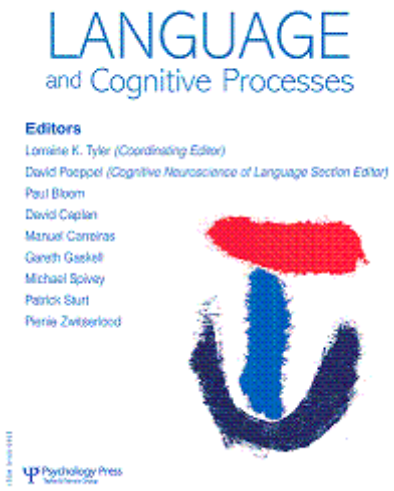

On the limits between grammatical and ungrammatical sentences: A response to Demestre

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On the limits between grammatical and ungrammatical sentences: A response to Demestre

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RUNNING HEAD: Response to Demestre

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Abstract

In this response to Demestre's comment, we first discuss the terms "legal" and "prohibited," applied to syntactic structures, stressing that there are boundaries in which the legality of certain constructions appears imprecise and is a matter of discussion. This coalesces with actual and daily use by native speakers of a language, who can normally cross the line between legality and illegality, giving support to the idea that syntactic rules are relatively more flexible than traditionally assumed. Thereafter, we raise the fact that Demestre has omitted important data present in our original paper that make his conclusions inapplicable to our paper.

Keywords: Syntax; word order; ERPs

Introduction

Science and, particularly, scientific practice, as any other human products, are neither error-free nor devoid of debates and different points of view. This can be illustrated with a very concrete and pertinent example for the matter of interest here—that is, the study of human language (particularly syntax) by means of ERPs. It has been asserted that left anterior negativities (LANs) can be observed only with outright syntactic violations but not with preference violations (Friederici, 2002). Presumed counterevidence (i.e., no LAN for outright violations) (e.g., Ainsworth-Darnell, Shulman, & Boland, 1998; Hagoort, Brown, & Groothusen, 1993; Münte, Szentkuti, Wieringa, Matzke, & Johannes, 1997; Osterhout & Nicol, 1999) has been viewed as a mistake committed by the authors of those studies, who considered syntactically legal but less frequent syntactic structures to be syntactic or morphosintactic errors (Friederici, 2002; Friederici & Weissenborn, 2007).

In the comment by Demestre, interestingly, we have the opposite situation: what we (Casado, Martín-Loeches, Muñoz, & Fernández-Frías, 2005) considered as legal but infrequent syntactic structures are now claimed to be outright violations. We thank Demestre for contributing to this debate, which is at the core of scientific practice, for choosing one of our studies as the target of his comment, and for giving us this opportunity to comment on his paper and the issues.

Demestre argues that our OVS sentences in the syntactic condition were actually ungrammatical sentences, for which the only option for the subjects was to detect and correct the syntactic anomaly, so that our results do not bear on issues concerning word-order variations. Demestre makes two arguments in support of his views. First, he presents several theoretical discussions on the obligatory nature of the marker “a” in Spanish for a definite animate direct object. Second, he presents the results of two

questionnaires. In them, the subjects were asked about the acceptability of our sentences and about which of the two NPs in our sentences was the agent of each sentence. Our OVS sentences were mostly considered to be unacceptable, and there was an overwhelming preference for assigning them an SVO order.

The theory

The existence of disagreement about what is and what is not a correct syntactical construction suggests that, in a number of cases, the rules appear to be straightforward concerning the grammaticality or ungrammaticality of an utterance. Demestre cites a number of authorities concerning the present case, this being an indication that the construction we are dealing with here is in itself a matter of discussion. Demestre himself mentions that the distribution of the Spanish object marker "a" has been discussed extensively in the literature *but is still not entirely understood*; he comments on the necessity for a-marking to indicate objecthood, but also states that this is so *under one account*. Unfortunately, Demestre does not discuss other accounts. Hence, what is "obligatory," according to Demestre, is indeed a matter of discussion, and the solution he provides is just one account.

At this point, it may be helpful to reflect on the term "obligatory" as it is applied to the construction of syntactic structures. For several languages, there are official institutions that determine what a "legal" construction is or is not. In Spanish, we have the Real Academia Española de la Lengua (RAE), a historical establishment, watching over the correct use of language, including grammar, and publishing periodically manuals concerning what is correct relative to specific features (lexicon, grammar, orthography, and so on) of the Spanish language. To determine whether a feature is correct or not, institutions and discussing authors usually apply criteria based on the real

use of the language by native speakers of that language. However, the results should be accepted with care.

First, the existence of successive editions of the manuals determining the "correct" grammar (the last one for Spanish was published in 2009: Real Academia Española & Asociación de Academias Americanas, 2009) indicates that the rules for the use of a given language change with time. Indeed, grammar or syntax appears to be relatively flexible. Syntax as the complete system we know today appears to be the result of the cultural evolution and conventions established by the speakers of a language (Heine & Kuteva, 2007)—speakers that have been using that language for centuries or millennia and modifying its rules without following authorities. Rather, authorities are those who must listen to the users.

Second, in the daily use of language, there may be large numbers of speakers speaking certain aspects of their proper language "incorrectly," according to both official manuals and experts' opinions. Examples for these situations abound in many languages, particularly in Spanish, and include many linguistic features (phonology, morphology, syntax). This would support the view that certain criteria are arbitrary, casting into doubt the validity of the terms "legal," "illegal," or "prohibited" for a number of constructions (see e.g., Bernárdez, 2004, for Spanish). This is reflected in the discussions among specialists and explains flagrant contradictions between authors in labeling certain sentences as correct or incorrect. The relevance of this subject is seen in current ongoing debates, where some authors propose the need for using quantitative methods (based e.g., on judgments by groups of naive subjects or the use of corpus-based materials) in establishing the correctness of syntactic and semantic constructions used in linguistic research (e.g., Gibson & Fedorenko, 2010, in press), whereas others in

turn stress the many limitations and problems of such proposals (e.g., Culicover & Jackendoff, 2010).

