



Talking and gesturing about motion in L1 and L2

Christina Piot – christina.piot@uliege.be

Of Time and Space: cognitive, typological and multimodal perspectives
University of Lille – September 7, 2022

Introduction

Motion events

Components

- Figure
- Ground
- Path
- Manner

Types

- Self-propelled motion events
- Caused-motion events
- Caused-location events
- (Location events)

(Talmy 2000)

Speech

Verb-framed languages

- French

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

[The bird **enters** the cage **flying**.]

Satellite-framed languages

- Dutch

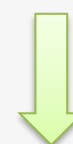
De vogel **vliegt** de kooi **binnen**.

[The bird **flies into** the cage.]

(Talmy 2000)

Co-speech gesture

- Spontaneous gesture
- Communication process
- Speech production & speech perception
- Universal and language-specific characteristics



The typological differences between V-languages and S-languages are reflected in co-speech gesture

(McNeill 1985, 2005; Kendon 1980, 1994; Alibali et al. 2000; Gullberg 2010; Graham & Argyle 1975, Rogers 1978 and Riseborough 1981 mentioned in Kendon 1994; Cassel et al. 1999; McNeill & Duncan 2000; Kita & Özyürek 2003; Brown & Chen 2013)

Outline of the presentation

1. Theoretical background
2. Methodology
3. Results
4. Discussion & Conclusion
5. Further research

1. Theoretical background

Thinking for speaking

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 Stam 2010)

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

Research on motion events to test the thinking for speaking hypothesis

First focusing on linguistic descriptions

Later also taking multimodality into account

Observations (overview in Stam (2010)):

- Differences between V-languages and S-languages and more specifically between English and Spanish
- More descriptions of **states and scenes** in Spanish vs. more descriptions **of processes and accumulation of path-components** in English (Slobin 1991, 1996a, 1996b, 2003)
- Synchronization between speech and co-speech gesture (McNeill & Duncan 2000): **verb** in Spanish vs. **satellite** in English
- **Manner fog gestures** (McNeill & Duncan 2000)

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

→ Gestures give information on thinking for speaking and on the shift from thinking for speaking in L1 to thinking for speaking in L2 (Stam 2010)

→ Learning/acquisition of the L2 multimodal pattern

Research questions

How do native **French** speakers, native **Dutch** speakers and **CLIL French-speaking learners of Dutch** express **motion events** in **speech**?

How do native **French** speakers, native **Dutch** speakers and **CLIL French-speaking learners of Dutch** express motion events in gesture?

2. Methodology

Participants

- 11 native French speakers
- 9 native Dutch speakers
- 12 CLIL French-speaking learners of Dutch
(Proficiency level: ranging between CEFR A1 and B2)

Task

- *Tweet Zoo* divided into 15 fragments
- Matching game



Analysis

Type of event

Speech

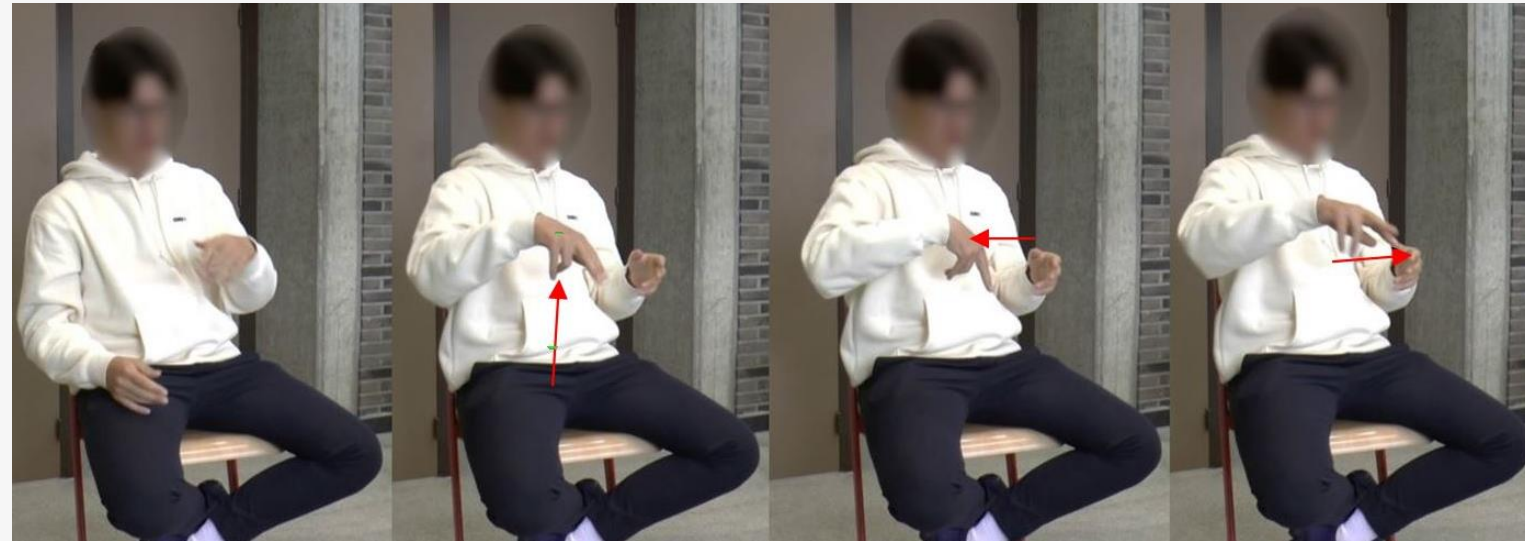
Verb	Neutral/Manner/Path/ Manner and path/ Manner and path (prefix)
Satellite	Manner/Path/Location/ Combination
Construction	e.g. MannerV + PathS
Boundary crossing	Yes/No

