

The Overt Pronoun Constraint Across Three Dialects of Spanish

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Abstract The overt pronoun constraint (OPC) states that, in null subject languages, overt pronoun subjects of embedded clauses cannot be bound by *wh*- or quantifier antecedents. Through the administration of two written questionnaires, we examined the OPC in 246 monolingual native speakers of three dialects of Spanish, spoken in Barranquilla (Colombia), Santiago (Chile), and Buenos Aires (Argentina). We tested separately the predictions that overt pronouns cannot be bound by *wh*- antecedents (Experiment 1) and that they cannot be bound by quantifier antecedents (Experiment 2). We found that the OPC was not operative in any of these dialects. In Experiment 1, the percentage of bound answers was approximately the same as the percentage of anaphoric answers. In Experiment 2, the percentage of bound answers was significantly higher than the percentage of anaphoric answers. Implications both for theories of pronoun resolution in null subject languages and for theories of first and second language acquisition are discussed.

Keywords Overt pronoun constraint · Null subject languages · Spanish · Pronoun resolution

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Introduction

Languages are classified as *null-subject* if their syntax permits sentences to lack an overt subject. For example, a Spanish sentence such as *viajó a Francia* [traveled to France] is acceptable because Spanish is a null subject language which allows for the omission of the subject pronoun. The agent subject *he/she* can be recovered thanks to the richness of the verbal morphology. In contrast, an English sentence such as *traveled to France* is unacceptable because English syntax requires for every finite clause to have an overt subject. Null subject languages like Spanish are thus said to contain both null and overt pronouns. In this study we challenge the generally accepted view that in null subject languages, overt pronouns cannot be bound by *wh*- or quantifier antecedents if a null pronoun can occur in the same position.

Ideally, overt and null pronouns would be in complementary distribution, such that their occurrence would be entirely predictable. Alternatively, they should have different meanings such that their distribution would be entirely contrastive. Unfortunately, neither situation is true. Overt pronouns can occur in most contexts where null pronouns are available, sometimes with the same meaning, sometimes adding a contrastive focus, and sometimes picking a different antecedent altogether. Null subject languages have so far resisted overly simplified formulas attempting to account for the use and distribution of null and overt pronouns.

Montalbetti (1984), however, presented a particular context in which an elegant formula can be provided: in the presence of a *wh*- antecedent or a quantifier antecedent, overt pronouns can only have one interpretation whereas null pronouns can have two. This constitutes an interesting case because it gives at least one environment in which the overt pronoun serves a crucial discourse function, namely, to avoid the ambiguity that its null counterpart would cause. Montalbetti described what he dubbed the overt pronoun constraint (OPC), such that an overt pronoun cannot receive a bound variable interpretation in contexts where its null counterpart could occur. In such situations, an overt pronoun cannot be linked to *wh*-antecedents or quantifier antecedents and can only receive an anaphoric interpretation. To clarify, and following Evans (1980), pronouns can function as anaphoric: *John_[i] loves his_[i] mother*, where the pronoun *his* is co referential with the referring expression *John*; but pronouns can also be function as bound variables: *every man loves his mother*, where the pronoun *his* is bound by the quantifier phrase *every man*, such that “for every *x*, such that *x* is a man, then *x* loves *x*’s mother”.

Specifically, this OPC predicts that in a Spanish question such as *¿quién cree que él va a ganar?* [who thinks that he will win?], the overt pronoun *él* [he] can only receive an anaphoric interpretation, that is, it must refer to one particular person mentioned earlier in the discourse or prominent in the situational context. The version with a null pronoun, *¿quién cree que va a ganar?* [who thinks that NULL will win?] can have that same anaphoric interpretation, but it can also receive a bound reading which can be paraphrased as *who thinks of himself as a possible winner?* Similarly, in a Spanish sentence such as *cada estudiante cree que él va a ganar* [each student thinks that he will win], the overt pronoun *él* [he] can only receive an anaphoric interpretation, that is, it must refer to a particular person. The bound interpretation whereby each student thinks of himself as a possible winner is not available. In the present study we examined the robustness of this OPC across three different dialects of Spanish.

The OPC has been offered as an argument that the same universal principles are operative in the acquisition of a first or a second language (L1 and L2, respectively). White (2003), for example, uses the OPC to show that this kind of constraint is not learnable, and that it can thus only be conceptualized as being hard-wired in the brain, a view which heavily relies on the assumption that some linguistic properties belong to a Universal Grammar (UG) as described

by Chomsky (1965, 1975, 1980, 1981, 1988, 1995, 2000, 2005). Indeed, one interesting fact about the acquisition of Spanish as an L2 by native speakers of English is that despite the fact that there is no overt/null alternation in their L1, they nevertheless appear to show sensitivity to the OPC in the L2 (Pérez-Leroux and Glass 1999). Similarly, Kanno (1997) found that native English speakers who were learning Japanese as an L2 also respected the OPC. This kind of evidence would show that L2 grammars are UG-constrained.

Because obedience to the OPC in L1 Spanish has generally been taken for granted (e.g., White 2003), little research has been done involving native speakers except as control subjects. Pérez-Leroux and Glass (1999) found that for control native speakers, all of whom were Spanish instructors, the percentage of production of overt pronouns in bound contexts was 13.7%. The explanation for this violation of the OPC was that some control participants were speakers of Caribbean Spanish, which the authors describe as a dialect noted for its higher rates of use of overt pronouns in subject position. It is unclear why the authors speak of Caribbean Spanish as one dialect when in fact it comprises different linguistic varieties including the Spanish spoken in Cuba, Puerto Rico, Dominican Republic, Panama, Venezuela, and the Caribbean coastal areas of Colombia. It is not true that all these dialects are equally characterized by a high incidence of overt pronouns (Flores-Ferrán 2002; Morales 1997).

One notable exception to the generalized assumption that the OPC is operative in L1 Spanish comes from Alonso-Ovalle et al. (2002), who examined native speakers' obedience to the OPC in Peninsular Spanish. They found that overt pronouns with quantifier antecedents had a bound variable interpretation 64% of the time. However, one major drawback of this study was that participants were required to answer a question which explicitly referred to the interpretation of the overt pronoun. Thus, the results from this study may have only reflected meta-linguistic operations and not the processes underlying pronoun resolution.

In short, it has generally been assumed that, for native speakers of null subject languages, overt pronouns cannot be bound by *wh*- or quantifier antecedents if a null pronoun can occur in that same position. This study challenges this assumption and offers an examination of the OPC in L1 Spanish. Because the OPC is a negative rule, that is, it predicts that a certain interpretation will not occur, these experiments were designed in a way that allowed readers to choose between an interpretation that was compatible with this constraint or an interpretation that contradicted it.

As pronoun use has been shown to have some degree of variation across different dialects of Spanish (Cameron 1992; Flores-Ferrán 2002; Lipski 1994; Morales 1997), we included participants from three different Spanish-speaking countries: Colombia, Chile, and Argentina. Disobedience to the OPC in only one dialect, as mentioned above with respect to the so called "Caribbean Spanish", could be taken as an exception to the OPC rule. Disobedience to the OPC in several different Spanish dialects can probably be taken as a serious challenge to the idea that the OPC exists at all.

It should be noted that in Montalbetti's view, *wh*- words and quantifiers are treated as instances of the same category. Montalbetti uses Higginbotham's (1983) definition of formal variables as empty categories in argument positions and linked to a lexical operator in a non-argument position. By this definition, traces of *wh*- movement and traces of quantifier raising qualify as formal variables, and, in this sense, one would expect them to behave similarly. However, Montalbetti's position seems to be based on a fallacious argument, for he claims that if *wh*- traces are formal variables, then the OPC must apply, and he also argues that if the OPC applies, then *wh*- traces ought to be considered formal variables. Thus, one of the reasons why we designed two different experiments was to step aside from Montalbetti's

circular logic whereby if *wh*- traces are formal variables, then the OPC applies and if the OPC applies, then *wh*- traces qualify as formal variables.

