

Multimodal Encoding of Motion Events in French and Dutch as L1 and L2

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Introduction

Motion events in speech

- **Verb-framed** vs. **Satellite-framed** languages (Talmy 2000)

French vs. Dutch

e.g. L'oiseau **rentre** dans la cage **en volant**.

De vogel **vliegt** de kooi **binnen**.

[The bird **enters** the cage **flying**] vs. [The bird **flew into** the cage.]

Use of **posture verbs** in Dutch vs. **Neutral verbs** in French

(Lemmens 2002)

e.g. La bouteille est sur la table vs. De fles **staat** op tafel.

[The bottle is (**standing**) on the table.]

Co-speech gesture

Gestures are **part of the communication process** (i.a. McNeill 1985, 2005, Kendon 1980, 1994)

Gestures play a role in both **speech production** and **speech perception**

(McNeill 1985, Alibali et al. 2000, Gullberg 2010a, 2010b, Graham & Argyle 1975, Rogers 1978 & Riseborough 1981 mentioned in Kendon 1994, Cassell et al. 1999)

Gestures have both **universal** and **language-specific** characteristics (Kita & Özyürek 2003, McNeill 2005, 2006 and Brown & Chen 2013)



The typological differences between satellite-framed and verb-framed languages are **reflected** in gestures

(Kita & Özyürek 2003, McNeill 2005, 2006, and Brown & Chen 2013)



Outline of the presentation

1. Theoretical Background
2. Method
3. Main Results
4. Discussion & Conclusion
5. Follow-up Research

1. Theoretical Background

1.1. Thinking for speaking (Slobin)

- = “the type of thinking that occurs online in the process of speaking (McNeill & Duncan, 2000; Slobin, 1991; Stam, 1998)” (Stam 2010: 61)
 - Weak version of the linguistic relativity hypothesis
 - Typological differences between languages in the way semantic domains such as motion events are expressed grammatically and lexically (Talmy, 1985, 2000; Slobin 1991, Stam 2010)
 - While acquiring their first language, children learn a specific way of thinking for speaking (Slobin 1991)
 - Through learning grammatical constructions and lexicon,
 - Children are provided with “a framework for the expression of thoughts, events and feelings” (Stam 2010: 61)
 - Their expression is guided “as they engage in the online thinking process related to speaking” (Stam 2010: 61)
- ➔ Different patterns of thinking for speaking in L1 and L2 = necessity to learn the L2 pattern to master the language (Stam 1998, mentioned in 2010)

1. Theoretical Background

1.2. Motion events – Co-speech gesture – Thinking for speaking – L2

- Research on motion events to test the thinking for speaking hypothesis
 - Linguistic descriptions
 - Multimodal expression
- ➔ Learning/Acquisition of the L2 multimodal pattern
- ➔ Gestures give information on thinking for speaking and also on the shift from thinking for speaking in L1 to thinking for speaking in L2 (Stam 2010)

1. Theoretical Background

1.3. Research Questions

- (1) How are **static** and **dynamic** motion events realized in the **speech** of **Dutch native speakers** (DU1), **French native speakers** (FR1), and **French-speaking learners of Dutch** (DU2)? Which **aspect(s)** (path and manner) do they respectively encode in the **verb** and **satellites**?
- (2) Which **dimensions** are present in the **gestures** of DU1, FR1, and DU2 as they describe motion events?
- (3) Which **aspects** do DU1, FR1, and DU2 encode in their **iconic co-speech gestures**?
- (4) Are the different groups' **gestures complementary to speech**?
- (5) Do learners tend to have a **similar behaviour** to the Dutch native speakers? Or do they tend to keep **behaving as in their mother tongue** when they describe motion events in Dutch?

2. Method

2.1. Participants

- Dutch native speakers

- 4 students and 2 assistants (KULeuven, Belgium)

- French native speakers

- 12 students (ULiège, Belgium)

