fait dodo la grenouille a s'enlève**
 [/] **enlevé de le um bol.** *(while the dog and the little boy are sleeping
 the frog gets out of the bowl.)*

CHI: et quand le garçon a réveillé <le mat-> [//] ce matin. *(and when the
 boy woke up this morning.)*

CHI: il [/] il [/] il a dit oh non il est où mon grenouille ? *(he said oh no
 where is my frog?)*

In the utterance in italics in extract 8.2.13, the adverbial clause was analyzed as reporting a backgrounded event while the main clause reported a foregrounded event, both events being presented as co-occurring rather than as sequential. It was noted in the previous section that the second recording period corresponded to a time when Lucas used more diverse types of lexical aspects in both foreground and background clauses in French. This diversification in the types of predicates he used participated in his ability to present more complex temporal relationships between the narrative events. In the utterance in bold, it is both the alternation between the present tense and the *passé composé* as well as between a durative predicate (“*faire dodo*”) and a punctual one (“*s’enlever du bol*”) that allows Lucas to present the events as co-occurring.

Oliver was also dominant in English at the time of recording but had not reached the same stage of narrative development as Lucas.

In his dominant language, Oliver used past finite forms mostly to relate the events which made up the main story line, as well as to order the events sequentially. In the first recording session, the order of the clauses produced by Oliver followed the order of the events depicted in the picture book – he used simple past morphology alongside adverbs and temporal connectors to present the events in a sequence. No difference was observed in Oliver’s production in the first setting during the second recording session – once again, Oliver produced foreground clauses whose order mirrored the order of the events they narrated. Similar observations were made on Oliver’s productions in his non-dominant language. In both recording sessions, Oliver presented the events in his narratives sequentially, as following one another in the same order as the clauses he used to relate them.

This again is tied to the distribution of lexical aspect in the foreground and background clauses used by Oliver in the first narrative setting. Indeed, in both recording sessions and in both of his languages, Oliver used mostly telic predicates in the foreground, which are more likely to be presented as naturally following one another.

A comparison between Lucas and Oliver's use of tense-aspect forms to order events temporally in their narrative productions suggests that language dominance and narrative development affect children's abilities to present complex temporal relationships between events. Moreover, the association between lexical aspect and tense is crucial to the children's ability to order events temporally – as children gain more experience with the narrative genre in each of their languages, they will use more diverse types of predicates in the foreground and in the background. This in turn will yield a more complex temporal ordering of narrative events, with events presented as co-occurring rather than exclusively organized in a sequence.

I now turn to the productions of Arthur and Julian, who were both considered balanced in their exposure and use of French and English, and had reached later stages of their narrative development in their two languages when their productions were recorded.

As mentioned earlier, Arthur was intimidated by the setting in the first recording session, and used mostly simple present forms in both of his languages. However, he still used tense-aspect morphology to order events along a narrative time-axis. Extract 8.2.7, used first in the previous section and reproduced below, shows how Arthur presented events as co-occurring rather than simply narrating the events sequentially.

Extract 8.2.7

Arthur, 5;09 – Setting 1 (English, first session)

CHI: and he *stops*.

INT: why [/] why do you say he stops?

CHI: uh there.

INT: yes and what happens here?

CHI: the turtle *goes on his back*.

INT: yes okay.

CHI: and the turtle **had fun** on his back (.) while the boy *is digging a hole*.

In this extract, Arthur used the present tense to locate telic predicates in the foreground and present them as sequentially ordered (these predicates are in italics in the extract). He then used an atelic predicate inflected for the simple past, followed by a telic predicate in the present progressive. This alternation between finite forms and different types of predicates allowed Arthur to present the situations both as ongoing and as co-occurring. In French, Arthur also used different finite forms to present complex temporal relations between the narrative events he related. The switch from the simple past to the simple present in Arthur's first production on the wordless picture book is reproduced in extract 8.2.14.

Extract 8.2.14.

Arthur, 5;06 – Setting 1 (French, first session)

CHI: après le chien a tombé de la fenêtre. (*then the dog fell down the window.*)

CHI: et après le pot il s'a cassé. (*and the jar broke.*)

CHI: et après le garçon il **était** pas content avec le chien parce-que le pot s'**est cassé**. (*and then the boy was not happy with the dog because the jar broke.*)

CHI: euh après je sais pas. (*and then I don't know.*)

INT: tu sais pas ce qu'ils font là [>] ? (*you don't know?*)

CHI: non [<]. (*no.*)

INT: le petit garçon ça on sait pas alors on peut continuer. (*the little boy we don't know so let's go on.*)

CHI: en fait le petit garçon regarde toujours pour sa grenouille. (*actually the little boy is still looking for his frog.*)

CHI: ah peut-être oui [>]. (*he might be yes.*)

CHI: il [<] regarde. (*he is looking.*)

CHI: et après et voilà. (*and then that's it.*)

CHI: **et après il trouve pas sa grenouille dans où il a regardé alors le chien il regarde.** (*and then he can't find his frog where he looked so the dog looks.*)

CHI: et après [/] et après tous les abeilles vient. (*and then all the bees come.*)

In extract 8.2.14, Arthur first alternated between the use of a stative predicate in the *imparfait* and a telic, punctual predicate in the *passé composé* (in bold in the extract), to comment on the characters' mental state and to explain this mental state by referring to a prior event. This explanation implied backtracking along the narrative time-axis. Then, he used the present tense first to word his hesitation and then to continue his narrative. Switching to the *passé composé* in the utterance in italics allowed him once again to backtrack in time. This use of tense-aspect morphology to present complex temporal relationships between narrative events is typical of narratives produced by children from 5;00 onward.

In the second recording session in French, Arthur used more diverse finite forms in both background and foreground clauses, including *passé composé*, *imparfait* and present tense forms but also *plus-que-parfait* verb forms. This diversification of tenses in his second narrative production in the first setting allowed Arthur to sequence the events in his narrative, presenting them as co-occurring as well as making causal relations between

them explicit. This is illustrated in extract 8.2.15.

Extract 8.2.15.

Arthur, 6;08 – Setting 1 (French, second session)

CHI: et le petit garçon regardait dans la trou de une taupe. (*and the little boy looked in a mole hole.*)

CHI: mais la taupe aimait pas donc xxx elle a mordu le garçon. (*but the mole did not like that so she bit the little boy.*)

INT: aie. (*ouch.*)

CHI: après le chien a fait par accident a fait la ruche tomber. (*then the dog accidentally made the hive fall.*)

CHI: et tous les abeilles venaient pour lui attaquer **pendant que le garçon était en train de regarder dans un tronc d'arbre.** (*and all the bees came to attack him while the little boy was looking inside a tree trunk.*)

CHI: après ça [//] tous les abeilles ont poursuivi le chien. (*and then all the bees chased the dog.*)

CHI: et après le garçon a tombé. (*and the little boy fell.*)

In this extract, Arthur used the *passé composé* and the *imparfait* both to signal events as backgrounded and foregrounded, and to present them as co-occurring. Moreover, Arthur tended to use *passé composé* forms in the foreground more frequently with telic, punctual predicates while he used the *imparfait* mostly with durative or stative predicates. The alternation between different tense forms and lexical aspect categories allowed him to narrate situations as simultaneously occurring as well as to order them sequentially. Arthur's use of tense-aspect morphology was similar in his two languages, and allowed him to present complex temporal relationships between narrative events.

This was also the case for Julian – he used tense-aspect morphology in a target-like fashion in French and in English with different types of predicates, which allowed him to narrate sequential as well as co-occurring events, and to backtrack along a narrative time-axis.

In French, Julian alternated between the use of the *imparfait*, the *passé composé* or the *passé simple* in foreground clauses mostly to present complex temporal relationships between the events. The *imparfait* forms used by Julian in the foreground were analyzed as serving different functions – they were used to present the events as ongoing, and as co-occurring. This is illustrated by extract 8.2.16 in which *imparfait* forms are in bold.

Extract 8.2.16.

