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Is Sylvester going away or is he walking away? The multimodal expression of motion events in French and Dutch as L1 and L2^{1,2}

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1. Introduction

Although space is a universal cognitive domain, there is a lot of crosslinguistic variation in the way it is described (Ameka & Levinson 2007; Talmy 2000). Talmy (2000) distinguished between verb-framed languages and satellite-framed languages. The differences between these categories were first studied for oral languages only. More recently, researchers have become interested in co-speech gestures, i.e., the gestures we spontaneously make as we talk. They have noticed that the differences between these two types of languages are reflected in the speakers' gestures (Gullberg 2022, 2010; Gullberg et al. 2008; Kita & Özyürek 2003; McNeill 2005; McNeill & Duncan 2000; Stam 2006). As co-speech gestures are part of the communication process (McNeill 1992) and differ across languages, they should also be considered as a dimension of second language acquisition/learning and should therefore be taken into account in second language acquisition research (Stam 2018).

Against this background, the present study aims to describe how L1³ French speakers, L1 Dutch speakers, and CLIL⁴ French-speaking learners of Dutch express motion events in speech and co-speech gestures.

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³ L1 refers to a speaker's first language.

⁴ Content and language integrated learning or CLIL is a form of bilingual education, which utilizes a language, other than the learner's first language, as the language of instruction of a particular subject or content.

2. Motion events and gestures: an overview of the literature

Self-propelled motion events⁵ are composed of five elements: the presence of a *motion*, and a *figure* which is moving in relation to a *ground* (i.e., the reference point) along a certain *path* and in a certain *manner* (Talmy 2000: 25). The expression of the last two (i.e., path and manner) varies across languages. In verb-framed languages (e.g., Romance languages), path is encoded in the verb root whereas manner is optionally encoded in a satellite as we can see in example 1 where the French verb *entrer* ('to enter') indicates the path of the movement and the satellite *en volant* ('flying') the manner.

1. *L'oiseau est entré dans le local en volant.*
(‘The bird entered the room flying.’)

By contrast, in satellite-framed languages (e.g., Germanic languages), the verb expresses manner and satellite(s) path as we can see in example 2 where the Dutch verb *vliegen* ('to fly') encodes manner and the satellite *binnen* ('into') expresses path.

2. *De vogel vloog het lokaal binnen.*
(‘The bird flew into the room.’)

These differences have been studied in both first and second language contexts (Anastasio 2018; Benazzo et al. 2012; Hendriks et al. 2022; Hendriks & Hickmann 2015; Larrañaga et al. 2012; Özçakalistan & Slobin 1999; Özçalışkan 2015; Slobin 2004; Treffers-Daller & Tidball 2015).

These studies have also served to test Slobin’s thinking-for-speaking hypothesis. Slobin (1991) hypothesized that we mobilize a certain kind of thought when we communicate about our experiences and that “in acquiring a native language, the child learns particular ways of thinking for speaking” (Slobin 1991, 12). According to him, “‘thinking for speaking’ involves picking those characteristics of objects and events that (a) fit some conceptualization of the event, and (b) are readily encodable in the language” (Slobin 1991, 12).

Research on motion events first focused on oral expression and eventually started to adopt a multimodal perspective by taking co-speech gestures – i.e., the gestures we spontaneously produce while we are talking – into account.

⁵ The type of motion events where an entity displaces itself (as opposed to caused motion events where an entity displaces another). Both types are taken into account in the author’s study, but the preliminary results mostly concern the first type.

The growing interest in gestures in the last decades has made it possible to specify their status and role in the communication process. Co-speech gestures form a single integrated system with speech (McNeill 2016, 2005, 1992). In fact, they form unbreakable psycholinguistic units as far as they share meaning (McNeill 2005). In addition, co-speech gestures have also been proved to play a key role in communication, both in speech perception and speech production (Kendon 1994; McNeill 1992) as they contribute to a better understanding of the message (Cassell et al. 1999) and appear to be involved in the conceptual phase of utterances (Alibali et al. 2000). In line with this last statement, Kita et al. (2017) proposed the gesture-for-conceptualization hypothesis which claims that “gesture shapes the way people conceptualize information” (Kita et al. 2017, 251).

