Abstract: *The coexistence of null and overt subjects in pro-drop languages raises the question of how they differ semantically. We offer a new perspective on this question by considering the interaction between null/overt pronouns and discourse relations. Discourse relations (Asher & Lascarides 2003, Kehler 2002) are semantic relations between propositions, which have been argued to alter the focus/background distinction. Two experiments compare the interaction between pronominal form and discourse relation in Mexican Spanish and American English. Results discredit the simplest analysis of overt/null subjects and strong/weak objects as obligatorily +/- focus, in favor of a more complex set of possible interpretations (e.g. Frascarelli 2007). Results also support the independent existence of the Position of Antecedent Strategy (Carminati 2002) for Mexican Spanish.*

Key words: *discourse relations, Spanish, null subjects, pronoun resolution, information structure*
Running head: *Discourse Relations and the Null/Overt Distinction*

Discourse Relations and the Null/Overt Distinction in Mexican Spanish

1. Introduction

A common and methodologically useful assumption in linguistics is that languages are not in the habit of retaining meaningless distinctions. If two lexical items fill the same position and have the same semantic content, one of them is bound to disappear. Conversely, if two lexical items appear in diachronically stable alternation, it must be that they differ somehow, whether semantically or socially. This appears to be the case for the alternation between null and overt subject pronouns in pro-drop languages, both of which can fill the subject position of finite clauses, as illustrated in the Spanish example below (1).

(1) {Ø/*Ella*} *come una manzana*.
pro/she eats an apple

Naturally, this has led to the following question: In structures where both null and overt subjects are licensed,[1] what is the difference in their interpretation?

Here, we offer a new perspective on this longstanding question by considering how the null/overt distinction interacts with discourse conditions affecting information structure. Our experimental results discredit the simplest analysis of the overt pronoun as obligatorily in focus, in favor of a more complex set of possible interpretations. They also provide support for the independent existence of a processing bias endowing null and overt subjects with different antecedent preferences (Carminati 2002).

In section 2 I present an overview of previous accounts of the null/overt subject alternation in Romance languages. Section 3 introduces the concept of discourse relations (Kehler 2002, Asher & Lascarides 2003), which have been argued to alter the focus/background partition. I then spell out how the accounts in section 2 would predict discourse relations to interact with the null/overt distinction. Sections 4 and 5 present two experiments testing these differing predictions in Mexican Spanish. Experiment 1 deals with null and overt subjects, while Experiment 2 also includes strong and weak object pronoun.

2. Previous accounts

[1] There are structures in which only the overt pronoun is licensed, including within conjunctions, as objects of prepositions, and under the focus operator *solo* ('only'). In these cases, the same semantic contrast is expressed instead by the alternation between the overt, unstressed and overt, stressed pronouns (see Luján 1999).

Many native speakers of Romance style pro-drop languages express the intuition that the overt pronoun has an emphatic or contrastive flavor. Luján (1999), for example, likens the overt subject to a stressed pronoun in non-pro-drop languages like English, as illustrated in the translation of (2). She also notes that the same emphatic flavor characterizes clitic-doubled object pronouns as well (3), although much more attention has been given in the literature to subjects, thanks to the importance of the pro-drop parameter to generative theories.

(2) *Tú trabajas demasiado.* [Luján 1999]
You work-2S too.much
'YOU work too much.'

(3) *Las quiero trasladar a ellas el próximo mes.*
CL want-1S to.move A them.F the next month
'I want to move THEM next month.'

However, null and overt subjects also exhibit formal differences, as first pointed out by Montalbetti (1984) and Luján (1985, 1986). While *pro* may be bound by a c-commanding antecedent (4) and can trigger both sloppy and strict interpretations in ellipsis structures (5), the overt variant resists these interpretations. And while the overt pronoun supports question-answer focus (6), *pro* does not.

(4) Binding [Montalbetti 1984]

a. *Nadie$_i$ cree que ø$_{/j}$ es inteligente.* (bound/free)
No one thinks that *pro* is intelligent.

b. *Nadie$_i$ cree que él$_{*i/j}$ es inteligente.* (free only)
No one thinks that he is intelligent.

(5) Ellipsis [Luján 1999]

c. *Juan cree que ϕ aprobó el examen y Ana también.* (strict/sloppy identity)
Juan thinks that *pro* passed the test and Ana too.

d. *Juan cree que él aprobó el examen y Ana también.* (strict identity only)
Juan thinks that he passed the test and Ana too.