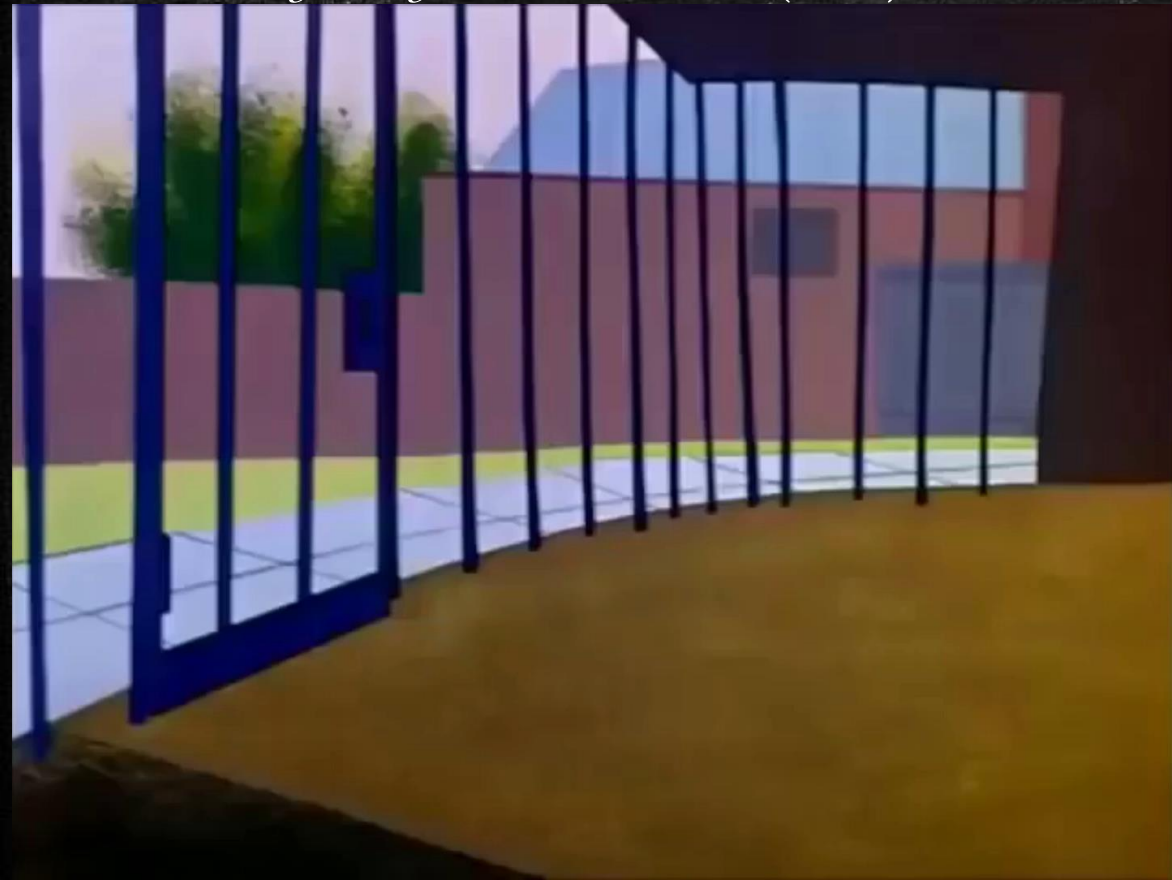
- French-speaking learners of Dutch

- 12 students (Germanic Languages & Literatures, ULiège)

2. Method

2.2. Tasks

XP 1: Retelling of video extracts
Tweety & Sylvester: Tweet Zoo (1957)



XP 2: Description of images



2. Method

2.3. Analysis

2.3.1. Speech analysis

Dynamic motion events

Satellite-framed pattern	Verb-framed pattern	
[PREF _{path}] – [V _{manner}] ac-courir dé-rouler é-couler ...	[V _{path + manner}] affluer déferler échapper ...	[V _{path}] arriver descendre entrer ...
[PREF _{path}] – [N _{figure}] – er é-crèm-er é-trip-er dé-peupl-er ...		
[PREF _{path}] – [N _{ground}] – er ac-croch-er em-pot-er dé-raill-er ...		

Spatial relationships

- Posture verbs
- Neutral verbs
- Transitive verbs (possession and perception)

Lemmens 2002, Lemmens & Perrez (2010, 2012, 2018)

2. Method

2.3. Analysis

2.3.2. Gesture analysis: Dimensions and Aspects

Figure 1: **Beats**



Figure 2: **Pragmatic gesture** Figure 3: **Metaforic gesture**



‘Papegaai’ (NT2C, F1D1)



‘Hij probeerde het meerdere keer opnieuw’
(MTD, F1D2)

Iconic gestures

Figure 5: Manner



‘Dan komt iemand van de dierentuin **komt wegrijden** met het karretje.’ MTE, F5

Figure 7: Depiction



‘Grosminet est caché dans un espèce de petite charrette.’

NT2M, F5

Figure 6: Path



‘De kat was gewoon **aan het ijsberen** langs de kooi.’ MTA, F3

(Levy & McNeill mentioned in McNeill 2006; Kendon 1995; Streeck 2006)

Figure 4: Location



‘Omdat Grosminet in de doos is.’

