The OPC in Spanish Monolinguals

Ewelina Barski
Western University

1. Introduction

This article has two primary goals: First, the aim is to show how monolingual Spanish speakers react to the Overt Pronoun Constraint (OPC) (Montalbetti 1984) within specific contexts that were elicited and/or forced. Past work that has been done on the OPC used monolinguals as control subjects in second language acquisition studies. The Pérez-Leroux & Glass (1999) study was based on stories that required one sentence to be translated (in written form) by the participants, which would indicate whether or not the controls (and the second language learner) followed the constraint proposed by Montalbetti. All L2ers performed significantly well on the task, however the monolinguals appear to fall behind, indicating an acceptance for a bound reading with an overt subject pronoun 13% of the time. As insignificant as this may seem, the authors do not explain why there would be such a difference between the monolinguals and the advanced group1. In the study done by Rothman and Iverson (2007), the authors showed that their native speaker control group in general did not violate the OPC. However, their task was much more metalinguistic in that the participants were asked to explicitly judge their interpretations of the sentences as bound or unbound. Although both studies successfully showed that the control groups’ interpretations were constrained by the OPC, both were metalinguistic in nature (one more than the other), and they did not allow for the participants to provide their own interpretation, without being explicitly asked about the structure being tested.

The second goal of this study is to show that although the OPC constrains quantified and wh-word antecedents, not all antecedents are treated equally by monolinguals. Experimental work done on the OPC thus far has concentrated on second language acquisition (L2A) and the problem of the poverty of the stimulus (POS) to see if something that is never taught explicitly can be learned through the input. To my knowledge, no study has attempted to analyze any potential interpretive differences as a function of the antecedent types constrained by the OPC.

In this study, I look to show whether the Spanish monolinguals tested herein have clear-cut intuitions that reflect the restrictions that the OPC proposes and whether these monolinguals interpret null and overt embedded clause pronominal subjects differently as a function of antecedent type (i.e. quantified vs. wh-word). Given these research questions, it is hypothesized that if Spanish monolinguals do not have clear-cut intuitions that reflect the restrictions, as proposed by the OPC, then there will be a preference for the type of antecedent found in the OPC environment. If Spanish monolinguals treat quantified antecedents differently from wh-word antecedents within the interpretive context of the OPC, then the two antecedent types may not be treated equally within the constraint.

* I would like to thank Silvia Perpiñán, Joyce Bruhn de Garavito, and two anonymous reviewers for their invaluable input to the paper. Thank you to my participants in Madrid. Any remaining errors are my own.

1 Pérez-Leroux & Glass (1999) show that their native speakers correctly accept a bound reading with an embedded null subject 85% of the time, but they also accept a bound reading with an overt subject 13% of the time. The advanced L2 group correctly accepted a bound interpretation with the embedded null subject 93.1% of the time and they never accepted a bound reading with an embedded overt subject. They did, however choose “other” 6.9% of the time.
2. The Overt Pronoun Constraint

Under the Universal Grammar (UG) framework, it is accepted that parameters are what allow languages to be different, while at the same time explaining in part how it is that children acquire language with such ease and efficiency. According to the Null Subject Parameter (NSP) (Chomsky 1981; Jaeggli 1982; Rizzi 1982), languages differ as to how they phonetically realize (or not) subject pronouns. The NSP divides languages into those that license and identify null subject pronouns (i.e. pro-drop languages) like Spanish, where both null and overt pronouns are used, and those that only produce overt pronouns (non-pro-drop languages) like English, where the subject pronoun must always be realized phonetically.

Although Spanish as a pro-drop language allows the use of both types of pronouns (empty and overt), they are used in complementary distribution governed by grammatical and discourse principles. Null subjects are used to indicate continuity within a discourse and provide old information, while overt pronouns provide new and contrastive information, as well as a focused interpretation. Furthermore, Rothman and Iverson (2007) clarify that the NSP comes with a cluster of properties as in (1) with examples in (2):

(1) a. the co-occurrence of null and overt subject pronouns in tensed clauses
b. obligatory null expletive subjects
c. free subject-verb inversion
d. no that-trace effects
e. the instantiation of the Overt Pronoun Constraint (Montalbetti 1984)

(2) a. Yo hablo francés. pro hablo francés.
   c. El las se fueron. Se fueron ellas.
   d. ¿Qué crees que no sabe bailar? *¿Qué crees que no sabe bailar?
   e. ¿Quién dice que él tiene mucho dinero? vs. ¿Quién dice que proi tiene mucho dinero?