(6) Question/answer focus: subject pronouns [Luján 1986]

Q: *¿<u>Quién</u> cree Juan que ganará el premio?*
Who does Juan think will win the prize?

A: *Juan cree que {<u>él/*ø</u>} ganará el premio.*
Juan thinks that {HE/*he} will win the prize.

This and other similarities between overt pronominal subjects in pro-drop languages and stressed pronouns in non-pro-drop languages led Luján (1985) to suggest that the Romance overt pronoun is located in FocusP at LF. This would not only explain its emphatic flavor and compatibility with Question/Answer focus, but also its resistance to binding: FocusP is a high position, falling outside the scope of potential binders.

Compatible with this account, others have proposed that the position of the overt subject is an A' position. Rigau (1988) uses Catalán data to argue that both overt pronominal subjects and clitic-doubled object pronouns are in a peripheral (non-argumental) position. Among other evidence, he points out that the strong form of both subject (8) and object (7) pronouns resists binding by a topicalized constituent. And Alexiadou & Anagnosopoulou (1998) go so far as to propose that all preverbal subjects, not just pronominal overt subjects, are essentially clitic left dislocated.

(7) *A en Pere, li van regalar un cavall {ø/*a ell}.* [Rigau 1988]

to the Peter, CL will-3P give a horse {*pro*/*to him}
"Peter, they will give him a horse."

(8) *En Pere, de compliments, {ø/*ell} no en fa.*
the Peter, of compliments, {*pro*/he} neg of-them make-3S
"Peter, compliments he does not pay."

As study of the left periphery progressed in the wake of Rizzi's influential split CP hypothesis (Rizzi 1997), different possibilities emerged for the precise location of null and overt subjects within the extended CP projection, as well as the specific semantics associated with those positions. For example, Mayol (2010) uses Catalán to argue that overt pronominal subjects are contrastive topics (located in a Contrastive Topic Phrase). And Frascarelli (2007) proposes for Italian that the overt subject can appear in multiple places, including not only FocusP but also two different kinds of TopicP.[2] In contrast, the null subject is restricted to a topic phrase where it is obligatorily bound by the preceding topic.

Finally, null and overt subject pronouns have been shown to exhibit different antecedent biases. Corpus studies (see Cameron 1995, Orozco & Guy 2008, and many others) consistently report that null subjects are favored in "same reference" contexts and overt subject pronouns in "switch-reference" contexts, i.e., null pronouns are favored when the intended antecedent of the subject pronoun is the subject of the preceding clause and overt pronouns are more commonly used when this is not the case. Carminati proposes that these differences arise from different processing preferences, which she dubs the Position of Antecedent Strategy (PAS): all else being equal, null subjects prefer antecedents in subject position and overt subjects prefer non-subject antecedents. Using reading time measures in a variety of contexts, she shows that null subjects in Italian are processed more quickly when disambiguated towards a subject antecedent, relative to a non-subject antecedent, and vice-versa for the overt subject.

(9) The Position of Antecedent Strategy (PAS) [Caminati 2002]
The null pronoun prefers an antecedent which is in the SpecIP position, while the overt pronoun prefers an antecedent which is not in the SpecIP position.

Support for the PAS has been found in other Romance languages as well, including Spanish (Keating et al. 2011, 2015). However, support is stronger for the null subject bias than it is for overt subjects (Alonso-Ovalle et al. 2010, Filiaci 2010, Keating et al. 2011). For example, Alonso-Ovalle et al. (2010) found that native speakers of Penninsular Spanish preferred the subject interpretation of the null subject about 73% of the time in contexts like (10), but no preference in either direction for the overt subject.

(10) *Juan pegó a Pedro. Ø/Él está enfadado.*
Juan hit Pedro. *pro*/He is mad.

The PAS makes no commitments about the syntactic position of null and overt subject pronouns—only the position of the antecedent is important—and thus it is conceivable that this processing difference coexists alongside one of the above proposed syntactic differences between null and overt subjects. The question is how to test this. In the next section I show that a fruitful line of approach is to look at how the PAS and the syntactic position of null and overt pronouns interact with discourse structure.