NT2H, F5

3. Main Results

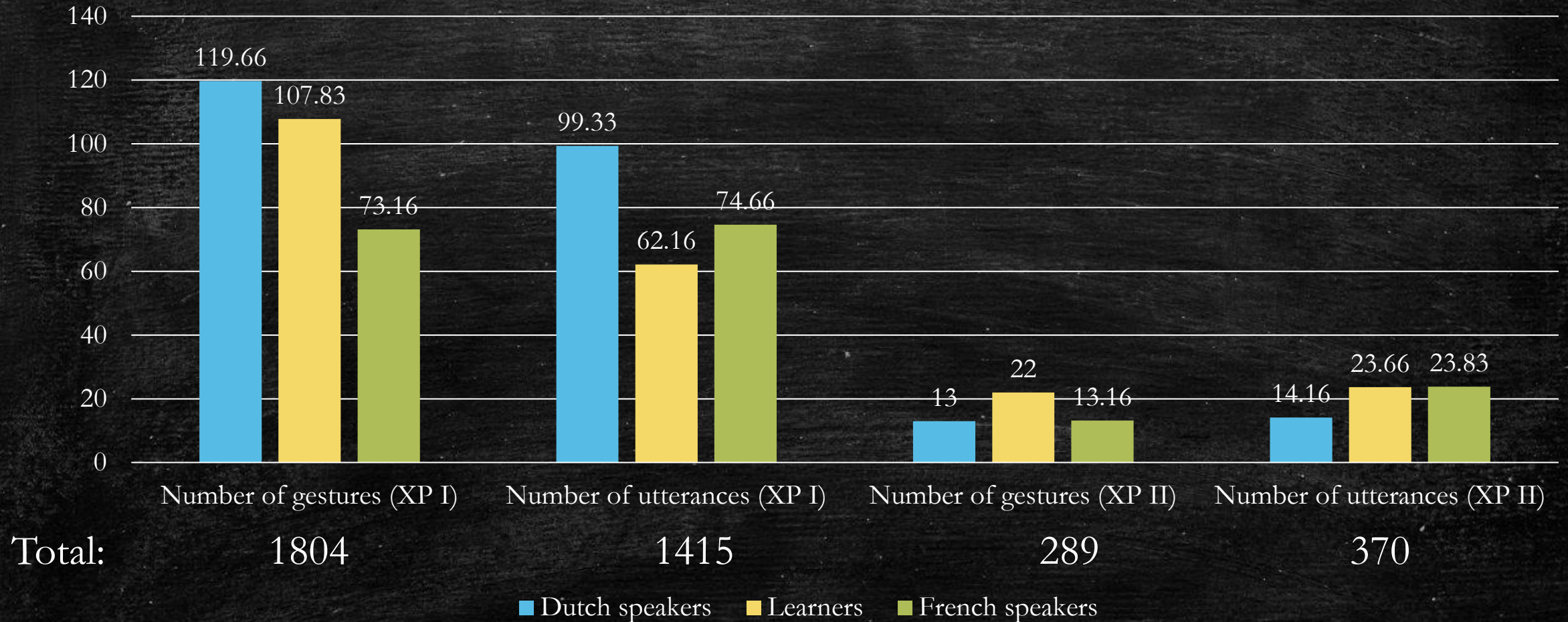
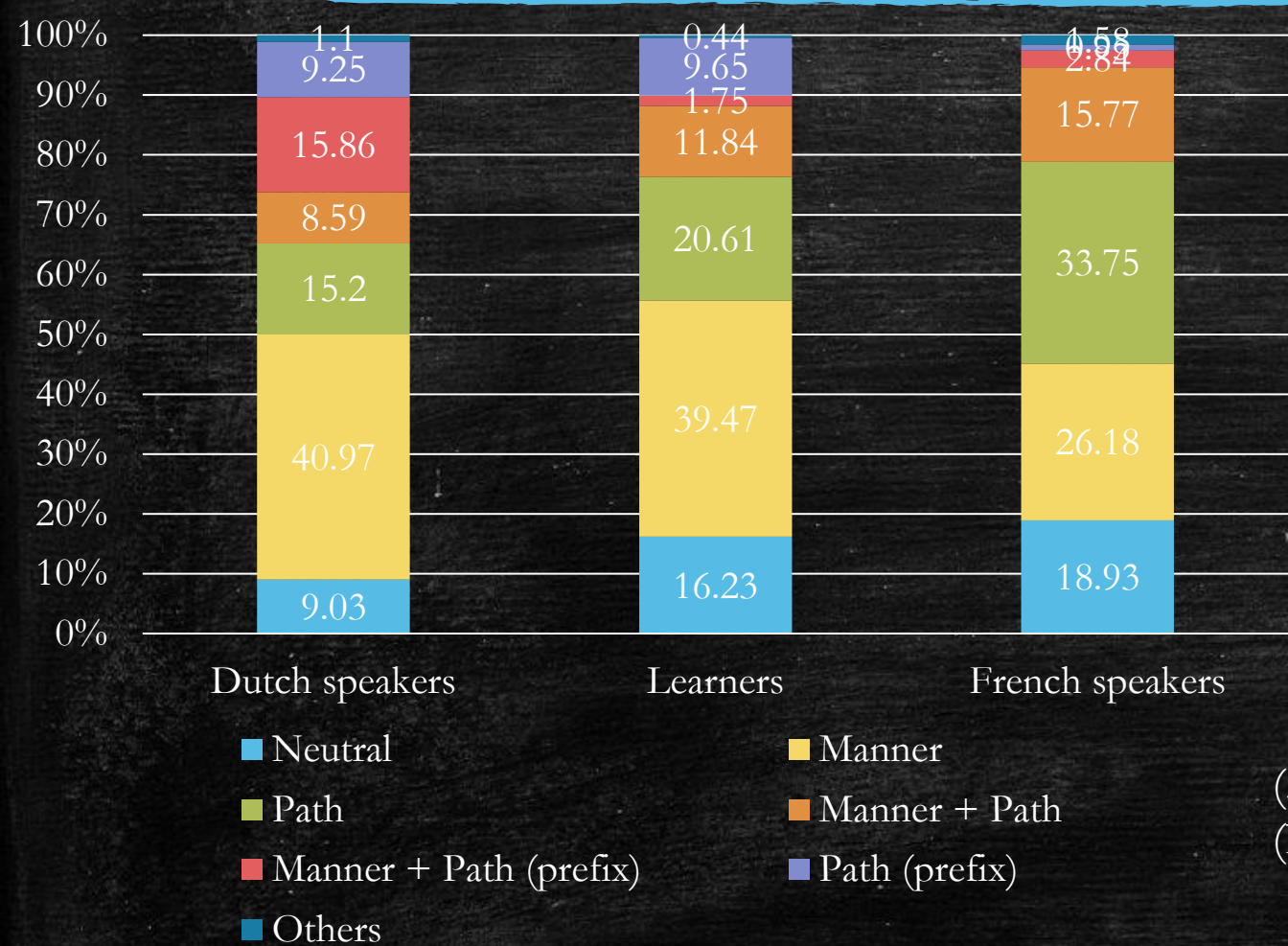


Figure 7: Number of utterances and gestures (average per group)

3. Main Results



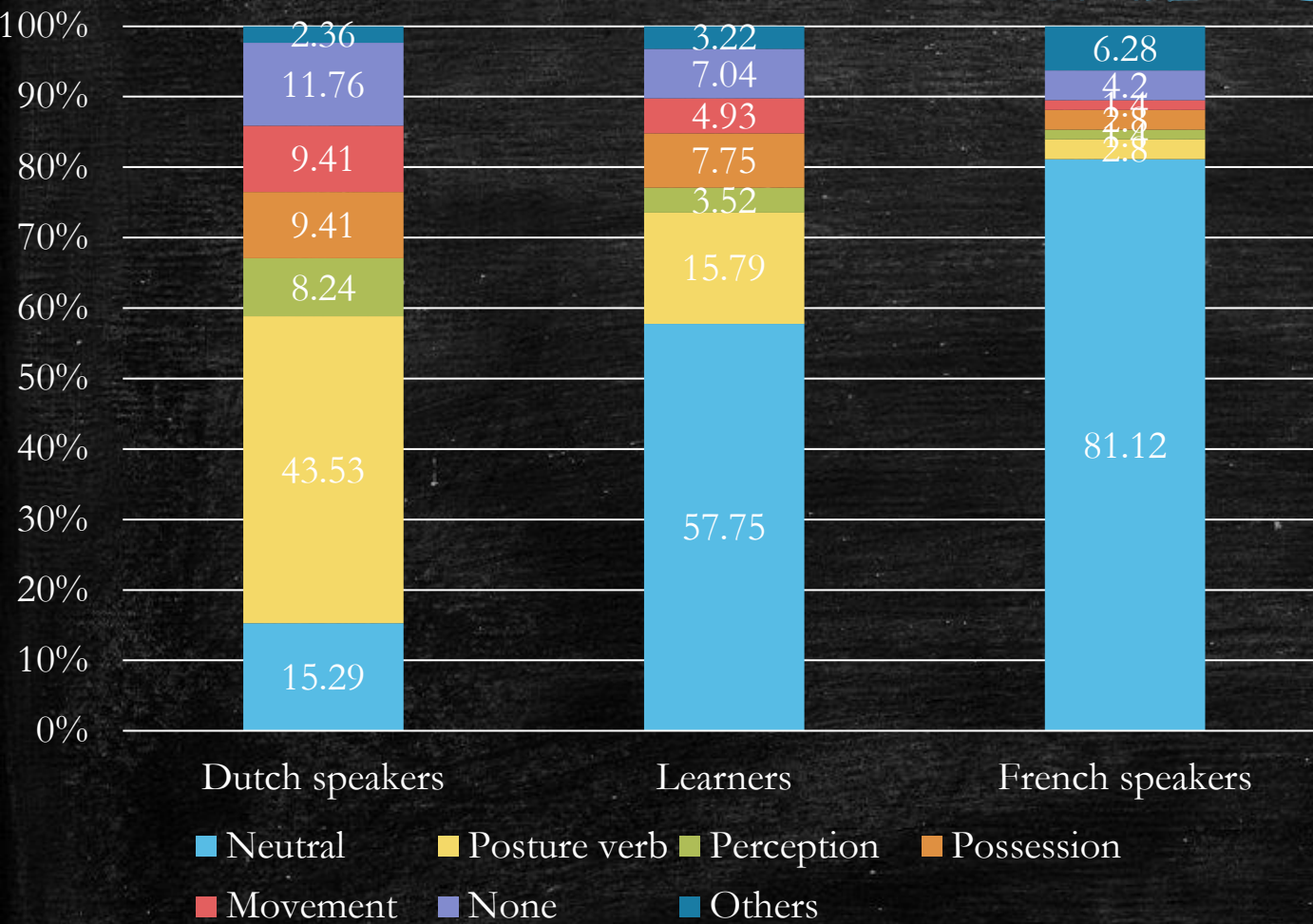
(1) ‘Sylvester denkt dat hij **op een veilige plaats de kooi is binnengelopen** [...] [hij] probeert **weg te lopen**’ (MTE, F4D2)
 [Sylvester thinks that he has **walked into a safe place** [...] [he] tries to **run away**]