Rothman and Iverson (2007) explain that properties (1a) – (1d) are found directly in the input. Nevertheless, property (1e) - the OPC - is not as easily identified from the input. The OPC is assumed to be a universal linguistic principle, and this interpretive constraint applies to all grammars, but its effects are only evidenced in null-subject languages. It accounts for the semantic and syntactic reasons that regulate the ability of subordinate subjects to be pronounced in null subject languages with the presence of quantified (someone, no one) or wh-word (who, which) antecedents.

According to this constraint, unlike the null pronoun, the overt subject pronoun in a subordinate clause can never refer back to a quantified expression (3) or a wh-word antecedent (4). In those cases, the overt pronoun needs to refer to a third person within the discourse.

Overt (3a) Nadie cree que él va a ganar
   ‘No one believes that he will win.’
Null (3b) Nadie cree que Ø va a ganar
   ‘No one believes that pro will win.’
Overt (4a) ¿Quién cree que él va a ganar?
   ‘Who believes that he will win?’
Null (4b) ¿Quién cree que Ø va a ganar?
   ‘Who believes that pro will win?’

Both properties in (1) and their given examples in (2) come from Rothman and Iverson (2007).
Examples (3a) and (4a) show that the embedded overt pronoun must refer to a third person and that it cannot be bound to the quantified/wh-word antecedent; sentences (3b) and (4b) on the other hand show that the presence of an embedded null pronoun makes the two sentences ambiguous where the interpretation may be bound to the antecedent or it may also refer to a third person not mentioned within the sentence.

Because the majority of the empirical work done on the OPC has been looking at it from a second language acquisition standpoint (Pérez-Leroux & Glass 1997; Kanno 1997; Rothman & Iverson 2007), and no work has looked at how monolinguals treat the OPC empirically, this work looks at monolingual judgments and interpretations in contexts specific to the Overt Pronoun Constraint.

3. Methodology

A total of 20 participants took part in this study. 11 were female and 9 were male. Age of participants ranged from 19 to 40 with an average age of 29 years old at the time of testing. All testing took place in Madrid, Spain and all participants were Spanish monolinguals. 11 out of the 20 participants stated that they have limited knowledge of other languages such as English or another Romance language such as Italian, Portuguese, or French, but only four had lived outside of Spain from two to four months. Two participants stated that they had lived in London, England for 2 and 3 months, while two others lived in France for four months. Although other participants may have had minimal knowledge of English, it is believed that such knowledge (or that learned over a period of 2-4 months abroad) would not affect native speaker interpretations of sentences that were constrained by the OPC. Participants range in education level, while a few were still in university other professions include personal assistant, lawyer, manager, electrician, engineer, interior designer, actor, photographer, among others.

Each participant completed three tasks: (1) A background questionnaire, (2) a sentence selection task (SST), and (3) a picture matching task (PMT). The background questionnaire was focused on whether or not these monolinguals spoke any other languages and if they had resided in any other country other than Spain. The sentence selection task tested the interpretation of a target bound reading (with the presence of a null subordinate subject) with quantified and wh-word antecedents, while the picture matching task tested the interpretation of bound and unbound readings (with the presence of both null and overt subordinate subjects) with quantified and wh-word antecedents. Both experimental tasks controlled for the type and occurrence of antecedents present in each token. The following subsections describe the two experiments and provide examples of the test items used.

3.1. Experiment 1: Sentence Selection Task

In this experiment, participants read a context in Spanish and were then instructed to choose an appropriate concluding sentence between sentence (a), (b), or (both). Participants were choosing between embedded clause sentences that included a null or overt subordinate subject and included a specific quantified or wh-word antecedent. The context purposefully forced a bound reading between the embedded subject and the antecedent, thus requiring the participants to recognize that the preferred option was the sentence choice that included the null subject in the subordinate clause.

