

# Pragmatic deficits with syntactic consequences?: L2 pronominal subjects and the syntax–pragmatics interface

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## Abstract

Contemporary acquisition theorizing has placed a considerable amount of attention on interfaces, points at which different linguistic modules interact. The claim is that vulnerable interfaces cause particular difficulties in L1, bilingual and adult L2 acquisition (e.g. Platzack, 2001; Montrul, 2004; Müller and Hulk, 2001; Sorace, 2000, 2003, 2004, 2005). Accordingly, it is possible that deficits at the syntax–pragmatics interface cause what appears to be particular non-target-like syntactic behavior in L2 performance. This syntax-before-discourse hypothesis is examined in the present study by analyzing null vs. overt subject pronoun distribution in L2 Spanish of English L1 learners. As ultimately determined by L2 knowledge of the Overt Pronoun Constraint (OPC) (Montalbetti, 1984), the data indicate that L2 learners at the intermediate and advanced levels reset the Null Subject Parameter (NSP), but only advanced learners have acquired a more or less target null/overt subject distribution. Against the predictions of Sorace (2004) and in line with Montrul and Rodríguez-Louro (2006), the data indicate an overuse of both overt and null subject pronouns. As a result, this behavior cannot be from L1 interference alone, suggesting that interface-conditioned properties are simply more complex and therefore, harder to acquire. Furthermore, the data from the advanced learners demonstrate that the syntax–pragmatics interface is not a predetermined locus for fossilization (in contra e.g. Valenzuela, 2006).

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## 1. Introduction

It is an observable fact that the vast majority of adult second language (L2) performance is, to various degrees and in various domains, non-target-like. Notwithstanding, it is equally established that adult L2 grammars project and interpret far beyond the limits of available input. In other words, despite observable L1/L2 differences, L2 acquisition confronts a similar *logical problem of acquisition* to the one that characterizes L1 acquisition (see Gregg, 1996; White, 2003 for discussion). Since L1 acquisition conforms to universal developmental paths and results in uniform ultimate attainment (Guasti, 2002; Hyams, 1986; Lust, 2006), how should one interpret the sharp contrasts between L1 and L2 in route and success?

L1/L2 asymmetry has framed the central questions of generative L2 acquisition studies for the past two decades. Essentially, two possible explanations have been traditionally investigated: (i) effects of L1 transfer and/or (ii) effects of age-related maturation to Universal Grammar (UG) (in part or in its entirety). Focusing on asymmetrical

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differences, L2 Representational Deficit hypotheses claim that language learning is fundamentally different for adults in the sense that access to representational primitives is subject to maturation. Whether this difference is purported to be due to a complete inaccessibility to UG after the critical-period (Bley-Vroman, 1989, 1990; Clahsen and Muysken, 1986, 1989; Clahsen and Hong, 1995), there is a critical-period specifically affecting the acquisition of new functional features (Beck, 1998; Franceschina, 2001; Hawkins and Chan, 1997; Hawkins and Franceschina, 2004), or perhaps only [-Interpretable] features (Hawkins, 2005; Hawkins and Hattori, 2006; Tsimpli and Dimitrakopoulou, 2007), these generative accounts essentially share the belief of other cognitive approaches (DeKeyser, 2003; Paradis, 2004; Ullman, 2001), claiming that (at least some) seeming success in L2 acquisition occurs via the application of domain-general learning procedures (explicit learning) and not the domain-specific linguistic mechanisms (implicit acquisition) that guarantee success in children.

Focusing on symmetrical domains between L1 and L2 acquisition, Full Access (FA) approaches maintain that adult acquisition must avail itself of UG's entire feature inventory (e.g. Duffield and White, 1999; Schwartz and Sprouse, 1996; White, 1989, 2003), citing evidence of new L2 knowledge that cannot be accounted for via general constraints on human mental constitution (see Slabakova, 2006 for review of relevant studies). FA approaches do not ignore observable L2 variability; they simply claim that inaccessibility to UG is not the source insofar as such a position leaves L2 *poverty-of-the-stimulus* facts unaccounted for. So while FA approaches acknowledge differences in L1 and L2 acquisitions, the claim is that they are not fundamentally different in the traditional sense of such terminology (see White, 2008). This leaves FA approaches with an additional burden of explanation since they too must account for observable variability. Over the past decade or so, FA approaches have attempted to do just that, maintaining that L2 variability obtains outside the narrow syntax (e.g. Prévost and White, 2000; Goad and White, 2006; Lardiere, 1998, 2006; Sorace, 2000, 2005).

For some researchers, interfaces are precisely the source of L2 non-convergence (e.g. Sorace, 2005; Valenzuela, 2006). Sorace and others contend that interfaces (e.g. the syntax–pragmatics, syntax–semantics interfaces) are especially vulnerable for adults and therefore subject to greater difficulty and delays, if not the principle loci for inevitable fossilization in adult grammars (e.g. Belletti and Leonini, 2004; Belletti et al., 2007; Fruit, 2006; Papp, 2000; Sorace, 2000, 2004, 2005; Sorace and Filiaci, 2006; Tsimpli and Sorace, 2006; Valenzuela, 2006). More specifically, Sorace (2005) maintains that interpretable features relevant to the syntax–discourse interface are particularly problematic for adult L2 acquirers.

Delays at the pragmatics–discourse interface are not unexpected in light of observations from L1 and child bilingual acquisition as well as the very nature of this particular interface. Research has shown adult monolingual variability/optionality (e.g. Carminati, 2005; Fruit, 2006) and developmental L1 delays (e.g. Platzack, 2001; Grinstead, 2004) with properties at this interface. Furthermore, greater incidences of cross-linguistic interference (e.g. the erosion of pragmatic features) and variability/optionality of properties at this interface for bilinguals (Montrul, 2004; Müller and Hulk, 2001; Paradis and Navarro, 2003; Serratrice et al., 2004; Zapata et al., 2005) have been reported as well. These observations point to what has been coined the syntax-before-discourse position, which likens some developmental delays and non-target-like behavior to the possibility that properties in the narrow syntax are acquired before syntax–pragmatics interfaced conditioned ones.

There are two related questions that emerge from such a proposal. The first involves the possible inevitability of (non-)acquisition of syntax–pragmatic dependent properties for adults. While we know that this interface is a source of delay for children as well as variability/optionality in adult grammatical judgments/production, child learners inevitably acquire an adult grammar, which entails that pragmatic delays are eventually overcome. If such delays in children are, at least in part, related to the cognitive development (Pérez-Leroux, 1998), adults should have fewer problems in this regard since they come to the learning task with fully developed cognitive abilities. However, in the case of L2 learners, the acquisition of the target grammar is not guaranteed, and it would appear that interface vulnerabilities are even more invasive and persistent for them. Thus, should one conclude that these properties are impossible to acquire as an adult in the sense that L2 features (at least some) are no longer acquirable (or re-valuable) after the so-called critical period and are, therefore, destined to remain unspecified in L2 grammars (new L2 features in general Beck, 1998; Franceschina, 2001; Hawkins and Franceschina, 2004; Hawkins and Chan, 1997; only uninterpretable ones Hawkins and Hattori, 2006; Hawkins, 2005; Tsimpli and Dimitrakopoulou, 2007 or only interpretable ones relevant to interfaces Sorace, 2005; Belletti and Leonini, 2004)? Alternatively, is there a surmountable delay for acquiring syntax–pragmatics interface properties?

The second question is related to the first. If the hypothesis that interfaced conditioned properties can eventually be acquired proves tenable (Borgonovo et al., 2006; Iverson et al., 2008; Montrul and Rodríguez-Louro, 2006), the question then becomes what is the source of the greater difficulty for adults at the syntax–pragmatics interface specifically? It has been argued that cross-linguistic interference is the primary source of the prolonged, if not permanent delays at this interface for heritage/bilingual learners (i.e. a so-called erosion of pragmatic features; Montrul, 2004; Zapata et al., 2005) and by extension for L2 learners (Tsimplici et al., 2004; Valenzuela, 2006). However, there is an alternative, which Sorace alludes to as being a contributory factor (2004, 2005). It is possible that the interface is, simply put, more difficult given the inherent complexity of properties that require the integration of syntactic knowledge with other cognitive systems. If true, this could be the primary reason for the slower acquisition of properties at interfaces. Although all interfaces require the integration of multiple types of information, not all interfaces present the same level of difficulty for adult L2 learners. For example, several studies have shown that syntax–semantic interface properties are acquired successfully and relatively early (see Slabakova, 2006 for review of this literature) as compared to syntax–pragmatics properties in L2 interlanguage. This can be accounted for if one takes the position that delays at internal interfaces happen for different reasons than delays at external ones; whereas syntax–semantic delays relate to computational operations, syntax–pragmatic delays obtain from processing difficulties (Sorace and Filiaci, 2006).