Julian, 5;05 – Setting 1 (French, first session)

CHI: et quand la grenouille grandit et que demain matin il la **voyait** plus.
(*and when the frog grew up and that tomorrow morning he could not see it anymore.*)

CHI: le chien **avait** la boîte dans sa figure. (*the dog had the box on his face.*)

CHI: et le petit garçon s'**habillait**. (*and the little boy was putting his clothes on.*)

CHI: le chien et le petit garçon **disaient** grenouille où es-tu grenouille où es-tu ? (*the dog and the little boy said frog where are you frog where are you?*)

CHI: le chien **tombait**. (*the dog fell.*)

CHI: et le garçon *rattrapa* le chien. (*and the boy caught the dog.*)

CHI: et *cria* grenouille où es-tu ? (*and yelled frog where are you?*)

CHI: woof woof où es-tu ? (*where are you?*)

CHI: il *chercha* dans le (pe)tit trou. (*he looked into the small hole.*)

CHI: oh oh qui est là ? (*who's there?*)

CHI: et le chien *a trouvé* les petites abeilles qui l'*a chassé* le chien. (*and the dog found the little bees who chased the dog.*)

CHI: et que le petit garçon **regardait** si sa grenouille elle était pas là.
(*and the little boy looked to see if his frog wasn't there.*)

The *imparfait* forms in bold in the extract were all used in foreground clauses – clauses which move the narrative forward, as they relate events which constitute the main storyline. These forms also all have in common that they were used to narrate events depicted as ongoing in the picturebook – for instance, the form “*le chien **tombait***” was used to narrate the picture in which the dog was drawn as he was falling, in mid-air. Finally, the *imparfait* was used by Julian to present foregrounded events as co-occurring – the clauses “*le chien **avait** la boîte dans sa figure*” and “*le petit garçon s'**habillait***” inflected for the *imparfait* are used to narrate co-occurring events. Conversely, Julian used the *passé simple* and the *passé composé* to present events as completed and as occurring sequentially.

In both recording sessions in English, foreground clauses were used by Julian both to present events sequentially, and to signal them as co-occurring – this was done not only through an alternation between finite forms, but also through the inflection for the simple past of predicates belonging to different lexical aspect categories and through the use of adverbial clauses, as illustrated in extract 8.2.17.

Extract 8.2.17.

Julian, 5;07 – Setting 1 (English, first session)

CHI: and then he saw a turtle <when he> [/] <when he> [/] when he came out.

INT: mhmh yeah the turtle (.) what about the turtle?

INT: let us see okay?

CHI: and then he [//] they had a fight with the dog and the turtle.

CHI: then the turtle bite the dog.

INT: oh yes.

CHI: <and then he> [//] and then the little boy pull on his dog.

In extract 8.2.17, Julian's first utterance presented two foreground events as co-occurring – the time of the stative situation <he see a turtle> was framed by an adverbial clause containing a punctual predicate (“when *he came out*”). This example shows that tense diversity is not the only means by which the children presented events as co-occurring – this was also achieved by the use of predicates with different temporal inherent features in main and adverbial clauses, and was typical of children's productions in later stages of their narrative development.

Finally, Emma and Charlotte were both dominant in French and in the early stages of their narrative development at the time of recording. Only Emma participated in the first recording session, and at this stage she used tense-aspect morphology not to distinguish between foregrounded and backgrounded events but rather solely to order events in sequence.

During the session in French, Emma mostly used the present tense both to give contextual information and to label the events which made up the bulk of the story. Emma moreover used *passé composé* forms with a temporal rather than with a narrative function, i.e. to locate an event prior to another rather than to signal the events as belonging to the background or to the foreground. This is illustrated in extract 8.2.18.

Extract 8.2.18.

Charlotte, 3;11 – Setting 1 (French, first session)

CHI: il shout@s sa maman. (*he calls his mother.*)

INT: ben oui. (*right.*)

INT: ok et ensuite ? (*and then?*)

INT: alors ça qu'est-ce qu'il s'est passé xxx [<]. (*so what happened?*)

CHI: <il se fache> [<]. (*he gets angry.*)

INT: pas content [>]. (*not happy.*)
 CHI: <il est> [<] pas content. (*he's not happy.*)
 INT: ben oui. (*right.*)
 INT: il a pas l'air content hein et pourquoi il a pas l'air content à ton avis
 ? (he doesn't look happy and why is that do you think?)
 CHI: parce-que le chien il **a fait** ses besoins. (*because the dog did his
 business*)

Extract 8.2.18 shows that Emma used present tense forms mostly to label the events pictured in the storybook rather than to order them temporally or to present them as belonging to the background or the foreground. She also used a *passé composé* form (in bold in the extract), which was analyzed as serving a temporal rather than a narrative function – it was used to locate the event <*il fait ses besoin*> prior to the situation <*il être pas content*> rather than to present the event as foregrounded.

It was mentioned in the previous section that during the recording session in English, Emma narrated the events mostly using telic predicates in the simple past, which she presented as completed as well as following each other. The ordering of events in Emma's narrative production in English was thus served both by specific associations between tense morphology and lexical aspect categories. Charlotte only participated in the second recording session in her two languages. She used present tense forms in the first setting in French, and simple present and present progressive forms in English, to label events rather than to order them temporally – her productions in the first setting were more descriptive than narrative, and she did not use tense-aspect morphology to order the events relative to one another.

The analyses presented above showed that the children's use of tense-aspect morphology to order events temporally in their narratives was mostly impacted by language dominance factors when the children had reached later stages of their narrative development. Indeed, it was shown that Lucas, who produced coherent and complete narratives in his two languages, used tense-aspect morphology to present complex temporal relationships between events in English, which was his dominant language at the time, while he used tense-aspect morphology in French to order events sequentially. On the contrary, Oliver who was dominant in English but was in the early stages of narrative development at the time of recording used tense-aspect morphology to order events sequentially in his narrative in both of his languages.

I now analyze how the children's use of tense-aspect morphology to order events temporally was affected by task-type effects in their two languages, by comparing the children's productions in the two different settings.

Task-type effects were identified in all of the children's productions, along with language dominance effects. In Lucas' productions in French and in English in the narrative retell task, Lucas used tense-aspect morphology to present events in a sequence. He used mostly simple past forms in English and *passé composé* forms in French in foreground clauses whose order followed the order of the events they narrated. Moreover, the associations between foreground clauses and telicity were stronger in Lucas' productions in the second setting in both of his languages during the first recording session, which is consistent with the comments made above on the temporal organization of his productions in the narrative retell task. He associated past tense-aspect morphology predominantly with telic predicates, to locate completed events in sequence. He thus used past forms with a temporal rather than with a narrative value in the second setting, during the first recording session in his two languages.

Lucas' production in the narrative retell task during the second recording session also highlights an effect of language dominance on his use of past forms to order events in his narratives in French and in English. Indeed, in English, Lucas used more diverse finite forms as well as more different types of predicates in the foreground. This yielded a more complex temporal organization of the events he related – in English, he presented the events as co-occurring, rather than exclusively as following one another. In his non-dominant language, Lucas used less diverse tenses to relate the events of the video clip, and did not use mostly telic predicates in the foreground. In his second production in the retell task in French, Lucas used past-tense aspect morphology merely to relate events sequentially. This suggests an interaction between task-type and dominance effects, by which his production was less complex in the second setting in his non-dominant language in both recording sessions.

The distribution of Oliver's verb forms was also more clear-cut in his narrative retell than in the picture book setting – in his retell production, Oliver used the simple past exclusively in the foreground, and used the past progressive in the background. The background clauses he used in the two sessions were moreover exclusively located at the beginning of his narrative production. The rest of his narrative consisted in foreground clauses in the simple past, which Oliver used to present the events sequentially, with the order of the foreground clauses he used following the order of the events they narrated. Oliver's first narrative production in French in the retell task contained only one foreground clause – he thus did not use past-tense morphology spontaneously to order different events relative to one another in the first recording session. This suggested that the narrative retell task represented an even heavier cognitive load in his non-dominant language than in his dominant language. In the second recording session, Oliver used exclusively foreground clauses in French, to order events sequentially

Arthur spontaneously used only foreground clauses in his first productions in the retell task. He ordered the events sequentially, with the order of his clauses mirroring the

order of the events they related. A similar evolution was moreover observed between his retell narrative productions during the first and the second recording sessions in his two languages. In French and in English, Arthur produced significantly more clauses and used more diverse finite forms. The tense alternation observed in his productions in French and in English allowed him to package events in his narrative and to navigate the narrative timeline – he no longer presented events merely in a sequence relative to a single anchor point, but rather was able to use tense morphology to present them as ongoing as well as to order events relative to one another. Like Arthur, Julian was identified as a balanced bilingual, and he used tense-aspect morphology in his retell productions similarly in his two languages. Julian's first narrative productions on the retell task included only foreground clauses used to relate events in a sequence, in both of his languages. In the second recording session, he used both background and foreground clauses in his narrative retell in his two languages, and presented events not merely in a sequence but also as co-occurring.