In addition, the identification of these two kinds of words is not in itself obvious since *wh*- words and quantifiers serve two distinct pragmatic functions: to form questions and to establish restrictions on the domain of reference, respectively. Hence, even if traces of *wh*- movement and traces of quantifier raising might be argued to have the same syntactic function, the communicative value of these two kinds of words is very different. If pronoun resolution is not merely a result of structural configuration (and there is evidence that this is indeed the case), then one might expect these two kinds of words to behave differently in spite of their syntactic similarity. In this respect, Reinhart (1983a, b) argues that only one type of pronominal co-reference (variable binding) is syntactically determined. Heim (1998) further argues that other types of semantic relationships, such as, the one that holds between two referring nominal expressions, are neither licensed nor ruled out by syntax.

Thus, in this study we departed from Montalbetti's view and assumed no *a priori* reason to treat *wh*- words and quantifiers as instances of the same category. Therefore, we designed two separate experiments in which overt pronouns could reasonably be read as either bound or anaphoric. In Experiment 1, overt pronouns were embedded in interrogative sentences to test for the OPC with *wh*- antecedents. In Experiment 2, overt pronouns were embedded in declarative sentences to test for the OPC with quantifier antecedents. For both experiments we expected that overt pronouns would create ambiguous sentences, that is, we predicted that both bound and anaphoric interpretations would be possible for native speakers. In short, we hypothesized that there is no OPC in L1 Spanish.

Material and Methods

Participants

The sample was composed of 115 participants in Experiment 1 and 131 participants in Experiment 2, all recruited from Barranquilla (Colombia), Santiago (Chile) and Buenos Aires (Argentina). Table 1 provides a summary of the characteristics of the participants. In both experiments, the groups were matched for gender [Exp 1: $\chi^2 = 0.51$, $df = 2$, $p = .10$; Exp 2: $\chi^2 = 0.96$, $df = 2$, $p = .61$], age [Exp 1: $F(2, 112) = 2.03$, $p = .13$; Exp 2: $F(2, 127) = 2.23$, $p = .11$], and educational level [Exp 1: $F(2, 110) = 0.02$, $p = .97$; Exp 2: $F(2, 128) = 1.69$, $p = .18$]. All institutions in which the study was performed approved the research. All participants gave signed, voluntary consent in accordance with the Declaration of Helsinki.

Materials

In both experiments participants were given a written questionnaire with instructions to complete the tasks. Instructions were also read aloud by the experimenter.

Experiment 1

A set of 20 experimental items was constructed (see Appendix 1). Each item consisted of a context and a question containing an overt pronoun and a *wh*- antecedent. Participants were required to choose one of two available answers (forced-choice task). They were also

Table 1 Demographic characteristics of participants in Experiments 1 and 2

Country	Colombia	Chile	Argentina	Between-group comparison
Experiment 1	(n = 43)	(n = 41)	(n = 31)	
Gender (female)	13 (27)	16 (25)	5 (26)	n.s.
Age (SD)	23.62 (0.73)	24.75 (0.75)	23.74 (0.86)	n.s.
Educational level (SD)	15.01 (0.55)	15.17 (0.44)	15.16 (0.50)	n.s.
Experiment 2	(n = 45)	(n = 58)	(n = 28)	
Gender (female)	8 (43)	13 (43)	4 (24)	n.s.
Age (SD)	22.15 (0.88)	24.01 (0.79)	21.35 (1.12)	n.s.
Educational level (SD)	13.33 (0.29)	14.2 (0.53)	13.35 (0.37)	n.s.

asked to give a confidence rating on a scale from 1 (minimum confidence) to 10 (maximum confidence).

Sample Item

Context

Ninguna actriz admitió haberse equivocado durante la función. Un actor admitió que la directora se equivocó al no estar presente en el ensayo general. [No actress admitted having made a mistake during the performance. An actor admitted that the female director had made a mistake by not being present at the dress rehearsal]

Question

¿Quién admitió que ella cometió una equivocación? [Who admitted that she made a mistake?]

Answer

- (a) Un actor. [An actor]
- (b) Nadie. [Nobody]

In this sample item, answer (a) implies that the overt pronoun *ella* [she] in the question was taken to mean “the female director” and the pronoun had an anaphoric interpretation, compatible with the OPC. In contrast, answer (b) implies that the overt pronoun *ella* [she] in the question was interpreted as being bound by the *wh*- word, against the OPC. It should be noted that both interpretations are equally available. A set of 20 unambiguous filler items was also constructed. Half of these control items had (a) answers, and half of them had (b) answers. The inclusion of control items was important for several reasons. First, it helped us mask the purpose of the experiment. Second, it was a measure that the participant was paying attention to the task. Third, it allowed us to argue against a possible default bias for (a) or (b) answers. Fourth, it gave us a baseline for comparison with experimental items.

The independent variables both for the forced-choice task and for the confidence rating task were: valence, pronoun gender, and group. “Valence” referred to the contrast between affirmative and negative contexts: *every actress/no actress admitted having made a mistake during the performance*. The importance of this manipulation is that quantifier phrases of the form “every x” might be argued to have referential properties whereas quantifier phrases of the form “no x” cannot possibly be said to be referential. We hypothesized that because pronouns usually refer back to R-expressions, there might be a stronger preference for anaphoric reading in affirmative than in negative contexts. In addition, we manipulated the gender of the pronoun: conventionally, it is customary to use masculine and feminine pronouns to

establish whether this causes a difference. In Spanish, this is particularly relevant for another reason: the masculine pronoun *él* is identical in phonological form and spelling (except for the accentual diacritic) to the definite article *el*. The feminine pronoun *ella* is very different in pronunciation and spelling from its corresponding definite article *la*. Because these are reading experiments, this difference might have an impact on the resolution of pronouns. If we had used only masculine pronouns, the similarity between pronouns and articles might have counted as a possible confounding effect. Finally, the group referred to the participant's regional dialect: Barranquilla (Colombia), Santiago (Chile), and Buenos Aires (Argentina). It should be noted that these dialects are not in contact.

Experiment 2

A set of 20 experimental items was constructed (see Appendix 2). Each item consisted of a context and a sentence containing an overt pronoun and a quantifier. Participants were asked to judge whether the sentence was true or false with respect to the preceding context (forced-choice task). They were also asked to give a confidence rating on a scale from 1 (minimum confidence) to 10 (maximum confidence).

Sample Item

Context

Ningún jugador del equipo reconoció haber fallado. Un jugador reconoció que el técnico había fallado en su trabajo. [No player on the team admitted making a mistake. One player admitted that the coach had made a mistake].

Sentence

Ningún jugador reconoció que él había fallado. [No player admitted that he had made a mistake]

Answer: True or False?

In the example above, a bound interpretation of the overt pronoun would make the sentence true: it is true that no player considered that he himself had made a mistake, as indicated in the context. Crucially, an anaphoric interpretation is also available but it would make the sentence false, since there was indeed one player who admitted that *he*, the coach, (morphologically marked for masculine gender in Spanish) had made a mistake. It should be noted that both interpretations are equally available in the context. The fact that participants had to answer true or false to the sentences allowed us to avoid explicit questions about the interpretation of the pronouns. A set of 20 unambiguous filler items was also constructed. Half of these control items had “true” answers, and half of them had “false” answers. The inclusion of control items was important for several reasons. First, it helped us mask the purpose of the experiment. Second, it was a measure that the participant was paying attention to the task. Third, it allowed us to argue against a possible default bias for “true” answers. Fourth, it gave us a baseline for comparison with experimental items.

The independent variables both for the forced-choice task and for the confidence rating task were: valence, pronoun gender, and group. Similarly to Experiment 1, valence referred to the type of quantifier which could be either affirmative or negative. The gender of the pronoun could be either masculine or feminine. The group referred to the participant's regional dialect: Barranquilla (Colombia), Santiago (Chile), or Buenos Aires (Argentina).