This latter possibility is pursued in the present article by testing the knowledge of the overt vs. null subject pronominal distribution in L2 Spanish by English native-speakers. Subject pronouns in Spanish meet the definition of increased complexity since their distribution is both syntactically and discourse-pragmatically conditioned. In the present study, experiments on L2 interpretation and production demonstrate that L2 learners acquire quite straightforwardly the syntax of null subjects; however, they have difficulty with the discourse distribution of null/overt subject pronouns. At first glance, this observation is not novel (see e.g. Phinney, 1987; Liceras, 1989 for earlier work), however, unlike most previous studies, I join Pérez-Leroux and Glass (1999) in demonstrating unassailable evidence of Null Subject Parameter (NSP) resetting via target-like application of the Overt Pronoun Constraint (OPC; Montalbetti, 1984), a *poverty-of-the-stimulus* (POS) related syntactic constraint on bound variable interpretation. While Pérez-Leroux and Glass (1999) also demonstrated that intermediate learners who have knowledge of the OPC overuse overt pronouns, the present data also demonstrate that they overuse null-pronouns in contexts that render them pragmatically odd. This observation, which is different than what is observed in most previous studies (but see Montrul and Rodríguez-Louro, 2006), provides evidence *in contra* the predictions of Sorace (2004) and questions the notion that relates interface vulnerability to L1 interference alone. Conversely, the syntax–pragmatics interface itself must present a learnability problem given its increased formal complexity. This possibility is supported in the literature by studies showing that non-target-like behavior at this interface is not selective depending on L1/L2 pairings. That is, similar non-target-like behavior with pronominal subjects in L2 Spanish has been noted for L1 Italian natives despite the fact that the same pragmatic conditions regulate null vs. overt pronominal subject distribution in Italian and Spanish (Sorace and Filiaci, 2006). Furthermore, data from the performances of particular individuals from the advanced group in the present study confirm that syntax–pragmatic interfaced conditioned properties are not fated to fossilization or ‘residual optionality’ as Valenzuela (2006) concluded.

This article is set up in the following manner. The following section presents discursive constraints on overt/null subjects in Spanish. Section 3 discusses other relevant NSP L2 acquisition studies. Sections 4 onwards present the hypothesis, design, methodology, results and significance of the present study.

## 2. Pragmatic constraints on overt subject pronouns in Spanish

The Null-Subject Parameter is one of the most studied parameters in linguistic inquiry (e.g. Chomsky, 1981; Hyams, 1986; Jaeggli and Safir, 1989; Rizzi, 1982, 1986; Alexiadou and Agnostopoulou, 1998 among many others).<sup>1</sup> With others in line with Minimalist Program (MP) assumptions, Alexiadou and Agnostopoulou (1998) argue that the  $\phi$ -features encoded in Spanish agreement morphology license null-subjects (i.e. satisfying the EPP-feature of T). Whatever analysis one takes is somewhat inconsequential for the immediate purposes inasmuch as it is observable that null-subjects are licensed in Spanish and that they co-exist with overt pronominal subjects. In light of MP assumptions of economy (Chomsky, 1995, 2000, 2001), it is logical to ponder why Spanish has the option to phonologically express

<sup>1</sup> Since the present study focuses on the acquisition of the null vs. overt pronominal subject distribution, I do not review herein the debate revolving around what properties, if any, constitute the NSP cluster of properties.

pronominal subjects at all, especially in the case of 1st and 2nd persons (singular and plural) where the morphology is never referentially ambiguous. In Spanish and related languages (e.g. Catalan and Italian), the distribution of null and overt subject pronouns has been well studied, inclusive of the pragmatic conditions that permit and require the use of overt subject pronouns in these languages (e.g. Alonso-Ovalle and D’Introno, 2000; Fernández-Soriano, 1989, 1993; Luján, 1987, 1999; Montalbetti, 1984; Picallo, 1994, 1998; Rigau, 1986, 1988; Rizzi, 1997). In Spanish, the use of overt subject pronouns is pragmatically odd in all but very specific discursive environments where their presence offers more than agreement features to the semantic interpretation.

A primary function of overt subject pronouns (or lexical subjects) is to remove referential ambiguity when new referents are introduced into the discourse, as seen by comparing (4) with (5). Conversely, once a discourse referent has been established, as in (4), it becomes pragmatically odd to use overt subject pronouns to refer to the same referent.

- (4) *María e Hilda no almorzaron hoy. \*/?ellas/Ø tendrán mucho hambre.*  
 Mary and Hilda not eat-3ppl-pret. today. \*/? they/pro have-3ppl-fut. much hunger  
 ‘Mary and Hilda did not eat today. They must be hungry.’
- (5) *No almorcé hoy. Ellas/\*Ø piensan que tengo hambre ahora.*  
*pro* not eat-1psg-pres today. They/ \* *pro* think-3ppl-pres. that *pro* have-1psg-pres. hunger now.  
 ‘I did not eat today. Mary and Hilda/they must think I am hungry.’

Additionally, as seen by comparing (6) to (7), overt subject pronouns must be used to answer topic questions. However, answers with overt subject pronouns without focus to a yes/no question would be pragmatically odd.

- (6) *¿Quiénes vieron la película?... Nosotros/\*Ø la vimos.*  
 Who see-3ppl-pret. the movie?... We/\*pro it-clitic see-1ppl-pret.  
 ‘Who saw the movie? We saw it.’
- (7) *¿Vieron Uds. la película?... Sí, ?nosotros/Ø la vimos.*  
 See-3ppl-pret. you-plural the movies?... Yes, we/pro it-clitic see-1ppl-pret.  
 ‘Did you guys see the movie?... Yes, we/\*Ø saw it.’

In contexts that create a sense of contrastive focus, a null subject would be pragmatically odd, even in the case that the referent can be interpreted from the verbal agreement morphology, as in (8a). However, if the discourse does not permit a contrastive interpretation then the overt subject would be pragmatically anomalous, as in (8b).

- (8) a. *O te lo digo yo o te lo dice ella. Quiero que me lo digas tú [y no ella].*  
 Or you-clitic-dat. it-clitic-acc. I or you-clitic-dat. it-clitic-acc. tell-3psg-pres. she *pro* want-1psg-pres.  
 that me-clitic-dat. It-clitic-acc. tell-2psg-pres.-subj. You [and not she]  
 ‘Either I will tell you or she will tell you. I want you to tell it to me [and not her].’
- b. *María tiene buenas noticias y acaba de llegar. Quiero que \*/?ella me las diga ahora.*  
 Mary have-3psg-pres. good news and she finish-3psg-pres. of arrive-inf. *pro* want-1psg-pres.  
 that she me-clitic-dat. It-clitic-acc. tell-3psg-pres.-subj. now.  
 ‘Mary has good news. I want her to tell it to me now.’

As common sense dictates, focal stress cannot be assigned to subjects that are phonetically null. Not surprisingly then, overt subject pronouns are also required to establish focus, as in (9).

- (9) *Nunca pensé que tuvieras que ir a buscar el paquete. Juan<sub>i</sub> me dijo que él<sub>i</sub> lo recogería.*  
 Never *pro* think-1psg-pret that *pro* have-2psg.imp.-subj. go-inf. to-prep. get-inf. the package.  
 John me-clitic-dat. tell- 3psg-pres. that he it-clitic-acc. get-3psg-cond.  
 ‘I never thought you would have to go get the package. John told me **he** would get it.’

Most overt (preverbal) subjects are clearly located in the left periphery, either in a topic position when presenting new information or a focal position (see Ordóñez and Treviño, 1999; Goodall, 2002; Suñer, 2003). These discourse-

dependent uses of overt subjects are regulated in the pragmatics by features of [Topic-shift] or [Focus]. This means that L2 learners need to first acquire new interpretable  $\phi$ -features associated with Spanish verbal morphology to converge on a grammar that syntactically licenses null subjects (see Alexiadou and Agnostopoulou, 1998) and then acquire features in the pragmatics that constrain the distribution of null/overt subjects in a native-like fashion (see Montrul and Rodríguez-Louro, 2006; Sorace and Filiaci, 2006).<sup>2</sup> And so, converging on the target discourse distribution of null and overt subjects is a multilayered process, which, for English L2 adult learners requires more than new syntactic knowledge.

In addition to the pragmatic restrictions on overt subject use in Spanish, the Overt Pronoun Constraint (OPC) (Montalbetti, 1984) embodies yet another restriction. The OPC is a syntactic principle of grammar whose instantiation in null subject grammars blocks the following interpretations [\*QDP/*wh*<sub>i</sub>...[overt pronoun<sub>i</sub>...]], as in (10):

- (10) (a) Who<sub>i</sub> believes that he<sub>i/j</sub> knows everything.  
 (b) Michael<sub>i</sub> thinks that he<sub>i/j</sub> knows everything.  
 (c) The boy<sub>i</sub> thinks that he<sub>i/j</sub> knows everything.  
 (d) ¿*Quién*<sub>i</sub> cree que él<sub>\*i/j</sub> lo sabe todo?  
 (e) ¿*Quién*<sub>i</sub> cree que Ø<sub>i/j</sub> lo sabe todo?  
 (f) Miguel<sub>i</sub> cree que él<sub>i/j</sub> lo sabe todo.  
 (g) Miguel<sub>i</sub> cree que Ø<sub>i/j</sub> lo sabe todo.  
 (h) El niño<sub>i</sub> cree que él<sub>i/j</sub> lo sabe todo.  
 (i) El niño<sub>i</sub> cree que Ø<sub>i/j</sub> lo sabe todo.