The narrative retell task was particularly challenging for Emma and Charlotte, who were the children whose narrative abilities were the least developed at the time of recording. Neither children produced a narrative retell in the first recording session in French – Emma, who was the only one to participate in the first recording session, merely used clauses in the simple present to name the characters in the video clip. They both participated in the second recording session in French, but only Charlotte participated in the second recording session in English. Interestingly, during the second recording session, the narrative retell task yielded more past forms in Emma and Charlotte's productions than the wordless picture book task had. This was expected, due to the nature of the task; the children were asked to retell a story which they had watched unfold immediately prior to SpT. The fact that neither Emma nor Charlotte used tense-aspect morphology to distinguish between foreground and background clauses in the narrative retell task, as well as the higher frequency of past tense forms used by the two children in the retell setting than in the wordless picture book setting suggest that the past tense forms used by Charlotte and Emma in their two languages were used with a temporal rather than a narrative function.

8.2.4 Interaction between tense-aspect morphology, narrative development and bilingualism

The analysis presented below is organized around the three types of bilingual profiles represented in the *Brunet* corpus. First, it considers Lucas, who was dominant in English at the time of recording and who had reached later stages of his narrative development. Then, a joint-analysis of Arthur and Julian's productions is provided – both children were considered balanced in their use and exposure to their two languages, and both had also reached advanced stages of their narrative development at the time of recording. Finally, I focus on Emma, Charlotte and Oliver's productions. All three children were in the earlier

stages of their narrative development and were dominant in one of their two languages – Charlotte and Emma were dominant in French and Oliver in English.

The identification of three groups in the *Brunet* corpus stems from the structural and linguistic analyses of the children's productions presented above. It aims at summarizing the interaction between the children's use of tense-aspect morphology, their dominance pattern and their ability to produce coherent narratives at the macro-structural level in their two languages.

8.2.4.1 English-dominant child in the later stages of his narrative development

In the first section of the present chapter, I showed that Lucas produced structurally more complex narratives in his two languages during the second recording sessions. The analysis of Lucas' productions in the first recording session highlighted that Lucas used different linguistic means to relate the events in the picture book and in the video clip in his two languages. It showed that Lucas used more causal connectors and that he maintained referential chains more efficiently in English than in French. It also mentioned that his prosody was more typical of narrative discourse in his dominant language than in his non-dominant language, in which he was more hesitant.

However, tables 8.15 and 8.16 suggest that he used past tense-aspect morphology in similar proportions in his two languages – Lucas used simple past forms and *passé composé* forms more frequently in the two first settings than he did during the family dinners or in the interview setting. Moreover, Lucas included the same number of story grammar units in his productions in French and in English. Dominance effects did not seem to impact either Lucas' ability to include the relevant story grammar units into a coherent production or to use past morphology in the two narrative settings. It may be hypothesized that as Lucas reached later stages of his narrative development, he was both more aware of the need for his narrative to include necessary story grammar units and to rely on tense-aspect morphology to signal events as backgrounded or foregrounded. This was the case even though there were differences in Lucas' ability to use past tense-aspect morphology in a target-like fashion in French and in English (as illustrated by the differences in the proportion of target forms he used in his two languages, displayed in table 8.17).

Another question relates to the evolution between Lucas' use of tense-aspect morphology in his narrative productions recorded a year apart in his two languages. In English, there was no difference in the number of background and foreground clauses he used or in the tense-aspect forms he used in both types of clauses. In particular, he used the simple past with predicates belonging to different lexical aspect categories in both the background and the foreground, which allowed him to order events sequentially as well as to present

them as co-occurring and to backtrack along the narrative time-axis. In French, he produced foreground clauses including mostly telic predicates in the *passé composé*, and the order of his narrative clauses followed the order of the events they related. At this stage, he used mostly the present tense in the background. In the second session, he used both more tense forms and more predicates belonging to different lexical aspect categories in the foreground and in the background, which allowed him to present events as co-occurring. As his use of tense-aspect morphology developed to resemble target-like uses in French, he was able to devise more complex temporal relationships between the events he related in his narrative.

A type-task effect was also identified in Lucas' productions in his two languages. In the first session, Lucas used almost exclusively foreground clauses in the second setting. He used less diverse tense forms, and the distribution of telic predicates in the foreground and atelic predicates in the background was even more clear-cut than it had been in the first setting. This resulted in Lucas ordering the events sequentially in the second setting in his two languages. This was explained by the greater cognitive load of the task. No clear evolution in Lucas' use of tense forms to signal events as backgrounded or foregrounded and to order them along the narrative time-axis was identified between Lucas' first and second productions in the retell task in French. In his dominant language however, Lucas used more diverse finite forms as well as more background clauses, and expressed more complex temporal relations between the narrative events he related, suggesting an interaction between task-type and dominance effects.

8.2.4.2 Balanced bilinguals in later stages of their narrative development

The first section of this chapter showed that Arthur and Julian's productions in their two languages were structurally similar in the two recording sessions – they included the same story grammar units in their productions in the different settings in French and in English. Similar task-type effects were also identified in the second setting in the children's two languages – Arthur and Julian both produced shorter and structurally less complex productions in the narrative retell task. It was also the setting in which both children used less diverse tense-aspect forms, suggesting a correlation between the use of tense-aspect morphology and narrative complexity. It also suggests task-type effects on the use of tense-aspect morphology in narrative productions, as was identified in Lucas' productions.

There were two main differences between Arthur and Julian's productions in the narrative settings. The first difference was mostly observed in the first recording session, when Arthur was particularly intimidated by the setting, and was more hesitant in his productions. In the first setting, Arthur switched from using past tense-aspect morphology to using mostly the present tense in both of his languages when he started hesitating. At this

stage in English, he used past tense forms to relate the events that made up the video clip. This was linked to the nature of the retell task, where the children were asked to narrate events that they had watched in the video clip a few minutes earlier; it was hypothesized that Arthur used the past tense with a temporal function rather than to order events in his narrative in the narrative retell setting. During the second session, Arthur used mostly past tense-aspect morphology in his narrative productions in his two languages. In both of Arthur's languages, the development of his narrative abilities and a greater familiarity with the narrative settings went hand in hand with a development in his use of past tense morphology. Julian on the contrary used past tense forms in both of his languages in the two narrative settings from the first session onward.

The second difference between Arthur and Julian's productions had to do with the variety of tense forms used by Julian, in particular in French. Indeed, Julian consistently used *passé simple* forms to relate events and present them as foregrounded. As explained in chapter 3, the *passé simple* is seldom used in oral French, but is quite frequent in narrative discourse and in particular in children's narratives. In addition to adopting the prosody characteristic of children's narratives, Julian also used the French tenses typical of this type of discourse. Both Arthur and Julian participated in reading activities in French at home – it was argued that Julian's seemingly greater experience with the genre in French may thus be explained by his exposure to narratives at school, where he was signed up in the French reading group.

Despite these differences in the past tenses used by the two children in French, they were both able to use finite forms to express a complex temporal ordering of events in their narratives, i.e. to order events in sequence as well as present them as co-occurring and backtrack along the narrative time-axis. Both Arthur and Julian used tense alternations to express complex temporal relationships between events. These temporal relationships between events were also supported by the use of predicates belonging to different types of lexical aspect categories in the foreground in their two languages.

Finally, similarly as what was observed for Lucas, a task-type effect was identified in the two children's productions. They both produced mostly foreground clauses in their retell productions during the first recording session in their two languages. These clauses were characterized by less diversity in the finite forms used by Arthur and Lucas. Finally, also both used more background clauses in the second recording session, although the distribution of lexical aspect in the foreground and in the background was more restricted than in the first setting. The background included exclusively stative predicates, while the foreground included mostly telic predicates. Both children presented less complex temporal relationships between the events they related in the narrative retell task during the two recording sessions.

8.2.4.3 Children in the early stages of their narrative development in their dominant language

Finally, Emma, Charlotte and Oliver were all in the early stages of their narrative development, but differed in their dominance patterns. Emma and Charlotte were dominant in French at the time of recording while Oliver was dominant in English. Moreover, the children differed in their narrative development – during the first session, only Emma participated and she did so only in her dominant language. Her production in the first session was moreover analyzed as descriptive rather than narrative. In the second recording session, Emma's productions in her two languages placed her in the very first stage of narrative development identified by Applebee. Conversely, Oliver participated in the tasks in his two languages during both recording sessions, and his productions corresponded to the second stage of narrative development in Applebee's classification. The main difference between the children's productions had to do with Oliver's ability to organize his narratives around a central theme and character in his two languages.

The difference between the children's dominance pattern, their narrative development and their use of past tense-aspect morphology in their two languages allows to reflect on the interaction between these factors.

