

Disambiguation of French motion/location expressions

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Abstract

The present study investigates reading preferences for French sentences containing a Manner of motion verb and a prepositional phrase which are ambiguous between a location and a locomotion reading. We tested how different prepositions and different Manner of motion verbs influence reading preferences. 61 native French speakers judged different ambiguous sentences by selecting one of two suggested contexts, each clearly suggesting one of the two readings. Results show that overall, locomotion readings are possible with all tested prepositions, but more likely with *à travers* ‘through’ than with ambiguous prepositions. Manner of motion verbs fall into two classes, one allowing the locomotion reading and the other one not. We provide experimental evidence confirming patterns observed in previous corpus studies.

Keywords: motion events, boundary-crossing, disambiguation task

Introduction

French (like other Romance languages) has sentences with a Manner of motion verb and a prepositional phrase that are ambiguous between a location and a locomotion reading, see (1).

1. *Il court dans le jardin.* (a) ‘He runs in the garden’. (b) ‘He runs into the garden’.

Some authors have claimed that such sentences can only have reading 1a (Slobin, Hoiting 1994) whereas other authors have described that they are in fact ambiguous with the two readings in 1a and 1b (Aurnague 2008, Kopecka 2009, Sarda 2019). Whether this structure can have only the unbounded interpretation, as in 1a, or whether a bounded reading, as in 1b, is indeed possible has implications for the question whether there is a constraint on the expression of boundary-crossing events in certain languages (Slobin, Hoiting 1994, i.a.). So far, not much research has been conducted on the interpretation of these sentences. Elicitation studies on motion events report that native speakers of French utter sentences similar to (1) to describe bounded motion events (Pourcel, Kopecka 2005; Hendricks, Hickmann 2011). A corpus study by Kopecka (2009) found that both readings are possible for most of the verbs under investigation, however with a different distribution for all verbs.

Methods

Materials, participants and procedure

This study investigated the reading preferences of ambiguous motion/location sentences in an experimental setting. Stimuli consisted of sentences containing:

- one of six Manner of motion verbs: *courir* ‘to run’, *sauter* ‘to jump’, *ramper* ‘to crawl’ (which Fortis 2010 claims to be possible with both readings) and *nager* ‘to swim’, *marcher* ‘to walk’, *danser* ‘to dance’ (which Fortis 2010 claims to be possible with a location reading only)
- one of three prepositions: *dans* ‘in(to)’, *en dehors* ‘outside/out of’ (both ambiguous) and *à travers* ‘through’ (with a clear locomotion meaning)

Both ambiguous prepositions, in their locomotion reading, express not only the direction of the locomotion, but also the crossing of a boundary. Every sentence was presented with two contexts, each clearly suggesting one of the two readings, see Fig. 1. The order of the two contexts was counter-balanced. Participants were asked to decide which context the sentence fits in best.

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| <p>Choisissez le paragraphe pour lequel la phrase du haut s'insère mieux dans le blanc.</p> <p>Elle nage dans la grotte.</p> <p><input type="radio"/> Une femme nage en mer et voit l'entrée d'une grotte marine.</p> <p>Après y être entrée, elle sort de l'eau et admire les formations rocheuses.</p> <p><input type="radio"/> Une femme se trouve dans une grotte marine avec des formations rocheuses impressionnantes.</p> <p>Tout en nageant, elle admire les formations rocheuses.</p> <p style="text-align: center;">Suivant</p> | <p>Choose the paragraph where the sentence fits best in the blank.</p> <p>She swims in(to) the cave.</p> <p>() A woman swims in the sea and sees the entrance of a cave.</p> <p>After she went inside, she gets out of the water and admires the rock formations.</p> <p>() A woman is inside a cave with impressive rock formations.</p> <p>While she swims, she admires the rock formations.</p> |
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Figure 1. Presentation of French test items, here with English translations.