In pro-drop languages, co-reference interpretations are always available between referential expressions with fixed referents (Miguel, María y el niño, los abogados) and embedded subject pronouns, whether overt or null. So, in examples (10d–i) co-reference between the matrix and embedded subjects is possible in all cases except for (10d) because the OPC blocks bound variable interpretations with embedded overt subject (as compared to when the embedded subject is null, as in (10e)). This makes all these sentences ambiguous (in the sense that there are two possible interpretations: (a) co-referential and (b) disjoint reference), except for (10d) where the only available interpretation is one in which *Quién/who* and the embedded subject *él/he* are interpreted as disjoint. As can be seen in the parallel English example (10a), this restriction does not obtain in English. This application of the OPC represents a learnability problem in light of the fact that the input does not provide evidence of this subtle difference. Its application is thus an example of the *poverty-of-the-stimulus* argument and therefore this property must be acquired via its underlying association to the positive setting of the NSP (see Kanno, 1998a,b; Pérez-Leroux and Glass, 1999; Rothman and Iverson, 2007a,b). Unlike the pragmatic restrictions on the distribution of null and overt subjects, this restriction should fall out from having acquired the syntax of null subjects and is thus a useful tool to measure syntactic competence.

In accord with a pragmatic universal, the Avoid Pronoun Principle (APP, Chomsky, 1981), which limits the use of overt subject pronouns to cases where null subjects are impossible, the native use of overt pronominal subjects in most dialects of Spanish is limited to environments in which the subject pronoun has a switch-reference quality. If the APP, or some larger subsuming principle of general economy, regulates the distribution of null and overt subjects in Spanish and it is a universal principle, should L2 target-deviant discursive use of overt/null subjects be interpreted as evidence that adult learners are unable to acquire the necessary features needed to reset the NSP?

The APP merely stipulates that null subjects be used unless impossible. Language learners of null subject languages, child and adult alike, must independently learn what makes null subjects ‘impossible’ in that particular grammar. English learners of L2 Spanish need to learn the discourse conditions of Spanish that delimit overt subject pronoun use to the above pragmatic environments, making referential pronouns of Spanish more complex than their English counterparts since only the former involve concurrent mastery of both morphosyntactic and pragmatic properties.

<sup>2</sup> It is not clear how useful features such as [+Topic] are insofar as it is not clear how such features are acquired in L1 acquisition either. That is to say, such features are not encoded in the lexicon.

### 3. The NSP and L2 acquisition research

The L2 resetting of the NSP has been examined in many studies, in both directions (pro-drop to non pro-drop and vice versa) and for many L1 → L2 combinations (e.g. Al-Kasey and Pérez-Leroux, 1998; Clahsen and Hong, 1995; Davies, 1996; Hilles, 1986, 1991; Isabelli, 2004; Kaltenbacher, 2001; Lakshmanan, 1991, 1994; Licerias, 1989; Licerias and Díaz, 1999; Licerias et al., 1999; Meisel, 1991; Phinney, 1987; Rothman and Iverson, 2007a,b; Tsimpli and Roussou, 1991; Vainikka and Young-Scholten, 1994, 1996; White, 1985, 1986).

In particular, the NSP parameter has received a privileged amount of attention in L2 Spanish research. Essentially, relevant studies have offered two consistent observations: (i) L2 learners seem to gradually acquire so-called [+ null subject] properties, beginning with evidence of early sensitivity to the syntactic conditions of empty subject licensing and (ii) despite the ability to produce null subjects in positions that are ungrammatical in the L1 the L2 discursive use of overt subject pronouns does not match the pragmatically restricted use of native Spanish (e.g. Al-Kasey and Pérez-Leroux, 1998; Pérez-Leroux and Glass, 1999; Licerias, 1989). Nevertheless, many authors have not correlated these observations with adult cessation to directly access UG (see Rothman and Iverson, 2007a,b for discussion). Most relevant to the present study is observation (ii), which is almost exclusively reported as an overuse of overt subject pronouns in pragmatically odd contexts (but see Montrul and Rodríguez-Louro, 2006), which declines progressively through higher stages of L2 interlanguage (IL), arguably never reaching native-like performance (see Sorace, 2005; Sorace and Filiaci, 2006).

### 4. The hypothesis

In line with previous experimental research and the generalizations/predictions they have put forth, the present study is motivated by the following hypotheses:

- (a) *Hypothesis 1*: English L2 learners of Spanish acquire the syntax of the NSP straightforwardly.
- (b) *Hypothesis 2*: English L2 learners of Spanish will have problems with the distribution of subject pronouns (overt/null) constrained by the pragmatics/discourse, even at developmental stages in which the NSP has been independently shown to have been reset (e.g. via the OPC task).

*Sub-hypotheses:*

- (i) the problem will be unidirectional, Soracés prediction is verified.
  - (ii) the problem will be bidirectional; Soracés prediction is falsified
- (c) *Hypothesis 3*: Problems at the syntax/pragmatics interface are not permanent (contra previous claims. e.g. Sorace, 2005; Sorace and Filiaci, 2006; Belletti et al., 2007; Valenzuela, 2006).

As detailed in the following section, the overall experimental designed for the present study was formulated around these hypotheses. Anticipating the explanation of the full methodology in the next section, it will be seen that hypothesis 1 motivates the inclusion of the OPC experiment; hypothesis 2 motivates experiments 2 and 3 while hypothesis 3 motivates the provided comparison of intermediate and highly advanced subjects.

### 5. The study

The present study compares three experimental groups: (i) a native control group, (ii) a group of intermediate English adult L2 learners of Spanish and (iii) a high advanced group of English-speaking adult L2 learners of Spanish. Data from three experiments are provided, testing for both syntactic knowledge of null subject licensing as well as knowledge of pragmatic pronominal distributional conditions.

#### 5.1. Participants

All of the L2 participants, intermediate and advanced alike, were students at a US research university at the time of data collection. The majority of the intermediate participants were undergraduate Spanish majors and minors, all of who had fulfilled their language requirement and were in Spanish content level courses (literature and/or linguistics).

Originally, 38 intermediate English learners of L2 Spanish were tested; however, success in experiment 1, the OPC task, was a requirement for inclusion in the overall study. As a result, the final group of intermediate L2 learners consisted of 28 individuals (see section 5.2 for rationale). The second group consisted of highly advanced English learners of L2 Spanish ( $n = 23$ ), all of who passed the OPC experiment. Many of these advanced speakers are graduate students in Spanish or related fields and are university instructors of Spanish. Many of these learners are near-native speakers; however, since this was not independently quantified (in the sense of White and Genesee, 1996; Montrul and Slabakova, 2003), I will conservatively refer to them as advanced. The final group was a group of native speaker controls ( $n = 15$ ). The native speakers were also university students from different Spanish speaking countries, including Colombia, Peru, Mexico and Spain. This reflects the gamut of dialects that the L2 participants are exposed to in class, as many of their instructors are from these countries.

L2 participants were selected for this study if they met the following requirements: (i) their L1 was English; (ii) they were not bilinguals of [+ null subject] languages nor was a [+ null subject] language spoken in their home; (iii) they had no substantial exposure to Caribbean Spanish in or outside of the classroom.<sup>3</sup> For the intermediate group, the mean age was 19.7 with a range of 18–22. For the advanced group, the mean age was 27.4 with a range of 22–36.

## 5.2. Experiment 1: co-reference interpretation task: L2 knowledge of the OPC

The first task tested for knowledge of interpretive restrictions on co-reference via proper application of the OPC (Montalbetti, 1984), whose syntactic trigger is the [+ null subject] setting of the NSP (see section 2, example (10)). In accordance with other research that has examined semantic POS effects associated with the acquisition of L2 morphosyntactic features (e.g. Dekydtspotter et al., 1997, 1999–2000; Dekydtspotter and Sprouse, 2001; Montrul and Slabakova, 2003; Slabakova, 2006), it is assumed that L2 knowledge of properties that constitute a *poverty-of-the-stimulus* provides unassailable evidence for L2 sensitivity to (acquisition of) associated target morphosyntactic features.

Passing this first experiment was deemed a necessary prerequisite for inclusion in the overall study since it is assumed that native-like knowledge of the OPC indicates that the syntax of null subjects has been acquired. Given the present discussion, reasonably ensuring that the L2 learners have reset the NSP is an important first step. That is, in order to isolate possible pragmatic deficits in this domain, one must present reasonably strong evidence to rule out syntactic deficits as the source of performance problems. Demonstrating L2 knowledge of the OPC does just that.

In a similar study, Pérez-Leroux and Glass (1997, 1999) demonstrated that intermediate L2 learners demonstrate sensitivity to the OPC concurrent with subject pronoun distributional differences. Rothman and Iverson (2007a,b) noted a similar tendency, but their analysis of individual learner data revealed that such a tendency, at least in their populations, was actually indicative of a mix of divergent individual performances within intermediate aggregates. Rothman and Iverson demonstrated that there were two L2 intermediate subgroups: (i) those that had clear OPC knowledge, performing entirely within the range of the native controls and (ii) those that performed below, at or around chance levels. The combination of the two subgroups conferred a false impression of an overall L2 intermediate tendency that did not accurately describe the performances of either subgroup. In light of this, the individual data are considered and only those individual learners that perform within the native-speaker range are included.