The question of whether gestures are universal or have language-specific characteristics – or in other words if gestures are related to the thinking-for-speaking pattern of a specific language – has also been a matter of interest. It appears that the typological differences between verb-framed and satellite-framed languages are reflected in co-speech gestures as well (Brown & Chen 2013; Gullberg 2022, 2010, 2009; Gullberg et al. 2008; Kellerman & van Hoof 2003; Kita & Özyürek 2003; McNeill 2005; McNeill & Duncan 2000; Özyürek et al. 2008, 2005; Stam 2006; Yoshioka & Kellerman 2006). More specifically, these studies show different correlations between different language types and the semantic components that are encoded in gestures, and the synchronization between gestures and speech. For instance, McNeill & Duncan (2000) found that Spanish speakers tend to produce manner fog gestures, that is to say gestures that express manner while this semantic component is absent in their speech. By contrast, English speakers express manner in both speech and gesture or could choose to downplay the importance of manner by producing a path gesture. Another example is Kita & Özyürek’s (2003) Interface Hypothesis which predicts that if a semantic component is difficult to express in speech for the speakers of a specific language, they are less likely to gesture about it. Concerning synchronization, McNeill & Duncan (2000) found that Spanish speakers tend to produce path gestures while uttering the verb whereas English speakers’ path gestures tend to co-occur with the satellite. Kellerman & van Hoof (2003) found that L1 Dutch speakers tend to produce path gestures as they utter the satellite or satellite phrase.

Since speakers with different language backgrounds gesture differently, these gestures should be taken into account when studying L2⁶ learners’ thinking-for-speaking patterns (Stam 2018, 2006). Several studies have focused on the multimodal L2 thinking-for-speaking pattern (Cadierno & Ruiz 2006; Gullberg

⁶ L2 refers to a speaker’s non-native language.

2022, 2009; Gullberg et al. 2008; Kellerman & van Hoof 2003; Negueruela et al. 2004; Stam 2018, 2010, 2008, 2006; Yoshioka & Kellerman 2006). These authors have shown that the way in which L2 learners gesture can reveal how they conceptualize events in their target language and whether they keep gesturing as in their first language or rather as L1 speakers of their target language.

Against this background, this study aims to determine how motion events are expressed in speech and co-speech gestures by L1 French speakers, L1 Dutch speakers, and CLIL French-speaking learners of Dutch. It should be noted that the study has a longitudinal aspect, as the L2 speakers participate in the experiment three times at yearly intervals. The following research questions lead the analysis:

1. How do L1 French speakers, L1 Dutch speakers, and CLIL French-speaking learners of Dutch express motion events in speech?
 - 1.1 Which semantic components do they encode in the verb?
 - 1.2 Which semantic components do they encode in satellites?

2. How do L1 French speakers, L1 Dutch speakers, and CLIL French-speaking learners of Dutch express motion events in gesture?
 - 2.1 Which types of gestures do they produce?
 - 2.2 Which semantic components do they encode in their deictic and iconic gestures?

3. How do L1 French speakers, L1 Dutch speakers, and CLIL French-speaking learners of Dutch express motion events in speech and gesture?
 - 3.1 Which multimodal constructions do they use to describe motion events?
 - 3.2 With which linguistic units do their gestures depicting motion events co-occur?

3. Methodology

To answer these questions, the author conducted an elicitation experiment in which participants were asked to recount the cartoon *Tweety and Sylvester: Tweet Zoo* (Freleng 1957). The cartoon was divided into 15 fragments so that it would be easier for participants to recall details. Fifteen L1 French speakers, twelve L1 Dutch speakers, and fifteen CLIL French-speaking learners of Dutch (with a proficiency level ranging from elementary to intermediate) completed the task.