(2) ‘Euh il **rentre dans sa cage** et en fait **y'a** Grosminet qui y **est** du coup il est fâché, Grosminet essaye de **s'enfuir**’ (NT2N, F4D2)
 [He **enters his cage** and in fact **there's** Sylvester who **is** there thus he is angry, Sylvester tries to **escape**]

(3) ‘Hij **gaat naar zijn plaats in de dierentuin** en euh **er is** de kat’ (NT2I, F4D2)
 [He **goes to his place in the zoo** and euh there is the cat]

Figure 8: Aspects in the verbs in XP1

3. Main Results



(4) ‘Dat **ligt** op het strand, tussen de trap en het zandkasteel, het zandkasteeltje, daartussen in.’ (MTC, P1O1)
 [That is **lying** on the beach, between the stairs and the sand castle, the small sand castle, there in-between]

(5) ‘Ok donc euh l'objet en question **se situe** euh du côté de la plage euh **il y a** des enfants en bas de l'image qui sont en train de faire un château de sable..’ (NT2E, P1O1)
 [Ok so the object in question **is situated** euh on the side of the beach and euh **there are** children at the bottom of the picture who are making a sand castle]

(6) ‘Ok dus mijn object **is** op de strand euh het **is** dicht bij een jongen die een euh een euh kasteel van zand is aan het her... opbouwen. En mijn object lijkt te... lijkt van uit de emmer van de jongen **uit te komen**’ (NT2K, P1O1)
 [Ok so my object **is** on the beach euh it **is** close to a boy who is building a eueuh castle of sand. And my object seems to... seems to **come from** the boy's bucket]

Figure 9: Types of verbs in XP2

3. Main Results

‘Hij **kruipt** dan **in een kooi waar** die kat **zat**, hij **haalt** die kat **eruit** en **steekt** de kat in het leeuw...**in het water waar** de alligators **waren** net. Dan wordt de kat helemaal verscheurd, zijn borst ten minste. Dan **pakt** hij de kat opnieuw **vast** en **zet** hij die met de beer **in de kooi.**’ (MTC, F4D2)

‘He **crawls into a cage where** the cat **was sitting**, he **takes** the cat out [of the cage] and **plunges** it **into the water where** alligators **were**. [...] Then he **grabs*** the cat again and **puts*** it with the bear **in the cage**’