Comparing Emma and Oliver's productions in the first recording session shows that Emma participated only in the session in her dominant language, in which she was not yet able to provide a truly narrative production. This may indicate a joint effect of language dominance and task-type – the narrative tasks were already challenging for Emma in her dominant language, and were too demanding for her to participate in the recording session in English, her non-dominant language. Conversely, in the first setting Oliver produced narratives in French and in English, which included the same story grammar units. This suggests that his narrative abilities at the macro-structural level may have developed similarly in his two languages, despite differences in his linguistic abilities in his two languages, and in particular in his use of past tense-aspect morphology.

Indeed, dominance effects were identified in Oliver's use of past tense-aspect forms – the previous section showed that he used significantly more past tense-aspect forms in English than he did in French. It also showed that there was more evolution between his use of tense-aspect morphology during the two recording sessions in his non-dominant language – present and infinitive forms were no longer the most frequent forms used by Oliver in the second recording session, when he used *passé composé* and *imparfait* forms more frequently. During the second recording session, Oliver also produced a significantly longer narrative and required less scaffolding to do so, especially in the narrative retell setting.

The development of Oliver's ability to retell the events which made up the video clip was thus accompanied by a development of his ability to use past-tense forms sponta-

neously and productively in French.

Although Oliver's use of past tense-aspect morphology appeared linked to language dominance, a comparison with Emma's use of past tense-aspect forms paints a slightly different picture. Indeed, Emma originally did not use past tense-aspect forms in her production in her dominant language, but rather started using tense-aspect morphology in the narrative settings in English, her non-dominant language. In her production on the wordless picture book in English, she thus used simple present and simple past forms with different functions. She used simple present morphology exclusively to comment on her difficulties in telling the story, whereas she predominantly used the simple past to relate the events in her narrative. This is illustrated in extract 8.2.19, in which the simple present forms are in bold.

Extract 8.2.19.

Emma, 4;11 – Setting 2 (English, second session)

INT: +< once +...

CHI: +, upon a time.

INT: once upon a time +...

CHI: +, there *was* a boy a dog and a frog.

INT: mhmh.

CHI: [-mix] and the boy the dog and the grenouille@s *went fishing*.

INT: mhmh they went fishing.

CHI: and I **don't know**.

INT: what happened ?

CHI: oops flop in the water.

INT: yes the boy fell in the water.

CHI: and there *was* that in the p- +//.

CHI: I **don't know** in English what it **is**.

In extract 8.2.19, the forms in bold are used by Emma to provide meta-narrative comments on her ability to order the events in her narrative production, whereas the forms in italics were used to relate narrative events.

This differential use of tense-aspect morphology suggests she was able to use it in her non-dominant language to distinguish between her narrative production and the meta-narrative comments she made, which she did not do in her dominant language. It can be hypothesized that Emma's earlier use of past tense-aspect forms in her narrative in her non-dominant language may be linked to a greater experience with the narrative genre

in English, however the information gathered from the parental questionnaires on the children's reading practices were not detailed enough to confirm this.

All three children used restricted associations between foreground and background clauses and lexical aspect categories to order events in their narrative – they associated the foreground to telicity and the background to stative predicates. Events in the foreground were presented exclusively in sequence – the children did not present events as co-occurring, nor did they use finite forms to backtrack in their narrative. The children's ability to use tense-aspect morphology with different types of predicates to present complex temporal relationships between events thus appeared to be influenced by their narrative development – children in the earlier stages of their narrative development used tense-aspect morphology and temporal connectors predominantly to present events sequentially.

Task-type effects were also identified in the children's productions.

It was more challenging for Emma and Oliver to participate in the narrative retell task in the first recording session. When the children did participate in the retell task, they produced mostly foreground clauses including telic predicates, used to order the events sequentially. All three children thus ordered the events in their narrative retell productions by associating tense-aspect morphology with specific lexical aspect categories.

Finally, another joint effect of task-type and narrative development was identified in Emma and Charlotte's use of past tense-aspect morphology. Indeed, both children used past tense-aspect forms more frequently in the interview and narrative retell settings in their two languages. In the interview setting, the children used past tense-aspect morphology to relate personal narratives – they were more free to choose what they wanted to relate, which may have positively impacted their use of tense-aspect morphology. However, the narrative retell task also triggered the use of more past tense-aspect forms than the narrative task based on a wordless picture book. This was interpreted as linked to the nature of the task, in which the children were asked to narrate events that had occurred in the clip they had watched just prior to SpT. Emma and Charlotte thus seemed to use past tense-aspect morphology spontaneously to locate situations in the past sooner than they used it to organize events in their narrative productions.

This chapter has showed that the children under study did not use past tense-aspect morphology identically in spontaneous and narrative contexts, highlighting the need to consider different discursive settings to provide a full picture of bilingual children's use of past verb forms. The main features analyzed in the children's productions, which were used to identify three different bilingual profile, are listed below. Moreover, the structural and linguistic analyses conducted on the corpus suggest that dominance, task-type and narrative development interacted differently with the syntactic complexity of the children's productions as well as with their use of past morphology to order events hierarchically and temporally in their narratives. These interactions are presented for each bilingual profile in tables 8.28, 8.29 and 8.30.

- Profile 1: Children in later stages of narrative development (dominant in one language)
 - included same SG units in two languages
 - used past morphology for grounding purposes in two languages
 - used past morphology to order events temporally more consistently in dominant language
 - restricted distribution of lexical aspect categories in foreground and background clauses in non-dominant language
 - shorter and less complex narratives on challenging tasks especially in non-dominant language
- Profile 2: Children in later stages of narrative development (balanced)
 - included same SG units in two languages
 - used past morphology for grounding and temporal ordering purposes in two languages
 - used diverse lexical aspect categories in foreground and background clauses in two languages
 - shorter and less complex narratives on challenging tasks in two languages
- Profile 3: Children in earlier stages of narrative development (dominant in one language)
 - included more SG units in dominant language
 - used past morphology predominantly to locate events prior to SpT or order events sequentially in narrative productions
 - restricted distribution of lexical aspect categories in foreground and background clauses in two languages
 - no narrative production on challenging task in first session

	Syntactic complexity	Past morphology used to order events hierarchically	Distribution of past morphology and lexical aspect in FG and BG to order events temporally
Narrative stage	No interaction (uneven syntactic complexity in same stage in 2 lg)	No interaction (past morphology used in FG and BG in different stages)	No interaction (equally complex temporal organization in narrative stages)
Language dominance	Interaction (more syntactic complexity in dominant lg)	No interaction (past morphology used in FG and BG in 2 lg)	Interaction (more complex temporal organization in dominant lg)
Task Type	Interaction (more complex syntax in less challenging tasks)	Interaction (less past morphology in FG and BG clauses in more challenging tasks)	Interaction (less complex temporal organization in more challenging tasks)

Table 8.28: Profile 1: dominant in one language, later stages of development (stages 4-6)

	Syntactic complexity	Past morphology used to order events hierarchically	Distribution of past morphology and lexical aspect in FG and BG to order events temporally
Narrative stage	No interaction (similar syntactic complexity in same stage in 2 languages)	No interaction (past morphology used in FG and BG in different stages)	No interaction (equally complex temporal organization in different stages)
Language dominance	No interaction (same syntactic complexity in 2 lg)	No interaction (past morphology used in FG and BG in 2 lg)	No interaction (equally complex organization in 2 lg)
Task Type	Interaction (more complex syntax in less challenging tasks)	Interaction (less past morphology in FG and BG in more challenging settings)	Interaction (less complex temporal organization in challenging task)

Table 8.29: Profile 2: balanced, later stages of narrative development (stages 4-6)

	Syntactic complexity	Past morphology used to order events hierarchically	Distribution of past morphology and lexical aspect in FG and BG to order events temporally
Narrative stage	Interaction (more syntactic complexity in later stages)	Interaction (no systematic use of FG and BG especially in stage 1)	No interaction (equally simple temporal organization in different stages)
Language dominance	No interaction (same syntactic complexity in 2 lg)	Interaction (more past morphology used in dominant lg in stage 3)	No interaction (equally simple temporal organization in 2 lg)
Task Type	Interaction (more complex syntax in less challenging tasks)	Interaction (no FG and BG clauses in more challenging tasks in stage 1)	Interaction (past morphology used to locate events prior to SpT rather than along narrative time-axis)

Table 8.30: Profile 3: dominant in one language, earlier stages of narrative development (stages 1-3)

Conclusion

This work analyzed the use of past tense-aspect morphology in French and in English in three different corpora: it used spontaneous longitudinal data from two French monolingual children aged between approximately 1;06 and 4;06, spontaneous longitudinal data from two French-English bilingual children aged between 2;06 and 3;06 as well as semi-experimental and spontaneous data from six French-English bilingual children from 3;11 to 7;08, who were recorded during family dinners and in narrative sessions in their two languages twice in the span of a year.