Using different taxonomies (Cadierno & Ruiz 2006; Hickmann & Hendriks 2006; Kopecka 2006; Lewandowski 2021; Özçakalistan & Slobin 1999; Slobin et al. 2014), the author identified the semantic components encoded in the verbs and satellites (e.g., manner as in *lopen* ('to walk') in Figure 3, path as in *passer* ('to pass by') in Figure 1, or both as in *ijsberen* ('to pace back and forth') in Figure 2). Gestures were classified as iconic, deictic, beat, or pragmatic, following Kendon (2017, 2004) and McNeill (2006, 1992). Iconic gestures – depictions of concrete entities and actions –, and deictic gestures – pointing gestures used to locate entities in space – were further analyzed to identify the semantic components of motion they convey. They can convey path as in Figures 1 and 3 where the participants are tracing the character's trajectory, manner as in Figure 4 where the participant enacts the action of flying, manner + path as in Figure 2 where the participant's fingers embody the character's paws and trace its path, ground, location, or several components (e.g., a combination of path and ground). Pragmatic gestures (i.e., gestures which have a discourse function and play a role in interaction) and beats (i.e., simple movements of the hand that go back and forth and that are related to prosody) were only coded to determine whether they are more frequent in L2 discourse than in L1 discourse. Finally, the author examined the synchronization between speech and gestures following Stam (2006) and identified the linguistic unit(s) that co-occur with the stroke of each gesture describing motion events (e.g., verb + satellite as in Figure 1, or verb (or verbal phrase) as in Figures 2, 3 and 4).

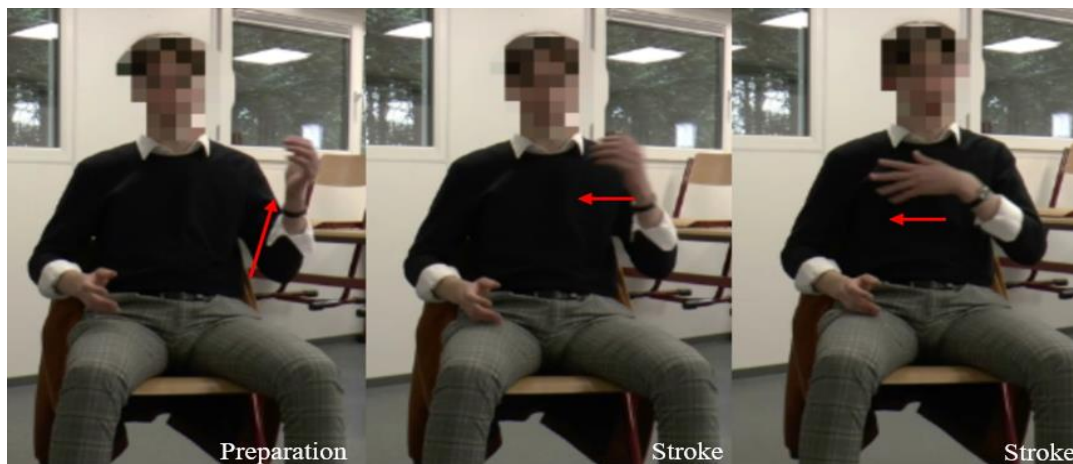


Figure 1. Gesture co-occurring with “*Il passe à côté*” (‘He passes by’) (FR5, ME31)⁷
Photo courtesy Christina Piot. Reproduced with permission.

⁷ FR is the code used to identify an L1 French speaker; ME31 is the tag used in the study to refer to the motion event described.



Figure 2. Gesture co-occurring⁸ with “Dan **loopt** de kat **efkes te** ijsberen voor de kooi” (‘Then the cat is pacing back and forth in front of the cage’) (DU4, ME26)⁹
Photo courtesy Christina Piot. Reproduced with permission.