The task consisted of 56 tokens in total, 32 target scenarios and 24 distractors. Six different types of antecedents were tested with four tokens per antecedent type. Furthermore, the task contained eight referential antecedent tokens in order to determine the participants’ interpretive preferences on antecedents not constrained by the OPC. Table 1 below describes the types and quantities of antecedents found in both experimental tasks. The following are examples of the tokens found in the SST.

Quantified Antecedent
(5) Un grupo de amigos siempre sale a bailar los fines de semana. Toman por lo menos 5 cervezas. A group of friends always goes out dancing over the weekend. (They) drink at least 5 beers.
a) Nadie cree que él toma demasiado.
   No one believes that he drinks too much.

b) Nadie cree que pro toma demasiado.
   No one believes that Ø drinks too much.

c) (a) y (b)

**wh-word Antecedent**

(6) Los amigos pasaron toda la semana estudiando para el examen. Antes del examen se preguntan:
The students spent the entire week studying for the exam. Before the exam they ask each other:

a) ¿Quién cree que pro aprobará el examen?
   Who thinks that Ø will pass the exam?

b) ¿Quién piensa que él aprobará el examen?
   Who thinks that he will pass the exam?

c) (a) y (b)

**Referential Antecedent**

(7) Juan siempre hace mil cosas a la vez y siempre está al teléfono.
   Juan is always doing a million things at the same time and is always on the phone.

a) Juan cruza la calle mientras él habla por el teléfono.
   Juan is crossing the street while he is talking on the phone.

b) Juan cruza la calle mientras pro habla por el teléfono.
   Juan is crossing the street while Ø is talking on the phone.

c) (a) y (b)

Examples (5) and (6) illustrate the forced bound context in the SST. In example (5) with the quantified antecedent, the monolinguals are expected to choose answer (b), where the null subject is bound to the quantified antecedent, showing the interpretation that no one within the group of friends thinks that they drink too much. Based purely on the context provided, selecting (a) is not an option because the context only provides a group reading. Similarly, the context in the following example (6) with the wh-word antecedent forces a bound reading with the null subject. Here it is expected that the monolinguals choose (a). Since the students as a group spent the week studying, they ask each other who thinks that he will pass the exam, noting that one individual was not singled out in the context. For this reason, the question can only refer to the group. Finally, example (7) shows a sample of a referential antecedent. Here, there is no “right or wrong” answer but rather a preference. Within a dialogue, it is more natural to omit the subject of the sentence once it has already been established. With this in mind, it is preferred to omit the subject of the subordinate clause, as in answer (b) in example (7).

3.2. Experiment 2: Picture Matching Task

The purpose of this task was to test for the participants’ interpretation of null and overt pronouns with strictly controlled quantified and wh-word antecedents. In this experiment, participants read a context in Spanish followed by a set of two pictures, and a concluding sentence. Based on the concluding sentence, the participants were instructed to choose a picture (A or B) as the correct depiction of the whole scenario. In this task, the participants were choosing between bound and unbound readings with quantified, wh-word, and referential antecedents with the presence of both null and overt pronouns in the subordinate clause.

The task consisted of 78 pairs of pictures (or scenarios) in total, where 14 were distractors. Six different types of antecedents were tested with eight tokens per antecedent type. Furthermore, there were 16 tokens of referential antecedents in order to see how participants reacted to antecedents that do no fall within the OPC. Table 1 below describes the types and quantities of antecedents found in both experimental tasks. Below are examples of the tokens found in the picture matching task.
Quantified antecedent

(8) Overt subject in subordinate clause

Los niños acaban de correr la carrera.

(Translation: The children just ran the race. No one understands why he won the prize.)

Target response: A

Quantified antecedent

(9) Null subject in subordinate clause

Los empleados están esperando las noticias.

(Translation: The workers are waiting for the news. The majority of the company knows that (they) will receive a raise.)