The present OPC experiment is a co-reference judgment task modified from Rothman and Iverson's (2007a,b) Spanish experiment, which was modeled after Kanno's (1998a) OPC experiment for English intermediate learners of L2 Japanese. The subjects were provided with contextualized sentences of four types ( $n = 10$  per type), as in (11). The subjects were instructed to read each sentence carefully and then determine the co-reference relationship of the

<sup>3</sup> Null vs. overt subject pronoun distribution is different in Caribbean dialects of Spanish, whereby more overt subjects are used. In an effort to avoid any possible confound this might have caused participants, those who had substantial exposure to these dialects were excluded from taking the experiment. However, I do not assume that excluding these L2 learners assured the selection of participants that never received ambiguous input since such an assumption would idealize a situation in which the only exposure they had was that of native speakers from other dialects. Obviously, L2 learners are exposed to non-native Spanish, which likely has a different distribution of referential subject pronouns, whether it be from the output of fellow students or non-native instructors. The truth is that L2 learners, at least tutored ones, especially at lower levels of proficiency, are exposed to ambiguous input in this regard and the extent to which this is deterministic in their performance is unknown. A future study comparing proficiency matched tutored versus naturalistic L2 learners would likely shed some light on this. However, we do know that a similar pattern is seen in childhood bilingualism (see Paradis and Navarro, 2003) and so-called attrition (Montrul, 2004).

embedded subject pronoun (overt or null), which they indicated by circling either (a) a co-reference interpretation, (b) a disjoint referential interpretation or both (a) and (b) if they felt both interpretations were possible.

(11) (a) **Null embedded pronoun with QDP/wh matrix subject**

*Ningún niño confesó que Ø había roto la silla.*  
No child confessed that Ø had broken the chair.

Who do you suppose did not confess that he had broken the chair?

(a) the same as *Ningún niño* (b) someone else

(b) **Null embedded pronoun with DP matrix subject**

*Ayer los muchachos estaban en la sala hablando de lo preocupado que se sentían.*  
*Repentinamente, su padre entró y les prometió que Ø no volvería a fumar más nunca.*

Yesterday the brothers were speaking in the living room about how worried they were. Suddenly, their father entered and said that Ø would never smoke again.

Who do you suppose will never smoke again?

(a) *el padre* (b) someone else who is not *el padre*

(c) **Overt embedded pronoun with a DP matrix subject**

*Vicente afirmó ayer que él le había pedido la mano a su novia y que ellos se casarían en julio.*  
Vincent affirmed yesterday that he had asked for his girlfriend's hand in marriage and that they would be married in July.

Who do you suppose asked his girlfriend to marry him?

(a) Vicente (b) someone else

(d) **Overt embedded pronoun with a QDP/wh matrix subject**

*¿Quién ha dicho que ella es la más bonita del grupo de amigas?*  
Who said that she was the prettiest of the group of friends?

Who do you suppose thinks she is the prettiest?

(a) the same person as *Quién* (b) someone else

In sentence types (11a) and (11b), both a co-reference and a disjoint referential interpretation are possible in Spanish and English. In sentence type (11c), both interpretations are also available in Spanish and English; however, in Spanish the tendency would be to interpret the embedded subject as disjoint since the presence of the overt subject pronoun is most naturally interpreted with disjoint reference. In sentence type (11d), both interpretations are only available in English; a co-referential interpretation is not available in Spanish as per the OPC.

### 5.3. Experiment 2: pragmatic context-matching felicitousness judgment task

The remaining two tasks were designed to test for L2 knowledge of pragmatic conditions regulating the distribution of null and overt subjects. If L2 learners demonstrate sensitivity to the pragmatic use of subject pronouns in Spanish, this would provide evidence that features interpretable at interfaces can be acquired and that the syntax–pragmatics interface is not an inevitable locus of fossilization.

The first of these tasks was a pragmatic felicitousness task, which asked the participants to judge on a scale of 1–5 how natural the sentences sounded as they related to the contexts they read. In isolation, each of the sentences are grammatically possible in Spanish, as a result it was crucial that the judgments were rendered in accord with how well a sentence matched/flowed from its specific context. A judgment of 1 was defined as completely awkward while a judgment of 5 was defined as completely natural/felicitous. Additionally, the participant was asked to indicate why they judged a context as being awkward in the case they assigned a 1 or a 2, by fixing it so that it would sound more

natural. So that vocabulary was not a confounder, the contexts were given in English.<sup>4</sup> There were four types of sentences ( $n = 5$  each type), as in (12).

(12) (a) **Context supports overt subject**

My friends and I need new shoes. I always buy white shoes, but lately red shoes have become popular. I think about buying red shoes, but when we get to the shoe store I don't like any and decide to stick with my classic color. My friends still think the red shoes are really cool.

*Ellos van a comprar los rojos y yo voy a comprar los blancos.*

They go-3ppl-pres. to-prep. buy-inf. the-masc.-pl reds-masc.-pl and I go-1psg-pres. to-prep. buy-inf. the-masc.-pl white-masc.-pl

'They are going to buy the red ones and I the white ones.'

1                      2                      3                      4                      5

(b) **Context supports null subject**

My girlfriend is studying abroad this semester. I'm very happy for her, but I miss her terribly. I really wish I were able to talk to her more.

*Mi novia está fuera del país y nunca hablo con ella porque siempre está ocupada.*

My girlfriend be-3psg.-pres. out of the country and *pro* never talk-1psg.-pres. because *pro* always be-3psg.-pres. busy.

'My girlfriend is out of the country and I never talk to her because she is always busy'

1                      2                      3                      4                      5

(c) **Context does not support overt subject**

Paul doesn't get paid very much at his job, but he works long hours and doesn't sleep much. His friends like to go out on Fridays, but he never goes.

Paula does not want to go out on Fridays because he does not have a lot of money and because he is always tired.

*Creo que él tiene vergüenza porque él no gana mucho dinero y por eso él no tiene mucho dinero para salir a tomar.*

*pro* believe-1psg.-pres. that he have-3psg.-pres. shame because he not be-3psg.-pres. much Money and for this he not have-3psg.-pres. much Money for go-inf. out drink-inf.

'I think that he is embarrassed because he does not make much money and therefore does not have much money to go out drinking.'

1                      2                      3                      4                      5

(d) **Context does not support null subject**

My sister and I always help out with the chores around our house. Today the carpets are especially dirty and need to be vacuumed.

*Mi madre quiere que lo haga.*

My mother want-3psg.-pres. that it-clitic-acc. *pro* do-1/3psg.-pres.-subj.

'My mother wants me to do it.'

1                      2                      3                      4                      5

<sup>4</sup> A reviewer pointed out the possibility of a Type I error needing to be controlled, a point with which I completely agree. This is controlled for with the methodology used. The procedure used for examining group differences here is called Fisher's least significant difference (LSD) procedure. In this method, the null hypothesis that all group means are equal is first tested using an ANOVA. Then, only at the suggestion of a significant  $f$ -value resulting from the ANOVA, group means are compared pairwise using  $t$ -tests. False positives are prevented by only making further statistical investigations when warranted by the results of the ANOVA. The significance level of the ANOVA (i.e. 0.05) is maintained throughout the process.

Contexts like (12a) and (12b) supported their accompanying sentences since they respectively presented pragmatic environments with either contrastive focus or not. As a result, judgments on these sentences should have been on the positive side of the scale. Contexts like (12c) and (12d), however, did not support the type of subject pronoun in the accompanying sentence and should have been judged on the negative side of the scale. That is, contexts like (12c) did not pragmatically warrant the use of overt subjects since there was no sense of disambiguation, switch-reference, contrastive focus or the like from the context. Conversely, contexts like (12d) did create such pragmatic environments that require the use of an overt subject, but the Spanish sentences did not contain one.

#### 5.4. Experiment 3: pragmatic context translation task

The final task was a translation task. This task provided five contextualized stories. Within each story, there were four context dependent sentences to be translated, making a total of 20 sentences ( $n = 5$  of each contextualized sentence translation type). The first type, like (13a), was a sentence without contrastive focus from the context. The second type, like (13b), was an answer to a topic question. The third type, like (13c), had a corresponding context with contrastive focus. The fourth type, as in (13d), is the answer to a yes/no question.

- (13) (a) My friend Juan is a scientist who is currently in Antarctica. He's very isolated and doesn't have a television, radio, telephone or the internet. I recently received a letter from him suggesting that I come stay with him during the warm season.

*Translate: I hate the cold, but I want to visit him because we are best friends.*

- (b) I tell my mom that I'm going to Antarctica for a while. She tells me to make a list of everything I need and to not forget to pack a little sunscreen since there is a hole in the ozone layer in Antarctica. Just then, my dad, who caught the very end of the conversation, walks into the room. He asks, "Who did you say is going to Antarctica?" I respond:

*Translate: I'm going to Antarctica to visit Juan.*

- (c) My dad starts asking me a million questions about the trip. He wants to know how I'm getting there, how long I'll be gone, if I have the proper equipment, etc. He asks me when the last time was I went to Antarctica and if Juan has any experience in the cold.