The study was conducted to reflect on how bilingual acquisition impacts the acquisition and use of past tense-aspect morphology, which are considered complex, late-acquired morphemes. The Prototype Account suggested that English monolingual children overuse frequent form-function associations found in their input between past morphology and telic predicates. I wished to test this account against the productions of French-English bilingual children to question bilingual children's ability to extract regularities and build prototypical associations from their reduced input. Because it was seldom studied in the productions of French monolinguals, I first analyzed French monolingual children's early uses of past tense-aspect forms.

Chapter 6 highlights a link between the children's use of past tense-aspect morphology and what was observed in their input, both in terms of the types of forms used and of the functions they served, confirming the predictions of usage-based theories.

The relative frequency of perfective and imperfective past forms impacted the order in which they were acquired by Anaé and Antoine – both children used the perfective past tense before the imperfective past. Moreover, the children produced past morphology first with the most frequent verb types with which it was found in their input.

The children's use of past perfective morphology partly confirmed the predictions of the Prototype Account – both children overused frequent associations found in their input between past perfective morphology and telic predicates. However, Antoine did not follow the path predicted by the Aspect Hypothesis in his generalization of past perfective morphology – telicity was not identified as the main feature guiding Antoine's acquisition of the *passé composé*. Moreover, the children largely mirrored their input in their use of

the *imparfait* in the early stages of acquisition – only Antoine overused imperfective past morphology with stative predicates. The predictions of the Prototype Account were thus not fully supported by the analysis of French monolingual children's associations between past tense-aspect morphology and lexical aspect. This may be explained by the specificity of Romance languages, in which speakers have a perfective and imperfective past tense at their disposal. The latter in particular is highly associated with stative predicates in adult speech – although the children replicate this frequent association, they did not systematically exaggerate it in their productions. The temporal functions served by perfective and imperfective past tense forms in the children's productions can contribute to explain the strong association between past perfective forms and telic predicates. Indeed, the adults in both corpora used the *passé composé* mostly to refer to past events disconnected from Speech Time (SpT) while the children first used past perfective morphology either to refer to SpT, or to focalize both the past temporality of events and their tangible results at SpT. This would lead the children to use past perfective morphology more frequently with telic predicates, as they entail a shift from an initial state to a resulting state. The analysis of the temporal reference of *imparfait* forms also confirmed the need to consider situational cues to account for the children's acquisition of past tense-aspect forms. Both children thus generalized the use of the imperfective past to telic predicates in situations of pretend-play and pretend-reading, to signal a modal rather than a temporal break.

Chapter 7 highlights dominance effects on the acquisition and use of tense-aspect morphology by the two bilingual children under study, in their two languages.

Although both children were dominant in English, Sophie was identified in chapter 5 as more balanced in her use of her two languages than Anne; contrary to Anne, Sophie used French consistently during the recording sessions. This impacted their use of past tense-aspect morphology in their two languages. In French, Sophie used past tense forms more consistently than Anne; although she used fewer past tense forms in French than what was observed in her input, Sophie's use of French past tense forms developed over the period, following the same path of acquisition as the monolingual children whose productions were analyzed in chapter 6, although at a different rate. In English however, Anne used more simple past forms than Sophie.

It was concluded that as Sophie acquired two languages, her use of past forms in French and in English developed at a slower pace than it would have had she been acquiring tense-aspect morphology in a single language. Crosslinguistic influence was visible mostly in the children's non-target realizations of past tense forms. Indeed, whereas previous findings on the acquisition of French had suggested that saliency of tense morphology would lead children to make more errors of commission than of omission in French, the most frequent deviation from standard forms identified in the productions of both children included omissions of tense morphology. This hinted at a possible influence of English, where morphology is not salient and likely to be omitted in children's early productions.

Anne and Sophie's use of past tense morphology was consistent to some extent with the predictions of the Prototype Account – in French both children exaggerated a trend which was identified in their input to use perfective past morphology most frequently with telic predicates. In English, both children associated the simple past with telic predicates predominantly, although these associations were most frequent only in Anne's input. Finally, dominance effects were also identified in the children's generalization of simple past morphology across lexical aspect categories – Anne, who used more verbs in the simple past and used them more consistently than Sophie, also generalized the use of the simple past to atelic predicates earlier than Sophie. Across the period, Sophie associated the simple past to telic predicates significantly more frequently than the adults in her corpus, although the statistical analyses conducted on the data suggest a slight tendency for her use of the simple past to get closer to what was observed in her input at the end of the recording period. Moreover, both children used past tense-aspect morphology in French and in English more frequently than the adults in their corpora to build past reference at least partly rooted in SpT – to locate in the past either situations that they had witnessed being completed in the moments leading up to SpT or situations that had yielded a tangible result at SpT. As Anne gradually used the simple past across lexical aspect categories, she also used it more and more frequently to locate situations in the distant or indefinite past.

Finally, the comparison between Sophie and Anaé's use of past morphology in French suggests that they followed the same acquisition path of past tense-aspect morphology, although not at the same rate. The main observations made on the children's use of past verb forms in the *Paris* and the *Hervé* corpus are summarized in table 8.31.

After analyzing French monolingual and French-English bilingual children's early uses of past tense-aspect morphology, this work also aimed at addressing later uses of past verb forms by French-English bilingual children in narrative contexts. This was meant to investigate the relationship between past morphology and lexical aspect categories in later stages of linguistic development and in specific discursive situations. It also aimed at identifying possible cross-linguistic transfer as well as dominance effects on the children's ability to build coherent narratives and to use past tense-aspect forms to order the events in their productions. These forms serve specific functions in narrative discourse; in children's narratives they are also originally restricted to specific types of predicates to serve the temporal and hierarchical ordering of events.

Chapter 8 focuses not on a comparison between bilingual and monolingual narrative productions, but rather attempts to highlight the variability of bilingual profiles which was hinted at by the comparison between Anne and Sophie's use of their two languages in chapter 7. It identifies three different bilingual profiles based on the interaction between the stage of narrative development reached by the children, their dominance patterns and their use of tense-aspect morphology at the time of recording. It also supports findings from

Children's name (age)	Language	Characteristics
Anaé (1;06-4;04)	French	<ul style="list-style-type: none"> - <i>Passé composé</i> acquired before <i>imparfait</i> - Stronger associations between <i>passé composé</i> and telic, punctual predicates than in the input - Association between <i>imparfait</i> and stativity mirrors the input - Generalization of perfective morphology guided by telicity - Past forms first used to refer to events linked to SpT
Antoine (1;06-4;05)	French	<ul style="list-style-type: none"> - <i>Passé composé</i> acquired before <i>imparfait</i> - Stronger associations between <i>passé composé</i> and telic, punctual predicates and between <i>imparfait</i> and states than in the input - Generalization of perfective morphology not guided by telicity - Forms first used to refer to events linked to SpT
Anne (2;06-3;04)	(French) English	<ul style="list-style-type: none"> - Little use of French past forms - Initial restriction of simple past to telic predicates, before generalization to other lexical aspects - Initial restriction of simple past to refer to events linked to SpT, before generalization to match adult functions
Sophie (2;06-3;07)	French English	<ul style="list-style-type: none"> - <i>Passé composé</i> acquired before <i>imparfait</i> - Stronger association between <i>passé composé</i> and telic, punctual predicates than in the input - Stronger association between simple past and telic, punctual predicates than in the input - Past forms first used to refer to events linked to SpT (no clear diversification of temporal functions)

Table 8.31: Main observations on the use of past verb forms by the children of the *Paris* and *Hervé* corpora

previous studies that bilingual children's meta-narrative abilities may be transferred from one of their languages to the other – once the children produced a narrative in one of their languages, they did so in the other language as well. Moreover, the children's narrative productions in their two languages shared structural characteristics – they included the same story-grammar units although these were sometimes more detailed in the children's dominant language.

The children's use of past tense-aspect morphology was mostly influenced by narrative development and dominance factors. Children in the earlier stages of their narrative development did not use past tense-aspect forms systematically to organize events in their narrative productions in their two languages. They used past tense-aspect forms to locate events prior to SpT rather than to order events on a narrative time-axis. When the children started using past verb forms in their narrative productions, they did so in their two languages. Moreover, as expected, the discursive setting influenced the type of past-tense forms used by the children – the two children who were dominant in English did not use the *imparfait* in spontaneous settings, but used it in their narrative productions to signal events as backgrounded.