Co-speech gestures

Type	Iconic/ Deictic/Metaphoric/ Pragmatic/Beat
Semantic components in deictic and iconic gestures	Manner/Path/ Ground /Location/Combination

Iconic gestures

Figure 1: Manner and Path



“Dan loopt de kat efkes te ijsberen voor de kooi.” (DU4, ME26)
[Then the cat is briefly pacing up and down in front of the cage.]

Figure 2: Path



“Il fait des aller-retours en faisant *en réfléchissant.” (FR5, ME26)
[He is going back and forth doing *thinking.]

Figure 3 : Manner

Figure 4: Ground

Figure 5: Deictic - Location

Figure 6: Beat

Figure 7: Pragmatic gesture



“En gaat daarmee naar de leeuwenkooi.” (DU11, ME33 + ME34)
[And goes with it to the tigers' cage.]



“En Grosminet is <> naast de *de huis.” (CLIL14, ME26)
[And Sylvester is next to the *the house.]



“Grosminet heeft niet gezien dat hij in water is nu.” (CLIL12, ME72)
[Sylvester has not seen that he is in the water now.]



“En dan stopt het” (DU4)
[And then it stops]

Analysis

Type of event

Speech	
Verb	Neutral/Manner/Path/ Manner and path/ Manner and path (prefix)
Satellite	Manner/Path/Location/ Combination
Construction	e.g. MannerV + PathS
Boundary crossing	Yes/No

Co-speech gestures	
Type	Iconic/ Deictic/Metaphoric/ Pragmatic/Beat
Semantic components in deictic and iconic gestures	Manner/Path/ Ground /Location/Combination

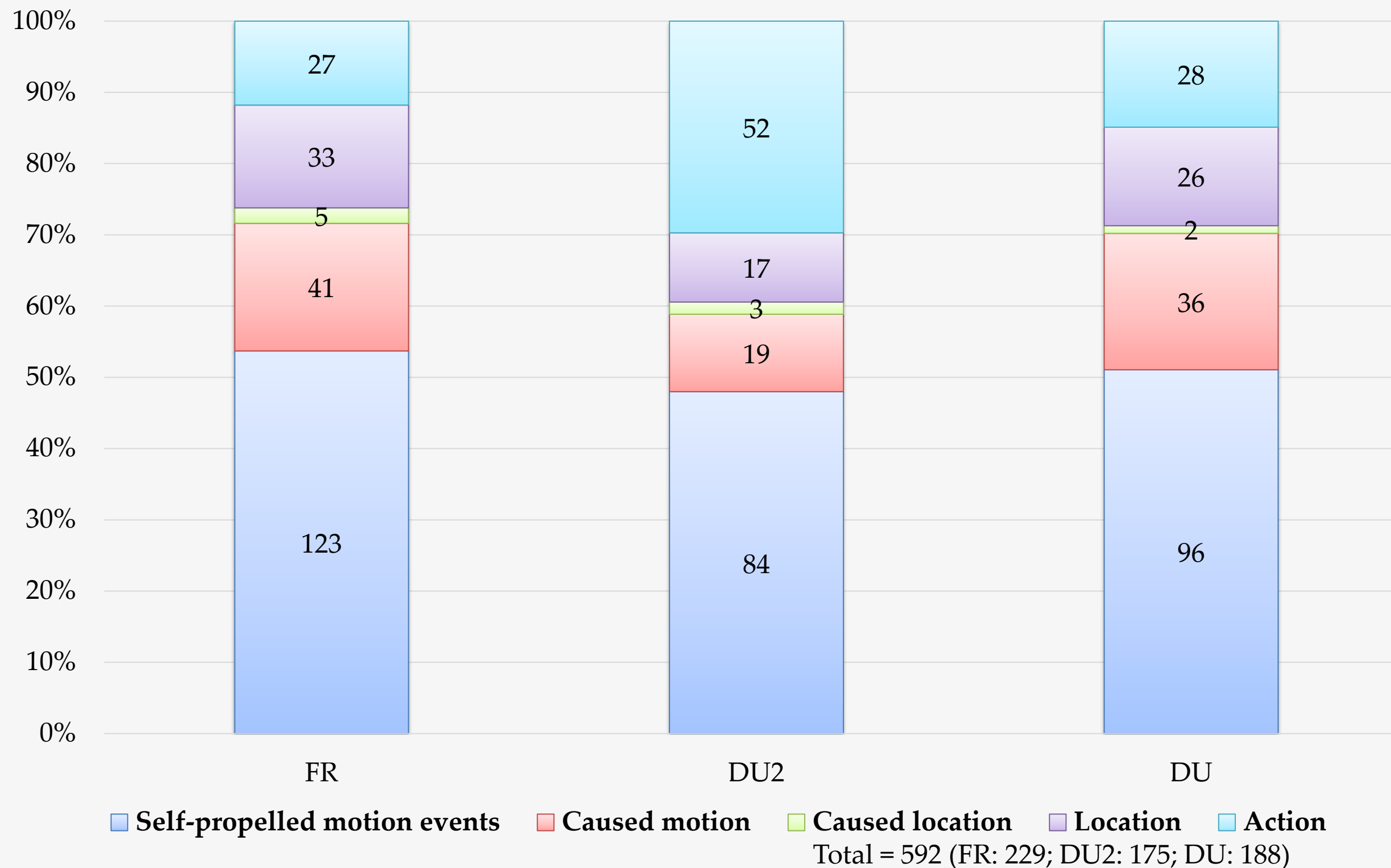
Synchronization between iconic and deictic gestures and linguistic units