*Translate: I've never visited there, but he has lived there for two years.*

- (d) My visit to Antarctica was fantastic and I was sad when I left. It's been two years since I made the trip. But, finally, Juan has finished his research and is able to come home. Since I haven't seen him for a very long time, I'm very excited. My dad can see this, and says, "I see you're pretty excited. Juan gets home today, doesn't he?" I tell him:

*Translate: "Yes. He arrives at the airport at two."*

For sentence translations like (13a) and (13d), null subjects are expected since these referential subjects do not satisfy the pragmatic conditions that require overt subject pronouns in Spanish. Conversely, sentence translations like (13b) and (13c) should contain overt subject pronouns since they meet the focus/switch-reference criteria that require overt subjects in Spanish. The vocabulary employed in the sentence translations should have been familiar to the L2 learners at the intermediate level. However, they were permitted to ask the research assistant for any vocabulary words that they did not know since this was not the focus of the experiment.

## 6. Results

This section is divided into three subparts, which correspond to the three empirical experiments. Each subsection is further divided into two components: (i) a descriptive analysis of the results and (ii) a quantitative statistical analysis of the group data, which compares the mean score performance of both groups of L2 learners against the native speaker control, and the L2 learners against each other. Additionally, each group is compared against themselves across contexts. Three

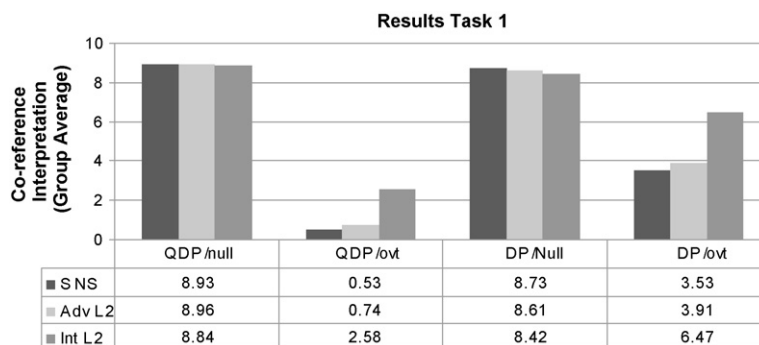


Fig. 1. Results task 1. **QDP/null** = quantified or wh-matrix subject with a null embedded subject pronoun; **QDP/overt** = quantified or wh-matrix subject with an overt embedded subject pronoun; **DP/null** = non-quantified DP/NP subject with a null embedded subject pronoun; **DP/overt** = non-quantified DP/NP subject with an overt embedded subject pronoun.

Table 1  
Results task 1 (intragroup comparisons)

	QDP/null vs. QDP/overt		QDP/overt vs. DP/overt	
	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
SNS	39.29	<0.001	9.27	<0.001
Adv L2	36.31	<0.001	13.19	<0.001
Int L2	10.93	<0.001	10.44	<0.001

statistical analyses were done for each experiment: (1) an intergroup comparison for each context, (2) an intragroup comparison between two contexts and (3) an intergroup comparison of the difference between two contexts. An ANOVA, when relevant, is used as an initial statistical measure across the groups and is followed by a series of two-sample *t*-tests when needed as further measures of statistical significance. When comparing a group to itself, paired *t*-tests are used. As is standard, the alpha value was set at (0.05) to ensure statistical confidence.<sup>5</sup> Additionally, in an effort to best understand the significance of the group data for Experiment 1, the OPC task, descriptive and quantitative analyses of two L2 subgroups, based on patterns revealed at the individual learner level, are provided.

## 6.1. Results task 1: OPC

### 6.1.1. Descriptive analysis

The group results for Experiment 1 can be seen in Fig. 1. The relevant comparisons are the rate-difference in co-reference interpretations derived depending on either the type of embedded subject (i.e. overt embedded subject vs. a null embedded subject) with a QDP/wh-matrix subject or the type of matrix clause subject (i.e. QDP/wh-phrase matrix subject vs. an NP matrix subject) when the embedded subject is overt.

From Fig. 1, it can be seen that the advanced group performed remarkably native-like. Conversely, only in one relevant comparison type, co-reference interpretations with QDP/wh-phrase matrix subject with an overt embedded subject vs. an NP with an overt embedded subject, does the group of intermediate L2 learners approximate the native speakers' difference (the intermediate L2 group yielded a difference of 3.89 to the SNS 3.00).

### 6.1.2. Statistical analysis

The intragroup comparisons, showing distinctions speakers make between categories, are seen in Table 1 below. Each group made statistically significant distinctions across contexts. As can be seen in the table, all groups yielded

<sup>5</sup> A reviewer pointed out the possibility of a Type I error needing to be controlled, a point with which I completely agree. This is controlled for with the methodology used. The procedure used for examining group differences here is called Fisher's least significant difference (LSD) procedure. In this method, the null hypothesis that all group means are equal is first tested using an ANOVA. Then, only at the suggestion of a significant *f*-value resulting from the ANOVA, group means are compared pairwise using *t*-tests. False positives are prevented by only making further statistical investigations when warranted by the results of the ANOVA. The significance level of the ANOVA (i.e. 0.05) is maintained throughout the process.

Table 2  
Results task 1

	QDP/null–QDP/overt			QDP/overt–DP/overt		
	<i>t(f)</i>	<i>p</i>	d.f.	<i>t(f)</i>	<i>P</i>	d.f.
ANOVA	5.75	0.005	75	1.79	0.174	75
SNS vs. Adv L2	0.59	0.561	34	n.s.	n.s.	*
SNS vs. Int L2	3.49	0.001	45	n.s.	n.s.	*
Adv L2 vs. Int L2	3.17	0.003	47	n.s.	n.s.	*

n.s. = Not significant; \* = not applicable.

a significant difference in co-reference interpretation when the matrix clause subject was either a quantified DP or a *wh*-expression, depending on whether or not the embedded clause subject was null or overt. Moreover, each group yielded a difference in deriving co-reference interpretations when the embedded subject was overt depending on whether the matrix subject was a variable or regular referential expression (DP).

Table 2 shows the intergroup comparisons of the differences learners make across certain contexts. For example, the numerical difference between the rate of co-reference interpretation for a quantified DP or a *wh*-element matrix clause subject with an overt embedded subject and that of a quantified DP or a *wh*-element matrix clause subject with a null embedded subject for the native speakers is compared to that same difference for the advanced learners. As the ANOVA revealed that there were significant differences somewhere between the three groups in the QDP/null–QDP/overt distinction, two-sample *t*-tests were done to follow up. These revealed that there was no statistically significant distinction between the differences made by the native speakers and the advanced L2 group. However, the intermediate L2 group behavior was statistically different from both the native and advanced L2 groups. With respect to the QDP/overt–DP/overt distinction, there were no significant differences found between the three groups.

Looking more closely at the intermediate L2 learner group, we see that there is a clear L2 sensitivity to the OPC in general. For example, in sentences with a QDP/*wh*-matrix subjects, the L2 aggregate derived co-reference interpretations on average 2.58 out of 10 times when the embedded subject pronoun was overt as compared to 8.84 out of 10 times when the embedded subject pronoun was null, which yields a significant difference ( $t = 10.93, p < 0.001$ ) in interpretation in line with the OPC restriction. Despite this OPC tendency, a comparison of the Spanish native speakers group to the intermediate L2 learner group revealed native/non-native differences in BV interpretations with QDP/*wh*-matrix clause subject contexts depending on the type of embedded subject pronoun (null vs. overt:  $t = 3.49, p = 0.001$ ). Similar significant differences were found by comparing the intermediate L2 group to the advanced L2 group (null vs. overt:  $t = 3.17, p = 0.003$ ).

### 6.1.3. L2 OPC sensitivity?: exploring individual data

It is reasonable to ponder why there should be such a significant native/intermediate L2 difference in performance when the intermediate group demonstrates a clear OPC sensitivity. Although it is enough to show a significant contrast in the intermediate group, it is interesting nonetheless to ponder why the OPC is not respected in a native-like manner by this group (differently from the advanced learner group). This L2 intermediate tendency is seen in other similar studies that tested for OPC restrictions in intermediate L2 Spanish (Pérez-Leroux and Glass, 1997, 1999; Rothman and Iverson, 2007a,b) and intermediate L2 Japanese (Kanno, 1998a,b). Like Rothman and Iverson, and Kanno, I consider individual data in an effort to better contextualize what this so-called tendency denotes.

Turning to the individual data in Task 1 for the intermediate learners, it becomes immediately clear that the group results reflected the averaging of two subgroups: (i) L2 individuals who demonstrated native-like knowledge of the OPC ( $n = 28$ ) and (ii) L2 individuals that did not demonstrate reliable knowledge of the OPC ( $n = 10$ ), performing at or below chance level. This can be visually appreciated in Fig. 2.

