Processing the experiencer role

There is ample processing evidence for agent and patient thematic roles, but evidence for the experiencer role is scarce (Rissman & Majid, 2019). Here, we investigate the processing correlates of the experiencer role in different argument structures and grammatical functions in Spanish.

The experiencer role can appear as a subject or as an object, presenting challenges within theories of argument structure. Psych verbs like *love* (i), and perceptual verbs like *observe* (ii) select a subject experiencer (experiencer-theme), whereas psych verbs like *frighten* (iii) select an object experiencer (agent-experiencer) (see Table 1) (Belletti & Rizzi, 1988; Levin, 1993; Pesetsky, 1995). Prior processing research has shown that argument structures with object experiencer (iii) entail larger processing costs than those with subject experiencer (i, and ii) in English (Do & Kaiser, 2021). Here, we present novel research in Spanish comparing all argument structures with experiencer role (i, ii, and iii) including a control condition with agent-theme argument structure, without experiencer role (iv).

The nature of thematic roles has been a matter of debate (Levin & Hovav, 2005). The thematic role list approach considers that thematic roles are discrete and unanalyzable categories (Fillmore, 1968; Gruber, 1965). By contrast, the feature decomposition approach characterizes thematic roles by entailments or features (Dowty, 1991; Reinhart, 2002; Rozwadowska, 1989). The first approach argues that the thematic roles agent, experiencer, and theme are discrete categories, whereas the second approach proposes that the experiencer role is characterized by the sentient feature, which is shared by agents (Dowty, 1991; Reinhart, 2002; Rozwadowska, 1989).

The thematic role list approach predicts that agent-experiencer argument structures (iii) do not entail larger processing costs than agent-theme (iv): agents, experiencers, and themes do not share any property. In contrast, the feature decomposition approach predicts that experiencers are closer to agents than to themes, due to its sentient feature. This entails a higher processing cost on agent-experiencer argument structures (iii) than on agent-theme, and experiencer-theme, because agents and experiencers share the same feature.

We conducted an eye-tracking reading task. 48 Spanish native speakers. Verbs were controlled by length and frequency. We created forty experimental sentences (normativized for naturality) with four different versions each, as a result of crossing: Verb Type (Psych vs. Non-psych) and Argument Structure (Experiencer-Theme vs. Agent-Theme/Experiencer) variables (see Table 1).

Results show that participants made more total fixation times on agent-experiencer (iii) than on agent-theme structures (iv) in the verb region [p=.004]; they also spent more time reading sentences with agent-experiencer (iii) compared to agent-theme (iv) [p=.004]. There are no significant differences between processing costs of sentences (i), (ii), and (iv)

These results provide evidence that not all argument structures with experiencer role involve the same processing correlates: just agent-experiencer structures (iii) involve higher processing costs compared to agent-theme (iv) or experiencer-theme (i, and ii). This evidence is compatible with the feature decomposition approach.

In the second experiment, we aim to look into the features of the subject of agent/cause-experiencer argument structures (iii). Agent/cause-experiencer argument structures can

have subjects with sentient, and cause features (iii) and subjects with only cause feature (v) (see Table 2). We test whether the number of features of the subject affects processing correlates of agent/cause-experiencer structures (iii, and v).

We conducted an eye-tracking reading task. 50 native speakers of Spanish. Verbs were controlled by length and frequency. We created forty experimental sentences (normativized for naturality) with four different versions each, as a result of crossing: Subject Type (Agent vs. Cause) and Object Type (Experiencer vs. Theme) (see Table 2).

Results show that participants made larger fixation times on agent/cause-experiencer argument structures (iii, and v) than on sentences without experiencer (iv, and vi) at the verb region [p=.0.25] independently of subject type (agent vs. cause). No subject type with object type interaction was found in any region/measure.

Results from both experiments are compatible with the feature decomposition approach. The experiencer role has the agent feature of sentient. Hence, argument structures, as agent/cause-experiencer (iii, and v), have two arguments with agent features, causing an increase in processing cost compared to structures in which only one of the arguments has agent features (i, ii, iv, vi).

Table 1. Examples of experimental sentence per conditions of experiment 1.

	Verb Type	Argument Structure Type	Subject Region	Verb Region	Object Region	Post-object Region	Last-word Region
(i)	Psych	Experiencer-Theme	La cantante	desea	al poeta	durante el recital de	poesía.
(ii)	Non-psych	Experiencer-Theme	La cantante	contempla	al poeta	durante el recital de	poesía.
(iii)	Psych	Agent-Experiencer	La cantante	enamora	al poeta	durante el recital de	poesía.
(iv)	Non-psych	Agent-Theme	La cantante	abandona	al poeta	durante el recital de	poesía.

The singer desires/ make fall in love/ contemplates / abandons the poet during the poetry recital.

Table 2. Examples of experimental sentence per conditions of experiment 2.

	Subject Type	Object Type	Subject Region	Verb Region	Object Region	Post-object Region	Last-word Region
(iii)	Agent	Experiencer	El marinero	preocupó	al vendedor	en el amplio puerto de	Bilbao.
(iv)	Agent	Theme	El marinero	golpeó	al vendedor	en el amplio puerto de	Bilbao.
(v)	Cause	Experiencer	El viento	preocupó	al vendedor	en el amplio puerto de	Bilbao.
(vi)	Cause	Theme	El viento	golpeó	al vendedor	en el amplio puerto de	Bilbao.

The sailor/the wind hit/worried the salesman in the large port of Bilbao.

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