Multimodal Construction: semantic components in linguistic units and substantive gestures

(Levy & McNeill mentioned in McNeill 2006; Kendon 2004; Stam 2006; Woerfel 2019)

3. Results

Figure 8: Types of events



(1) En / <> en dus een man van de <> een arbeider van de zoo komt, neemt de dingen voor de voedsel en gaat naar de tijgers. (CLIL1, F5, ME32-34)

[And / <> and so a man from the <> a worker from the zoo comes, takes the things for food and goes to the tigers.]

(2) En die duwt dat karretje naar de tijgers. (DU2, ME34)

[And he pushes that cart towards the tigers]

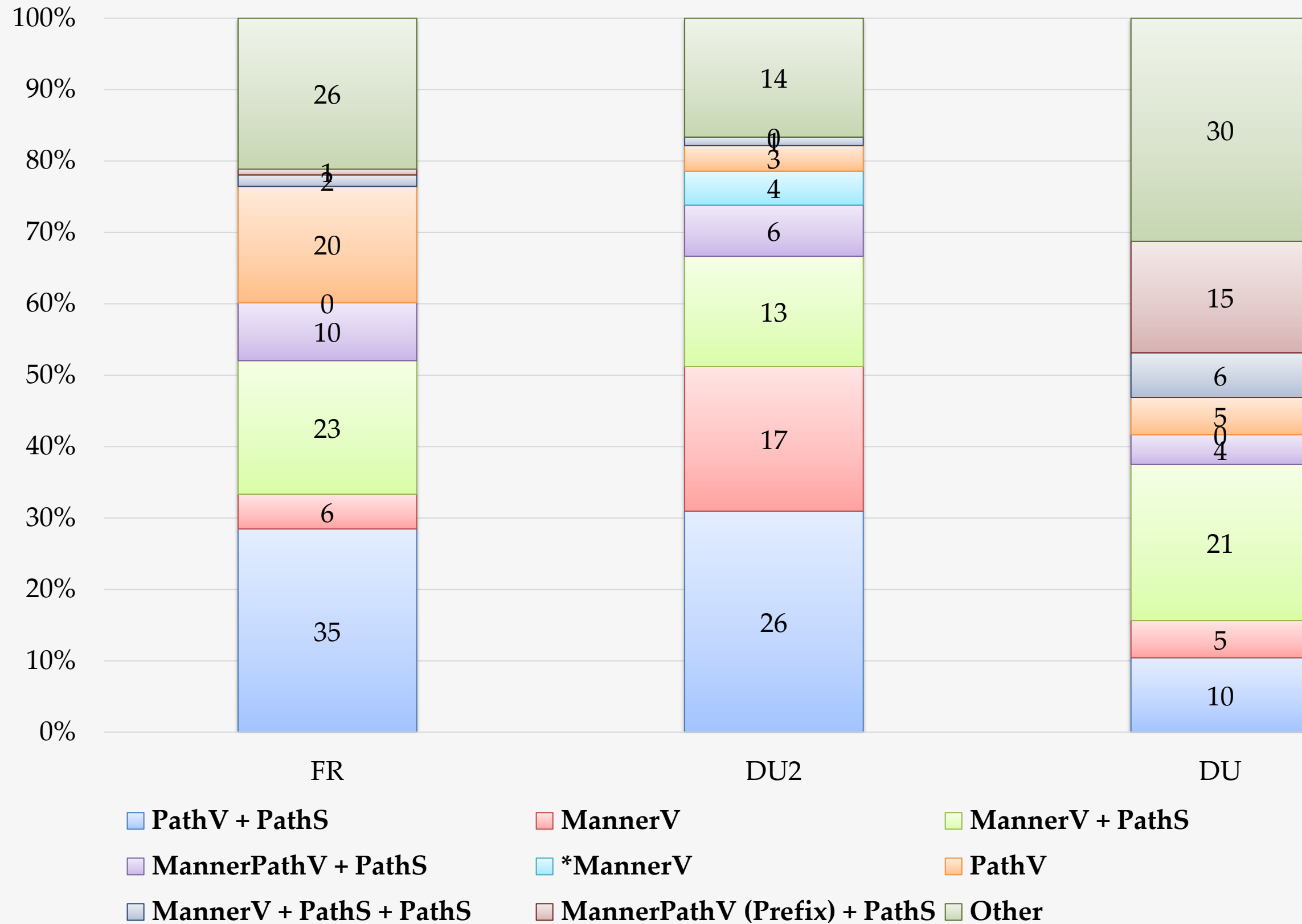
(3) <> Il le met dans l'eau des alligators en le tenant par la queue. (FR1, F13, ME96)