3. **Discourse Relations**

One crucial difference between Luján's proposal and the other accounts outlined in section 2, is that it assumes strict complementarity of focus status. If this is the case, then any process that modifies the

[2] In Italian, each of these different interpretations is associated with a different prosody, but work remains to be done on the prosodic realization of these positions in other pro-drop languages, including Spanish.

focus/background partition should necessarily affect null and overt subjects in complementary ways. Discourse relations, which are the semantic relations between clauses, have been argued to be one such process. In this section I explain what discourse relations are and how they modify the focus/background partition. In the following section I then address how they should be expected to interact with the null/overt distinction if it is indeed a -/+focus distinction, or if instead the distinction is as described by the PAS and/or one of the other syntactic accounts from section 2. Sections 5 and 6 test these predictions.

Discourse relations, which have alternately been referred to as Rhetorical Relations (Asher & Lascarides 2003) or Coherence Relations (Kehler 2002), are the semantic relations that dictate how events and individuals introduced by one proposition relate to the events and individuals of another. For instance, *Parallel* (11a) relates two propositions describing semantically similar sets of individuals and events, while its opposite, *Contrast* (11b), establishes a semantic opposition between the two. *Result* (11c) holds of propositions whose events form a cause-effect chain, and *Occasion* (11d) holds when the events are spatiotemporally connected but not necessarily causally related.

(11) Discourse relations and their pronoun resolution biases

a.	*Parallel*:	María hugged Sara and Juan hugged her, too.	*her* = Sara
		María hugged Sara and she hugged Juan, too.	*she* = María
b.	*Contrast*:	María hugged Sara but Juan hugged her.	*her* = María
		María hugged Sara but she hugged Juan.	*she* = Sara
c.	*Occasion:*	Juan sang for Pedro and then he danced.	*he* = Juan
d.	*Result:*	Juan sang for Pedro and so he danced.	*he* = Pedro

Naturally, the way in which two propositions are related can be expected to affect the interpretation of pronouns within those propositions. For example, the *Occasion* relation in (11c) encourages the subject pronoun *he* to refer to the preceding subject *Juan*, while establishing a *Result* relation between the same two events encourages the opposite strategy (11d). And switching from a *Parallel* relation (11a) to a *Contrast* relation (11b) means that a parallel resolution strategy—whereby subjects pick out subjects, direct objects pick out direct objects, and so on—is reversed. In fact, Kehler et al. (2008) argue that the most commonly observed pronoun resolution strategies within the psycholinguistic literature, including the parallel resolution strategy (Smyth 1994, Chambers & Smyth 1998), the subject or first-mention strategy (Crawley, Stevenson & Kleinman 1990, Arnold, Eisenband, Brown-Schmidt, and Trueswell 2000), and others, are largely a by-product of discourse relations. For example, in one experiment, participants who were asked to resolve pronouns in two-sentence discourses like (12) employed the parallel resolution strategy when encountering parallel discourses (12a-b), but switched to a subject/first-mention strategy when encountering result-type discourses like (12c-d).

(12) Samuel threatened Justin with a knife, and… [Kehler et al. 2008, Expt. 1]

a.	…Erin blindfolded him.	[*Parallel*]
b.	…he blindfolded Erin.	[*Parallel*]
c.	…Erin stopped him.	[*Result*]
d.	…he alerted security.	[*Result*]

In addition to influencing pronoun resolution, Kehler (2005) argues that discourse relations modify the focus/background partition, which in English constrains the placement of accent (see Selkirk 1996, Schwarzchild 1999, among others). Using English stress patterns, Kehler argues specifically that each different discourse relatios accommodates different material into the background, causing constituents referring to that material to become defocalized. For instance, *Parallel* assumes that the connected clauses share a single common topic, which enters the background (13a). This explains why *her* (referring to *Sara*) in (13b) must be unstressed. Stressing the pronoun forces it to refer to a different antecedent, such as *María*. For the *Result* relation, Kehler suggests that the background information required to license the cause-effect relation is itself incorporated into the background, hence in (14) the knowledge that an event

of pushing *Pedro* can cause an event of *Pedro* falling is itself part of the background, causing *he* (referring to *Pedro*) in (14b) to be defocalized.