3. Main Results

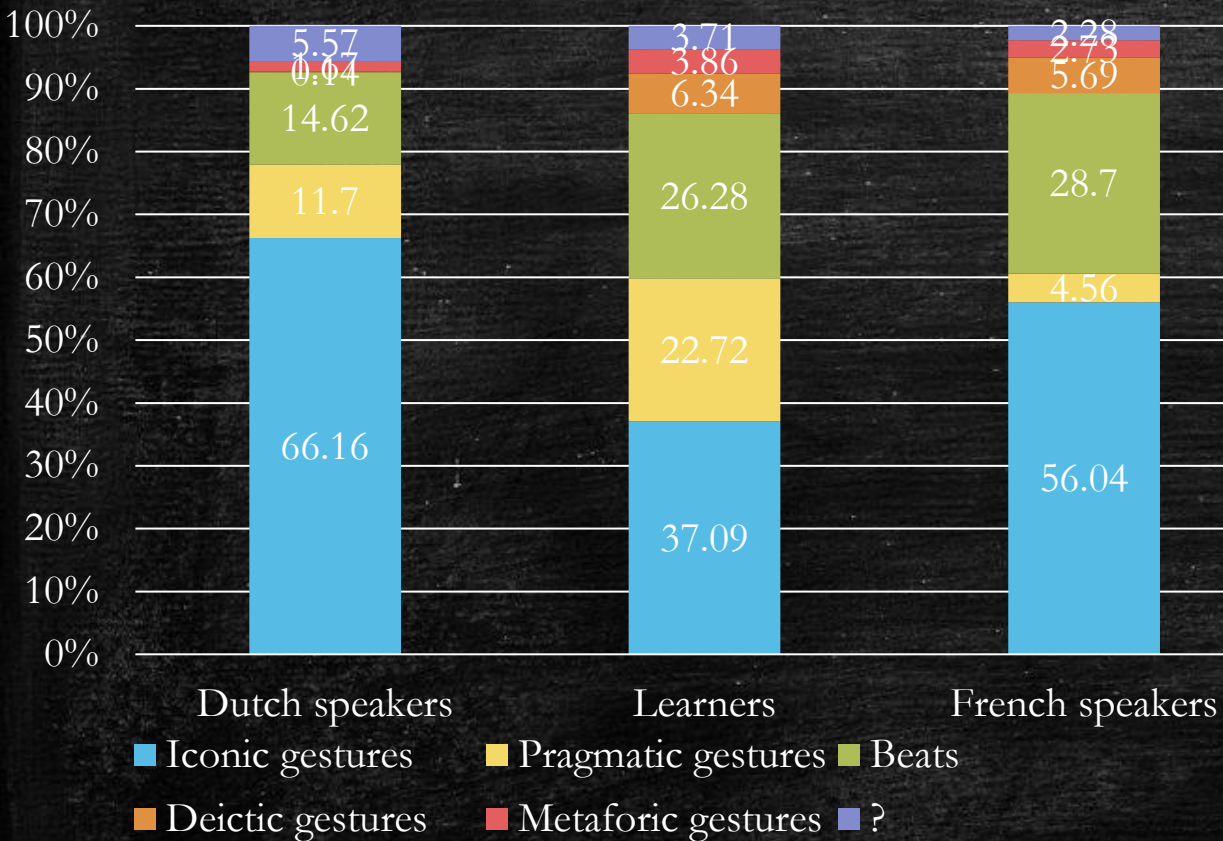


Figure 10: Dimensions in gestures in XP1 (Relative frequencies)

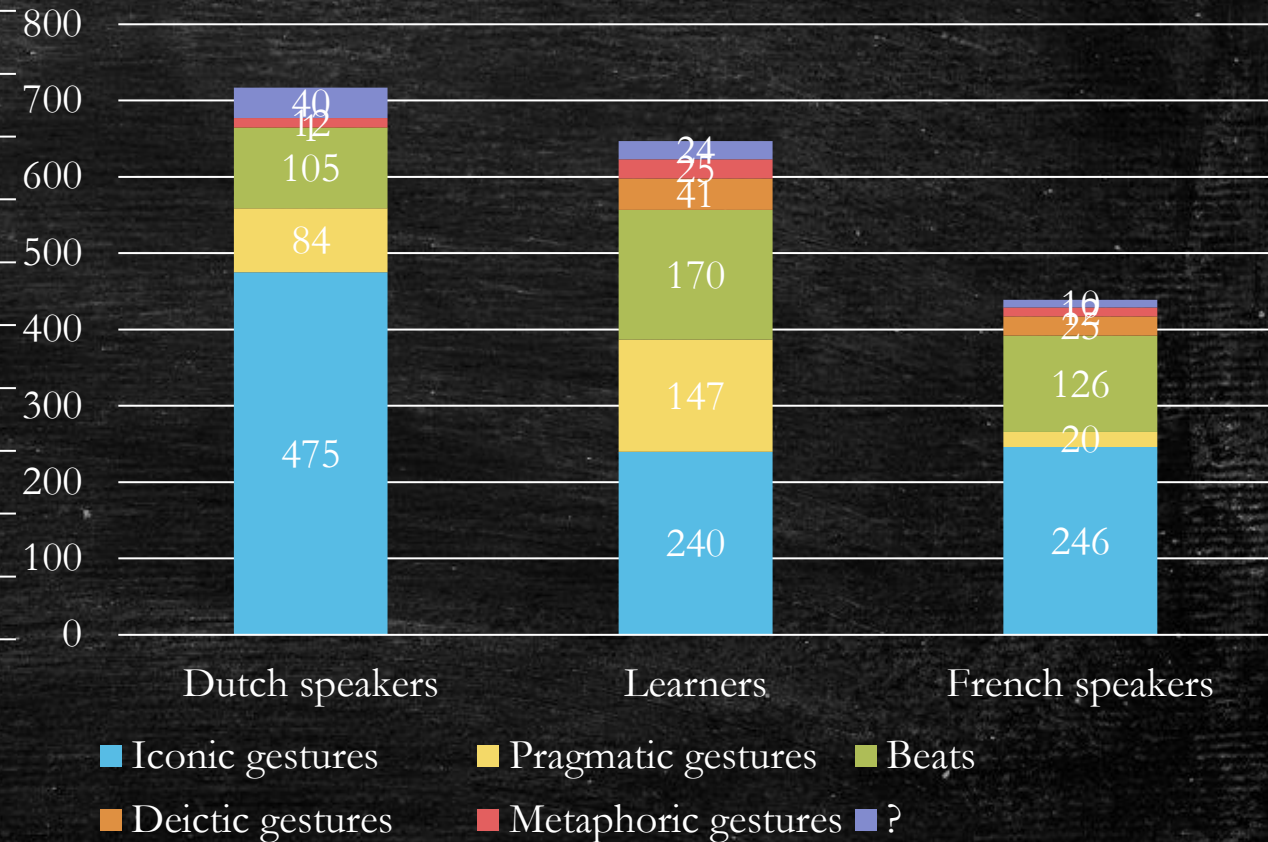


Figure 11: Dimensions in gestures in XP1 (Absolute frequencies)

