

Reading Fictive Motion Across Languages: Experimental data from a self-paced reading task

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Fictive Motion (FM): involves "the conceptualizer's mental tracing along a path for the purpose of computing the configuration or location of the entity expressed in the subject NP" (Matsumoto, 1996: 184)

Matsumoto (1996) : English and Japanese FM Expressions (FMEs)

Similarities:

- The **PATH condition**: a FME must always include some path-related information
e.g. *the road runs vs the road runs along the coast
- The **MANNER condition**: when a FME includes a manner-conflating verb, the manner information must be somehow related to some specific feature of the path
e.g. the road zig-zagged/*tip-toed along the valley

Differences:

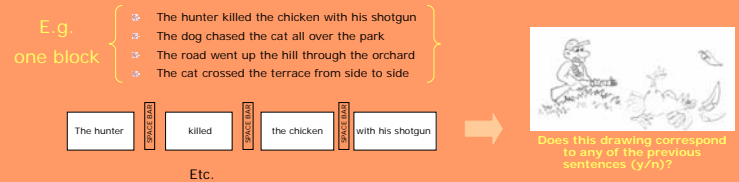
- In **Japanese**, there is a distinction between 'travellable' and 'non-travellable' paths
- Some 'non-travellable paths' are not amenable to a Fictive Motion description (e.g. walls.)
- In **English**, all paths are amenable to fictive motion description

Our research questions

1. How is the distinction between travellable and non-travellable paths reflected in Spanish?
2. Does the Manner condition affect Spanish FM verbs in the same way as English and Japanese?

Experimental paradigm: a self-paced reading task

- Subjects read sentences divided into different periods; to see each period, they had to press the Space Bar
- To ensure correct understanding, every four sentences were followed by a drawing, which could correspond or not to one of the previous sentences.



Experiment 1

- **Subjects:** 45 Spanish native speakers from the University of Murcia
- **Stimuli:** 32 Spanish sentences, divided into four syntactic periods, with two types of subjects:
 - **Travellable subjects:** carretera (road), camino (path), sendero (track), Jardín (garden), pradera (field), valle (valley), bosque (forest), sierra (mountain range).
 - **Non-travellable subjects:** pared (wall), muro (wall), alambrada (wire fence), tubería (pipe), tendadero (clothesline), línea de árboles (line of trees), precipicio (precipice), frontera (frontier)
- **Subjects were divided into two groups:** one group would read an experimental fictive motion sentence and the other group its 'control' counterpart, i.e. the same sentence in the 'real motion' context.

Exp	El valle ascendía lentamente hacia el norte (the valley ascended slowly towards the north)
Con	El autobús ascendía lentamente hacia el norte (the bus ascended slowly towards the north)
Exp	El muro bajaba por la colina hasta el lago (the wall descended downhill up to the lake)
Con	La liebre bajaba por la colina hasta el lago (the hare descended downhill up to the lake)

- **Results:** subjects took longer to read sentences with non-travellable subjects than with travellable ones (see Figure 1)
- Non-travellable subjects were then grouped into different categories (vertical-2D, lines and surfaces) in order to find differences between the groups: the non-travellable subjects which took longer to process were 'vertical' ones (e.g. wall, wire fence), as can be seen in Figure 2.

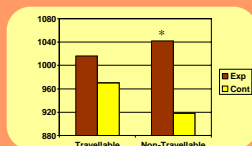


Figure 1

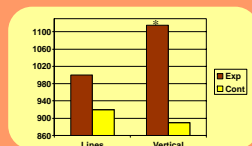


Figure 2

Experiment 2

- **Subjects:** 65 Spanish native speakers from the University of Murcia
- **Stimuli:** 24 Spanish sentences, divided into three syntactic periods, with two types of verbs: Path-related manner verbs and Non-Path related manner verbs
 - **Path-related manner verbs:** reptar (slither), culebrear (snake), zigzaguear (zigzag), deambular (roam), vagar (wander), precipitarse (fall)
 - **Non-path related manner verbs:** deslizarse (slide), rodar (roll), apresurarse (hurry), embalsarse (dash), trotar (tro), arrastrarse (crawl)
- **Subjects were divided into two groups:** one group read an experimental sentence with a manner verb and a FM subject) and the other group read its 'control' counterpart, the same sentence in the 'real motion' context.

Exp	El sendero reptaba hacia la cima (the path snaked towards the hill)
Con	El vehículo reptaba hacia la cima (the vehicle snaked towards the hill)
Exp	La autopista rodaba en dirección a Madrid (The highway rolled towards Madrid)
Con	La moto rodaba en dirección a Madrid (The motorbike rolled towards Madrid)

- **Results:** subjects took longer to read sentences with non-path related manner verbs than with manner related ones (see Figure 3)
- In order to locate the manner features that were harder to relate to the path, non-path related manner verbs were grouped into three different categories: ease of progress, speed and motor pattern. As can be seen in Figure 4, verbs of motor pattern (e.g. trot, crawl) took longer to process than verbs of speed (e.g. hurry, dash) and verbs of 'ease' (e.g. slide and roll).

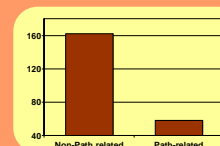


Figure 3

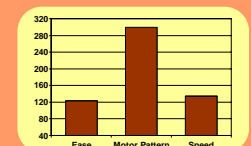


Figure 4

Conclusions

- Spanish FMEs with non-travellable subjects take longer to process than those with travellable entities.
- Further research would be required to see which types of objects are amenable to a FM description.

- Non-path related manner verbs also take longer to process, suggesting that Matsumoto's Path and Manner condition are psychologically real.
- Further research would be needed in other languages to test the universal validity of the conditions and the role of the different manner features in FMEs.