(13) *Parallel:* María$_i$ hugged Sara and she$_i$ hugged Juan.
a. Background: *hug*(*S, y*)
b. Prosody: …and {she$_{[-F]}$/*SHE$_{[+F]}$} hugged JUAN. *she* = Sara, *SHE* ≠ Sara

(14) *Result*: Juan pushed Pedro$_i$ and he$_i$ fell.
a. Background: typically, *push*(*x, P*) → *fall*(*P*)
b. Prosody: …and {he$_{[-F]}$/*HE$_{[+F]}$} fell. *he* = Pedro, *HE* ≠ Pedro

The effect of discourse relations on information structure makes very testable predictions for those accounts imputing a +/- focus difference to null and overt subjects, which we turn to now.

4. Interactions between discourse relation and the null/overt subject distinction

If discourse relations modify the focus/background partition, and if the null/overt distinction is indeed a focus distinction as suggested by Luján, then null and overt subjects should react in opposite directions to a given discourse relation, just like stressed and unstressed English pronouns. For example, in contexts like (15) and (16), where establishing an *Occasion* relation between two events encourages a subject pronoun resolution strategy for the null subject while a *Result* relation encourages the opposite strategy (16), then we would expect a focused, overt subject pronoun to block the subject strategy in (15), but encourage it in (16). In other words, contexts like (15) and (16) should produce a crossover interaction between pronominal form and discourse relation. Experiment 1 tests these predictions for speakers of Mexican Spanish and American English.

(15) Occasion*: Juan le pega a Pedro y después {ø/él} se va.* ø = Juan, *él* = ?
Juan hits Pedro and then {he/HE} leaves.

(16) Result*: Juan canta para Pedro y por eso {ø/él} baila.* ø = Pedro, *él* = ?
Juan hits Pedro and so {he/HE} leaves.

If on the other hand the null/overt distinction is more complex, then we should not necessarily see a complementary split in their antecedent preferences. Specifically, if the overt subject can appear in multiple positions, as suggested by Frascarelli (2007), then it should be able to refer to either antecedent in (15) and (16). Which antecedent it prefers could be the result of many factors, including the PAS. If the PAS has any measurable effect[3], then we would expect use of the overt subject to decrease the likelihood of a subject antecedent, overall. In other words, there should be separate, coexisting effects of pronominal form and discourse relation, but no statistically significant interaction between the two.

5. Experiment 1: Interactions between discourse relation and the null/overt subject distinction

We used a picture-selection task to probe native Mexican Spanish speakers' preferred interpretations of ambiguous 3rd person singular null and overt subjects as well as American English speakers' interpretations of stressed and unstressed pronominal subjects. The pronouns were embedded in short, 2-clause discourses related by *Occasion* and *Result* discourse relations of the same form as (15) and (16) above.

5.1.1. *Participants*

[3] Of course, given that the PAS is just a processing preference, it may have no measurable offline effect on the ultimate interpretation of such sentences, in which case, we expect no significant effect of pronominal form.

42 native Mexican Spanish-speaking adults (35 women) participated (n = 2 exclusions). 56 native American English-speaking undergraduates at Michigan State University participated in exchange for extra credit (n = 2 exclusions).

5.1.2. *Design and Procedure*

The task was administered using Psychopy version 1.82.01 (Pierce 2007) running on either a MacBook Air or an Apple iMac. Participants listened via headphones to pre-recorded prompts read by a native speaker of Mexican Spanish or American English while viewing an illustration of the first clause, followed by two illustrations, each corresponding to one of the potential interpretations of the second clause. Participants pressed a key to select the picture that best matched their own interpretation.

A 2 (null, overt) x 2 (*Occasion, Result*) design, blocked within subjects, was used, with 4 trials per condition. A list of 8 different items was created which contained verbs that were easily depicted and which did not induce a strong pragmatic bias towards either a subject or an object reading in either *Occasion* or *Result* contexts, so that the effects of the PAS could be detected. All 32 item-condition combinations (8 items x 4 conditions) were counterbalanced across the four versions of the experiment, such that each subject saw each item in 2 of the 4 conditions. Order of presentation was randomized within each block, and characters' positions were counterbalanced across items.

5.1.3. *Exclusions*

The experiment was preceded by introduction of the characters (*María, Sara, Juan, Pedro*) and a 4-item name-recognition task. Anyone scoring less than 2 out of 4 correct was excluded (n = 1 Spanish speaker, n = 2 English speakers). The remaining participants correctly identified the characters 3.6 out of 4 times on average (SD 0.5) for Spanish-speakers and 3.5 out of 4 times (SD 0.64) for English speakers. 1 additional Spanish speaker was excluded due to computer malfunction.

