Abstract

The present study considers the acquisition of English pronominal subjects by Greek learners. It aims to explore the role of feature interpretability in L2 acquisition and examine L1 transfer at the syntax–discourse interface. The results have shown persistent optionality manifested through null pronominal subject acceptability/use especially in cases of topic-continuity. This, on the one hand, is attributed to the unavailability of uninterpretable features in L2 acquisition, which renders null pronominal subjects, an L1 syntactic option, active in L2 grammars. On the other hand, it is claimed that this syntactic option is exploited by Greek learners in order to enforce in L2 interpretative effects exactly in the way these are implemented in L1. The conclusion is that the optionality evinced in L2 pronominal subject realization could be related to transfer of L1 formal features rather than to a problem with the interpretable feature of [topic-shift].

1. Theoretical background

1.1 Introduction

Much recent research has focused on the optionality related with morphosyntax when this is regulated by pragmatic or semantic factors (see Sorace & Serratrice 2009, for an overview). L2 inconsistent performance has been accounted for in two ways: narrow syntax vs. the interfaces. Interface Vulnerability Hypotheses (Hulk & Müller 2000; Sorace & Filiaci 2006; Belletti, Bennati & Sorace 2007; Sorace & Serratrice 2009) maintain that in L2 acquisition narrow syntax features are acquirable, but the interfaces and the related interpretable features are not. This implies that crosslinguistic influence may not be relevant to the learnability problems reported. On the other hand, Formal Features Deficit Accounts (Smith & Tsimpli 1995; Hawkins & Hattori 2006) like the Interpretability Hypothesis (Tsimpli & Dimitrakopoulou 2007) attribute L2 variability to a deficit in uninterpretable features, since, according to their proposals, they remain inaccessible in adult L2 acquisition, unlike interpretable features which are more readily available. In this case, the implication is that L1 transfer may be associated with L2 instability.

Previous L2 findings have reported residual optionality in the interpretation of pronominal subjects. Learners were found to overuse overt pronominal subjects in topic-maintenance contexts (Bini 1993; Pérez-Leroux & Glass 1999; Margaza & Bel
A. PRENTZA

2006; Sorace & Filiaci 2006; Belletti, Bennati & Sorace 2007; Lozano 2008) and, to a much lesser extent, to inaccurately use null pronominal subjects in topic-shift contexts (Montrul & Rodriguez Louro 2006; Lozano 2008; 2009). By contrast, concerning production, some studies have reported that speakers of non null-subject languages (NNSLs) learning a null-subject language (NSL) produce null pronominal subjects at rates comparable to those of native speakers (Liceras, Diaz & Maxwell 1999; Belletti, Bennati & Sorace 2007).

Given that the assessment of the causes of L2 optionality in pronominal subject realization requires the investigation of both aspects of the phenomenon, syntactic and interpretive, the current study examines the licensing as well as the interpretation of subject pronouns in English L2 acquisition.

The remaining of this section will analyze the constraints on pronominal subject use and outline the predictions for the current study. Section 2 will present the experiment and the results and Section 3 will discuss them concluding this paper.

1.2 Pronominal subjects: Licensing and distribution

Beginning with the syntactic aspect of pronominal subject use, it is well known that NSLs like Greek feature null lexical and pronominal subjects in matrix and subordinate clauses, a possibility not available for English as [1] demonstrates:

[1] _Ipe oti_ tha mas tilefonisi
Said.3SG that will us.ACC call.3SG
*Said that will call us
‘(S)he said that (s)he will call us’

Within minimalism these differences have been accounted for as differences in the way the uninterpretable D feature on T is valued. In English the phi-features of T are valued by Move/Merge of an overt subject/expletive in the Spec,TP. Conversely, in Greek the valuation proceeds through verbal agreement morphology, which is assumed to be nominal in nature. Therefore, the SpecTP/IP position need not be occupied by an overt subject (Barbosa 1995; 2009; Alexiadou & Anagnostopoulou, 1998; Spyropoulos & Philippaki-Warburton 2001; Roussou & Tsimpli 2006). According to minimalist assumptions on crosslinguistic variation (Chomsky 1995; 2001), this difference between Greek and English amounts to a divergence in the feature specification of the functional head(s) associated with subject-verb agreement or, in other words, to a difference associated with uninterpretable features.