Analysis

The data were analyzed using Statistica software. Gender differences were assessed with χ^2 . In both experiments, we analyzed the proportion of choices (percentage of classification

of each category) with repeated measures ANOVAS. This strategy is commonly used in different forced-choice tasks, including non-linguistic decision making (Grecucci et al. 2014), emotional categorization (Ibanez et al. 2014), moral categorization (Escobar et al. 2014), and, within the language domain, word segmentation (Spinelli et al. 2010) and auditory speech identification (Bertelson et al. 2003). Note that although the participants' responses involved categorical choices ("a" or "b" decisions), we calculated the percentage of classification (trial-by-trial) for each category. This procedure allowed us to reduce within-subject variance, adjust for multiple comparisons, and construct a combined a parametric design. With this design, we analyzed our two main measures (choice and confidence), three possible categories (bound, anaphoric, and fillers), and additional within-subject factors (see below).

Results

The data were analyzed using Statistica software. Repeated measures ANOVA and χ^2 were used as tests of independence. For both experiments we considered two measures: (a) the forced-choice task: the participant's choices (percentage of classification), and (b) the confidence rates: the participant's self-assessment of the degree of certainty of his or her response in a rating of percentage scale: 1 = minimum confidence; 10 = maximum confidence).

First, in order to evaluate the differences between participants' choices of experimental stimuli (as bound and as anaphoric) and control stimuli (fillers) in both experiments, we compared the choice task and confidence rates for the three possible categories (bound, anaphoric, and fillers).

Second, in order to evaluate whether the gender of the pronoun and the valence influenced the participants' choices, we included the following within-subject factors in a second analysis of experimental stimuli: valence (affirmative, negative) and pronoun gender (masculine, feminine).

For all analyses, we included a between-subject factor (Group) with 3 levels (Colombia, Chile and Argentina). For pairwise comparisons, Tukey's HSD post hoc tests were performed. To determine the relevance of the relationships, we calculated effect sizes using eta-squared (η^2 , where 0.01 ~ small; 0.06 ~ medium; 0.14 ~ large). The calculation of effect sizes allows the assessment of the magnitude of relationships beyond the mere reporting of p values, which only specify the existence of statistically significant relationships.

Experiment 1

Bound, Anaphoric, and Fillers

Forced-Choice Task

A main effect of choice [$F(2, 256) = 67.56, p < .0001, \eta^2 = 0.34$] followed by post hoc comparisons (Tukey HSD, $MSE = 1189.0, df = 256.00$) evidenced that correctly classified fillers yielded the highest percentage compared with bound ($p < .001$) and anaphoric ($p < .001$) answers. No differences between bound and anaphoric answers were observed (see Fig. 1a). No interaction of choice and group was observed.

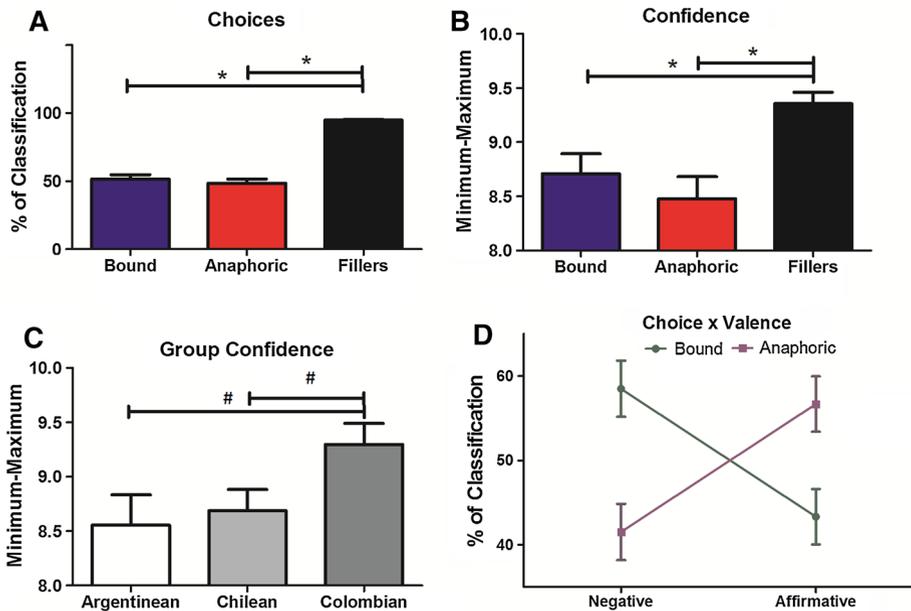


Fig. 1 Results of Experiment 1. **a** Main effect of percentage of choice revealing no differences between bound and anaphoric choices. Only control items elicited a higher classification compared to experimental stimuli. **b** Confidence ratings. Similar effects as choice (**a**) were observed for confidence ratings (**b**), evidencing higher confidence levels for control items but no differences between bound and anaphoric classifications. **c** Group differences showing Colombian dialect presented a trend toward higher confidence levels than Chilean and Argentinean in all categories (indicated by #). **d** Significant interaction between choice and valence yielding significant differences between experimental stimuli (bound > anaphoric) in the negative condition

Confidence Rates

A main effect of confidence rates [$F(2, 196) = 11.45, p < .001; \eta^2 = 0.10$] followed by post hoc comparisons (Tukey HSD, $MSE = 1.6414, df = 196$) confirmed that fillers yielded higher confidence rates than bound ($p < .05$) and anaphoric ($p < .001$) answers. No other effect was observed (Fig. 1b). Group presented a small but significant effect [$F(2, 98) = 3.44, p = .03, \eta^2 = 0.06$] and post hoc analyses (Fig. 1c) revealed that the Colombian group presented a trend toward higher rates of confidence relative to the Argentinean ($p < .07$) and Chilean groups ($p < .07$).

Interactions with Pronoun Gender and Sentence Valence

Forced-Choice Task

An interaction between choice and valence [$F(1, 121) = 64.65, p < .0001, \eta^2 = 0.34$] was observed. Post hoc comparisons (Tukey HSD, $MSE = 1.8743, df = 187$) showed that only in the negative condition was the choice of bound significantly higher than the anaphoric one ($p < 0.005$). See Fig. 1d. No group differences were observed.

Confidence Rates

No differences were observed regarding valence, gender of the pronoun or group effects.

Experiment 2

Bound, Anaphoric, and Fillers

Forced-Choice Task

A main effect of choice [$F(2, 226) = 89.37, p < .001, \eta^2 = 0.44$] followed by post hoc comparisons (Tukey HSD, $MSE = 1096, df = 226$) evidenced that the percentage of anaphoric answers was significantly lower than the percentage of bound answers ($p < .001$) and correctly classified fillers ($p < .001$). The percentage of bound answers was also lower than correctly classified fillers ($p < .001$). No interaction with Group was observed. See Fig. 2a.

Confidence Rates

A main effect of confidence rates [$F(2, 172) = 4.39, p = .01, \eta^2 = 0.04$] followed by post hoc comparisons (Tukey HSD, $MSE = 1.66, df = 172$) confirmed that anaphoric answers yielded lower confidence rates than fillers ($p < .001$). No other effect was observed. No interaction with Group was observed. See Fig. 2b.

Interactions with Pronoun Gender and Sentence Valence

Forced-Choice Task

An interaction between choice and valence [$F(1, 121) = 64.65, p < .001; \eta^2 = 0.11$] followed by a post hoc analysis (Tukey HSD, $MSE = 752.08, df = 113$) evidenced that the choice difference (bound > anaphoric; $p < .001$) in affirmative sentences was higher than in negative sentences ($p < .05$, Fig. 2c).

Finally, another interaction of choice and gender was observed [$F(1, 113) = 8.21, p < .01, \eta^2 = 0.09$]. Post hoc comparisons (Tukey HSD, $MSE = 669.15, df = 113$) evidenced that feminine pronouns elicited larger differences (bound > anaphoric; $p < .001$) than masculine pronouns ($p < .05$). No differences among groups or group interactions were observed (Fig. 2d).