5.2. *Results*

The proportion of subject responses in each condition is reported in Figure 1. Multilevel mixed effects logistic regression models were fit to English and Spanish speakers separately, with likelihood of a subject response as the dependent variable and relation (*Occasion*, *Result*) and pronominal form (weak, strong) as level-1 fixed effects predictors. The models also included level-2 random intercepts for items and participants[4]. Results are in Table 1.

For both groups, the *Result* relation was associated with an overall decrease in the likelihood of a subject interpretation (both beta < 0, both $p < 0.001$). For English-speaking adults, there was a significant crossover interaction between discourse relation and pronominal form (beta > 0, $p < 0.001$). Two-tailed t-tests revealed that the strong form decreased the rate of subject responses in the *Occasion* condition ($M1 = 0.79$, $M2 = 0.67$, $t(422) = 2.72$, $p < 0.01$) but increased the subject response rate in *Result* conditions ($M1 = 0.35$, $M2 = 0.49$, $t(429) = -2.95$, $p < 0.01$). For Spanish-speaking adults, however, there was no such interaction ($p > 0.8$). Use of the strong form significantly decreased the likelihood of a subject interpretation across both discourse relations (*Occasion*: $M1 = 0.76$, $M2 = 0.61$, $t(312) = 3.040$, $p < 0.01$; *Result*: $M1 = 0.57$, $M2 = 0.38$, $t(317) = 3.53$, $p < 0.001$).

Figure 1. Experiment 1 subject antecedent responses by speakers of Mexican Spanish and American English

[4] Models including random slopes failed to converge and were therefore not considered.

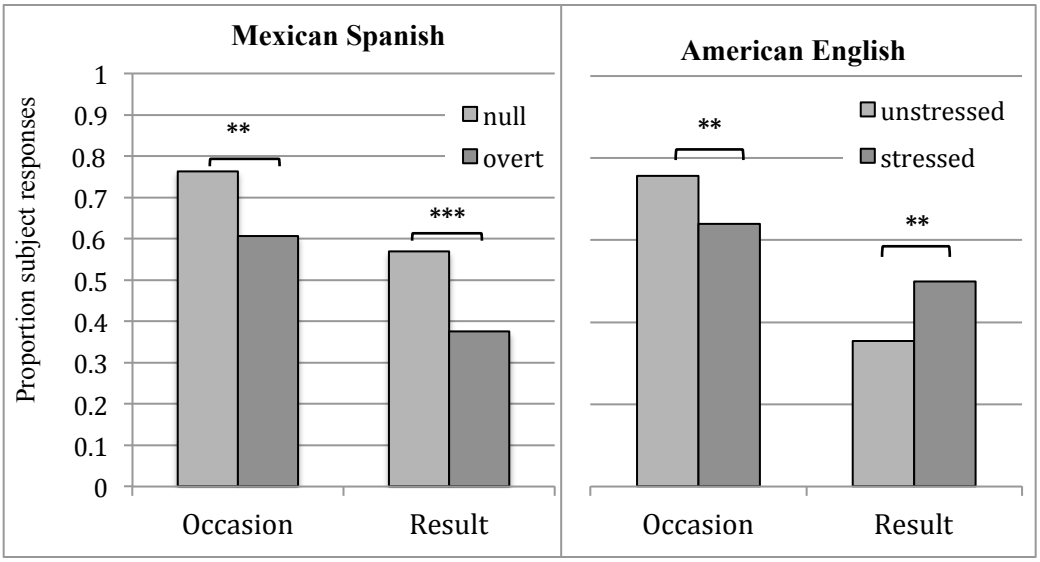


Table 1. Fixed effects estimates for the multilevel logistic regression model of subject responses, with pronominal form and discourse relation as predictor variables. Model was fit using the *glmer()* function of the *lme4* package in R (R Core Team, 2014), with the following formula: `subj.response ~ form * relation + (1| item) + (1| subject)` (English: N=54, Spanish N=40)

