

Gender and number agreement in comprehension in Spanish



J. Carlos Acuña-Fariña^{a,*}, Enrique Meseguer^b, Manuel Carreiras^{c,d,e}

^a *Department of English & German, University of Santiago de Compostela, Spain*

^b *Department of Experimental Psychology, University of La Laguna, Spain*

^c *Basque Center on Cognition, Brain and Language (BCBL), Donostia, Spain*

^d *IKERBASQUE, Basque Foundation for Science, Bilbao, Spain*

^e *Department of Basque Language and Communication, University of the Basque Country EHU/UPV, Bilbao, Spain*

Received 30 October 2012; received in revised form 28 January 2014; accepted 31 January 2014

Available online 13 March 2014

Abstract

An eye-tracking experiment examined the processing of gender and number agreement in the comprehension of subject–verb–adjective sentences in Spanish. We used complex subject NPs made up of two nouns of the sort which is known to cause frequent attraction/proximity concord mistakes in production (e.g. *the name of the boys are German). The effects showed that: (1) as in attraction errors in production, readers were sensitive to a locally-distracting noun in both the number and the gender conditions; (2) number mismatches produced much stronger effects than gender mismatches; (3) number and gender effects were found in very early measures, with gender effects occurring at the verb, even before the disambiguation point was reached, which seems harder to explain in unification (as opposed to copying) accounts of agreement processes; (4) no (semantic) distributivity effects were found in reading using the same materials as those in which distributivity effects were reported in production by Vigliocco et al. (1996a); (5) gender and number mismatches did not interact, although design features of our experiments might make this result artifactual, so this conclusion needs to be taken with care. We discuss this complex pattern of results, which is too nuanced to be fully explained by any existing model, and consider how it relates to linguistic theories which make heavy use of such notions as agreement heads and agreement phases. A key issue of our research is how 'porous' agreement processes are, that is, how much they are affected by semantic interfacing. We argue that rich-inflection languages contain such interfacing more than poor-inflection ones.

© 2014 Elsevier B.V. All rights reserved.

Keywords: Agreement; Attraction; Gender and number; Comprehension; Spanish

1. Introduction

Agreement phenomena pose a great challenge to processing systems. In Spanish, for instance, encoders and decoders must constantly monitor the word endings of almost all lexical and functional categories, as gender and number are marked on articles, demonstratives, possessives, adjectives, nouns, and participles. Verbs do not mark gender but they mark person, in addition to number. Thus, in a short clause such as *las pequeñas sillas blancas y altas están rotas* ('the small white and high chairs are broken') language users have 15 morphological features of gender, number and person to sort out. This amounts to processing one feature every 130 ms or so (which does not mean that every

* Corresponding author at: Departamento de Inglés y Alemán, Facultad de Filología, Universidad de Santiago de Compostela, Santiago, Coruña, Avda. Castelaio s/n 15782, Spain. Tel.: +34 986841549.

E-mail address: carlos.acuna.farina@usc.es (J.C. Acuña-Fariña).

morphological cue must be processed necessarily). Languages like English show that this morphological excess is, however, not necessary. It is no wonder then that complex agreement systems constitute, in principle, one of the quintessential cases of what some have defined as a clear case of the victory of the indexical nature of language over its iconic aspect, something not only non-iconic but seemingly meaningless (Jespersen, 1922:352 ff.; Corbett, 2006:274; Taylor, 2002:332 ff.). Given the fact that over 70% of the world's languages (including English) exhibit some form of agreement (Mallinson and Blake, 1981), such comments simply add to its mystery as a computational component of the language faculty and of the mind. Needless to say, agreement is very often *obviously* functional, needed to signal different syntactic relations among constituents. In the following Spanish examples, despite occupying the same place in the sentence structure, the predicative adjective that occurs last in it refers to adjacent *doctor* in (1a) but to distant *teacher* in (1b); only the gender inflection *o/a* guides the parser to the right meaning:

- (1a) El profesor escuchó a la doctora apática
The teacher listened to the apathetic doctor
 (1b) El profesor escuchó a la doctora apático.
The teacher listened apathetically to the doctor

From a psycholinguistic perspective, agreement has been widely investigated in the last two decades within the realm of production studies. This kind of research started with the seminal work of Bock and Miller (1991) and Bock and Cutting (1992) on English subject–verb ties (also Bock and Eberhard, 1993; Bock et al., 1999, 2001; Eberhard et al., 2005) and was soon extended to Italian (Vigliocco et al., 1995), Spanish (Vigliocco et al., 1996a), Dutch, French (Vigliocco et al., 1996b; Franck et al., 2008, among others) and other languages. In these studies, participants are typically presented with preambles which consist of complex noun phrases such as (2) below, and they are simply asked to repeat and complete them to form a full sentence by including a verb or a verb plus a predicate.

- (2a) The key to the cabinets... (IS PRETTY)
 (2b) The keys to the cabinet... (ARE PRETTY)

With such preambles speakers sometimes mistakenly make the number of the verb agree with the local or proximal noun ('cabinet-s') disrupting the agreement process (as in the classic example **the key to the cabinets are in the kitchen*). This phenomenon is known as *attraction* in experimental work, or as *proximity concord* in traditional grammar. It has been long documented by grammarians (Jespersen, 1924; Kimball and Aissen, 1971; Quirk et al., 1985; den Dikken, 2001) and it surfaces even in carefully-edited texts (Huddleston and Pullum, 2002:500–01). The former President of the United States, George Bush, illustrated it nicely: "... the illiteracy level of our children are appalling" (George Bush, Washington, 23 January 2004; see Corbett, 2006:223).¹

Here we provide an eye-tracking study of attraction in comprehension in Spanish. This is, to our knowledge, the first study of this kind in this language. We will evaluate: the role of morphological markedness in comprehension, where the first encoding cycle is not meaning but form (1.1), the merits of copying vs unification accounts in explaining semantic interference in agreement processes (1.2), and the features of gender and number (1.3). Attraction has been studied extensively, but most data come from the feature of number. The gist of our proposal is that agreement processes are sensitive to at least two factors which are only recently beginning to be understood: the first is that a strong morphological component blocks semantic interfacing, instead of making it more likely; and the second is that semantic interfacing is stronger in production than in comprehension due to the fact that in the former conceptual structure is activated necessarily before form enters the scene.

1.1. Markedness and morphology in comprehension

The first interesting aspect uncovered by research on attraction was that errors were asymmetric, much more likely to occur with singular-plural combinations than with the opposite setup: (2a) is much more disruptive than (2b) above (Bock and Miller, 1991; Bock and Cutting, 1992; Bock and Eberhard, 1993). Bock and Eberhard (1993) and Eberhard (1997) argue that the explanation for the agreement *error asymmetry effect* lies in the notion of feature *markedness*. In their view, in the abstract syntactic representation that drives all formal syntactic operations (including agreement), plural nouns carry

¹ Here are a few real examples from Bock and Miller (1991): **The cause of layoffs such as these are not the taxes*; **The time for fun and games are over*; **I don't think it much matters where the final reinterment of these men are*, **The learning skills people have entering college is less than it should be*; **The only generalization I would dare to make about our customers are that they're pierced*.

Download English Version:

<https://daneshyari.com/en/article/935507>

Download Persian Version:

<https://daneshyari.com/article/935507>

[Daneshyari.com](https://daneshyari.com)