Confidence Rates

No significant effects of valence, gender or group were observed.

Discussion

To the best of our knowledge, this is the first study that examines the OPC across three different dialects of Spanish, with a large number of native participants, and with a task that does not explicitly ask for the interpretation of the overt pronoun. Overall, in both experiments the OPC was shown to be inoperative. Native speakers of Barranquilla, Santiago, and Buenos Aires completed the required tasks from Experiment 1 and 2 in ways that are clearly incompatible with the predictions of the OPC. Participants produced a large number of answers in which the overt pronoun was bound by a *wh*-antecedent or a quantifier antecedent. Importantly, we found no significant differences among the three different dialects studied. These results strongly suggest that there simply is no OPC in these dialects of Spanish, at least for the kind of passages that we studied. Importantly, because these are not dialects in contact, the uniformity of the results obtained in the experiments cannot be attributed to mutual influences.

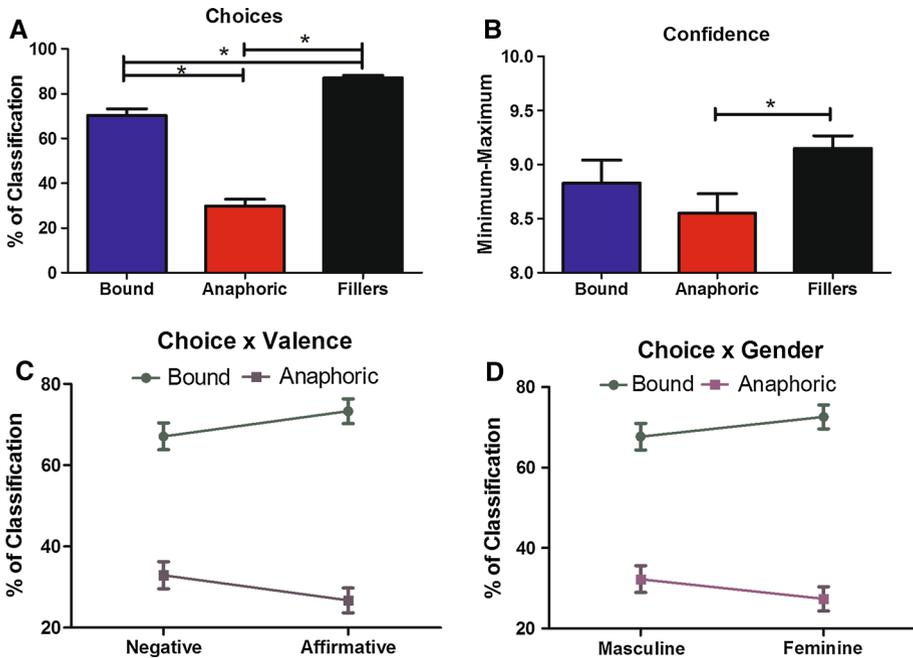


Fig. 2 Results of Experiment 2. **a** Main effect of percentage of choice indicating that there were significantly fewer anaphoric than bound answers. **b** Confidence ratings. Only anaphoric classifications were lower than fillers. No difference between fillers and bound stimuli was observed. **c** Significant interaction between choice and valence in the percentage of choice. There were more bound than anaphoric answers in both types of valence, but this difference was higher for affirmative sentences. **d** Significant interaction between choice and gender in the percentage of choice. There were more bound than anaphoric answers, in both types of grammatical gender, but this difference was higher for feminine pronouns

Specific Effects in Both Experiments

In Experiment 1, the percentage of answers in which the overt pronoun was interpreted as anaphoric did not significantly differ from the percentage of answers in which the overt pronoun was interpreted as bound by the *wh*- antecedent. This indicates that this kind of interrogative sentence is in fact ambiguous, with both anaphoric and bound interpretations being acceptable for native speakers. In addition, there was no difference between the confidence ratings of anaphoric and bound answers. These results clearly suggest that questions containing an overt pronoun and a *wh*- antecedent are ambiguous and that both anaphoric and bound readings of the overt pronoun are possible, against the prediction of the OPC.

In Experiment 2, the percentage of answers in which the overt pronoun was interpreted as being bound by the quantifier antecedent was significantly larger than the percentage of answers in which the overt pronoun was read anaphorically. This result is surprising because not only does it show that the OPC is inoperative, but it also may suggest that the OPC works backwards, facilitating a bound reading relative to an anaphoric reading with quantifier antecedents. The confidence ratings, which allowed participants to measure and quantify their own answers, were also lower for anaphoric (but not for bound) than for control items. Overall, similarly to Experiment 1, these results indicate that the OPC is inoperative in these dialects of Spanish.

There are, at least, three possible explanations for the relatively smaller number of bound answers in Experiment 1 than in Experiment 2. First, in Experiment 1, the question contained the singular form of the Spanish interrogative pronoun *quién* [who]. In affirmative contexts, the answer could be a certain singular person for anaphoric answers, or the plural quantifier “all” for bound answers. Because the question was in the singular form, this may have favored singular anaphoric answers. For negative contexts this problem did not arise, because the bound option was represented by the negative quantifier *nadie* [nobody], which is singular. Support for this explanation comes from the fact that there were more bound answers for negative contexts than for affirmative contexts in Experiment 1.

The second possible explanation for the difference between the two experiments is that *wh*- antecedents and quantifier antecedents are not instances of one same category. It may be the case that, regardless of syntactic similarity, native speakers treat these two types of words as different, and, accordingly, the resolution of overt pronouns with one or other type of antecedent takes different paths. It may also be that even if syntactic theory is right in treating both kinds of words as belonging to the same category, the process of pronoun resolution, which has been shown to be affected by other factors besides syntax, treats questions with overt pronouns and *wh*- antecedents as different from sentences with overt pronouns and quantifier antecedents.

A third possible explanation is that, in Experiment 2, participants might have been influenced by a default preference for “true” answers, which were associated with a bound interpretation. This may have been responsible for the higher number of bound answers. However, it should be noted that 50% of control items required “true” answers and 50% required “false” answers, and no default preference for “true” answer was observed.

Additional Effects

The following two unexpected results should be noted. In Experiment 1, there was a trend for the Colombian group to show higher confidence levels than both the Argentinean and the Chilean group. We cannot provide an explanation for this result but it is possible that this might be an extra-linguistic effect. Importantly, this difference in the confidence levels among groups did not affect the forced-choice task, where all three groups answered in a similar fashion.

In Experiment 2, an unexpected result was that the difference between bound and anaphoric answers was larger for feminine than for masculine pronouns. It is possible that the similarity between the third person singular masculine pronoun (*él*) and its corresponding definite article (*el*) might count as a possible confounding effect, reducing the distance between bound and anaphoric interpretations. Although counter intuitive, it could also be that feminine and masculine pronouns in these particular environments behave slightly differently. Strikingly, neither [Alonso-Ovalle et al. \(2002\)](#) nor [Pérez-Leroux and Glass \(1999\)](#) manipulated the gender of the pronoun, so this unexpected result is noteworthy and should be further studied.

Relevance

The OPC has been used as an argument to show the involvement of UG in L1 acquisition (e.g., [White 2003](#)). The argument is that in the acquisition of a null subject language it is quite implausible that the child would have received the relevant data to learn the OPC. It should be noted that sentences containing overt pronouns and *wh*- words or quantifiers are uncontroversially grammatical. What was considered to be ungrammatical was only the interpretation whereby those overt pronouns receive a bound reading. It is very unlikely that

in the process of acquisition the child would have received negative evidence, that is, explicit information about the purportedly ungrammatical nature of such bound interpretation (Brown and Hanlon 1970). The OPC was therefore presented as an innate principle of UG.