For the larger subgroup of 28 intermediate L2 learners, the group rate of co-reference interpretations in OPC restricted contexts drops from 2.58 to 0.79 out of 10 for this subgroup. The rate of co-reference interpretations in contexts with QDP/*wh*-matrix clause subjects and null referential subject pronouns in the embedded clause changes to 8.82 out of 10. Thus, the difference in interpretation of co-reference based on embedded subject pronoun type would be 8.03 for this subgroup, which is statistically significant ( $t = 37.37, p < 0.001$ ). When compared to the mean difference of the natives, there is no statistical significance between their performances (see Table 4 below). Moreover,

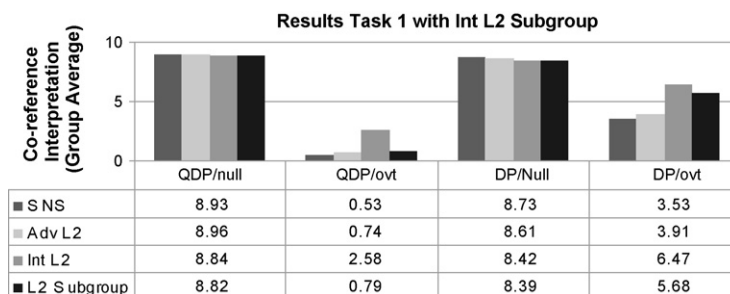


Fig. 2. Results task 1 with intermediate L2 subgroup. **QDP/null** = quantified or *wh*-matrix subject with a null embedded subject pronoun; **QDP/overt** = quantified or *wh*-matrix subject with an overt embedded subject pronoun; **DP/null** = non-quantified DP/NP subject with a null embedded subject pronoun; **DP/overt** = non-quantified DP/NP subject with an overt embedded subject pronoun.

the difference in co-reference interpretations derived by this subgroup as it relates to the type of subject in matrix position (QDP/*wh*-phrase vs. DP) when the embedded subject is overt ( $t = 17.56, p < 0.001$ ) is also significant (see Appendix A for tables that summarize the relevant intra- and intergroup comparisons for the two intermediate subgroups in a parallel manner to the tables in Section 6.1.2). This larger subgroup of intermediate L2 learners has native-like knowledge of OPC restrictions in L2 Spanish.

It is assumed that knowledge of the OPC means that these L2 learners have acquired the syntax of null subjects and thus they have target mental representations for null subjects. Lack of OPC knowledge could indicate the opposite. Given the questions of the present article which explore beyond the syntax of the NSP, the 10 learners from the original intermediate pool that do not show knowledge of the OPC are removed from the intermediate L2 aggregates in the remaining analyses to avoid a possible conflation of confounding issues.

## 6.2. Results experiment 2: pragmatic felicitousness judgment task

### 6.2.1. Descriptive analysis

The purpose of this task was to determine the L2 learners' sensitivity to the overuse and underuse of overt and null referential pronominal subjects in contexts that render them pragmatically odd. Recalling that the participants were asked 'to fix' the sentences they judged unnatural, it is important to mention that only in the case of the native speakers and the advanced learners did corrections consistently indicate the appropriate reason for correction. As can be seen in Fig. 3, the natives and the advanced L2 learners performed quite similarly.

Both non-native groups and the native control reliably judge overt referential subject pronouns used in contrastive focus environments as well as null subjects in non-contrastive focus environments highly. The advanced L2 and native control groups consistently judge sentences with overt referential pronoun subjects without contrastive focus and null subjects used with contrastive focus contexts as pragmatically anomalous. Conversely, the intermediate L2 learners only do not differentiate the appropriateness of overt subject and null subject use based on pragmatic conditions,

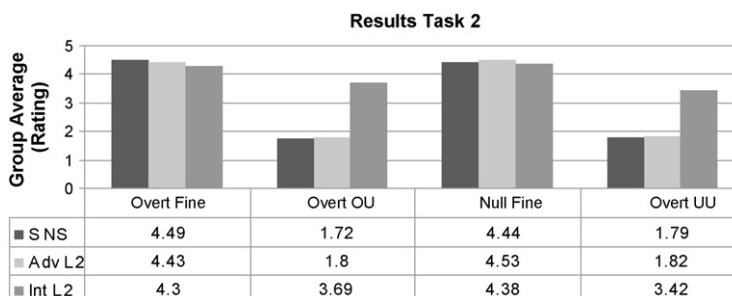


Fig. 3. Results task 2 (with intermediate L2 subgroup). **Overt fine** = represents that the contexts pragmatically permit overt subject pronouns; **Overt OU** = represents that the contexts did not permit overt subjects, but favored null subjects, reflecting an overuse of them; **Null Fine** = represents that the context pragmatically favored null subjects; **Overt UU** = represents contexts in which overt subjects were expected by the pragmatic contexts although they were absent, constituting an under-use of overt subjects (or over-use of null subjects).

Table 3  
Results task 2 (intragroup comparisons)

	CF overt fine vs. overt OU		CF overt fine vs. overt UU		Null fine vs. overt OU		Null fine vs. overt UU	
	<i>t(f)</i>	<i>p</i>	<i>t(f)</i>	<i>p</i>	<i>t(f)</i>	<i>p</i>	<i>t(f)</i>	<i>p</i>
SNS	24.06	<0.001	16.59	<0.001	30.56	<0.001	16.93	<0.001
Adv L2	26.47	<0.001	28.62	<0.001	27.89	<0.001	23.42	<0.001
Int L2	3.76	0.001	5.99	<0.001	4.77	<0.001	6.73	<0.001

suggesting that they do not know that overt subject pronouns in Spanish are mediated by pragmatic conditions related to the notion of focus and topic-shift. Interestingly, their judgments indicate over acceptance of both overt and null subject pronouns in environments where they are pragmatically odd for native speakers.

### 6.2.2. Statistical analysis

Table 3 shows the intragroup distinctions made by each group across counterbalanced categories (results for intergroup comparisons across single contexts are available in Appendix B). All groups made statistically significant distinctions in acceptance between each relevant pairing. That is, all three groups distinguished between the acceptability of pragmatically felicitous overt pronouns vs. their overuse (used with a pragmatic necessity) or under use (not used when pragmatically warranted). Additionally, all groups judge differently null subjects when used felicitously as opposed to their overuse or under use (note that an over use of overt subjects is an under use of null subjects and vice versa).

Table 4 shows how the degrees of distinction made between the categories presented in Table 3 across groups by comparing the difference between two categories for one group against that same difference for another group. While Table 3 revealed that each group distinguished between categories, the statistics presented in Table 4 can confirm whether these distinctions are indeed native-like. As can be seen in the table below, the ANOVA showed that there were significant differences in all comparisons; therefore, two-sample *t*-tests were done to see where the differences lie. The *t*-tests revealed no significant differences between the advanced L2 group and the native speakers for any category comparisons, while it was shown that the intermediate L2 group varied significantly from both groups in all relevant comparisons.

### 6.3. Results experiment 3: context sentence translation task

#### 6.3.1. Descriptive analysis

The purpose of this final task was to test L2 production of null and overt referential subject pronouns in light of translations of two sets of pragmatically counter-balanced sentences whose contexts render the use of overt subjects pragmatically expected or odd. The two counterbalanced environments included contexts with and without Contrastive Focus (CF) and answers to Topic-*wh* and Yes/No questions. The results are reported as total number of overt subject uses in a particular context (where 5 equals 100%). As can be seen in Fig. 4, the data from Experiment 3 confirm the results of Experiment 2. The native speakers and the advanced L2 learners again performed quite similarly. Both groups produced overt subject pronouns consistently only in translations of sentences supported by environments with CF contexts and as answers to Topic-*wh* questions. Conversely, they produced a negligible number of overt pronouns in the other two environments.

The intermediate learners, however, performed very differently from both the natives and the advanced L2 learners, producing many null subjects across all four contexts. While this behavior further indicates that they are able to

Table 4  
Results task 2

	CF fine–OOU			CF fine–OUU			Null fine–OOU			Null fine–OUU		
	<i>t(f)</i>	<i>p</i>	d.f.	<i>t(f)</i>	<i>p</i>	d.f.	<i>t(f)</i>	<i>p</i>	d.f.	<i>t(f)</i>	<i>p</i>	d.f.
ANOVA	78.4	<0.001	65	61.35	<0.001	65	93.45	<0.001	65	55.96	<0.001	65
SNS vs. Adv L2	0.91	0.370	31	0.48	0.638	22	0.08	0.938	35	0.31	0.762	28
SNS vs. Int L2	10.8	<0.001	40	8.33	<0.001	34	11.9	<0.001	40	8.01	<0.001	34
Adv L2 vs. Int L2	10.6	<0.001	43	9.82	<0.001	48	11.63	<0.001	45	9.57	<0.001	48

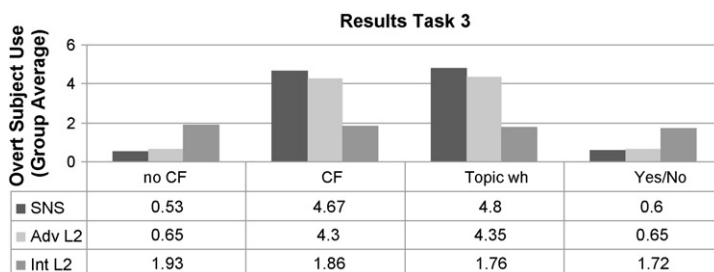


Fig. 4. Results task 3 (with intermediate L2 subgroup). **No CF** = contexts without contrastive focus, null subjects expected; **CF** = contexts with contrastive focus, overt subjects expected; **Topic-wh** = answers to topic-wh questions, overt pronouns expected; **Yes/No** = answers to yes/no questions, null subjects expected.

syntactically license null subject pronouns, it demonstrates a failure to differentiate among any of the contexts in terms of when overt subjects are pragmatically licensed (or not). In failing to do so, the results of Experiment 3 further support the conclusion that the intermediate learners have not acquired the switch-reference properties of overt subjects in Spanish. It is quite interesting, and thus worthy of mention, that the intermediate learners not only show an overuse of overt subject pronoun production in environments where they are pragmatically odd, but they also show an over-production of null subjects in environments where overt subjects are discursively expected. While this result is unexpected by Sorace’s (2004) claims, it is consistent with other recent findings (Montrul and Rodríguez-Louro, 2006; Rothman, 2007).