The experiment was carried out with Labvanced. It was run with 61 monolingual speakers of French recruited through Prolific in August 2023. Each participant judged three test sentences along with nine filler sentences. Ten (to eleven) judgements were elicited for each test sentence.

Hypotheses

1. The ambiguous prepositions (*dans* ‘in/into’, *en dehors de* ‘outside/out of’) were expected to behave differently to the directional preposition (*à travers* ‘through’): Less boundary-crossing readings are expected with the ambiguous prepositions.
2. Manner verbs were expected to differ regarding the extent to which they allow the boundary-crossing reading: They fall into two classes, one allowing the BC reading, the other one not (cf Fortis 2010).

Results

The results both for different prepositions and for different Manner of motions verbs are shown below in Fig. 2 and 3, respectively.

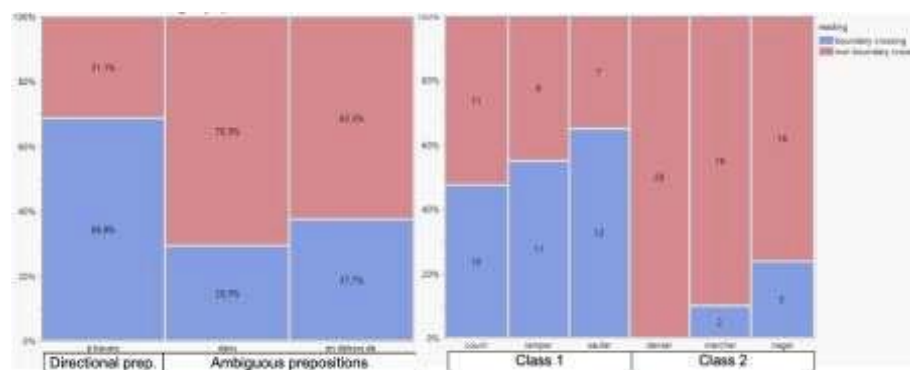


Figure 2. BC readings with different prepositions Fig. 3: BC readings with different Manner verbs.

Statistical analyses were carried out with R (R Core Team 2021). Results were examined with two mixed-effects logistic regression models using the glmer function contained in the package lme4 (Bates et al. 2015). The first model examined the likelihood of the interpretation as a boundary-crossing event depending on the type of preposition and the verb class. The directional preposition *à travers* ‘through’ significantly increased the likelihood of a boundary-crossing interpretation in comparison to the ambiguous prepositions (Estimate = 1.7545, $p < 0.001$). Verb class 1 significantly increased the likelihood of a boundary-crossing interpretation compared to verb class 2 (Estimate = 1.6054, $p < 0.001$). The second model examined the interaction of individual verbs and prepositions with regard to boundary-crossing interpretations. No significant difference between the two ambiguous prepositions *dans* and *en dehors de* was observed ($p = 0.31$). Regarding the different Manner of motion verbs, no significant difference among the verbs of class 1 was observed. In class 2 however, there was a significant difference in the interpretation of sentences containing *danser* and *nager* ($p = 0.002$).

Discussion

We have presented experimental evidence that a boundary-crossing reading is available for at least some sentences with a Manner of motion verbs and a prepositional phrase. The advantage of our approach lies in the comparability of results for different lexical items under the same conditions. Both our hypotheses were confirmed:

1. Less boundary crossing-readings occurred with the ambiguous prepositions *dans* 'in(to)' and *en dehors* 'outside/out of' than with the directional preposition *à travers* 'through'.
2. Different Manner of motion verbs show different preferences for the boundary-crossing reading. They seem to fall into two classes, only one of which clearly allows this reading. The status of *nager* 'to swim' however remains somewhat unclear; further research is required in this regard.

As our results come fairly close to those of the corpus study in Kopecka (2009), the experimental method designed here seems to be appropriate to investigate the ambiguous sentence type under discussion. As a next step, the experiment will be extended to include more prepositions.

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