In addition, the OPC has been used to show the involvement of UG in L2 acquisition (Kanno 1997; Pérez-Leroux and Glass 1999; White 2003). As proof that this process is guided by UG, one should demonstrate that L2 learners display knowledge of linguistic properties which could have been neither learnt from the L2 input, nor derived from the grammar of their L1, nor explicitly learnt from formal instruction. The OPC was thus presented as an ideal candidate to examine the role of UG in the development of a non-native or interlanguage grammar, that is, the rule-governed emerging linguistic system of L2 learners (Adjemian 1976; Corder 1981; Selinker 1972). The acquisition of L2 Spanish by native speakers of English appeared to satisfy these conditions. The obedience to the OPC in L2 acquisition thus seemed to provide strong support for the claim that interlanguage grammars are UG constrained.

The present study suggests that there is no OPC in L1 Spanish. Native speakers of three different dialects of Spanish link overt pronouns to *wh*- antecedents and quantifier antecedents against the predictions of the OPC. Therefore, since native speakers of Spanish do not obey the OPC, our study seriously challenges the argument that obedience to the OPC in L2 Spanish proves that interlanguage grammars are UG-constrained.

In this sense, our findings also raise questions of interest for leading proposals in the field, such as the Interface Hypothesis (Sorace 2011; Sorace and Filiaci 2006). Research within this framework shows that null pronouns are similarly acceptable for various types of speakers and language pairs. Instead, overt pronouns which take a subject as their antecedent tend to be over-accepted by bilinguals who speak a null-subject L1 and a non-null-subject L2. Since native speakers favor null pronouns in those contexts, it has been proposed that bilinguals may be unable to fully acquire properties operating at the interface between syntax and other cognitive domains. The overuse of overt pronouns could thus reflect a preference for less demanding processing operations at the expense of redundancy. Here we have shown that bound and anaphoric interpretations of overt pronouns with *wh*- or quantifier antecedents are similarly probable. It would be interesting to explore whether this distribution changes in non-native users of Spanish, and whether such an effect varies depending on the null-subject/non-null-subject status of their L1. Such evidence would shed light on interface-level cross-linguistic transfer and, more generally, on the proposed role of UG in L2 acquisition. Preliminarily, our results indicate that the OPC should not be used as an argument to prove the involvement of UG in either L1 or L2 acquisition.

Limitations and Further Research

One limitation of the present study is the offline nature of the task. Both experiments involved forced-choice judgment tasks, which could be argued to be tapping into decision processes rather than the underlying pronoun resolution processes. It should be noted, however, that no offline measure has been shown to make native speakers judge ungrammatical sentences as grammatical. In addition, one advantage of this study is that participants were not explicitly asked about the interpretation of the overt pronouns. Yet, the results from this study could be strengthened by more online measures such as reading times or eye tracking.

The current study also leaves some open questions. Our results suggest that feminine pronouns favor bound readings even more than masculine pronouns. In addition, valence appears to differentially affect linguistic contexts with *wh*- and quantifier antecedents. However, the

relative weight of these two factors (valence and pronoun gender) on pronoun resolution should be further studied.

Future studies should also include null pronouns. The decision to exclude this type of pronouns in this study was based on the understanding that the OPC makes no prediction whatsoever with respect to null pronouns. However, our knowledge of the binding properties of pronouns in null subject language would be extended if both kinds of pronouns were included.

Finally, this research ought to be extended to other dialects of Spanish, including varieties where the use of overt pronouns is relatively higher, such as Puerto Rican and US Spanish. Our expectation is that in these dialects the OPC should be even less operative since the presence of overt pronouns coreferring with antecedents in subject position is frequent in these dialects (Flores-Ferrán 2002).

Conclusions

The main conclusion from this study is that there appears to be no OPC in Spanish. This means that for native speakers of Spanish, *wh*- questions and sentences with quantifiers do not make overt pronouns unambiguously anaphoric. The fact that we tested this across three rather distant dialects gives strong support for the conclusion that, at least for the kind of passages studied in these experiments, there is no OPC for native speakers of Spanish. These results are in line with Alonso-Ovalle et al. (2002), who found that the OPC was also not operative in Madrid Spanish. The results from the current study are even more convincing because of the large number of monolingual native speakers, the non explicit nature of the task, and the cross dialectal convergence.

Our results are also in line with Larson and Luján (1989) and Luján (1999), who observed that overt subject pronouns in Spanish can receive a bound variable interpretation, against the OPC. Furthermore, their claim that Spanish null and overt pronouns are analogous to English unstressed and stressed pronouns also supports our results, since focused pronouns in English can perfectly receive a bound variable interpretation (and so can overt pronouns in Spanish).

In addition, our results should be placed within the broader context of studies on pronoun resolution in null subject languages. It appears that the very specific environment of the OPC is finally very similar to typical instances of the overt/null pronominal alternation: both kinds of pronouns are equally possible and render grammatical sentences, although native speakers might process sentences containing one type of pronoun faster than the other one. This kind of processing advantage or delay, however, seems to depend on a number of structural and pragmatic variables and not on just one specific syntactic factor (Gelormini-Lezama and Almor 2011, 2013).

In sum, together with previous studies on pronoun resolution, this study shows that simplistic configurational rules fail to make the right predictions about the use and distribution of overt and null pronouns in null subject languages. Rather, it seems that pronoun resolution is a more complex process that is affected by several factors that do not exclude the syntactic configuration of the pronoun and its antecedent (Camacho 2011; Crawley et al. 1990; Chambers and Smyth 1998; Frederiksen 1981), but which also include discourse pragmatic principles (Almor 1999; Ariel 1990), related memory processes (Almor 1999; Gernsbacher 1989; Sanford and Garrod 1981), and language specific preferences (Baumann et al. 2011; Hemforth et al. 2010). To conclude, the evidence collected to date suggests that the resolution

of null and overt pronouns in null subject languages is affected by the complex and dynamic interaction of the same variety of factors that affect pronoun resolution in general.

Appendix 1

1. Ningún periodista dijo haber hablado con los sospechosos antes del juicio. Una locutora de canal 8 dijo que el juez sí había hablado con los sospechosos. [*No journalist admitted to speaking with the suspects before the trial. A female newscaster from Channel 8 said that the judge had spoken with the suspects.*]

¿Quién dijo que él había hablado con los sospechosos? [*Who said that he had spoken with the suspects?*]

 - (a) Nadie. [*Nobody.*]
 - (b) Una locutora de canal 8. [*A female newscaster from Channel 8.*]

2. Un grupo de alumnas están conversando sobre la maratón que disputarán al día siguiente. Cada una de las alumnas declara en algún momento: “Yo ganaré la maratón”. El profesor dice: “Yo creo que la que va a ganar es Micaela”. [*A group of female students are discussing the marathon that will take place tomorrow. Each one declares at some point, “I will win the marathon.” Their professor says, “I believe that Michelle will be the winner.*]

¿Quién cree que ella ganará la maratón? [*Who thinks that she will win the marathon?*]

 - (a) Todas las alumnas. [*All female students.*]
 - (b) El profesor. [*The professor.*]

3. Ninguna actriz admitió haberse equivocado durante la función. Un actor admitió que la directora se equivocó al no estar presente en el ensayo general. [*No actress admitted to having made a mistake during the performance. An actor admitted that the female director had made a mistake by not being present at the rehearsal.*]

¿Quién admitió que ella cometió una equivocación? [*Who admitted that she had made a mistake?*]

 - (c) Un actor. [*An actor.*]
 - (d) Nadie. [*Nobody.*]

4. En una fiesta infantil las niñas quieren llevarse el premio de una rifa de un oso de peluche. Cada una de las niñas piensa: “yo me llevaré el premio”. El papá de Marcela grita: “Yo pienso que la que se va a llevar el premio es Marcela”. [*At a birthday party, all of the girls want to win the teddy bear raffle. Each one of the girls thinks, “I will win the prize.” Marcela’s father says, “I think that the prize will go to Marcela.”*]

¿Quién piensa que ella se llevará el premio? [*Who thinks that she will win the prize?*]

 - (a) El papá de Marcela. [*Marcela’s father.*]
 - (b) Todas las niñas. [*All of the girls.*]