Target response: A
**wh-word antecedent**

(10) Overt subject in subordinate clause

(Translation: *The students wrote an exam yesterday in French class. Who believes that they did not study enough for the exam?*)

Target response: B

**wh-word antecedent**

(11) Null subject in subordinate clause

(Translation: *The friends are discussing the possibility of going to Mexico. Who believes that (he) will go to Mexico?*)

Target response: A
Referential antecedent

(12)

En el baño...

Maria se mira por el espejo mientras ella se lava los dientes.

(Translation: In the bathroom... Maria looks at herself in the mirror while she brushes her teeth)

Target response: A

Examples (8) through (11) illustrate bound and unbound contexts (for each type of pronoun) in the PMT. In the first example (8) with a quantified antecedent and an overt subject in the subordinate clause, the monolinguals are expected to choose picture (A), where the overt subject is not bound to the quantified antecedent, showing the interpretation that no one within the group of friends who ran the race understands why that one runner won the race. Next, the context in following example (9) contains a null subject and the quantified antecedent. The presence of a null subject pronoun in the subordinate clause allows for the sentences to be ambiguous and thus permitting two readings: the null pronoun may be bound to the quantified antecedent indicating that the majority of the company will receive a raise, or it may be disjoint and refer to a third person (“the majority of the company knows that someone specific will receive a raise”). Because there is no restriction between a null subject pronoun and a quantified antecedent, the response is based purely on preference. With that being said, the more natural preference is for a bound reading, having the monolinguals choose picture (A). It is the role of the top sentence combined with the pictures to provide an accurate context for the OPC. Example (10) is an example of a wh-word antecedent with the overt subject in the subordinate clause. The monolinguals are expected to choose picture (B) as the correct answer since the overt subject in the subordinate clause cannot be bound to the wh-word antecedent and the picture gives the interpretation of two people talking about another group (of students) who did not study enough, and they are not talking about themselves. Next, (11) shows a wh-word antecedent token with a null subject in the subordinate clause. The preferred answer is picture (A) for the same reason stated above for example (9). The null subject in the subordinate clause allows for an ambiguous reading, however there is a stronger preference to bind the null pronoun to the wh-word antecedent. In this case, everyone is thinking about going to Mexico and not just one person. Finally, just like in the SST, example (12) is a referential antecedent and it shows what type of referential antecedents the monolinguals were asked to judge. Here, there is no “right or wrong” answer but rather a preference. This token shows that it is preferred to omit the subject of the subordinate clause once it has already been mentioned therefore the expected answer is picture (A), although picture (B) is perfectly fine.
Table 1
Antecedent types in both tasks

<table>
<thead>
<tr>
<th>Antecedent Type</th>
<th># of tokens in SST (k = 4)</th>
<th># of tokens in PMT (k = 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nadie ‘no one’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>La mayoría de ‘most of’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muchos ‘many’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Todos ‘everyone’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quién ‘who’ sg.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quiénes ‘who’ pl.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Referential antecedents</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 lays out all of the antecedent types that were tested in both the sentence selection task and the picture matching task. The PMT was twice as long and for that reason it has double the amount of tokens found in the SST.

4. Results
4.1. Results Experiment 1: Sentence Selection Task

In this experiment, participants were instructed to choose between a null and an overt subject in contexts that forced a bound interpretation. Consequently, the expected response was the sentence with a null pronoun since according to the OPC the overt pronoun in a subordinate clause cannot be bound with a quantified or wh-word antecedent.

Overall, results in Figure 1 indicate that monolinguals overwhelmingly prefer a null pronoun to an overt one in forced bound contexts. Furthermore, results indicate that the monolinguals responded with a higher acceptance rate with the antecedents nadie (78%), la mayoría de (79%), and quién (81%), and they displayed weaker results with antecedents muchos (61%), todos (69%), and quiénes (66%). They performed very well with the singular quién by responding correctly in a forced bound situation 81% of the time, while the antecedent muchos proved to be the most problematic with a 61% rate response accepting a bound interpretation with a null pronoun. The rest of the time (39%), participants incorrectly chose sentences that suggested a bound interpretation with an overt pronoun, or indicated that both answers were possible.