As for the semantic constraints, it has been extensively argued that the distribution of null and overt subjects in NSLs is regulated by the interpretable [topic-shift] feature: while null pronouns denote topic-maintenance, overt pronouns signal topic-shift (Cardinaletti & Starke 2001; Carminati 2002; Tsimpli et al. 2003; 2004; Miltsakaki 2007). In English overt pronouns are obligatory and thus discursively unmarked. See [2] and [3]:

[302]
TRANSFER AT THE SYNTAX–DISCOURSE INTERFACE

[2] — Milise o Janis stin Anna?
    Talked,3SG the,NOM Janis,NOM stin to,ACC Anna,ACC ?
a. — Ne, pro tis milise (topic-continuity)
yes, pro her talked,3SG
b. — ??Ne, aftos tis milise (topic-shift)
yes, he,NOM her talked,3SG

[3] — Did John talk to Anna?
   — Yes, he did (a&b)

Thus, in pronominal subject realization both interpretable and uninterpretable features are involved; interpretable features (i.e., topic-shift) may not parameterized (Chomsky 1995), but can exploit parametric options to encode interpretive effects (Tsimpili et al. 2003; 2004).

Given this mismatch between L1 and L2 regarding the specification of interface conditions to syntactic structures and endorsing the view that uninterpretable features are related to prolonged acquisitional problems, the following are predicted for this experiment:

[4] a. Licensing: due to parameterized formal features, null pronominal subjects will be active in English subordinate clauses even in advanced and very advanced stages of proficiency
b. Interpretation: L2 learners but not the NS will accept/produce more null pronominal subjects when these refer to the main clause subject than when they are referentially disjoint from it, transferring an L1 property

2. The experiment

2.1 Subjects and materials

The participants of the study were 35 intermediate (INT) and 37 advanced (ADV) Greek learners as well as a control group of 25 English natives. Twelve participants of the ADV group were very advanced learners (VA). Notice that our most proficient learners are referred to as very advanced, since they, as all L2 learners, were tested by the Oxford Quick Placement Test (2001), a test which cannot categorize learners as near-natives. We decided to use this screening test, since it was administered to first-year students in the School of English, Aristotle University of Thessaloniki, who formed a considerable part of our L2 groups. Our VA group was subjected to a separate analysis: their results were contrasted with those of 12 randomly selected English controls in the structures that were problematic for the ADV. For clarity reasons, the group of the 12 English natives will be referred to as NS2 group, while the original group will be the NS1 group.

The tasks used were a Paced Grammaticality Judgement Task (PGJT), a Sentence Completion Task (SCT) and a Cloze Test (CT).

The PGJT aimed to test the acceptability of null and overt pronominal subjects
A. PRENTZA

in English subordinate clauses. It consisted of 10 items in which the subject pronoun referred to the higher-clause subject (Coreferential condition, henceforth, CoR) and of 10 items in which the subject pronoun was referentially disjoint from it (Disjoint Reference condition, henceforth, DjR). This categorization is related to the Pronoun Reference Type variable. In each type, half of the items were ungrammatical, while the other half were grammatical. Sentences in [5] provide examples:

[5]  

a. *We won’t finish on time if _ don’t start now (CoR)
   Mary was angry because she had lost her job.

b. *It is so hot in here that _ sweat all the time (DjR)
   The movie was so boring that Mary fell asleep.

Participants had to indicate their judgements using a – 2 to + 2 scale as follows: – 2 would be given to an ungrammatical sentence, + 2 to a grammatical sentence and 0 if they thought that a sentence had equal chances of being grammatical or ungrammatical. Zero responses were not eliminated in the statistical analysis, since it was decided that in this study uncertainty in judgement will be exploited. Participants were also given two more choices, – 1 and + 1. They ought to use them when they were not as sure about the (un)grammaticality of a sentence as they were when they used the – 2 and + 2 choices. For reasons of presentation, during data inputting the – 2 to + 2 scale was matched to a positive 1–5 scale. In this way, for both grammatical and ungrammatical items the scale categories encoded the same choices regarding both accuracy and certainty in judgement, as [6] illustrates:

[6]  

5: accurate-categorical (– 2 for ungrammatical, + 2 grammatical items)
4: accurate-non-categorical (– 1 for ungrammatical, + 1 for grammatical items)
3: inaccurate (0 for grammatical/ungrammatical)
2: inaccurate-non-categorical (+ 1 for ungrammatical, – 1 for grammatical)
1: inaccurate-categorical (+ 2 for ungrammatical, – 2 for grammatical)

The subjects read on a screen and at the same time listened to the test items. Each item had to be judged during a 5-second gap.