5. Ningún estudiante creyó ser responsable de la pelea en el colegio. Una secretariacreyó que el responsable fue el director. [*No student admitted to being responsible for the school fight. A secretary thought that the male director was responsible.*]

¿Quién creyó que él fue el responsable de la pelea en el colegio? [*Who thought that he was responsible for the school fight.*]

- (a) Nadie. [*Nobody.*]
(b) Una secretaria. [*A secretary.*]
6. Un grupo de hombres de negocios, que incluía ingenieros, economistas y abogados discuten un proyecto para ganar mucho dinero. Cada uno de ellos dice: “yo participaré del proyecto”. Una secretaria dice: “Del proyecto también participará el presidente del colegio de ingenieros”. [*A group of businessmen, including engineers, economists, and lawyers, discuss a project which could earn a lot of money. Each one of them says, “I will participate in the project.” A secretary says, “The president of the college of engineering will also participate.”*]
¿Quién dijo que él participará del proyecto? [*Who says that he will participate in the project?*]
(a) Todos los hombres de negocio. [*All of the businessmen.*]
(b) Una secretaria. [*A secretary.*]
7. Ningún bombero aceptó su culpa en el fracaso del operativo. La supervisora aceptó que el director general de bomberos era culpable. [*No fireman accepted the guilt in the failure of the mission. The female supervisor believed that the male director was guilty.*]
¿Quién aceptó que él era culpable? [*Who thought that he was guilty?*]
(a) La supervisora. [*The female supervisor.*]
(b) Nadie. [*Nobody.*]
8. En un equipo femenino de hockey se produce una discusión acerca de quién será la nueva capitana del equipo. Cada una de las chicas presiente que será la elegida. El profesor de gimnasia presiente que la elegida será María Luz. [*On a female hockey team, discussion arose as to who would be the new captain of the team. Each one of the girls was confident about being chosen. The gym teacher felt that Mary Luz would be picked.*]
¿Quién presiente que ella será elegida capitana? [*Who thinks that she will be elected captain?*]
(a) Todas las chicas. [*All of the girls.*]
(b) El profesor de gimnasia. [*The gymteacher.*]
9. Ningún jugador del equipo reconoció haber fallado. Una jugadora reconoció que el director técnico había fallado en su trabajo. [*No player on the team remembered making a mistake. One female player admitted that the male director had made a mistake.*]
¿Quién reconoció que él había fallado? [*Who admitted that he had made a mistake?*]
(a) Una jugadora. [*A femaleplayer.*]
(b) Nadie. [*Nobody.*]
10. Un grupo de 17 artistas de un circo están ensayando. Cada uno de ellos se considera el mejor artista del grupo. La directora del circo considera que el mejor artista es el domador. [*A group of 17 circus performers are rehearsing. Each one is confident about being the best performer in the group. The director of the circus thinks the best performer is the lion tamer.*]
¿Quién considera que él es el mejor artista? [*Who thinks that he is the best performer?*]
(a) Los 17 artistas. [*The 17 performers.*]
(b) La directora del circo. [*The female director of the circus.*]

11. Cinco mujeres se presentan como candidatas a presidenta del centro de estudiantes. Cada una confía en ser seleccionada. El director de la institución confía que la seleccionada será su propia hija. [*Five women are presented as candidates to be president of the student center. Each one is confident that she will be selected. The director of the institution is confident that his own daughter will be chosen.*]
 ¿Quién confía que ella será seleccionada como presidenta del centro de estudiantes? [*Who is confident that she will be chosen as the president of the student center?*]
 (a) El director de la institución. [*The director of the institution.*]
 (b) Las cincomujeres. [*The five women.*]
12. Ninguna profesora del colegio prometió ayudar con la fiesta de fin de curso. Un profesor prometió que su hija escenógrafa ayudaría con la fiesta. [*No female high school teacher promised to help with the end-of-course party. A male professor promised that his daughter, a stage designer, would help with the party.*]
 ¿Quién prometió que ella ayudaría con la fiesta? [*Who promised that she would help with the party?*]
 (a) Unprofesor. [*A professor.*]
 (b) Nadie. [*Nobody.*]
13. En un colegio secundario se organizó una Olimpiada de matemática entre todos los alumnos de quinto año. Cada uno siente que será el vencedor. La profesora de matemática siente que el vencedor será Pablo. [*At a high school, a Math Olympiad is organized amongst all the seniors. Each one is confident about winning the contest. The math teacher thinks that Pablo will be the winner.*]
 ¿Quién siente que él será el vencedor? [*Who thinks that he will be the winner?*]
 (a) Todos los alumnos de quinto año. [*All of the seniors.*]
 (b) La profesora de matemática. [*The math professor.*]
14. Ninguna enfermera del equipo médico se consideró causante del accidente ocurrido en el quirófano. Un enfermero consideró que la causante fue la jefa de residentes. [*No female nurse believed herself to be the reason for the accident that occurred in the operating room. A male nurse thought that the female chief resident caused the accident.*]
 ¿Quién consideró que ella era responsable del accidente? [*Who thought that she was responsible for the accident?*]
 (a) Nadie. [*Nobody.*]
 (b) Un enfermero. [*A male nurse.*]
15. Ninguna candidata se consideró inhabilitada para la elección. Un candidato consideró que la actual presidenta estaba inhabilitada para ser elegida. [*No female candidate believed herself to be disqualified for the election. A male candidate believed that the actual female president was disqualified for the election.*]
 ¿Quién consideró que ella estaba inhabilitada para la elección? [*Who believed that she was disqualified for the election?*]
 (a) Nadie. [*Nobody.*]
 (b) Uncandidato. [*A male candidate.*]
16. Un grupo de médicos fue seleccionado como precandidatos a la dirección del hospital de niños de Buenos Aires. Cada uno imagina que obtendrá ese puesto. La directora saliente

imagina que el Dr. Martínez obtendrá el puesto. [*A group of doctors was selected as potential candidates to address a children's hospital in Buenos Aires. Each is confident about getting the job. The outgoing director thinks that Dr. Martinez will get the job.*]
 ¿Quién imagina que él obtendrá el puesto? [*Who thinks that he will get the job?*]

- (a) Los precandidatos médicos. [*The potential candidates.*]
- (b) La directora saliente. [*The outgoing director.*]

17. Ninguna niña reconoció haberle pegado al perro. Un niño reconoció que su madre le había pegado al perro. [*No girl remembered having hit the dog. A boy remembered that his mother had hit the dog.*]

¿Quién reconoció que ella le había pegado al perro? [*Who remembered that she had hit the dog?*]

- (a) Un niño. [*A boy.*]
- (b) Nadie. [*Nobody.*]

18. Ningún obrero se declaró autor del brutal crimen. Una ingeniera declaró que el autor del crimen fue el arquitecto. [*No worker admitted to being the killer in a brutal crime. An engineer said that the murderer was an architect.*]

¿Quién declaró que él era autor del crimen? [*Who said that he was the murderer?*]

- (a) Nadie. [*Nobody.*]
- (b) Una ingeniera. [*An engineer.*]

19. Los tres socios de una empresa textil discuten acerca de un robo producido. Cada uno niega ser el responsable. La tesorera negó que el portero sea responsable del robo. [*The three partners of the textile company discussed a robbery that occurred. Each one denied being responsible. The treasurer denied that the doorman was responsible for the robbery.*]

¿Quién negó que él sea el responsable? [*Who denied that he was responsible?*]

- (a) La tesorera. [*The treasurer.*]
- (b) Los tres socios. [*The three partners.*]

20. Veinte mujeres compiten por el puesto de secretaria del director de una empresa de productos plásticos. Cada una de ellas considera que será la elegida. El jefe de personal considera que la elegida será Marta. [*Twenty women are competing to be the secretary for the director of a company that produces plastic products. Each one is confident about being chosen. The chief of staff thinks that Marta will be chosen.*]

¿Quién considera que ella será la elegida? [*Who thinks that she will be chosen?*]

- (a) Las veinte mujeres. [*The twenty women.*]
- (b) El jefe de personal. [*The chief of staff.*]