On average, the quantified antecedents were interpreted correctly 71.75% of the time and the wh-word antecedents were interpreted correctly 73.5% of the time. As for the referential antecedents, the participants chose the null pronoun 88% of the time, indicating that they preferred a reading where the embedded null subject was bound to the referential antecedent, instead of an overt pronoun.
4.2. Results Experiment 2: Picture Matching Task

In the picture matching task (section 3.2), after reading an introductory context, observing two pictures and reading a concluding sentence, the participants had to choose the picture that best matched the scenario provided. Here, the participants were not forced into a specific interpretation, but they were to give their own interpretation of the concluding sentence and choose the picture (A or B) that best depicted the sentence.

When comparing results between the quantified antecedents and the *wh*-word antecedents, Table 2 shows that where an overt pronoun was present in the subordinate clause (in an unbound interpretation), participants overwhelmingly interpreted the pictures correctly as unbound.

<table>
<thead>
<tr>
<th>Antecedent Type</th>
<th>Bound</th>
<th>Unbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantified</td>
<td>32</td>
<td>68</td>
</tr>
<tr>
<td><em>wh</em>-word</td>
<td>27</td>
<td>73</td>
</tr>
</tbody>
</table>

Table 2
Comparing responses in % in unbound contexts with overt pronoun, between quantified and *wh*-word antecedents.

Again, when comparing results between the quantified antecedents and the *wh*-word antecedents, Table 3 shows that where a null pronoun was present in the subordinate clause (with a bound interpretation), participants produced almost the exact opposite by choosing a bound interpretation correctly in bound contexts with 70% with quantified antecedents and 61% with *wh*-word antecedents.

<table>
<thead>
<tr>
<th>Antecedent Type</th>
<th>Bound</th>
<th>Unbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantified</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td><em>wh</em>-word</td>
<td>61</td>
<td>39</td>
</tr>
</tbody>
</table>

Table 3
Comparing responses in % in bound contexts with null pronouns, between quantified and *wh*-word antecedents.

Table 4 provides results for each antecedent type in each type of context. An unbound context indicates that an overt subject pronoun was present in the subordinate clause, while a bound context indicates that a null pronoun was present. This table shows that antecedents *la mayoría de* and *quién* demonstrate positive results in an unbound interpretation (overt pronoun), while the presence of a null

<table>
<thead>
<tr>
<th>Antecedent Type</th>
<th>Unbound</th>
<th>Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>nadie</td>
<td>69</td>
<td>78</td>
</tr>
<tr>
<td><em>la mayoría de</em></td>
<td>88</td>
<td>66</td>
</tr>
<tr>
<td>muchos</td>
<td>60</td>
<td>64</td>
</tr>
<tr>
<td>todos</td>
<td>58</td>
<td>73</td>
</tr>
<tr>
<td>quien</td>
<td>80</td>
<td>53</td>
</tr>
<tr>
<td>quiénes</td>
<td>66</td>
<td>70</td>
</tr>
<tr>
<td>referential</td>
<td>66</td>
<td>90</td>
</tr>
</tbody>
</table>

Table 4
Antecedent types and % of correct responses in each type of context: unbound and bound interpretations.

When referring to a bound or unbound context, it is always the intention that the bound context contains a null subject and the unbound context contains an overt subject. Thus, a bound context indicates that the null pronoun refers to the quantified antecedent (is bound to it), and an overt pronoun refers to a third person within the discourse (it is not bound to the quantified antecedent). It is understood that the presence of a null subject may create an unbound context due to the ambiguous nature of the pronoun in the given context, however, the analyzed interpretation is that of a bound context (the preferred reading).
subject pronoun causes the same antecedents to be problematic with a bound interpretation. However, the presence of a null subject pronoun makes the sentence ambiguous and allows for two types of interpretations. The unbound context should only permit one interpretation, where the overt subject pronoun cannot be bound to the quantified or *wh*-word antecedent. With this in mind, Table 4 indicates that antecedent *todos* may be problematic.