3. Main Results

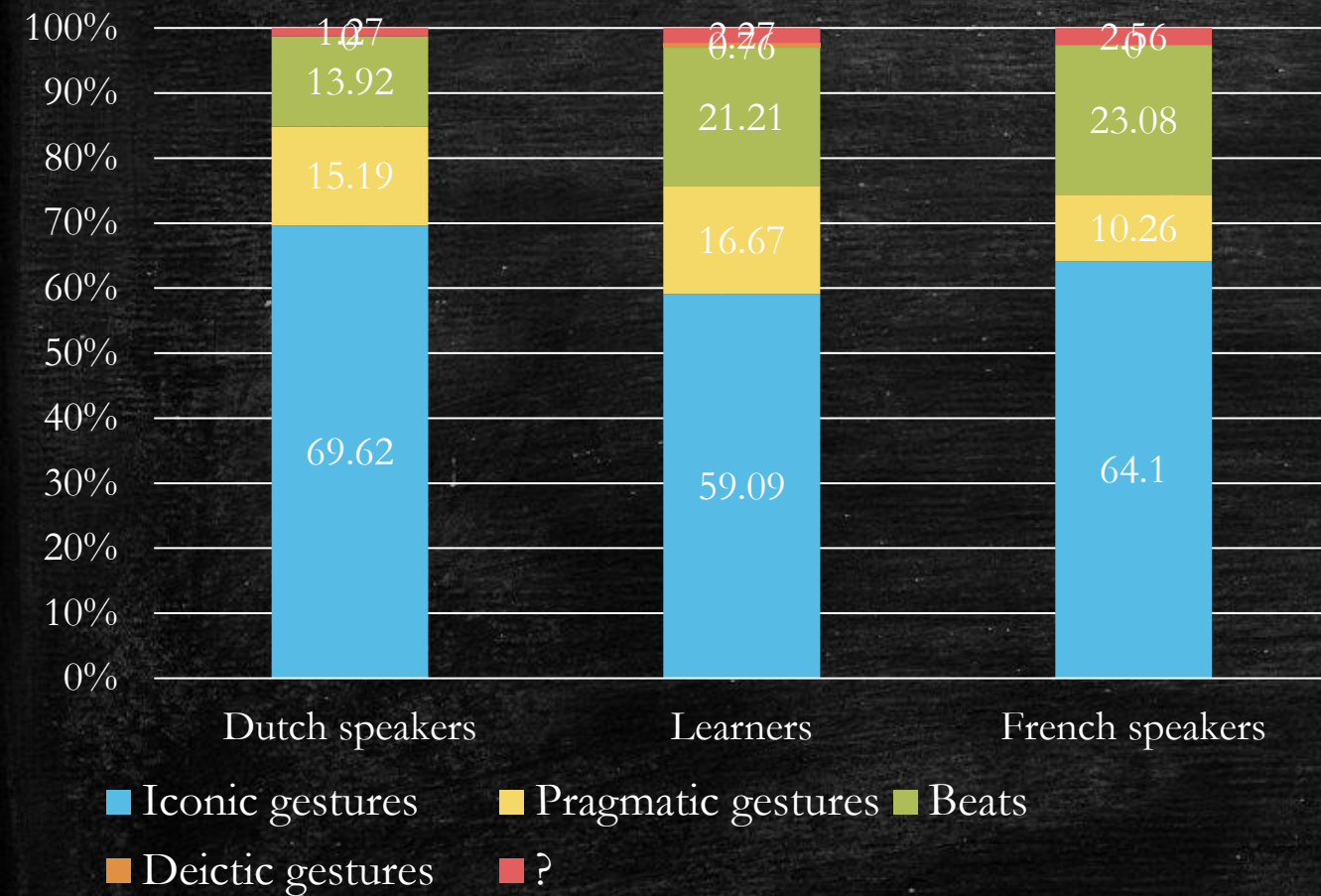


Figure 12: Dimensions in gestures in XP2 (Relative frequencies)

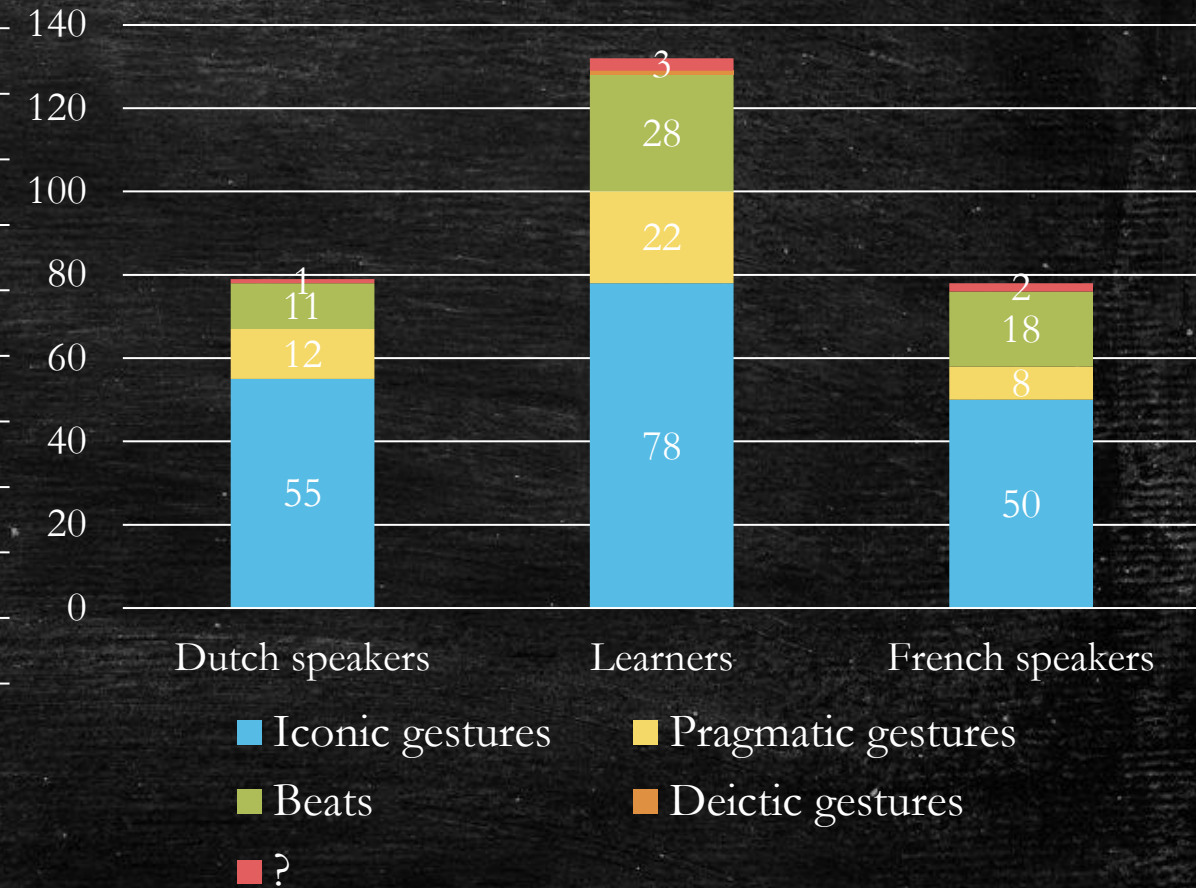


Figure 13: Dimensions in gestures in XP2 (Absolute frequencies)