Appendix 2

1. Ningún periodista dijo haber hablado con los sospechosos antes del juicio. Un periodista de canal 8 dijo que el juez sí había hablado con los sospechosos. [*No journalist admitted to speaking with the suspects before the trial. A female newscaster from Channel 8 said that the judge had spoken with the suspects.*]

Ningún periodista dijo que él había hablado con los sospechosos. [*No journalist said that he had spoken with the suspects.*]

2. Un grupo de alumnas están conversando sobre la maratón que disputarán al día siguiente. Cada una de las alumnas declara en algún momento: “Yo ganaré la maratón”. La profesora dice: “Yo creo que la que va a ganar es Micaela”. [*A group of female students are discussing the marathon that will take place tomorrow. Each one declares at some point, “I will win the marathon.” Their professor says, “I believe that Michelle will be the winner.”*]
Cada alumna cree que ella ganará la maratón. [*Each student believes that she will win the marathon.*]
3. Ninguna actriz admitió haberse equivocado durante la función. Una actriz admitió que la directora se equivocó al no estar presente en el ensayo general. [*No actress admitted to having made a mistake during the performance. An actor admitted that the female director had made a mistake by not being present at the rehearsal.*]
Ninguna actriz admitió que ella cometió una equivocación. [*No actress admitted that she made a mistake.*]
4. En una fiesta infantil las niñas quieren llevarse el premio de una rifa de un oso de peluche. Cada una de las niñas piensa: “yo me llevaré el premio”. La mamá de Marcela grita: “Yo pienso que la que se va a llevar el premio es Marcela”. [*At a birthday party, all of the girls want to win the teddy bear raffle. Each one of the girls thinks, “I will win the prize.” Marcela’s father says, “I think that the prize will go to Marcela.”*]
Cada niña piensa que ella se llevará el premio. [*Each girl thinks that she will win the prize.*]
5. Ningún estudiante creyó ser responsable de la pelea en el colegio. Un estudiante creyó que el responsable fue el director. [*No student admitted to being responsible for the school fight. A secretary thought that the male director was responsible.*]
Ningún estudiante creyó que él fue el responsable de la pelea. [*No student believed that he was responsible for the fight.*]
6. Ninguna candidata se consideró inhabilitada para la elección. Una candidata consideró que la actual presidenta estaba inhabilitada para ser elegida. [*No female candidate believed herself to be disqualified for the election. A male candidate believed that the actual president was disqualified for the election.*]
Ninguna candidata consideró que ella estaba inhabilitada para la elección. [*No female candidate believed that she was disqualified for the election.*]
7. Un grupo de hombres de negocio, que incluían ingenieros, economistas y abogados discuten un proyecto para ganar mucho dinero. Cada uno de ellos dice: “yo participaré del proyecto”. Un ingeniero dice: “Del proyecto también participará el presidente del colegio de ingenieros”. [*A group of businessmen, including engineers, economists, and lawyers, discuss a project which could earn a lot of money. Each one of them says, “I will participate in the project.” A secretary says, “The president of the college of engineering will also participate.”*]
Cada hombre de negocios dijo que él participará del proyecto. [*Each businessman said that he will participate in the project.*]
8. Ninguna niña reconoció haberle pegado al perro. Una niña reconoció que su madre le había pegado al perro. No girl remembered having hit the dog. [*A boy remembered that his mother had hit the dog.*]
Ninguna niña reconoció que ella le había pegado al perro. [*No girl remembered that she had hit the dog.*]

9. Cinco mujeres se presentan como candidatas a presidenta del centro de estudiantes. Cada una confía en ser la elegida. La directora de la institución confía que la elegida será su propia hija. [*Five women are presented as candidates to be president of the student center. Each one is confident that she will be selected. The director of the institution is confident that his own daughter will be chosen.*]
Cada una de las cinco mujeres confía que ella será elegida como presidenta del centro de estudiantes. [*Each one of the five women is confident that she will be selected as president of the student center.*]
10. Ningún bombero aceptó su culpa en el fracaso del operativo. Un bombero aceptó que el director general de bomberos era culpable. [*No fireman accepted the guilt in the failure of the mission. The supervisor believed that the male director was guilty.*]
Ningún bombero aceptó que él era culpable. [*No fireman accepted that he was guilty.*]
11. En un colegio secundario se organizó una Olimpiada de matemática entre todos los alumnos de quinto año. Cada uno siente que será el vencedor. El profesor de matemática siente que el vencedor será Pablo. [*At a high school, a Math Olympiad is organized amongst all the seniors. Each one is confident about winning the contest. The math teacher thinks that Pablo will be the winner.*]
Cada alumno siente que él será el vencedor. [*Each student feels that he will win the contest.*]
12. Veinte mujeres compiten por el puesto de secretaria del director de una empresa de productos plásticos. Cada una de ellas se considera la elegida. La jefa de personal sin embargo considera que la elegida será Marta. [*Twenty women are competing to be the secretary for the director of a company that produces plastic products. Each one is confident about being chosen. The chief of staff thinks that Marta will be chosen.*]
Cada una de las veinte mujeres considera que ella será la elegida. [*Each one of the twenty women thinks that she will be chosen.*]
13. Ningún jugador del equipo reconoció haber fallado. Un jugador reconoció que el técnico había fallado en su trabajo. [*No player on the team admitted making a mistake. One player admitted that the coach had made a mistake.*]
Ningún jugador reconoció que él había fallado. [*No player remembered that he had made a mistake.*]
14. Un grupo de 17 artistas de un circo están ensayando. Cada uno de ellos se considera el mejor artista del grupo. El director del circo considera que el mejor artista es el arriesgado domador. [*A group of 17 circus performers are rehearsing. Each one is confident about being the best performer in the group. The director of the circus thinks the best performer is the lion tamer.*]
Cada uno de los 17 artistas considera que él es el mejor artista. [*Each one of the 17 performers is confident that he is the best artist.*]
15. Ninguna enfermera del equipo médico se consideró causante del accidente ocurrido en el quirófano. Una enfermera consideró que la causante fue la jefa de residentes. [*No female nurse believed herself to be the reason for the accident that occurred in the operating room. A male nurse thought that the female chief resident caused the accident.*]
Ninguna enfermera consideró que ella era causante del accidente. [*No female nurse thought that she was the cause of the accident.*]

16. Los tres socios de una empresa textil discuten acerca de un robo producido. Cada uno niega ser el responsable. El socio mayor negó que el portero sea responsable del robo. [*The three partners of the textile company discussed a robbery that occurred. Each one denied being responsible. The treasurer denied that the doorman was responsible for the robbery.*]
Cada uno de los tres socios negó que él sea el responsable. [*Each one of the three partners denied that he was responsible.*]
17. Ninguna profesora del colegio prometió ayudar con la fiesta de fin de curso. Una profesora prometió que su hija escenógrafa ayudaría con la fiesta. [*No female high school teacher promised to help with the end-of-course party. A male professor promised that his daughter, a stage designer, would help with the party.*]
Ninguna profesora prometió que ella ayudaría con la fiesta. [*No female professor promised that she would help with the party.*]
18. Un grupo de médicos fue seleccionado como precandidatos a la dirección del hospital de niños. Cada uno está convencido de que obtendrá ese puesto. El director saliente está convencido de que el Dr. Martínez obtendrá el puesto. [*A group of doctors was selected as potential candidates to address a children's hospital in Buenos Aires. Each is confident about getting the job. The outgoing director thinks that Dr. Martinez will get the job.*]
Cada precandidato está convencido de que él obtendrá el puesto. [*Each potential candidate is confident that he will get the job.*]
19. Ningún obrero se declaró autor del brutal crimen. Un obrero declaró que el autor del crimen fue el arquitecto. [*No worker admitted to being the killer in a brutal crime. An engineer said that the murderer was an architect.*]
Ningún obrero declaró que él era autor del crimen. [*No worker admitted that he was the murderer.*]
20. En un equipo femenino de hockey se produce una discusión acerca de quién será la nueva capitana del equipo. Cada una de las chicas presiente que será la elegida. La actual capitana presiente que le elegida será María Luz. [*On a female hockey team, discussion arose as to who would be the new captain of the team. Each one of the girls was confident about being chosen. The gym teacher felt that Mary Luz would be picked.*]
Cada una de las chicas presiente que ella será la capitana. [*Each one of the girls feels that she will be chosen as captain.*]