6.3.2. Statistical analysis

The results for the statistical analysis are presented in Tables 5–7 below. Table 5 shows the comparisons of overt subject use, examining whether each group used overt subjects with the same frequency for a given category. A series of ANOVAs revealed significant differences in each category, so two-sample *t*-tests were conducted as a follow up. These tests showed that intermediate L2 group deviated from the performance of the other two groups. The advanced L2 group differed significantly from the native group in only one context, Topic *wh*-questions. However, comparing the means for both groups in this environment (natives = 4.8, advanced L2 = 4.35) shows that while these numbers may be statistically significantly different, the advanced L2 learners still produce overt subjects reliably in this context—well over 80% of the time.

Table 6 shows the intragroup comparisons for the relevant contexts. This table allows one to see whether each group makes a distinction between non-contrastive focus vs. contrastive focus environments or topic *wh*-question vs. yes/no question contexts as they relate to overt subject use. Both the native and advanced L2 groups made highly significant

Table 5  
Results task 3 (intergroup comparisons)

	No CF			CF			Topic Wh			Yes/no		
	<i>t</i> ( <i>f</i> )	<i>p</i>	d.f.	<i>t</i> ( <i>f</i> )	<i>p</i>	d.f.	<i>t</i> ( <i>f</i> )	<i>p</i>	d.f.	<i>t</i> ( <i>f</i> )	<i>p</i>	d.f.
ANOVA	17.3	<0.001	65	70.15	<0.001	65	63.60	<0.001	65	12.61	<0.001	65
SNS vs. Adv L2	0.58	0.565	27	1.87	0.069	35	2.47	0.019	35	0.25	0.807	30
SNS vs. Int L2	4.95	<0.001	40	11.34	<0.001	36	11.16	<0.001	40	4.2	<0.001	39
Adv L2 vs. Int L2	4.98	<0.001	41	9.36	<0.001	44	8.76	<0.001	46	4.3	<0.001	46

Table 6  
Results task 3 (intragroup comparisons)

	No CF vs. CF		Topic Wh vs. yes/no	
	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
SNS	25.02	<0.001	21.0	<0.001
Adv L2	19.8	<0.001	17.38	<0.001
Int L2	0.33	0.742	0.8	0.429

Table 7  
Results task 3

	No CF–CF			Topic Wh–yes/no		
	<i>t</i> ( <i>f</i> )	<i>p</i>	d.f.	<i>t</i> ( <i>f</i> )	<i>p</i>	d.f.
ANOVA	70.36	<0.001	65	65.24	<0.001	65
SNS vs. Adv L2	1.94	0.06	35	1.73	0.093	35
SNS vs. Int L2	11.11	<0.001	37	10.68	<0.001	40
Adv L2 vs. Int L2	9.54	<0.001	42	9.14	<0.001	45

distinctions in these contexts. The intermediate group, however, made no such distinctions, effectively producing overt subjects at the same rate between the relevant contexts.

Table 7 compares the degree of distinction made in the contexts given in Table 5 across groups. That is, through this comparison we are able to see if the distinctions made in the comparisons in Table 6 are native-like. Not surprisingly, there are statistically significant differences between the intermediate L2 group and both other groups. There are no statistically significant differences between the advanced L2 learners and the native group. When coupled with Table 6, this suggests that the advanced learners not only make distinctions between the given categories, but that these distinctions are native-like.

## 7. Discussion of results

In this section, the data from all three experiments are brought together and summarized in an effort to draw general conclusions. Additionally, implications of these general conclusions are discussed in terms of what they bring to bear on current L2 theorizing.

Results from experiment one are consistent with previous research that tested for L2 knowledge of the OPC (e.g. Kanno, 1998a,b; Pérez-Leroux and Glass, 1999; Rothman and Iverson, 2007a,b). The advanced group performed completely native-like. Being conservative, I divided the intermediate group into two subgroups since only the intermediate learners who demonstrated clear knowledge of the OPC were assumed to have reset the NSP. These intermediate learners comprised the aggregate used in the remaining two experiments in an effort to quantify the extent to which re-setting the syntactic parameter (the NSP) correlates to associated knowledge of pronominal subject distribution.

The two remaining experiments demonstrated that intermediate learners who otherwise demonstrate relevant syntactic knowledge have not acquired the pragmatic conditions that regulate null vs. overt subject distribution. The two experiments had different methodologies/designs in an effort to see if L2 judgments and elicited production correlated. The intermediate group's performances on both tasks were decidedly and similarly non-target-like. Conversely, despite small differences highlighted in the discussions throughout section 6, the advanced learners performed more or less like the native controls on all of the experiments.

What can be taken from all of the above analyzed data is two-fold: (a) L2 learners are sensitive to the syntax of null-subjects well before they become sensitive to their pragmatic distribution and (b) L2 learners can acquire features interpreted at the syntax–pragmatics interface, but the acquisition of these interpretable features are more difficult than interpretable features relevant only to the narrow syntax. This discovery is not new (see Sorace, 2005; Sorace and Filiaci, 2006), but the question still remains as to why this should be and if the current data is explained by previous accounts.

Much of the results obtained here are expected by Sorace's (2005) interface vulnerability hypothesis (also see Papp, 2000); however, if her analysis is entirely correct, some of the results are left unexplained. Specifically talking about pronominal subject distribution of this sort, Sorace (2004) argues that cross-linguistic influence, in this case from English, must be unidirectional insofar as it obtains on a basis of a less to more economical continuum. Since Spanish referential pronouns are more complex than English ones, Sorace predicts that cross-linguistic influences can be seen via an English effect on Spanish, that is, an overuse of overt subjects is predicted, but not the observed overuse of null subjects. In other words, if English interference affects the acquisition of pragmatic features specifically (and even indefinitely) then these L2 Spanish learners should not only demonstrate a lack of sensitivity to overusing overt subjects, but also have a keen sensitivity to overuse of null subjects (i.e. under use of overt subjects) when they are pragmatically awkward. Sorace and Filiaci (2006) make the claim that effects at the syntax–pragmatics interface obtain, even in near-natives, from the added difficulty involved in the integration of the multiple types of information

related to the proper use of pronominal subjects. In such a case, a default emerges, the overt form, favored by influences of the L1 and L1/L2 differences in processing strategies. Again, under both scenarios, L1/L2 differences should highly favor the overuse of overt pronouns. This observation, however, was not supported. The intermediate learners showed a lack of sensitivity to both the overuse and under use of overt subject (i.e. overuse of null subject) pronouns and over and under produced them (context depending) in the production task.

Earlier, I discussed the Avoid Pronoun Principle ((APP) Chomsky, 1981), which I assumed is actually subsumed under some larger universal consideration of economy. In any case, being universal, all L2 learners should come to the learning process with the knowledge that using null subjects is more economical than overt ones and should thus favor the use of null subjects if and only if they can converge on a grammar that licenses null subjects in the first place. The present data, which is consistent with other data sets (see Montrul and Rodríguez-Louro, 2006), demonstrate that this logical expectation is not what happens. On the one hand, one could argue that the overuse/over acceptance of null subjects is perfectly consistent with both a null-subject grammar and a grammar that has the APP instantiated. However, the APP requires null subjects to be used only when they (i) can be licensed and (ii) can be identified. Nevertheless, this L2 overuse/over acceptance of pragmatically odd null subjects occurred even in environments with ambiguous verbal morphology (3rd person singular and plural) from which the subject could not be identified. Additionally, the intermediate learner overused/over accepted both pragmatically odd overt and null subjects, a behavior which could not be explained by a grammar that respects the APP (or its subsuming general rule of economy). Should this lead us to suggest that adult learners do not have access to universals, or that they cannot acquire features interpretable at interfaces? The data from the advanced group tells us that such an analysis is untenable insofar as this non-target-like behavior is eventually surmountable.