In the earlier stages of their development, the children used past morphology with a restricted set of lexical aspect categories – in English, the simple past was mostly used with telic predicates in foreground clauses, whereas in French the *imparfait* was used predominantly with atelic predicates in the background and the *passé composé* with telic predicates in the foreground. Dominance factors also impacted the use of tense-aspect morphology with different categories of lexical aspect. The two balanced bilinguals in the study used past morphology across lexical aspect categories to build perfective reference in the foreground and imperfective reference in the background in their two languages. Conversely, the child who was dominant in English continued to use past morphology with telic predicates to build perfective reference in the foreground longer in his non-dominant language than in his dominant language. The main observations made on the children's use of past tense-aspect forms are presented in table 8.32 below.

The three corpora used in this work allowed me to study the development of past verb forms in monolingual and bilingual children at different ages and in different recording settings. This highlighted a continuity in the way past tense-aspect forms are acquired by children and gradually come to be used with the functions they serve in adult speech. It also showed that dominance factors impact the children's use of past tense-aspect morphology differently at different ages and in different settings.

First, the analyses conducted on the three corpora highlight similar associations between past morphology and lexical aspect categories in the early stages of the children's development, as well as similar restrictions in the functions served by these forms in spontaneous and narrative contexts. Indeed, the children in the two longitudinal corpora restricted the use of past morphology to specific lexical aspect categories (the English

Children's name (age)	Dominant language	Characteristics
Lucas	English	<ul style="list-style-type: none"> - Task and dominance effects strengthen the associations of past perfective morphology with telic predicates - Simpler temporal structure in non-dominant language - <i>Imparfait</i> forms used only in narrative productions (background)
Arthur	Balanced	<ul style="list-style-type: none"> - Task effect strengthen the associations of past perfective morphology with telic predicates (both languages) - Use of past morphology across lexical aspects (foreground and background; both languages) - Complex temporal relationships in both languages
Julian	Balanced	<ul style="list-style-type: none"> - Use of the <i>passé simple</i> (child with most experience with narrative genre in French) - Use of past morphology across lexical aspects (foreground and background; both languages) - Complex temporal relationships in both languages
Oliver	English	<ul style="list-style-type: none"> - <i>Imparfait</i> forms used only in narrative productions - Diverse lexical aspects in simple past during second session - Predominantly telic predicates and perfective past in French (both sessions)
Emma	French	<ul style="list-style-type: none"> - No production in non-dominant language in first session - Predominantly telic predicates in <i>passé composé</i> (both sessions) - Past forms to break from SpT rather than to organize events in narrative
Charlotte	French	<ul style="list-style-type: none"> - No production in non-dominant language in first session - Predominantly telic predicates in <i>passé composé</i> (both sessions) - Past forms to break from SpT rather than to organize narrative events

Table 8.32: Summary of the main characteristics observed in children's productions in the *Brunet* corpus.

simple past was mostly associated to telic predicates, while the *passé composé* and the *imparfait* were associated predominantly with telic and stative predicates respectively). These associations lasted longer in the productions of the bilingual child who maintained her use of two languages across the period. They were also identified in the younger children's narrative productions in the *Brunet* corpus, especially in their non-dominant language.

Preferential associations between lexical aspect and past morphology are thus found in the children's first spontaneous productions of past verb forms, as well as in their first use of past morphology in narrative productions.

A parallel can also be drawn between the generalization of past morphology across lexical aspect categories and the children's ability to build more complex temporal reference in spontaneous and narrative discourse. The children recorded in a spontaneous setting all used perfective past morphology with a restricted set of predicates first to refer either to characteristics of the situation at SpT, or to refer to a past event whose results were tangible at SpT. In both the *Paris* and the *Hervé* corpora, the generalization of past morphology to different types of predicates was accompanied by a greater tendency for the children to build reference fully displaced from SpT. In the children's narrative productions, the generalization of past morphology across lexical aspect categories also allowed them to build more complex temporal relationships between narrated events.

Moreover, a comparison between the two bilingual corpora shows that dominance factors play a similar role in the children's language development at different ages in different discursive settings. Indeed, the children in the *Hervé* corpus generalized the use of past morphology to different lexical aspect categories sooner in their dominant than in their non-dominant language. This was also the case in the bilingual children's narrative productions. Indeed, the children dominant in English generalized the English simple past to different types of predicates before they used perfective and imperfective past morphology in French across lexical aspect categories.

Finally, the comparison between the children in the *Paris* and in the *Brunet* corpus shows that the monolingual and bilingual children's use of the *imparfait* was similarly tied to situational factors. Chapter 6 showed that the *imparfait* was first used productively by the children in situations of pretend-play or pretend-reading, to build fictive reference. The analyses of the children's narrative productions presented in chapter 8 noted that the children who were non-dominant in French used the *imparfait* in their narrative productions, whereas they did not use it in the spontaneous settings. The *imparfait* was thus used first by the monolingual and bilingual children under study to build fictive reference rather than to locate events prior to SpT.

This work could have benefited from several adaptations which will be considered in future research projects.

Its main limitation is that it includes different children recorded in different settings – recording the same children in different settings would have allowed us to get a true developmental perspective on their use of past tense-aspect morphology in different discursive contexts. However, this would have implied recording the same children over several years, and would have been too time-consuming to do in a Ph.D project. Similarly, the results presented in chapter 7 suggest that it would have been useful to record French-English bilingual children for a longer period of time. This would have allowed to gain a more complete developmental perspective on the children's use of past tense-aspect forms in their two languages, as well as to take into consideration the shifting aspect of bilingual children's dominance patterns. Had Sophie and Anne been recorded over a more extended period of time, it would have been possible to determine whether and how their use of past tense-aspect morphology came to resemble their input in their two languages.

Finally, there are several limitations to the analyses presented in the final chapter of this work. First of all, it would have been extremely valuable to have more insight into the children's narrative abilities at home and in school. A section of the parental questionnaires handed out to the families who participated in the study focused on the children's reading activities at home, but it should have been more developed and should also have addressed the children's reading activities in school. One way to overcome this limitation would have been to record the children while they were engaged in reading activities at home – it would then have been possible to link the children's narrative abilities more consistently to their experience with the genre in their two languages.

I also believe that the children's true narrative abilities in the different settings might have been more faithfully depicted had the recording sessions been shorter – this would have avoided the fatigue effect observed in the children's productions, especially in the last setting. Organizing pilot sessions with the children would have allowed to identify this limitation, and it is something I will try to do in future research projects. Finally, the final chapter of this work lacks statistical analyses to consolidate the results and investigate the interaction between the factors identified as having influenced the children's use of past tense-aspect morphology in their narrative productions in more depth.

Despite these limitations, this work has provided additional support to the usage-based theory of language acquisition. First, it confirms the link between the children's acquisition of past tense-aspect morphology and their input, which was observed in the productions of monolingual and bilingual children alike. It shows in particular that children's acquisition of complex constructions was guided by input properties. All the children used past morphology first with the verb types most frequently found bearing such morphology in their input. This held in all of the children's languages, regardless of dominance patterns.

Usage-based theories also suggest that forms that serve different functions in adult speech will be more difficult to acquire than forms for which form-to-function mapping is unilateral. This was confirmed by the children's acquisition path of past verb forms in

French – all the children produced *passé composé* forms before they did *imparfait* forms, which was interpreted as a consequence of the multiple functions served by the imperfective past tense in adult speech. Moreover, situational factors played a role in the monolingual children's acquisition of the *imparfait* and in their generalization of imperfective past morphology across lexical aspect categories. This supports the claim made by usage-based theories that forms are learned in interaction with specific interlocutors and communication goals. In the *Paris* corpus, the *imparfait* was frequently used by the adults with different lexical aspect categories in pretend-reading or pretend-play situations. This was also the case in the children's productions.

The analyses conducted on the association between past tense-aspect morphology and lexical aspect categories in the two longitudinal corpora only partially confirm the findings of the Prototype Account – on the whole, the children tended to replicate frequent associations found in their input between past morphology and specific lexical aspect categories. However, individual differences were found between the children's path of generalization of past morphology across lexical aspect categories, suggesting that lexical aspect may not be the sole acquisition trigger for past verb forms. I have striven to show that the temporal functions served by past verb forms in the children's productions may also explain the preferential associations they made between past morphology and lexical aspect categories. My analyses suggest that the development of past verb forms cannot be explained by a single factor such as lexical aspect. On the contrary, I argue for the importance to take into account all the parameters that participate to the acquisition of these forms by children, including discursive and situational factors.