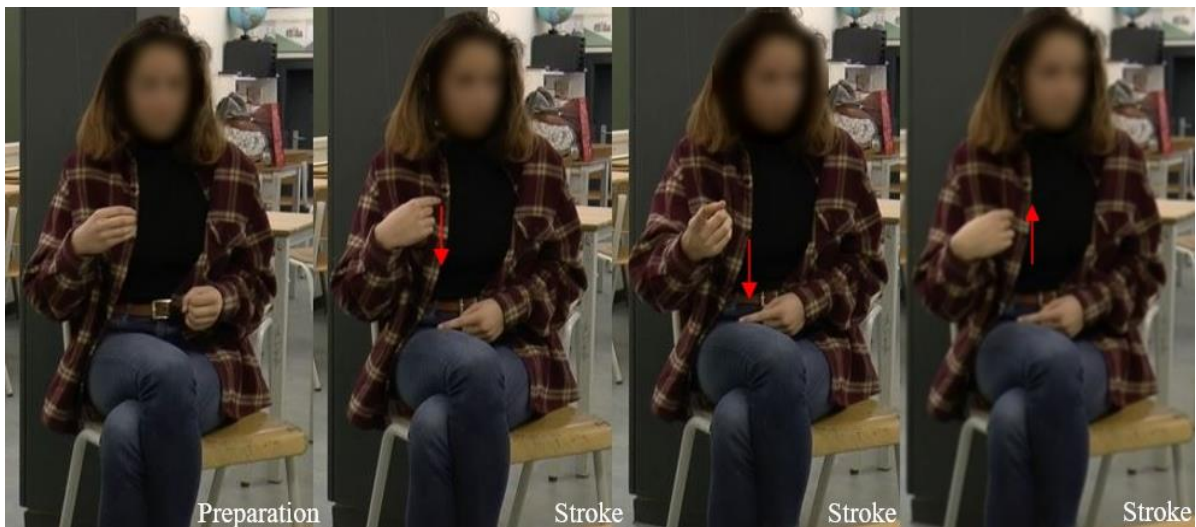


Figure 3. Gesture co-occurring with “hij **loop** <> *hij loop <> **recht en terug**”¹⁰ (‘He is walking <> *he is walking straight and back’) (CLIL7, ME26)¹¹
Photo courtesy Christina Piot. Reproduced with permission.

⁸ The stroke of the gesture co-occurs with the words in bold.

⁹ DU identifies an L1 Dutch speaker; ME26 is the tag of the motion event described.

¹⁰ The correct form in Dutch is *heen en terug* (‘back and forth’).

¹¹ CLIL identifies a French-speaking learner of Dutch; ME26 is the tag of the motion event described.

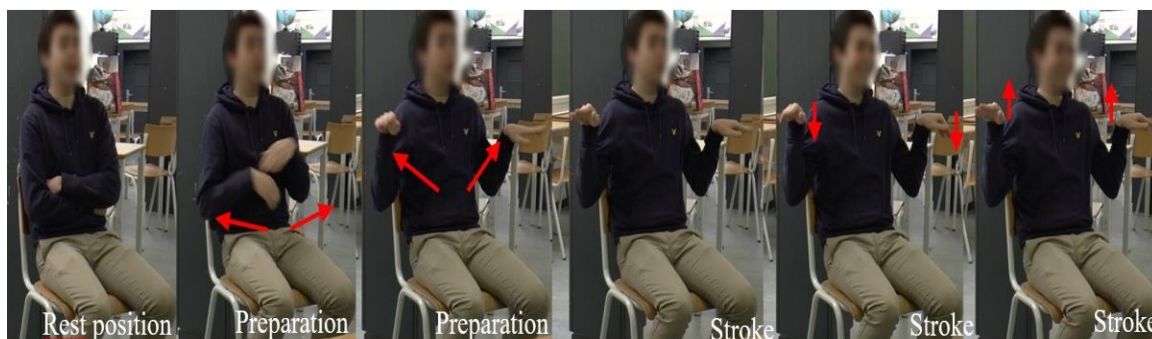


Figure 4. Gesture co-occurring with “Titi is een vogel dus hij **kwikwi**”
 (‘Tweety is a bird so he kwikwi’) (CLIL9, ME66)

Photo courtesy Christina Piot. Reproduced with permission.

