

MOVING INTO PAST?

PRIMING STUDY OF SPACE-TIME METAPHORICAL MAPPINGS AT SPANISH TENSES

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INTRODUCTION

Experiencing time's flow is one of the most important dimensions of human condition. In fact, both physical and philosophical approaches claim relations between space and time. Unlike other types of perception, Time is not directly available to any sensory organ. *Metaphorical mappings* -as part of *Embodiment* thesis- explain language processing of Time as a domain which we experience throughout the duration and succession of the perceived stimulus. The basic claim of *Time Metaphor* is that the representation of space becomes the original domain which projects some of its features onto our representations of time.

In our study we offered an abstract representation of time using spatial dimensions to the participants. By this way we wanted to check if our participants could adjust to a specific spatial representation of tense, thus testing a cognitive mapping from space to time.

GOAL

Assess the psychological validity of the Time Metaphor in Spanish tenses with a decision task, using priming to evaluate the cognitive support of spatial features by each tense.

Predictions

We expected to find a pattern for spatial dimensions associated to each tense.

METHOD

Participants

38 native Spanish speakers. 27 Women and 11 Men. Mean age: 30;8. Level of studies: University
Participants were divided into two groups, according to the time between sessions (3 to 5 minutes and 4 to 8 weeks).

Materials

Apparatus

Stimuli were presented and data were recorded using E-Prime version 1 on a PC

Stimuli

* 60 affirmative simple sentences were prepared with agents in 3rd singular person. Articles were balanced in number, gender, and definiteness. No prepositions, pronouns or adverbs were included.

* The sentences contained 14 different verbs: 7 material (*empujar*); 7 perceptual (*oler*) in three Spanish tenses. Each sentence was presented in a separate slide with two figures representing spatial dimensions (see figure 1).

* One *Laminated sheet* was used to explain the symbolism used to indicate the subject, the object, the referred event and the speaker (see figure 2)

* 8 Slides introducing spatial dimensions and answer options(see figure 3)

Procedure

Experimental sessions were carried up at the Laboratory of Psicologia General. Percepció i Llenguatge.

1. Each participant watched on the computer monitor the Instructions and received the *Laminated sheet*, which could be checked during the task.

2. Slides introducing spatial dimensions were shown.

3. Participants were asked to read the sentences on the screen and make an answer.

Participants were asked to choose which figure symbolized best the tense of the action represented by the verb at the sentence. Answers were recorded by pressing keys number "1" or "2".

RESULTS

We ran Wilcoxon tests in order to compare the preferred answers given by the participants to each spatial dimension.

A preferred answer means the crossed spatial feature between two options because it was considered by the participant the best related with the tense of the action represented by the verb at the sentence.

For **Involvement**, the statistical analysis show a preference in all three tenses (IPI ($z = -4,236, p < ,001$), IPP ($z = -5,313, p < ,001$) and SP ($z = -2,733, p < ,01$)).

For **Duration**, it was reported a favorite answer just at the tenses of Indicative (IPI ($z = -5,094, p < ,001$) and IPP ($z = -5,392, p < ,001$)).

Orientation was meaningful just at IPI and **Perspective** just at IPP (see figures 4).

CONCLUSIONS

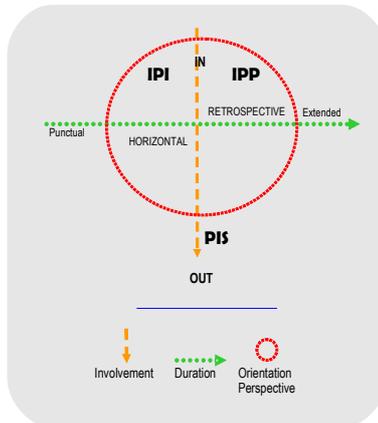
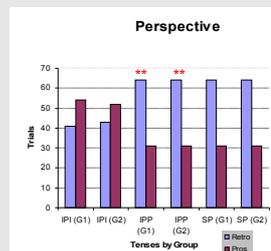
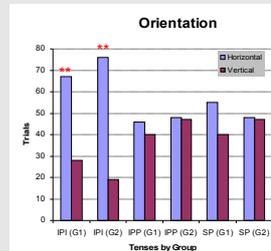
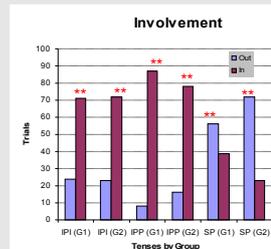
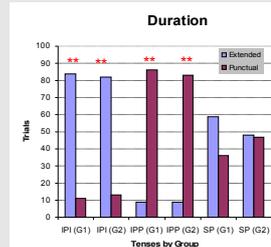


Figure 5: Spatial schematization of conclusions

Results suggest that Involvement and Duration are spatial dimensions that offer a psychological ground to time representation. However, a parsimonious explanation of results should weigh up that spatial mappings could not be the usual path at mental processing of tense.

Respect to grammatical categories, Mood seems to be the most important since when Mood was "IN" the other dimensions gave significant results in terms of preference. Opposite to it, when Mood was "OUT" any other dimension reported significant results (as shown in figure 5).



Figures 4: Preferred answers by dimension
IPI: Indicative Past Imperfect. IPP: Indicative Past Perfect. SP: Subjunctive Past

Indicative seems necessary for activating the metaphorical space-time mappings of tenses

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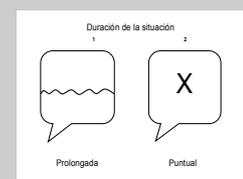


Figure 1: Introducing dimensions (Duration)

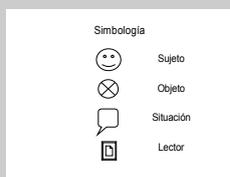


Figure 2: Laminated sheet

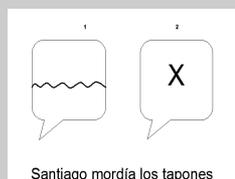


Figure 3: Task slide

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