5. Discussion and Conclusion

Current results indicate that when it comes to a forced bound reading where a null subject pronoun is present in the subordinate clause, Spanish monolinguals chose the correct interpretation at a rate of 72.6%. It is learned that this group of participants knows that an overt pronoun cannot be bound to the antecedents provided and that such choice would have to refer to a third person. Quantified and *wh*-word antecedents were treated very similarly, with 71.75% and 73.5% respectively. When the monolinguals were working with a forced bound reading in the SST, the antecedent *muchos* received the lowest acceptance (with a bound reading) with 61%. There was no antecedent that was accepted 100% of the time, but there was *quién* with 81%, *la mayoría de* with 79%, and *nadie* with 78%. Surprisingly plural *quiénes* also had a low acceptance with a forced bound reading with 66%. It is possible that both *quiénes* and *muchos*, along with *todos* (69%) were treated differently from the other three antecedents because of their explicit plural ‘s’ marking. Although semantically *la mayoría de* and *nadie* also have plural scope, morphologically they do not have any plural markings. Furthermore, antecedent *muchos* is the least specific, which may cause more pragmatic problems at the sentence level.

The PMT provided the participants with both bound and unbound interpretation possibilities and based on the context provided, they had to choose a picture that showed a bound reading or one that showed an unbound reading. The presence of an overt subject pronoun in a subordinate clause required an unbound interpretation. Again, singular(-like) antecedents *la mayoría de* (88%), *quién* (80%), and *nadie* (69%) had the highest acceptance rate of an unbound interpretation, while antecedents *quiénes* (66%), *muchos* (60%), and *todos* (58%) were at the bottom half, just like the results found in the SST (although the majority of the results are lower in general). For this reason, I maintain my reasoning for this type of distribution of antecedents, which is that semantically plural antecedents cause problems at the interpretation level because they allow for many more possibilities. Looking at quantified versus *wh*-word antecedents, as described above the *wh*-word antecedents are given the correct unbound interpretation with an overt pronoun slightly more than the quantified antecedents (73% and 68% respectively).

When looking at contexts with the null subject pronoun present in the subordinate clause, it is preferred that speakers choose the bound interpretation, however since the presence of the null pronoun allows for an ambiguous interpretation, it is expected that results will vary from those with the overt pronoun. In this context antecedent *nadie* had the highest rate of correctly providing a bound interpretation with 78%, but then antecedents *todos* (73%) and *quiénes* (70%) also had high interpretation rates, which is the opposite of what was seen above. Results from antecedent *quién* (53%) show that monolinguals were choosing both bound and unbound interpretations at par indicating that they were allowing for the ambiguity that the null pronoun produced. On the same note, given that participants were asked to assign their own interpretation to the sentences and to show this through one of the pictures provided, it is also possible that antecedents *nadie*, *todos*, and *quiénes* had such high results (in comparison to that discussed above) because they allow for less ambiguity even with a null pronoun present. When comparing the two groups of antecedents (quantified and *wh*-word) with the expectation of a bound interpretation, this time the group of quantified antecedents has a higher acceptance rate (70%) than the *wh*-word antecedents (61%).

The data presented followed through with the first goal of the study, which was to show how monolingual Spanish speakers interpret the OPC within specific contexts, which elicit/force such an interpretation. A natural consequence was to show that Spanish monolinguals’ grammars are constrained by the OPC. Furthermore, the second goal was also achieved, which was to show that not
all types of antecedents are treated equally. This study indicates that Spanish monolinguals respond better to \textit{wh}-word antecedents in comparison with quantified antecedents, unless the context allows for an ambiguous reading. As the OPC states, the presence of an overt subject pronoun in an embedded clause causes an unbound interpretation. It appears as though Spanish monolinguals obey the overt pronoun constraint but it is not as clear-cut as previously predicted. More work still needs to be done in this area to further support the findings presented. A next step would be to test other dialects of Spanish using the same methodology to see if the same results will be found with the \textit{wh}-word and quantified antecedent contrast, as well as the difference in interpretation between singular and plural antecedents. In this study, experimental data contribute to capture intuitions in a more fine-grained way since they provide gradient differences between the types of variables discussed.

**References**