4. Multimodal expression of motion events in French and Dutch: preliminary results

Preliminary results show that L1 French speakers tend to encode path in the verb, satellites, and gestures when they describe self-propelled motion events. Figure 1 illustrates this phenomenon: the participant uses the French path verb *passer* (‘to pass’) with the path satellite *à côté* (‘by’) and, as he utters the verb and satellite, he produces a path gesture. They do not seem to produce manner fog gestures as L1 Spanish speakers do (McNeill & Duncan 2000).

L1 Dutch speakers tend to combine manner verbs and path satellites, and to combine verbs, in which manner is encoded in the root and path in a prefix, with a path satellite to describe self-propelled motion events. They also tend to encode path in their gesture but less often than French speakers, which is in line with Alferink's (2015) results. In addition, L1 Dutch speakers also produce conflated gestures, i.e., gestures expressing both manner and path. Figure 2 features a conflated gesture: as the participant is saying that the cat is pacing back and forth in front of the cage – combining a verb that expresses both manner and path (*ijsberen* (‘to pace back and forth’)) with a path satellite and ground (*voor de kooi* (‘in front of the cage’)) – he is representing the cat walking with his fingers.

Both L1 French speakers and L1 Dutch speakers tend to synchronize their path gestures with the verb which is not in line with Kellerman & van Hoof's (2003) finding that L1 Dutch speakers tend to synchronize their path gesture with the satellite or satellite phrase. Still, path gestures co-occur with the satellite and the satellite + ground more often in Dutch than in French.

Finally, CLIL French-speaking learners of Dutch tend to keep behaving as L1 French speakers as they tend to encode path in the verb and satellites. They also use manner verbs, but verbs in which manner is encoded in the root and path in the prefix seem to be difficult for them. They also tend to produce path

gestures. In Figure 3, the learner is using the manner verb *lopen* ('to walk') and the path satellite **recht en terug* ('straight and back'). We can observe that she is looking for the correct form *heen en terug* ('back and forth') and ends up saying something close to it but still not correct. She produces a path gesture as she utters the verb.

In addition, L2 speakers also show some peculiarities, in that they make pragmatic gestures and manner gestures more often than the two groups of L1 speakers. These manner gestures are sometimes used as a compensation strategy: they are used as a sort of manner fog gesture not because there are no linguistic tools to express what they want to say but because they do not know how to express what they aim to describe in speech. Figure 4 illustrates this phenomenon: the learner cannot recall the Dutch verb *vliegen* ('to fly') and as he says "*kwikwi*," he produces a manner gesture in which he is flipping his hands up and down to depict the action of flying.

Learners also tend to produce path gestures as they utter the verb but less frequently than L1 speakers. These general tendencies need more data to be confirmed.

5. Conclusion

The next steps of this study include analyzing more data, coding whether gestures are boundary-crossing or not, and differentiating between the use of conflated gestures (manner + path and path + ground) versus two gestures (i.e., path-only + manner-only gestures and path-only + ground-only gestures) to describe one event (Kita & Özyürek 2003; Özyürek et al. 2008, 2005; Stam 2021; ter Bekke et al. 2022). Attention will also be paid to the distinction between observer viewpoint versus character viewpoint gestures (McNeill 1992; Parrill 2011). Finally, as mentioned above, this study is longitudinal and will follow the evolution of the learners over a period of three years: their productions will be compared to determine to what extent their gestural systems evolve towards a Dutch one as their proficiency levels increase.

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