References

- Adjemian, C. (1976). On the nature of interlanguage systems. *Language Learning*, 26, 297–320.
- Almor, A. (1999). Noun-phrase anaphors and focus: The informational load hypothesis. *Psychological Review*, 106(4), 748–765.
- Alonso-Ovalle, L., Fernández Solera, S., Frazier, L., & Clifton, C. (2002). Null vs. overt pronouns and the topicfocus articulation in Spanish. *Journal of Italian Linguistics*, 14(2), 151.
- Ariel, M. (1990). *Accessing noun-phrase antecedents*. London and New York: Routledge.
- Baumann, P., Konieczny, L., & Hemforth, B. (2011). Expectations and coreference: How alternative constructions and referring expressions can serve as cues. In C. H. L. Carlson & T. Shipley (Eds.), *Proceedings of the 33rd annual conference of the cognitive science society*. Austin, TX: Cognitive Science Society.
- Bertelson, P., Vroomen, J., & de Gelder, B. (2003). Visual recalibration of auditory speech identification: A McGurk aftereffect. *Psychological Science*, 14, 592–597.

- Brown, R., & Hanlon, C. (1970). Derivational complexity and order of acquisition in child speech. In J. R. Hayes (Ed.), *Cognition and the development of language* (pp. 11–53). New York: Wiley.
- Camacho, J. (2011). *On null subjects: Towards a unified analysis of the null subject variation*. Piscataway: Rutgers University.
- Cameron, R. (1992). *Pronominal and null subject variation in Spanish: Constraints, dialects, and functional compensation*. Philadelphia: University of Pennsylvania.
- Corder, S. P. (1981). *Error analysis and interlanguage*. Oxford: Oxford University Press.
- Crawley, R. A., Stevenson, R. J., & Kleinman, D. (1990). The use of heuristic strategies in the interpretation of pronouns. *Journal of Psycholinguistic Research*, 19(4), 245–264.
- Chambers, C., & Smyth, R. (1998). Structural parallelism and discourse coherence. *Journal of Memory and Language*, 39, 593–608.
- Chomsky, N. (1965). *Aspects of the theory of syntax*. Cambridge, MA: MIT Press.
- Chomsky, N. (1975). *Reflections on language*. New York: Pantheon.
- Chomsky, N. (1980). *Rules and representations*. New York: Columbia University Press.
- Chomsky, N. (1981). *Lectures on government and binding*. Dordrecht, Netherlands: Foris.
- Chomsky, N. (1988). *Language and problems of knowledge: The Managua lectures*. Cambridge, MA: MIT Press.
- Chomsky, N. (1995). *The minimalist program*. Cambridge, MA: MIT Press.
- Chomsky, N. (2000). *On nature and language*. New York: Cambridge University Press.
- Chomsky, N. (2005). Three factors in language design. *Linguistic Inquiry*, 36(1), 1–22.
- Escobar, M. J., Huepe, D., Decety, J., Sedeno, L., Messow, M. K., Baez, S., et al. (2014). Brain signatures of moral sensitivity in adolescents with early social deprivation. *Scientific Reports*, 4, 5354.
- Evans, G. (1980). Pronouns. *Linguistic Inquiry*, 11, 337–362.
- Flores-Ferrán, N. (2002). *A sociolinguistic perspective on the use of subject personal pronouns in Spanish narratives of Puerto Ricans in New York City*. Munich: Lincom-Europa.
- Frederiksen, J. (1981). Understanding anaphora: Rules used by readers in assigning pronominal referents. *Discourse Processes*, 4, 323–347.
- Gelormini-Lezama, C., & Almor, A. (2013). Singular and plural pronominal reference in Spanish. *Journal of Psycholinguistic Research*. doi:10.1007/s10936-013-9254-6.
- Gelormini-Lezama, C., & Almor, A. (2011). Repeated names, overt pronouns, and null pronouns in Spanish. *Language and Cognitive Processes*, 26(3), 437–454.
- Gernsbacher, M. A. (1989). Mechanisms that improve referential access [Research Support, U.S. Gov't, Non-P.H.S.]. *Cognition*, 32(2), 99–156.
- Greucci, A., Giorgetta, C., Rattin, A., Guerreschi, C., Sanfey, A. G., & Bonini, N. (2014). Time devours things: How impulsivity and time affect temporal decisions in pathological gamblers. *PLoS One*, 9(10), e109197.
- Heim, I. (1998). Anaphora and semantic interpretation: A reinterpretation of Reinhart's approach. In U. Sauerland & O. Percus (eds.), *The interpretative tract*, MIT Working Papers in Linguistics, vol. 25.
- Hemforth, B., Konieczny, L., Scheepers, C., Colonna, S., Schimke, S., & Pynte, J. (2010). Language specific preferences in anaphor resolution: Exposure or Gricean maxims? In *Proceedings of the 32nd annual conference of the cognitive science society, August 2010, Portland, USA*.
- Higginbotham, J. (1983). Logical form, binding and nominals. *Linguistic Inquiry*, 14, 395–420.
- Ibanez, A., Aguado, J., Baez, S., Huepe, D., Lopez, V., Ortega, R., et al. (2014). From neural signatures of emotional modulation to social cognition: Individual differences in healthy volunteers and psychiatric participants. *Social Cognitive and Affective Neuroscience*, 9(7), 939–950.
- Kanno, K. (1997). The acquisition of null and overt pronominals in Japanese by English speakers. *Second Language Research*, 13(3), 265–287.
- Larson, R., & Luján, M. (1989). *Emphatic pronouns*. Austin: Ms. SUNY Stony Brook and UT.
- Luján, M. (1999). Expresión y Omisión del Pronombre Personal. *Gramática Descriptiva de la Lengua Española*, edited by Bosque, Ignacio y Violeta Demonte. Real Academia Española: Colección Nebrija and Bello. Fundación Ortega y Gasset (pp. 1276–1315). Madrid: Espasa-Calpe.
- Lipski, J. M. (1994). *Latin American Spanish*. London: Longman.
- Montalbetti, M. (1984). *After binding: On the interpretation of pronouns*. Ph.D. dissertation, Massachusetts Institute of Technology.
- Morales, A. (1997). La hipótesis funcional y la aparición de sujeto no nominal: El español de Puerto Rico. *Hispania*, 80, 153–165.
- Pérez-Leroux, A., & Glass, W. (1999). Null anaphora in Spanish second language acquisition: probabilistic versus generative approaches. *Second Language Research*, 15(2), 220–249.
- Reinhart, T. (1983a). Coreference and bound anaphora: A restatement of the anaphora questions. *Linguistics and Philosophy*, 6, 47–88.

- Reinhart, T. (1983b). *Anaphora and semantic interpretation*. Chicago: University of Chicago Press.
- Sanford, A. J., & Garrod, S. C. (1981). *Understanding written language*. Chichester, UK: Wiley.
- Selinker, L. (1972). Interlanguage. *IRAL*, *10*(3), 209–231.
- Sorace, A. (2011). Pinning down the concept of “interface” in bilingualism. *Linguistic Approaches to Bilingualism*, *1*, 1–33.
- Sorace, A., & Filiaci, F. (2006). Anaphora resolution in near-native speakers of Italian. *Second Language Research*, *22*, 339–368.
- Spinelli, E., Grimault, N., Meunier, F., & Welby, P. (2010). An intonational cue to word segmentation in phonemically identical sequences. *Attention, Perception, and Psychophysics*, *72*(3), 775–787.
- White, L. (2003). *Second language acquisition and universal grammar*. Cambridge: Cambridge University Press.