English		*β Estimate*	*Std. Error*	*z value*	*p-value*
	(intercept)	1.5401	0.2653	5.804	< 0.0001***
	pronominal form	-0.7086	0.2380	-2.978	0.0029
	discourse relation	-2.2294	0.2450	-9.099	< 0.0001***
	relation × form	1.3728	0.3221	4.262	< 0.0001***
Spanish					
	(intercept)	1.41904	0.33587	4.225	< 0.0001***
	pronominal form	-0.87671	0.27276	-3.214	0.0013
	discourse relation	-1.09530	0.27071	-4.046	< 0.0001***
	relation × form	-0.07367	0.36912	-0.200	0.84180

5.3. *Discussion*

As expected, changing the discourse relation between two clauses changed the interpretation of pronouns within those clauses, in the same way for both languages. However, the two languages diverged with respect to pronominal form. In English, the strong pronoun was associated with a decrease in reference to the backgrounded antecedent (fewer subject interpretations in the *Occasion* condition, fewer object interpretations in the *Result* condition), while in Spanish the strong pronoun was associated with an overall decrease in subject interpretations, regardless of discourse relation. This speaks against Luján's focused-based account and in favor of those syntactic accounts that allow the overt pronoun to appear in locations other than FocusP (Frascarelli 2007, Mayol 2010). It is also consistent with the Position of Antecedent Strategy (Caminati 2002).

It bears noting that the results for the stressed English pronouns are not exactly as we might expect. Even though stressing the pronoun produced a significant change in the number of subject responses, stress never actually produced an *absolute* preference in the opposite direction as the unstressed pronoun. This suggests that focusing a pronoun involves more than simply "flipping" the ranking of potential antecedents of the unstressed variant, as argued by DeHoop (2004) contra Kameyama (1999). If we had

allowed the option of a third antecedent, rather than forcing each pronoun to choose between only two possibilities, we may have seen a clearer difference between the two pronouns. Nevertheless, the contrast between English and Spanish, and the effects of the PAS in Spanish, remain clear.

6. **Experiment 2**

In Experiment 1 we manipulated discourse relations to see what effect this would have on the interpretation of strong and weak pronouns. Now we will apply that same technique in reverse, manipulating pronominal form to see how this constrains the space of possible discourse relations. Speakers do not always explicitly indicate how their sentences are related to each other, so discourse relations must sometimes be inferred using linguistic and pragmatic cues. In English, thanks to the more or less direct connection between discourse relations, focus, and stress, stress patterns are one such cue. In (17) for example, one does not need the explicit connectives *too* and *but* to indicate that a *Parallel* or a *Contrast* relation is intended. Stress alone is enough to signal a change in the focus/background partition, triggering a change from parallel to anti-parallel pronoun resolution. This observation holds for not only subject but also object pronouns.

(17) *Parallel* and *Contrast* as indicated by focal stress

a.	Sara hugged María and she hugged Juan.	*Parallel* → *she* = Sara
b.	Sara hugged María and Juan hugged her.	*Parallel* → *her* = María
c.	Sara hugged María and SHE hugged Juan.	*Contrast* → *SHE* = María
d.	Sara hugged María and Juan hugged HER.	*Contrast* → *HER* = Sara

However, the results of Experiment 1 suggest that pronominal form in Spanish is a different kind of cue than it is in English. In that experiment we saw that the distinction between Spanish null and overt subject pronouns is *not* simply a question of presence versus absence of focus. If this is the case for strong and weak pronouns more generally, then the alternation between strong and weak subject and object pronouns on its own should be a poor cue to the speaker's intended discourse relation. In other words, alternating between strong and weak pronouns in Spanish translations of (17) should *not* trigger a change between *Parallel* and *Contrast* interpretations.

Experiment 2 tests this hypothesis by probing Mexican Spanish speakers' use of parallel versus anti-parallel pronoun resolution strategies in prompts like (18). We contrast cases in which both pronominal form and overt discourse markers *también* ('too') and *pero* ('but') serve as cues to the intended discourse relation, against cases in which pronominal form is the only cue. In the explicitly marked cases, we would expect weak subjects and objects accompanied by parallel marker *también* (18a-b) to refer to the preceding subject and object, respectively, and we would expect strong pronouns accompanied by contrast marker *pero* (18c-d) to exhibit the opposite preferences. But in cases without explicit discourse markers, we expect no preferences whatsoever, aside from the effects of the PAS, which should encourage the null subject (18a) to select a subject antecedent.