[He puts it in the alligator water holding it by the tail.]

(4) Grosminet est derrière lui (FR3, F9)

[Sylvester is behind him.]

Figure 9: Linguistic constructions used to describe self-propelled motion events



(5) *Il ressort de l'étang* (FR3, ME75)
[He goes out of the pond again]

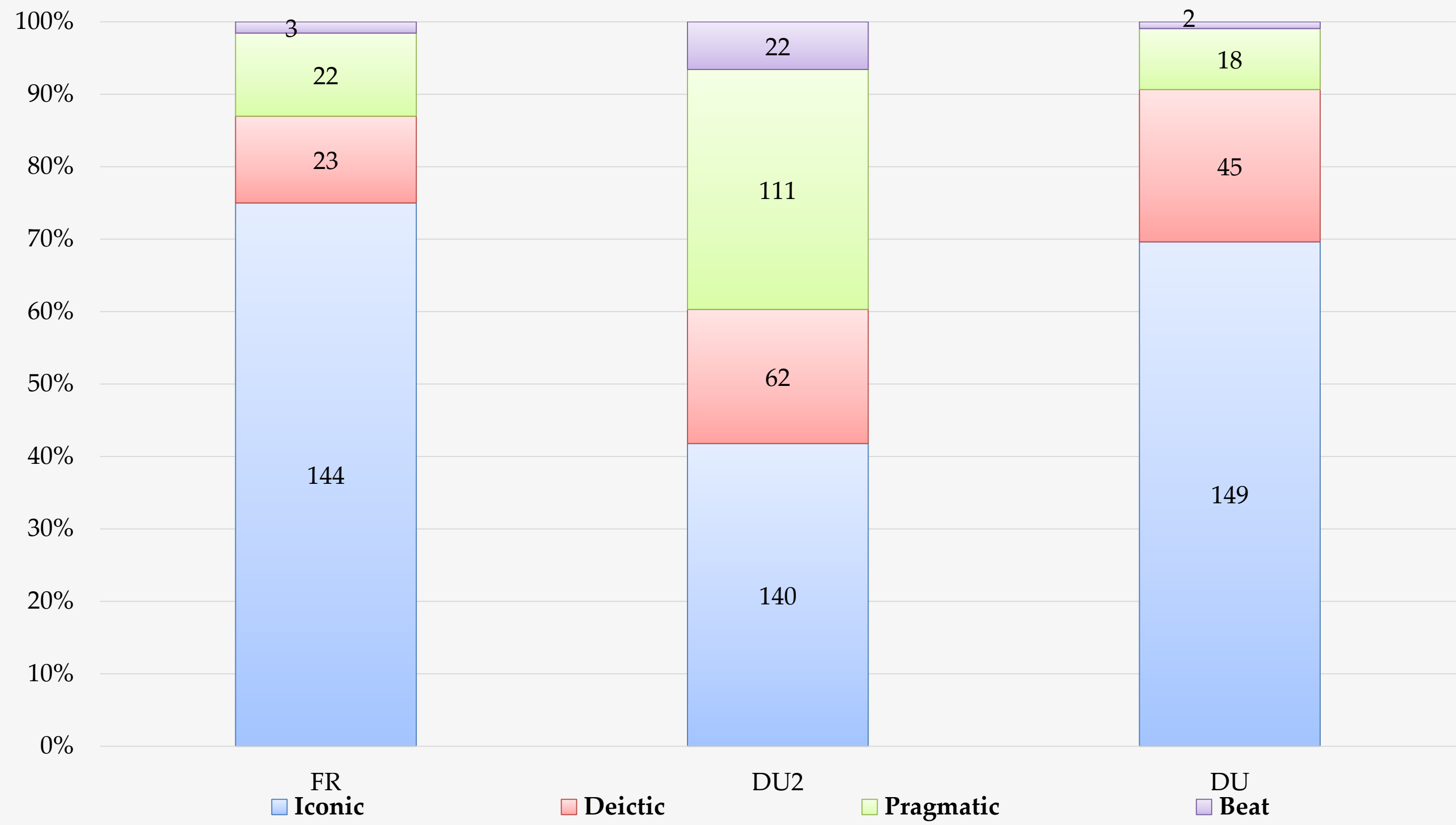
(6) *Après on voit Titi et Grosminet qui marchent sur un muret* (FR2, ME64 + ME65)
[Then we see Tweety and Sylvester who are walking on a low wall]