Finally, this work has asserted the need to consider bilingual children's productions in various discursive settings in order to present a complete picture of their use of tense-aspect morphology and to take the full measure of the impact of dominance factors on the development of past verb forms.

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Appendices

A Recruitment announcements in French and English

Madame, Monsieur,

Je suis doctorante à l'université Paris 3 — Sorbonne Nouvelle. Je vous contacte dans le cadre du recrutement de participants pour mon étude, qui vise à améliorer notre compréhension du développement bilingue français-anglais et à promouvoir l'acquisition bilingue chez l'enfant.

Projet de recherche

Je souhaite constituer un corpus d'enregistrements d'*enfants bilingues français-anglais* âgés de *trois à cinq ans*, vivant dans *le grand Paris ou dans la région de Londres*. Je recherche des familles dans lesquelles l'un des parents a pour langue maternelle l'anglais et l'autre le français.

Protocole de recherche

Les enfants participeront à un test de diversité lexicale au début de l'étude et à nouveau un an plus tard. Leurs productions narratives seront enregistrées dans chacune des langues lors de trois tâches d'incitation : un récit à partir d'un livre sans image, une restitution d'un court clip vidéo sans parole, et un entretien avec le testeur qui reviendra sur les récits de l'enfant. Je souhaite aussi observer les enfants en contexte « naturel », au moment du dîner familial. Toutes les séances d'enregistrement auront idéalement lieu au domicile familial.

Nombre et déroulement des séances

- **Session 1** : Test de diversité lexicale et production narrative dans une des deux langues (45-60 mns)
- **Session 2** : Observation d'un dîner familial
- **Session 3** : Test de diversité lexicale et production narrative dans l'autre langue (45 – 60 mns)
- **Session 4** : Observation d'un dîner familial
- **Session 5 (un an plus tard)** : Test de diversité lexicale dans les deux langues (30-45 mns).

Utilisation des enregistrements

Tous les enregistrements seront mis à disposition des familles, qui pourront choisir d'accepter ou non qu'ils soient diffusés. Toute séquence qui ne conviendrait pas sera supprimée sur demande familiale, et tous mes travaux de recherche seront mis à disposition des familles. Les familles qui ne souhaitent pas être nommées seront anonymisées sur demande.

Contact

Si vous avez un enfant bilingue dont le profil correspond et que vous accepteriez de participer ou que vous souhaitez en savoir plus sur les modalités de l'étude, je vous serais très reconnaissante de me contacter à l'adresse suivante : alice.brunet@univ-paris3.fr ou sur mon portable au 06.38.15.39.63. Si vous connaissez d'autres familles qui pourraient être intéressées, pourriez-vous avoir la gentillesse de diffuser largement cet appel à participation ?

Je vous remercie,
Cordialement,
Alice BRUNET

Dear madam, dear sir,

I am a PhD student at University Paris 3 - Sorbonne Nouvelle working on bilingual acquisition. I am reaching out to you with the hope that you will consider participating in this doctoral study, which aims at promoting bilingualism in young children through a close study of their linguistic abilities in each of their languages.

Research project

I wish to record and compare the narrative and spontaneous productions of *French-English bilingual children* between *three and five years old*. The children should be living either *in Paris or in London*, in a multilingual setting – ideally with one of the parents being native in French, and the other one in English.

Experimental protocol

The children will be asked to participate in two lexical diversity tests: one at the beginning of the study and one a year later. Their narrative productions will be recorded in each of their languages during narrative tasks based on a wordless picture book and a short video clip which will lead to a playful interview with the tester. I also wish to conduct two observation sessions to record spontaneous, natural interactions between the members of the family at dinner time. All recording sessions will take place at the family's home.

Number and organisation of the sessions

- **Session 1:** Lexical diversity test and narrative production in one of the two languages (45-60 mns)
- **Session 2:** Observation of a family dinner
- **Session 3:** Lexical diversity test and narrative production in the other language (45-60 mns)
- **Session 4:** Observation of a family dinner.
- **Session 5:** Lexical diversity test in both languages (30-45 mns)

Use of the recordings and contact information

All the videos recorded will be given to the families, as well as any scientific production based on the recordings (dissertation, articles, etc.). Any footage that doesn't suit the family will be deleted upon request. Any family who does not wish to be mentioned by name will be made anonymous.

Contact information

If you have a bilingual child whose profile corresponds to the criteria and if you would agree to let her participate in the study, or if you have any question concerning the study, I would be extremely grateful if you contacted me on my email address alice.brunet@univ-paris3.fr. If you know other families who might be interested in this study, would you be so kind as to transfer this note to them?

Thank you for your time,
Best,
Alice BRUNET

B Recording authorization

Dear Madam, Sir,

You accepted that your child's linguistic productions be recorded as part of a PhD research project. This project focuses on the language acquisition patterns and the narrative abilities of French-English bilingual children from 3 to 5 years old.

Despite a growing part of the population being raised bilingual, a feeling of defiance towards bilingualism is still perceptible in France. This research project aims at promoting bilingual acquisition in young children through a study of the linguistic productions of young bilingual children.

I need your formal authorization in order to record, transcribe and exploit the narrative productions of your child. The recordings will take place over five sessions, at the family's home. If you accept, the data collected may be used in future research project, in an academic context. Should you have any question, or should you wish to limit or stop the use of the data, do not hesitate to contact Alice Brunet, PhD student in English linguistics at University Sorbonne Nouvelle – Paris 3: alice.brunet@univ-paris3.fr

Parents' (or legal representative's) authorization for the recording, filing and scientific exploitation of the data collected.

We,
Mr.
Mrs.
as mother and father (or legal representative),

living at
ZIP
Phone number

Have read and understood the above description, and have received answers to all the questions we asked. We agree to participate in this project following the conditions stated above

Agree that our child, named

Be recorded as a participant to the research project described above. The recordings will be realized by:

Alice Brunet
Institution : Université Sorbonne Nouvelle.
Address : 4 rue des Irlandais, 75005 PARIS

Accept and authorize ALICE BRUNET to use the videos picturing (name of the child) :..... As part of her PhD project.

Agree that the transcribed corpus, fully anonymised, be used to scientific and research aims in the field of language acquisition.

We note that :

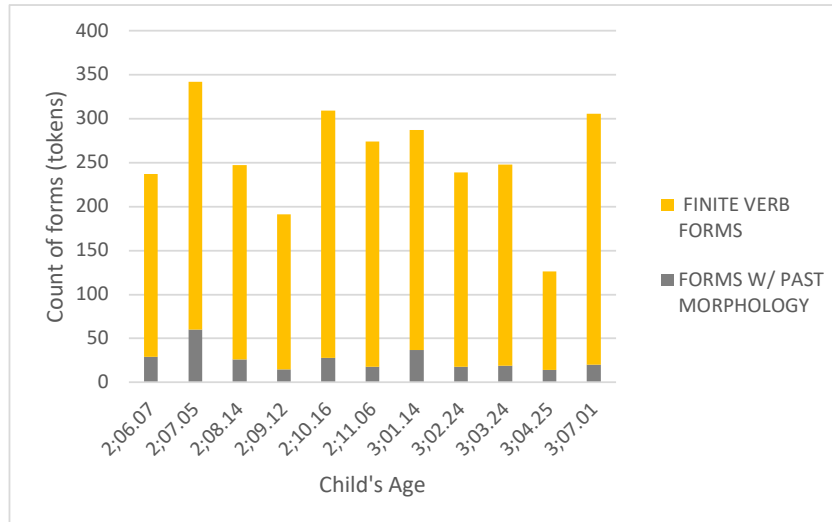
a) No confidential information, including the full identity of the child or her family members, will ever be shared or included in scientific work based on the recordings.

b) We have the right to ask for the destruction of the recordings and to stop taking part in the project at anytime, even after the recording sessions are over.