(18) Example items from Experiment 2

a. *María saluda a Sara y ϕ saluda a Juan (también).*
María greets Sara and *pro* greets Juan (too).

b. *María saluda a Sara y Juan la saluda (también).*
María greets Sara and Juan CL-fem greets (too).

c. *María saluda a Sara (y/pero) ella saluda a Juan.*
María greets Sara (and/but) she greets Juan.

d. *María saluda a Sara (y/pero) Juan la saluda a ella.*
María greets Sara (and/but) Juan CL-fem greets her.

6.1.1. *Participants*

The same Mexican Spanish-speakers from Experiment 1participated (n = 42, 35 women); three participants were excluded for failing to learn the names of the characters (n = 2) or failing to understand the directions (n = 1).

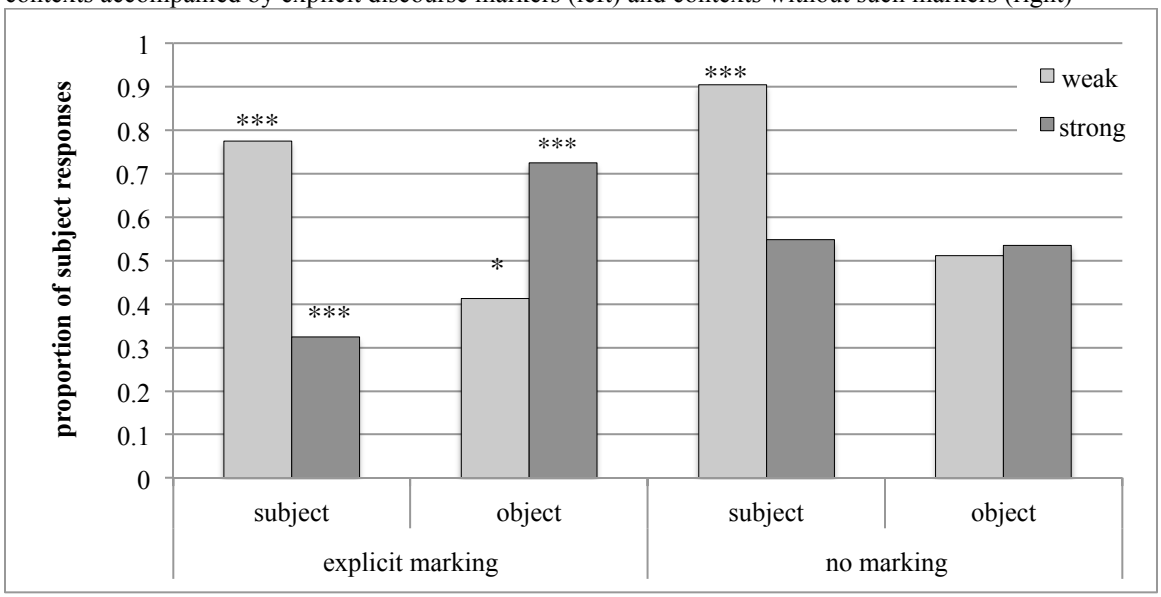
6.1.2. *Design and Procedure*

Using the same methods and procedure as in Experiment 1, we probed adults' interpretations of 3rd person singular subject and object pronouns in a 2 (subject, object) x 2 (weak-parallel, strong-contrast) x 2 (explicit discourse marking, no marking) blocked design. Pronoun position and pronominal form/discourse relation were blocked within-subjects and discourse marking was a between-subjects factor. Items were constructed using easily depicted verbs: *abrazar* ('to hug'), *lavar* ('to wash'), *mirar* ('to look at'), and *saludar* ('to greet'). Each item was presented in each block in random order, and the order in which blocks were presented was counterbalanced across participants.

6.2. *Results*

The proportion of subject responses in each condition is shown in Figure 2. This proportion was compared to chance (50%) using 1-tailed t-tests. Participants exposed to explicit discourse marking employed a parallel resolution strategy for weak pronouns accompanied by the *Parallel* marker *también* (null subject: $M = 0.78$, $t(79) = 5.85$, $p < 0.001$; accusative clitic: $M = 0.41$, $t(79) = -1.58$, $p = 0.059$) and an anti-parallel strategy for strong pronouns accompanied by the *Contrast* marker *pero* (overt subject: $M = 0.33$, $t(79) = -3.32$, $p < 0.001$; doubled object: $M = 0.73$, $t(79) = 4.48$, $p < 0.001$). Participants exposed to no explicit discourse markers showed a preference for null subjects to refer to the preceding subject ($M = 0.89$, $t(79) = 11.14$, $p < 0.001$), but no preference in any other condition (all $p > 0.4$).