3. Main Results

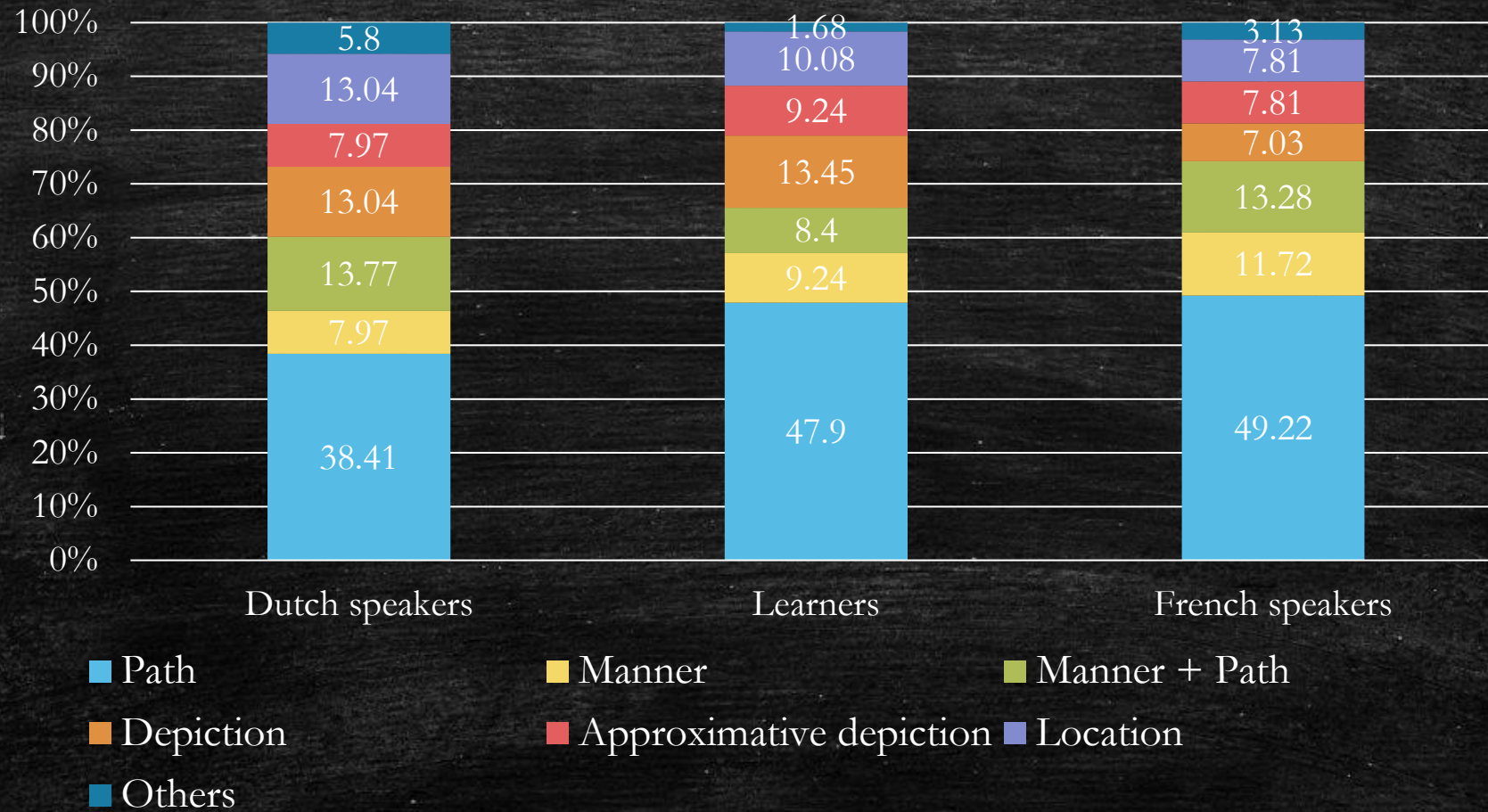


Figure 14: Aspects in the iconic gestures in XP1

3. Main Results

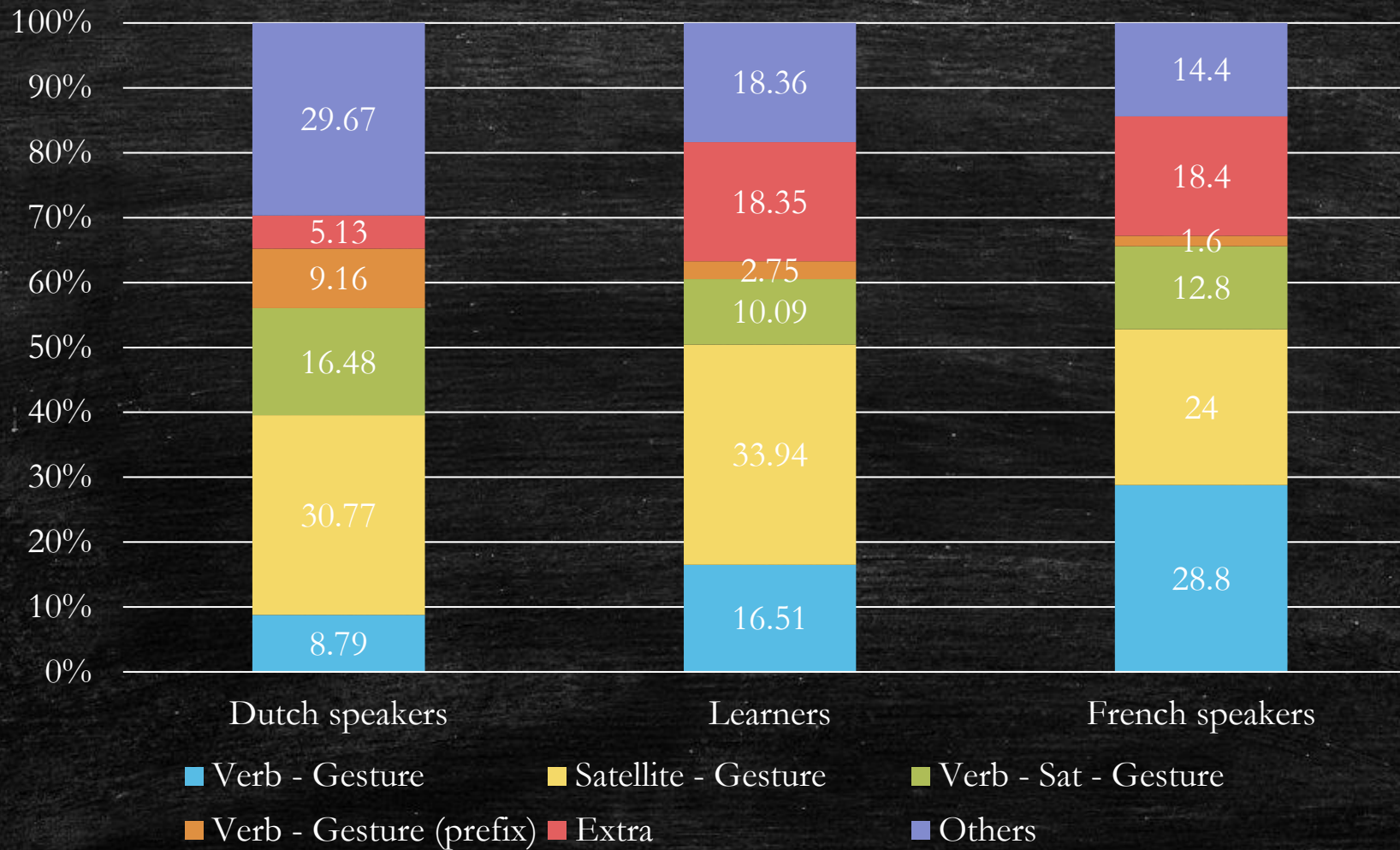


Figure 15: Speech vs. gestures in XP1

4. Discussion & Conclusion

4.1. The expression of motion events in speech

Aspects in native speakers' speech (RQ1)

Differences between the verb-framed and satellite-framed languages reflected in the oral productions of the two groups native speakers

➔ // Talmy (2000), Pourcel & Kopecka (2005), Kopecka (2006), Lemmens & Slobin (2008)

- Differences between French and Dutch in the expression of static motion events: present here as well

➔ // Lemmens (2002)

Aspects in learners' speech (RQs 1 & 5)

- The learners are acquiring the structures used in Dutch to describe dynamic motion events (i.e. they tend to encode manner in the verb similarly to native speakers, but they still underuse verbs in which manner is encoded in the stem and path in a prefix in comparison to Dutch native speakers)
- The acquisition of the structures used in Dutch to describe static motion events (i.e. posture verbs) seems difficult. Learners still overuse neutral verb and underuse the posture verbs. But possession verbs*.

➔ // Lemmens & Perrez (2010, 2012, 2018*)

4. Discussion & Conclusion

4.2. The expression of motion events in gesture

Dimensions in native speakers' gestures (RQ2)

- Mainly **iconic gestures**

Dimensions in learners' gestures (RQ2):

- **Iconic gestures**
- Many **non-substantive gestures** (pragmatic and beats)

Aspects in native speakers' gestures (RQ3):

- **Path: more often encoded by French speakers** (// Gullberg 2008 en 2010a) than by Dutch speakers
- **Manner: no big difference** between the two groups
- **Depiction**

Aspects learners' gestures (RQs 3 & 5):

- **Path: rather similar to French** (// Gullberg 2009)
- **Manner: between the two groups native speakers**
- **Depiction**

4. Discussion & Conclusion

4.3. Speech vs. Gestures

Speech vs. Gestures in the native speakers groups (RQ4):