(7) *De twee loop loop loop* (CLIL7, ME64 + ME65)
[The two run run run]

(8) *De kat rent achter het vogeltje aan* (DU6, ME69)
[The cat runs after the little bird]

(9) \diamond *Grosminet loop naar Titi op één kleine *één kleine / muur van \diamond *van steen.* (CLIL14, ME65)
[Sylvester runs to Tweety on a small *on a small/ wall of stone]

Figure 10: Types of gesture



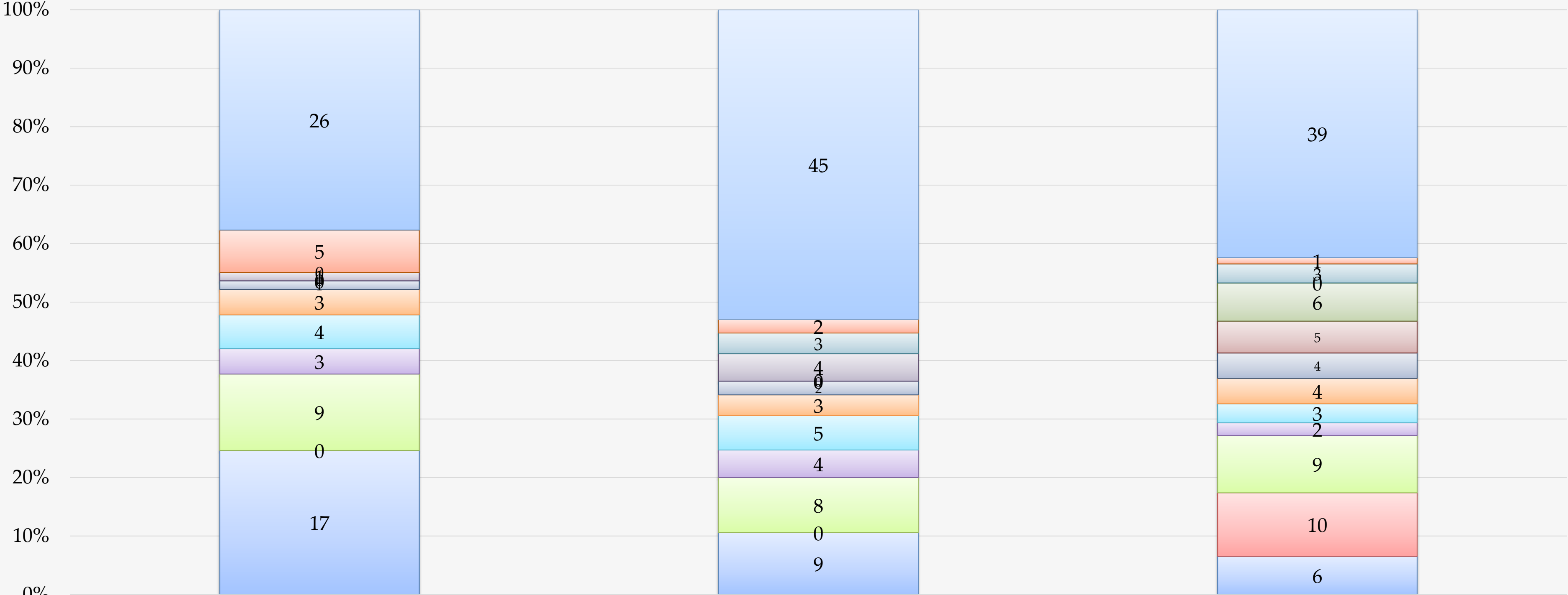
Total = 741 (FR: 192; DU2: 335; DU: 214)