Figure 2. Experiment 2 proportion of subject interpretations of strong and weak subject and object pronouns in contexts accompanied by explicit discourse markers (left) and contexts without such markers (right)



6.3. *Discussion*

The results here extends the conclusion from Experiment 1 that strong versus weak subjects in Spanish are not simply +/- focus, to strong versus weak objects as well. When syntactically parallel

clauses were presented with weak subject and object pronouns, participants failed to show a parallel pronoun resolution strategy unless those clauses were explicitly connected with the parallel discourse marker *también*. Likewise, when the same clauses contained strong subject and object pronouns, participants failed to employ an anti-parallel pronoun resolution strategy unless accompanied by the contrast marker *pero*. In cases without discourse marking, the only detectable strategy was to assign null subjects to the preceding subject, in accordance with the PAS. This contrasts starkly with English-language intuitions of similar passages and indicates that, in contrast to English, Spanish cannot use pronoun realization alone to indicate a shift between *Parallel* and *Contrast* discourse relations.

However, if strong pronouns cannot signal a *Contrast* interpretation, why are they nevertheless obligatory in contrastive contexts, as shown by (19) and (20)? Actually, Amaral & Schwenter (2005) show that strong pronouns are not, in fact, obligatory in contrastive contexts. Topic-introducing adverbials, locative prepositions, and speaker-oriented adverbials can appear in contrastive contexts, rendering the strong pronoun optional. This suggests that, while strong pronouns may license contrast, they are nevertheless not the source of the contrast itself. This interpretation is confirmed by the fact that strong pronouns are compatible with the parallel contexts that we tested (21)-(22).

(19) *María$_i$ abraza a Sara pero {*ø$_i$/ella$_i$} abraza a Juan.*
María hugs Sara but (*pro*/she) hugs Juan.

(20) *María abraza a Sara$_i$ pero Juan la$_i$ abraza {*ø$_i$/a ella$_i$}.*
María hugs Sara but Juan CL-fem hugs (*pro*/her).

(21) *María abraza a Sara y {ø/ella} abraza a Juan también.*
Maria hugs Sara and (*pro*/she) hugs Juan too.

(22) *María abraza a Sara y Juan la abraza {ø/a ella} también*[5].
Maria hugs Sara and (*pro*/she) hugs Juan too.

In sum, the results of Experiment 2, and the data in (19)-(22) are consistent with accounts which allow for strong pronouns to have more than one interpretation (as Frascarelli 2007 allows for subjects). If strong pronouns can fill more than one syntactic position, it makes sense that they can be focused or unfocused, contrastive or not contrastive.

7. Conclusion

The purpose of this paper has been to use discourse relations to shine a new light on the semantic distinction between null and overt subject pronouns, and to a lesser extent, the alternation between strong and weak object pronouns in Spanish. While the experiments reported here leave many questions unanswered, they make at least three important contributions. First, they show the importance of discourse relations to pronoun resolution in languages other than English. Second, they confirm the validity of the Position of Antecedent Strategy (Carminati 2002) for Mexican Spanish. And third, they show that the distinction between strong and weak pronouns in this dialect cannot be equated with the English distinction between stressed and unstressed pronouns, as suggested by superficial similarities between the two. Instead, the results are consistent with more recent moves toward a more complex set of interpretive options (e.g., Frascarelli 2007).

Because of the great importance placed on null and overt subjects, little syntactic work exists on the status of weak versus strong object pronouns in Spanish. Future work could benefit from extending existing syntactic accounts of subject pronouns to objects. Finally, other work is already underway (Forsythe 2016) examining whether children's pronoun resolution shows earlier sensitivity to discourse

[5] Some speakers prefer for *también* to appear in penultimate position:
(i) *María abraza a Sara y Juan también la abraza.*
(ii) *María abraza a Sara y Juan la abraza también a ella.*

relations or to strong/weak distinctions, and the implications that this has for the acquisition of pronouns more generally.

8. **References**

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