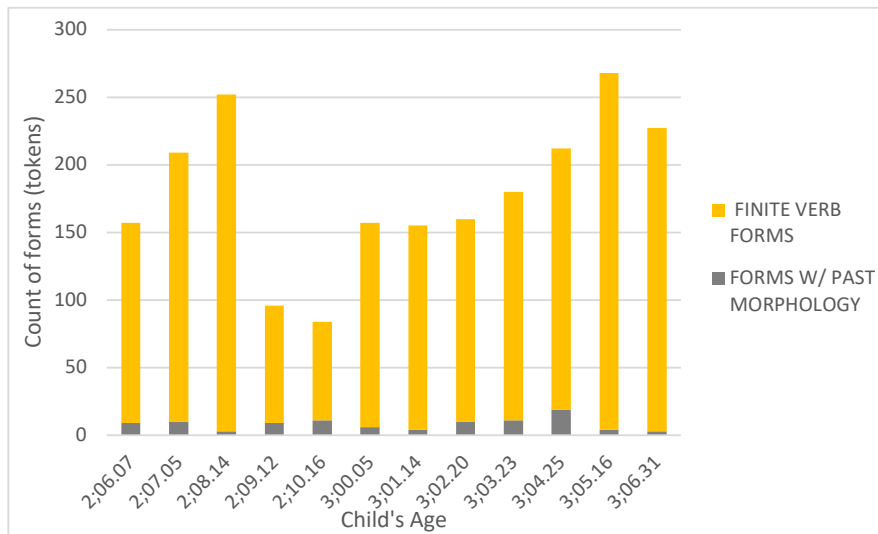
Signed twice, for the family and for the researcher.

Signature of the two parents or legal representative, preceded by the phrase
« Read and approved »

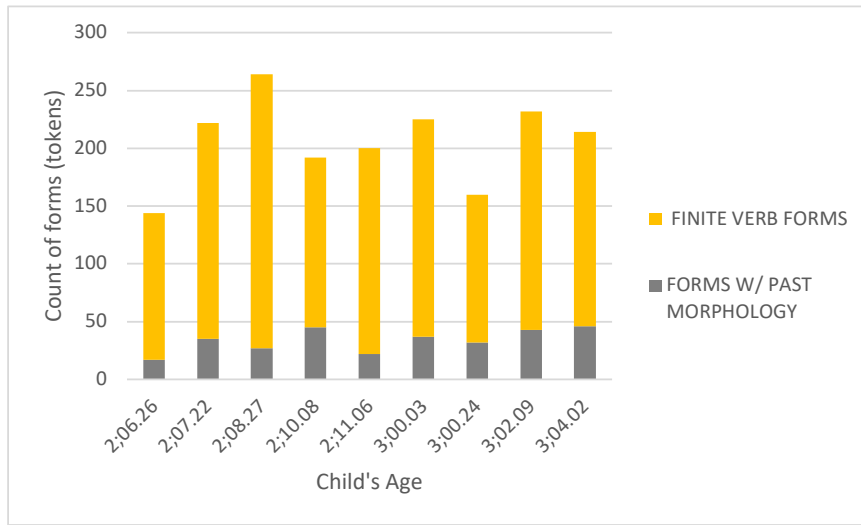
C Additional graphs (chapter 7): proportion of past verb forms relative to all finite verb forms



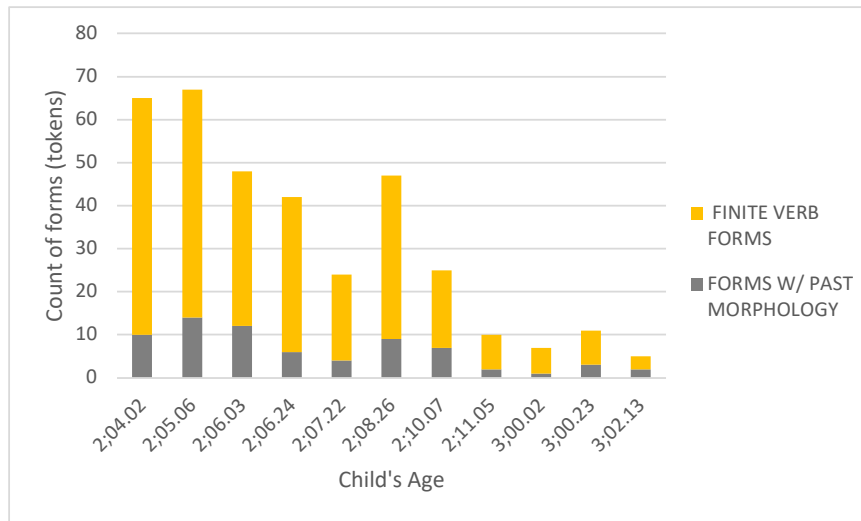
Graph C.1: Count of forms bearing past morphology relative to all finite verb forms used by Sophie during each one-hour session in English



Graph C.2: Count of forms bearing past morphology relative to all finite verb forms used by Sophie during each one-hour session in French



Graph C.3: Count of forms bearing past morphology relative to all finite verb forms used by Anne during each one-hour session in English



Graph C.4: Count of forms bearing past morphology relative to all finite verb forms used by Anne during each one-hour session in French

Acquisition and use of past tense-aspect morphology by French monolingual and French-English bilingual children. A study of interactions between past morphology and lexical aspect in spontaneous and narrative data across languages.

Abstract

Title: Acquisition and use of past tense-aspect morphology by French monolingual and French-English bilingual children. *A study of interactions between past morphology and lexical aspect in spontaneous and narrative data across languages.*

This dissertation focuses on the acquisition of past verb forms in French and in English by two French monolingual children filmed between 1;06 and 4;05 and two French-English bilingual children filmed between 2;06 and 3;07 in spontaneous interaction with their caretakers. I also analyze the productions of six bilingual children aged from 3;11 to 7;08 and recorded during two family dinners and narrative sessions in French and in English.

This work is set within usage-based theories, which present language acquisition as driven by language exposure and use. I investigate the interactions between past morphology and lexical aspect in the narrative and spontaneous productions of the children and in their input, to test the predictions of the prototype account of the Aspect Hypothesis. The adults' use of past verb forms in the longitudinal corpora was thus confronted to the children's use of tense-aspect morphology.

The first two parts present the theoretical framework, the method and the corpora used. I then show that the children recorded longitudinally first produced past morphology predominantly with the types of predicates they were used with most frequently in their input. All children used these forms with restricted temporal functions. Language dominance affected the bilingual children's use of past verb forms in narrative and spontaneous discourse, suggesting that their acquisition highly depends on the quantity of input received by children in their two languages. Task-type effects were identified in the children's use of past verb forms in their narrative productions, where they used past morphology to serve less complex functions in the more complex tasks.

Key-words: tense, aspect, lexical aspect, acquisition of French, bilingual acquisition, language dominance, narrative abilities, aspect hypothesis

Acquisition des formes verbales du passé par des enfants monolingues et bilingues français-anglais. Etude de l'interaction entre les marqueurs aspectuo-temporels et l'aspect lexical en contexte spontané et narratif.

Résumé

Titre : Acquisition et emploi des formes verbales au passé dans le discours d'enfants monolingues francophones et bilingues français-anglais. *Une étude de l'interaction entre temps et aspect lexical dans le discours spontané et narratif de jeunes enfants en français et en anglais.*

Cette thèse porte sur l'acquisition des formes verbales du passé par deux enfants monolingues francophones filmés entre 1;06 et 4;05 et deux enfants bilingues français-anglais filmés entre 2;06 et 3;07, en interactions naturelles en famille. Nous analysons aussi les productions de six enfants bilingues français-anglais entre 3;11 et 7;08, filmés lors de deux dîners familiaux et de deux sessions narratives.

Notre étude s'inscrit dans le cadre des approches basées sur l'usage, qui considèrent l'exposition à la langue comme le principal moteur du développement langagier. Nous cherchons à caractériser les associations entre la morphologie aspectuo-temporelle du passé et l'aspect lexical dans les productions spontanées et narratives des enfants et dans leur input, afin de vérifier les prédictions de l'Hypothèse de l'Aspect dans les productions d'enfants monolingues francophones et bilingues français-anglais.

Les deux premières parties de cette thèse présentent le cadre théorique, la méthode adoptée et les corpus choisis pour notre étude. Les résultats montrent que les enfants filmés en interactions naturelles utilisaient d'abord la morphologie verbale du passé presque exclusivement avec les types de procès les plus fréquemment trouvés au passé dans l'input. Ces formes servaient aussi des fonctions temporelles moins diverses que celles identifiées dans l'input. L'usage des formes verbales du passé est également influencé par la dominance linguistique des enfants bilingues, autant en contextes spontanés que narratifs. Des effets de tâche ont également été identifiés, suggérant que les tâches plus complexes menaient les enfants à utiliser les formes verbales du passé avec des fonctions plus restreintes, en particulier dans leur langue non-dominante.

Mots-clés : temps, aspect, acquisition du français, acquisition bilingue, dominance linguistique, compétences narratives, hypothèse de l'aspect