Figure 11: Semantic components in the gestures used to describe self-propelled motion events



Total = 249 (FR: 69; DU2: 85; DU: 95)

Figure 12: Multimodal constructions used to describe self-propelled motion events



FR

DU2

DU

PathV + PathS + PathG

MannerPathV (prefix)+PathS+PathG

MannerV + PathS + PathG

MannerPathV + PathS + PathG

LocationG

PathV + PathS + GroundG

MannerV + PathS + GroundG

MannerPathV + PathS + MannerPathG

MannerV + PathS + PathS + PathG

MannerV + MannerG

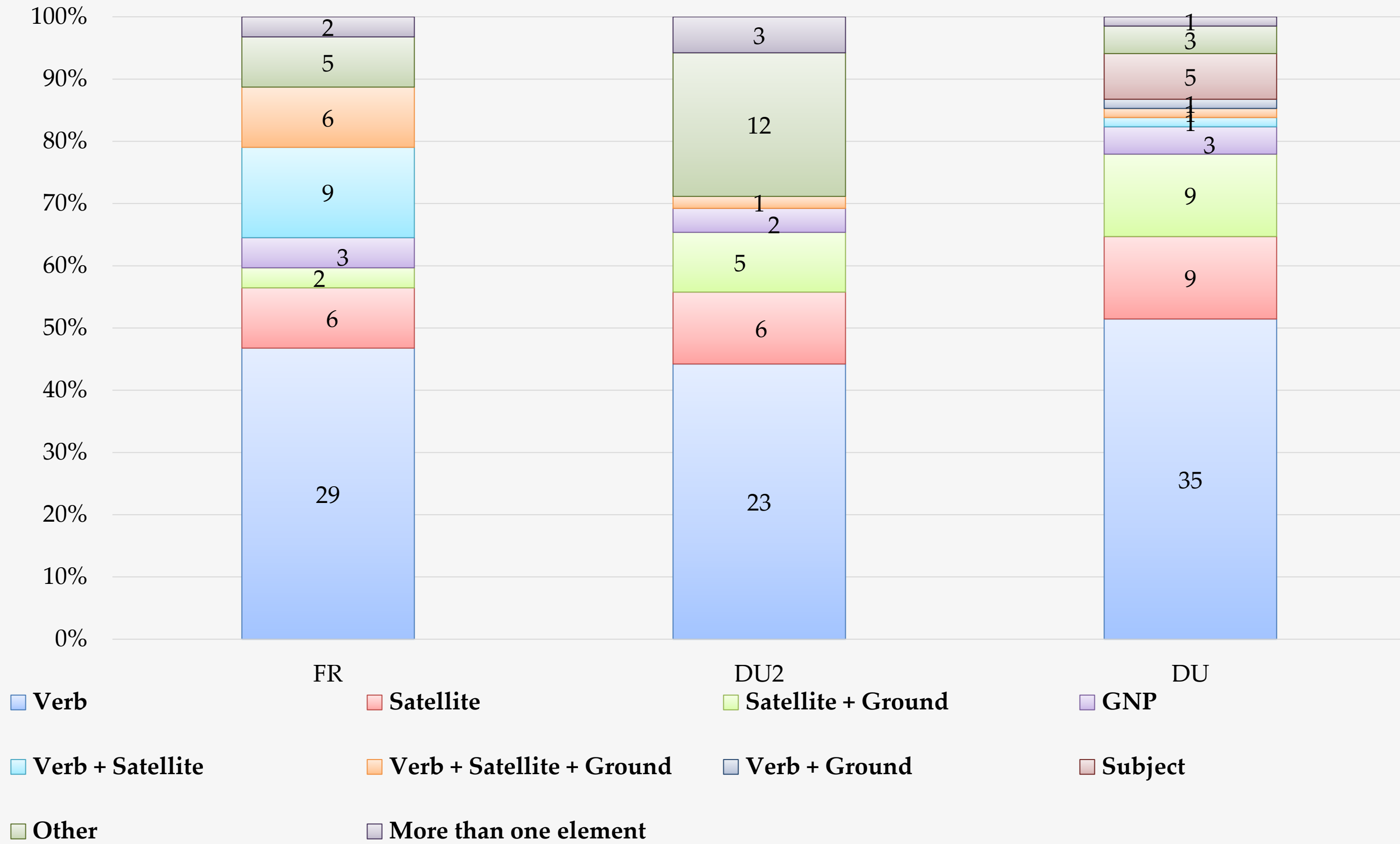
MannerV + PathG

PathV + PathG

Other

Total = 246 (FR: 69; DU2: 85; DU: 92)

Figure 13: Synchronization between speech and PATH_{GESTURE}



Total = 183 (FR: 62, DU2: 52; DU: 69)

PathV+PathS+PathG

In French as L1

Extract 1

Titi, **il passe à côté**. (FR5, ME31)
[Tweety **passes by**.]