With others (Sorace, 2004, 2007; Tsimpli et al., 2004; Sorace and Filiaci, 2006), I would like to suggest that the present data can be explained by assuming that L1 English exercises an effect on the acquisition of features at interfaces and that the additional complexity involved in the integration of syntactic and pragmatic information related to pronominal subject distribution in Spanish contributes to the delays observed in the acquisition of these properties. However, the present data do not favor the claim that there is a unidirectional default, favoring the overuse of overt subjects (Sorace and Filiaci, 2006), at least not for Spanish. The bidirectional target-deviancy observed in subject pronoun use in this study in intermediate learners can be explained by the fact that the relevant pragmatic features for Spanish subject distribution are acquired late precisely because they involve the integration of multiple layers of information at the syntax–pragmatics interface. And so, subject pronoun use for these L2 learners is in a state of free variation; it is unconstrained by the information-structure/pragmatics interface whereas, conversely, it is decidedly constrained by discourse context for native speakers of Spanish. If they have acquired the ability to license null subjects, and pronominal subject use is in a type of free variation for L2 learners at this stage it is, in theory, equally possible that pronominal subjects in any environment could be overt or null. On a continuum of proficiency, these pragmatic features are eventually acquired and this target-deviancy begins to decline, all but fading away by very high levels.

This possibility brings us to a larger question of why the syntax–pragmatics interface is seemingly more difficult than other interfaces, for example, the syntax–semantics one (Tsimpli and Sorace, 2006). It is an interesting question in light of the fact that pragmatic distributional patterns are evidenced in the input while semantic evidence is often entirely lacking from available input. Recently, Sorace and colleagues have suggested that the asymmetry has to do with a difference between internal and external interfaces. Difficulties at the syntax–pragmatics interface, being an external interface, are processing difficulties predicated on the greater complexity inherent to the integration of syntactic and pragmatic information involved in the selection of subject pronouns (null vs. overt). Moreover, intermediate learners who are still focusing on forms and grammatical information likely find it more challenging to acquire pragmatic conditions since discursive patterns are less salient to them as they struggle to interpret meaning. After all, overusing overt pronouns is not wrong per se. It is simply pragmatically odd. Worse, however, is the failure to use overt subjects when the discourse information does not provide an immediately identifiable/accessible subject (such is the case when new information is introduced). However, as long as the learner is able to assign some referent to the null subject it is interpretable to at least him/her. Over time and as proficiency increases, L2 learners can be more sensitive to the pragmatic environments of subject use, thus intaking the input necessary to acquire pragmatic features. The present data seem to indicate that syntax–pragmatics interface difficulties can be overcome as proficiency develops (but see Sorace and Filiaci, 2006; Valenzuela, 2006).

Additionally, there is an important aspect to research of this type that cannot be ignored. Although the present data, as is the case with other available data, are unable to exclude this possible confound it is worthy of mention.

Pragmatic conditions are imparted to language learners on the basis of discourse patterns. That is, unlike other features such as grammatical [gender] and [number] features, features like [+ Focus] or [+ Topic-Shift] are not encoded in the lexicon. Logically, for a learner, child and adult alike, to acquire these pragmatic features, the discourse pattern that they are exposed to must provide unambiguous evidence as far as this is concerned. It is possible that a contributing factor to the delay in acquiring subject distribution in L2 Spanish and/or any ‘residual optionality’ for some highly advanced learners has to do with the type of input they receive. Here I am referring to two types of input that could likely come to bear on production and judgment outcomes. First, L2 learners are almost unavoidably exposed to non-native input both at the level of their peers and even at the level of instruction. Insofar as they receive non-native input, one cannot take for granted that they receive unambiguous input in regards to the pragmatics of pronominal subjects in Spanish. Even in the case L2 learners receive naturalistic input, it is likely that such input employs a greater frequency of overt subjects than normal since emphatic speech is more commonly used by natives to help non-native speakers understand, especially when the non-natives’ proficiency is at the beginning and intermediate stages. This latter type of input would not provide pragmatically odd uses of overt subjects, but would simply provide a greater frequency of overt subjects in general. Coupled with the likelihood that they receive ambiguous evidence from non-native speech, a greater frequency of overt subjects in native input than would be normal, even when pragmatically warranted, could compound the difficulty L2 learners have initially, especially if the pragmatic environment of the native overt subjects is not salient to the learners who are just focusing on the meaning. Moreover, we often treat subject distribution in native Spanish as if there were no native variation, which is of course inaccurate. For example, Caribbean dialects of Spanish systematically use more overt subjects and exposure to these dialects (a variable I attempted to control for in the present study) could have unavoidable effects (see [Paradis and Navarro, 2003](#) for possible effects in bilingual child acquisition). Even in dialects that are said to have a rigorous pragmatic distribution of overt and null subjects, there are native speakers who vary in actual use/choice. For example, [Carminati \(2005\)](#) and [Tsimpli et al. \(2004\)](#) have shown that some monolingual speakers of Italian choose overt pronouns approximately 10–20% of the time in contexts where a null subject is the preferred pragmatic option. One cannot ignore the fact that different situations of exposure to input itself could confer delays in the acquisition of pragmatic conditions. In the present case, if input type is a contributing factor than the delay would only be expected with the pragmatics and not the syntax of Spanish subjects, a possibility which is supported not only by the present data, but by the literature as a whole on this topic.

## 8. Conclusion

In light of the compiling evidence which supports the idea that adult L2 learners continue to fully access UG in non-primary language learning (see [White, 2003](#) for discussion of literature) juxtaposed with the variable success of adult L2 learners it has become increasingly more the focus of contemporary L2 acquisition research to identify the variables involved in adult language learning that result in non-target-like L2 behavior. It is for this reason that, in addition to providing unassailable evidence in support of adult UG accessibility (via L2 POS effects), recent research has placed an onus on explicating why the majority of adult L2 grammars are different than L1 grammars. While it is not yet entirely clear why L1/L2 differences obtain, it seems clear that there are mitigating circumstances in L2 acquisition whereby a one-to-one comparison of adult L2 grammars to target L1 grammars is not entirely fair. The present research highlights what many other studies have shown: that L2 syntactic competence can be native-like despite target-deviancy resulting from the interface of syntax with other linguistic modules.

As we have seen in the present study, the syntax/discourse-pragmatics interface is a particularly vulnerable interface for adult L2 learners. Since pragmatics and syntax must interface, this observation results in the real possibility that L2 target-deviant syntactic performance for particular properties is more accurately explained in terms of deficits in pragmatic knowledge despite sophisticated native-like syntactic knowledge. Framed within the syntax-before-discourse observation (e.g. [Flynn, 1987](#); [Montrul, 2004](#); [Montrul and Rodríguez-Louro, 2006](#); [Pacheco and Flynn, 2006](#); [Papp, 2000](#); [Pérez-Leroux and Glass, 1999](#); [Serratrice, 2004](#); [Serratrice et al., 2004](#); [Sorace, 2000, 2003, 2004, 2005](#)), this hypothesis was examined in the present study by investigating L2 sensitivity to both syntactic and discursive constraints that regulate the distribution of null and overt subjects in Spanish. The results demonstrated that L2 learners have early sensitivity to the syntax coupled with insensitivity to the discourse-pragmatic conditions of pronominal subjects in Spanish. Unlike most previous studies, it was demonstrated that L2 intermediate non-target-like behavior manifests as an overuse (the expected scenario) as well as an underuse of overt subjects depending on the

context. However, it was demonstrated that pragmatic delays are overcome at advanced levels, which suggests that the syntax–pragmatics interface is not an inevitable locus of fossilization (in contra Valenzuela, 2006).

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## Appendix A. Intra and inter-group comparisons for the intermediate subgroups for experiment 1

See Tables A.1 and A.2.

Table A.1  
Results task 1 with L2 subgroup (intragroup comparisons)

	QDP/null vs. QDP/overt		QDP/overt vs. DP/overt	
	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
SNS	39.29	<0.001	9.27	<0.001
Adv L2	36.31	<0.001	13.19	<0.001
Int L2 Sub	37.37	<0.001	17.56	<0.001

Table A.2  
Results task 1 with L2 subgroup

	QDP/null–QDP/overt			QDP/overt–DP/overt		
	<i>t(f)</i>	<i>p</i>	d.f.	<i>t(f)</i>	<i>p</i>	d.f.
ANOVA	0.6	0.552	65	14.83	<0.001	65
SNS vs. Adv L2	n.s.	n.s.	*	0.416	0.67	28
SNS vs. Int L2 Sub	n.s.	n.s.	*	4.43	<0.001	33
Adv L2 vs. Int L2 Sub	n.s.	n.s.	*	4.67	<0.001	48

## Appendix B

See Table B.1.

Table B.1  
Results task 2: intergroup comparisons across single contexts

	CF overt fine			Overt overuse			Null fine			Overt underuse		
	<i>t(f)</i>	<i>p</i>	d.f.	<i>t(f)</i>	<i>p</i>	d.f.	<i>t(f)</i>	<i>p</i>	d.f.	<i>t(f)</i>	<i>p</i>	d.f.
ANOVA	2.34	0.105	65	92.6	<0.001	65	1.47	0.238	65	73.47	<0.001	65
SNS vs. Adv L2	n.s.	n.s.	*	0.74	0.468	31	n.s.	n.s.	*	0.24	0.810	24
SNS vs. Int L2	n.s.	n.s.	*	11.71	<0.001	39	n.s.	n.s.	*	9.55	<0.001	40
Adv L2 vs. Int L2	n.s.	n.s.	*	11.59	<0.001	38	n.s.	n.s.	*	10.78	<0.001	39

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### **Further reading**

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