The data

Focalization and topicalization, among other informative functions, allow for a very large number of word order variations in Spanish, mostly in literature and especially in poetry (Real Academia Española & Asociación de Academias Americanas, 2009, p. 2971). The sentences in Casado et al. (2005) were constructed by native Spanish speakers (the authors) as focalized constructions, following a design for an ERP study that intended to determine the word order of the whole sentence by to a syntactic cue (contrasting with the semantic cue in the other condition), appearing as the 4th word of 5-word sentences. The sentences were judged by the authors to be very rare but admissible, at least in certain contexts. In the context of our experimental conditions, those sentences appeared to be clearly acceptable, and this was so not only for the authors but also (very importantly) for the participants in the study. Demestre neglected this crucial fact—namely, that the proportion of *errors* in assigning an OVS order to our "rare" OVS sentences by our subjects was 5% (range 0-11). The very high number of choices assigning an OVS order to our OVS sentences (95%) was numerically slightly higher than for our clearly "legal" SVO sentences (7% error, range 0-12). This result blatantly contrasts with the results of Questionnaire 2 in Demestre's comment, where 96.15 % of choices assigned an SVO order to our syntactic OVS sentences. The context was certainly not the same in both cases, supporting the relevance of context in the use of syntactic structures by speakers, consistent with the relative flexibility of the syntax discussed above.

Our participants performed a word-order task, not an acceptability one. Even if rare, the participants easily understood and utilized our syntactic cue, without overt instructions. The feedback given during the short training with 4 sentences of each type (SOV and OVS) was all that they needed. The ease with which our subjects understood and utilized our syntactic cues is an indication that, even if very rare, these cues act similarly to more frequent and definitely legal constructions in Spanish. In the worst case, in which our sentences were not on the "legal" side of the line, they would constitute a case of *artificial grammar*. Interestingly, no differences at all are found in ERPs between the use of "natural" and "artificial" grammars, such that even the "critical periods" for language acquisition have been disputed (Friederici, Steinhauer, & Pfeifer, 2002). In a similar vein, interestingly, although it is not the aim of the present discussion, we did not find a LAN at the disambiguation point—just the result that some authors (see our first paragraph) have claimed for infrequent but legal constructions.

The actual responses by our participants raise questions about the relevance of the responses to Demestre's Questionnaire 1. A preference for correcting the presumed ungrammaticality with an SVO interpretation ("Revision Option 1") cannot apply to our participants. We add that parsing preferences are affected by several factors. The Late Closure Principle, probably a more robust and universal preference than the Minimal Chain and the Minimal Revisions principles claimed by Demestre to be applicable to our sentences, has been shown to be flexible and varies, for instance, cross-linguistically (e.g., Cuetos & Mitchell, 1988). Preferences would appear, therefore, to be highly prone to contextual effects.

References

Ainsworth-Darnell, K., Shulman, H.G., & Boland, J.E. (1998). Dissociating brain responses to syntactic and semantic anomalies: evidence from event-related potentials. *Journal of Memory and Language, 38*, 112-130.

Bernárdez, E. (2004). *¿Qué Son las Lenguas?* Madrid: Alianza.

Casado, P., Martín-Loeches, M., Muñoz, F., & Fernández-Frías, C. (2005). Are semantic and syntactic cues inducing the same processes in the identification of word order? *Cognitive Brain Research, 24*, 526-543

Cuetos, F., & Mitchell, D.C. (1988). Cross-linguistic differences in parsing: restrictions on the use of the Late Closure strategy in Spanish. *Cognition, 30*, 73-105.

Culicover, P.W., & Jackendoff, R. (2010). Quantitative methods alone are not enough: Response to Gibson and Fedorenko. *Trends in Cognitive Sciences, 14*, 234-235.

Friederici, A.D. (2002). Towards a neural basis of auditory sentence processing. *Trends in Cognitive Sciences, 6*, 78-84.

Friederici, A.D., Steinhauer, K., Pfeifer, E. (2002). Brain signatures of artificial language processing: Evidence challenging the critical period hypothesis. *Proceedings of the National Academy of Sciences, 99*, 529-534.

Friederici, A.D., & Weissenborn, J. (2007). Mapping sentence form into meaning: The syntax-semantic interface. *Brain Research, 1146*, 50-58.

Gibson, E., & Fedorenko, E. (2010). Weak quantitative standards in linguistics research. *Trends in Cognitive Sciences, 14, 233-234.*

Gibson, E., & Fedorenko, E. (in press). The need for quantitative methods in syntax and semantics research. *Language and Cognitive Processes.* DOI: 10.1080/01690965.2010.515080.

Hagoort, P., Brown, C., & Groothusen, J. (1993). The syntactic positive shift (SPS) as an ERP measure of syntactic processing. *Language and Cognitive Processes, 8*, 439-483.

Real Academia Española & Asociación de Academias Americanas (2009). *Nueva Gramática de la Lengua Española*. Madrid: Espasa Calpe.

Münte, T., Szentkuti, A., Wieringa, B.M., Matzke, M., & Johannes, S. (1997). Human brain potentials to reading syntactic errors in sentences of different complexity. *Neuroscience Letters, 235*, 105-108.

Osterhout, L., & Nicol, J. (1999). On the distinctiveness, independence, and time course of the brain responses to syntactic and semantic anomalies. *Language and Cognitive Processes, 14*, 283-317.