Extract 2

Grosminet **il a fait des aller-retours devant** <> l'enclos. (FR4, ME26)
[Sylvester **went back and forth in front of**
<> the pen.]

In Dutch as L2

Extract 3

En dus <> Titi gaat <> ***gaat verder**. (CLIL7)
[And thus Tweety goes <> ***goes further**.]

MannerV+PathS+PathG

In Dutch as L1

Extract 1

En hij is op en neer aan het lopen. (DU1, ME26)

[And he is walking up and down.]

In Dutch as L2

En hij loop *hij loop <> recht en terug. (CLIL7, ME26)

[And he walk *he walk <> *straight and back.]

In French as L1

Extract 2

Et en fait il glisse dedans. (FR5, ME102)

[And in fact, he slides into it.]

MannerPathV (prefix) + PathS + PathG

In Dutch as L1

Extract 1

En <> die vogel vliegt er dus zo over.
(DU3, ME71)

[And <> this bird thus flies over it.]

Extract 2

En die kat loopt daar in. (DU10, ME72)

[And this cat runs into it.]

Extract 3

Die gaat dus *die loopt terug uit de kooi
(DU2, ME23)

[Hij goes thus *hij walks back out of the cage.]

MannerPathG

In French as L1

Extract 1

Il s'en va

[He goes away] (FR5, ME33)

In Dutch as L1

Extract 2

Oké dus dan <> komt het vogeltje op een soort heel langere muur en die kat stond daar ook op en dan lopen die heel die muur af en op het einde van de muur springt de kat er af en gaat het vogeltje zeg maar een beetje vliegen <> tot op een gegeven moment je een waterplas ziet [...]. Die valt in het water. (DU11, ME64, ME65, ME67, ME71, ME73)

[Okay so then <> the bird comes on a kind of very long wall and the cat was also standing on the wall and then they run down the whole wall and at the end of the wall, the cat jumps off the wall and the bird is going to let's say fly a bit <> until a certain point where you see a waterhole [...]. He falls into the water.]

In Dutch as L2

En dus <> Titi gaat <> *gaat verder, vlieg vlieg, vlieg (CLIL7, F9)

[And thus Tweety goes <> *goes further, fly fly fly.]

4. Discussion & Conclusion

- **States**: not more frequent in the V-language than in a S-language (>< Spanish vs. English (Slobin 1991, 1996a, 1996b, 2003))
- The most frequent **construction** used by L2 learners = same as in their L1.
- **MANNERPATH_V(PREFIX)**: difficult for learners but still **MANNER_V**.
- Accumulation of path components: in Dutch (S-language // English (Slobin 1991, 1996a, 1996b, 2003)).
- More **pragmatic** gestures in L2 vs. in L1 (// Piot (2019)).
- **PATH_G**:
 - Most frequent semantic component in both French and Dutch (// Alferink (2015)), a bit more frequent in French;
 - Most frequent semantic component in DU2 as well even though it is less prevailing.
- **MANNER_G**: more frequent in DU2: sometimes compensation gesture.

- **Manner fog gestures**: so far only in the case of the learners.
- Conflated gesture (**MANNERPATH_G**): not very frequent here and similar in the three groups.
- Most frequent **multimodal construction** in French and Dutch L2: same ones vs. Dutch L1.
- Multimodal constructions: a lot of variation and even more in L2.
- Synchronization: Verb: Dutch L1 > French L1 > Dutch L2.
- Synchronization of path gesture: the differences between French and Dutch are not as clear as the ones between English and Spanish (McNeill & Duncan 2000).
- Synchronization in L2: in 26.09% of cases: “Other”.
- ➔ L2 learners seem to try to find their way around.
- “Gesture as a Window Onto Conceptualization (in Second Language Acquisition)” (Stam 2018)

5. Further research

- More data
- **Boundary crossing gesture**
- **Conflated gesture vs. 2 gestures**
- L2 learners' evolution

