

The processing of OR clauses in Spanish: Some evidence in favor of usage-based approaches

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Sentences with object relative (OR) clauses such as *The politician that the secretary called resigned* are difficult to process. This well-established phenomenon has been explained by different theories relying on structural or functional variables including working memory limitations, discourse/pragmatics and experience (Roland et al., 2012; Reali & Christiansen, 2007). However, when the embedded subject is a pronoun as in *The politician that we called resigned*, OR clauses become much easier to process. Such facilitation has been explained in terms of discourse expectations (Roland et al., 2012) or, in line with usage-based approaches, as a consequence of exposure to frequent pronominal OR constructions that may become automated into processing units that get easier to access (Reali & Christiansen, 2007). Here, we provide further evidence in favor of the latter, studying the use of OR clauses in Spanish.

Previous corpus analyses have shown that pronominal ORs are extremely frequent in English (Roland et al., 2012; Reali & Christiansen, 2007). Here, we analyzed a corpus of spoken Spanish (Marin, 1991), using around 200,000 words of transcriptions from radio broadcasts covering a wide range of topics. As in English, the overwhelming majority of ORs were pronominal (85% from a total of 564). Spanish allows more surface flexibility than English: embedded pronouns can be omitted because subject information is encoded in verb conjugation (e.g., optional *nosotros* in, *la persona que [nosotros] conocemos*), and, word order in OR clauses (verb-first/verb-final) is flexible. Importantly, despite flexibility there is no OR/SR ambiguity because different grammatical markers are used in each case. The corpus analysis revealed that pronouns are omitted in the majority of pronominal ORs (77%), and that, when present, pronouns occur in verb-final clauses 85% of the times. However, when the embedded subject is a full noun-phrase the pattern reverses: 70% of ORs are verb-first.

Second, we conducted two off-line rating tasks designed to investigate whether complexity ratings mirror the distributional patterns found. The first experiment showed that – consistent with statistics – pronominal ORs were rated easier when the embedded pronoun is omitted followed by verb-final pronominal ORs, while verb-first pronominal ORs were rated the most difficult ($F_1(2,34)=4.67$; $p=.02$). In a second experiment, we found that when the embedded subject is a full noun-phrase (e.g., *secretary* in our first example) the pattern was reversed: verb-first OR clauses were rated easier ($F_1(1,21)=8.22$; $p=.009$). Importantly, while consistent with the predictions of usage-based accounts, the results are hard to explain in terms of structural, working-memory or discourse factors. We conclude in favor of usage-based accounts, arguing that frequent pronominal OR constructions may become easier to access as a consequence of use.

References

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