- French speakers: verb, satellite, extra
- Dutch speakers: satellite, verb and satellite, extra

Speech vs. Gestures in the learners group (RQ4):

- NT2: satellite, extra, verb

4. Discussion & Conclusion

- Similarities as well as differences => // **Kita & Özyürek (2003)**
McNeill (2006), Stam (2010), Brown & Chen (2013)
- Intergesture system? // *interlanguage* (Selinker 1972)
- Learners' thinking for speaking pattern

5. Follow-up Research

- Participants
 - 15 French native speakers
 - 15 Dutch native speakers
 - 15 French-speaking CLIL-students (Content and Language Integrated Learning)
- Longitudinal study (4th, 5th and 6th forms/ 9th, 10th, 11th years)
- Standard language test
- Analysis
 - Transcriptions using McNeill's code (mentioned in the preprint version of Stam 2008)
 - Analysis per motion event

5. Follow-up Research

Speech		Co-speech gestures	
Verb	Neutral/Manner/Path/ Manner and path/ Manner and path (prefix)	Type	Iconic/ Deictic/Metaforic/Prag matic/Beat
Satellite	Manner/Path/Destinati on/Source/Location	Type of iconic gestures	Drawing/Molding/Ena cting/Representing
Combination	e.g. MannerV + PathS	Aspect(s) in substantive gestures	Manner/Path/Destinati on/Source/Location
Elaboration of the description		Formal characteristics	Based on Bresse (2013) for specific cases

- **Synchronization** between substantive gestures and linguistic units
- **Combinations** of the aspects in linguistics units and substantive gestures



5. Follow-up Research

- Analysis

- Elaboration of the description (Cadierno & Ruiz 2006, Woerfel 2019)
 - Amount of adjunct expressing goal, source, and medium
 - Elaboration of manner
- Synchronization: comparison with results of English vs. Spanish (McNeill & Duncan 2000)
- Importance of manner & gestures: reinforcing vs. Downplaying (McNeill 2005)
- Descriptions of states and scenes vs. Descriptions of processes (Slobin, 1991, 1996a, 1996b, 2003)

Thank you for your attention!

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