References

- Alferink, I. (2015). *Dimensions of convergence in bilingual speech and gesture*. LOT.
- Alibali, M. W., Kita, S., & Young, A. J. (2000). Gesture and the process of speech production: We think, therefore we gesture. *Language and Cognitive Processes*, 15(6), 593–613. <https://doi.org/10.1080/016909600750040571>
- Brown, A., & Chen, J. (2013). Construal of Manner in speech and gesture in Mandarin, English, and Japanese. *Cognitive Linguistics*, 24(4), 605–631. <https://doi.org/10.1515/cog-2013-0021>
- Cassell, J., McNeill, D., & McCullough, K.-E. (1999). Speech-gesture mismatches: Evidence for one underlying representation of linguistic and nonlinguistic information. *Pragmatics & Cognition*, 7(1), 1–34. <https://doi.org/10.1075/pc.7.1.03cas>
- Freleng, F. (1957). *Tweet Zoo. Merry Melodies – Warner Bros.* <https://www.youtube.com/watch?v=SqhwmHrdf74>
- Gullberg, M. (2010). Language-specific encoding of placement events in gestures. In J. Bohnemeyer & E. Pederson (Eds.), *Event Representation in Language and Cognition* (pp. 166–188). Cambridge University Press. <https://doi.org/10.1017/CBO9780511782039.008>
- Kendon, A. (1980). Gesticulation and speech: Two aspects of the process of utterance. In M. R. Key, *The Relationship of Verbal and Nonverbal Communication: Contributions to the sociology of language* (pp. 207–227). Mouton Publishers.
- Kendon, A. (1994). Do Gestures Communicate?: A Review. *Research on Language and Social Interaction*, 27(3), 175–200.
- Kendon, A. (2004). *Gesture: Visible action as utterance*. Cambridge University Press.
- Kita, S., & Özyürek, A. (2003). What does cross-linguistic variation in semantic coordination of speech and gesture reveal?: Evidence for an interface representation of spatial thinking and speaking. *Journal of Memory and Language*, 48(1), 16–32. [https://doi.org/10.1016/S0749-596X\(02\)00505-3](https://doi.org/10.1016/S0749-596X(02)00505-3)

- McNeill, D. (1985). So You Think Gestures Are Nonverbal? *Psychologica Review*, 92(3), 350–371.
- McNeill, D. (2005). *Gesture and thought*. University of Chicago Press.
- McNeill, D. (2006). Gesture and Communication. In K. Brown (Ed.), *Encyclopedia of Language & Linguistics* (pp. 58–66). Elsevier. <https://doi.org/10.1016/B0-08-044854-2/00798-7>
- McNeill, D., & Duncan, S. D. (2000). Growth points in thinking-for-speaking. In D. McNeill (Ed.), *Language and Gesture* (1st ed., pp. 141–161). Cambridge University Press. <https://doi.org/10.1017/CBO9780511620850.010>
- Piot C. (2019). *Onderzoek naar de multimodale codering van motion events in het Frans en Nederlands als T1 en T2* [Université de Liège]. <https://hdl.handle.net/2268/240243>
- Slobin, D. I. (1991). Learning to think for speaking: Native language, cognition, and rhetorical style. *Pragmatics*, 1(1), 7–26.
- Slobin, D. I. (1996a). From “thought and language” to “thinking for speaking.” In J. J. Gumperz (Ed.), *Rethinking linguistic relativity* (pp. 70–96). Cambridge University Press.
- Slobin, D. I. (1996b). Two ways to travel: Verbs of motion in English and Spanish. In M. Shibatani & S. A. Thompson (Eds.), *Grammatical constructions: Their form and meaning* (pp. 195–220). Clarendon Press.
- Slobin, D. I. (2003). Language and thought online: Cognitive consequences of linguistic relativity. In S. Goldin-Meadow & D. Gentner (Eds.), *Language in mind* (pp. 157–191). MIT Press.
- Stam, G. (2006). Thinking for speaking about motion: L1 and L2 speech and gesture. *IRAL – International Review of Applied Linguistics in Language Teaching*, 44(2). <https://doi.org/10.1515/IRAL.2006.006>
- Stam, G. (2010). Can an L2 Speaker’s Patterns of Thinking for Speaking Change? In Z. Han & T. Cadierno (Eds.), *Linguistic Relativity in SLA: Thinking for Speaking* (pp. 59–83). Multilingual Matters. <https://www.degruyter.com/document/doi/10.21832/9781847692788-005/html>
- Stam, G. (2018). Gesture as a window onto conceptualization in second language acquisition: A Vygotskian perspective. In J. P. Lantolf, M. E. Poehner, & M. Swain (Eds.), *The Routledge Handbook of Sociocultural Theory and Second Language Development* (Routledge, pp. 165–177).
- Woerfel, T. J. N. (2019). *Encoding motion events: The impact of language-specific patterns and language dominance in bilingual children*. De Gruyter.

Thank you for
your attention !