The SCT tested the production of null and overt subject pronouns. It consisted of 16 items in which the targeted pronoun referred to the higher-clause subject and of 16 items in which it did not. Participants had to conjoin the sets of clauses presented to them. Only the predicate of the second clause was given. See [7–8] (anticipated responses in italics):

[7]  

a. When she heard the news [tell / all friends] (CoR)
   When she heard the news she told all her friends

b. We can’t pay you because [you / not complete / the work] (DjR)
   We can’t pay you because you haven’t completed the work yet

The test was to be completed in 10 minutes.2 Performance was analyzed in terms

1 The term ‘higher-clause’ is used since the linearly first clause could be either matrix or subordinate.
2 In the SCT and CT the time allocated was decided after the tests were given to two ADV and two
of target and non-target responses which were related to pronominal subject use and omission respectively.

The CT tested the production of null and overt pronominal subjects, yet in a less restricted context than the SCT. Participants were given 10 short passages including 14 test items and 62 fillers. In 8 of the test items the targeted response was a pronoun coreferential with the higher-clause subject, while in the remaining 6 the pronoun was disjoint in reference. See [9] below (anticipated response in italics):

\[9\]

a. They hold one’s interest …, because … they … are carefully written. (CoR)
b. Hunters sell … their … skin because … it …. is very expensive (DjR)

The task had to be completed in 40 minutes. As in the SCT, target and non-target responses corresponded to the overt pronominal subject production vs. omission respectively.

The statistical analysis was conducted as follows: for the PGJT, a random effects factorial GLM (ANOVA) approach was used to assess factors with a significant effect on the responses. This approach contributed to accounting for repeated responses. After defining main effects of all possible variables on the response, variable interactions were tested. Tukey HSD post-hoc tests were conducted to test for between and within-group differences. For the SCT and the CT, which are binary response tests, analyses of main effects and interactions were performed through a logistic regression model.

2.2 Results

Results are presented in three subsections, one for each of the tests used. In every subsection, the findings from the comparison between INT, ADV, NS1 will be followed by data from the VA vs. NS2 comparison conducted on the coreferential items of each task, since they were problematic, as will be shown.

2.2.1 The PGJT

Multiple 3 × 2 × 2 analyses yielded a highly significant main effect of Group ($F_{2,376} = 114.98, p < 0.001$) and Grammaticality ($F_{1,376} = 143.01, p < 0.001$), as well as a main effect of Pronoun Reference Type ($F_{1,376} = 13.32, p < 0.05$). Moreover, Group was found to interact with Grammaticality in a highly significant way ($F_{1,376} = 47.44, p < 0.001$) and with Pronoun Reference in a significant way ($F_{2,376} = 4.17, p < 0.05$). The interaction of Group × Pronoun Reference Type × Grammaticality was not significant ($F_{2,376} = 1.47, p > 0.05$).

INT learners (different from those participating in the study) who were asked to complete them at a regular pace.

[ 305 ]
Figure 1 illustrates group overall accuracy rates:

![Graph](image)

**Figure 1: PGJT Overall Accuracy Rates – INT, ADV, NS1**

Within-group comparisons showed a grammaticality effect, but only for L2 groups (INT, ADV: \( p < 0.001 \), NS1: \( p > 0.05 \)). Between-group comparisons in the ungrammatical sentences revealed that all groups differ significantly from one another (INT vs. NS1, INT vs. ADV, ADV vs. NS1: \( p < 0.001 \)). In the grammatical sentences the INT and the ADV were significantly less accurate than the NS1 (INT vs. NS1: \( p < 0.001 \), ADV vs. NS1: \( p < 0.05 \)), but no differences were found between the two L2 groups (INT vs. ADV: \( p > 0.05 \)). The scores in the ungrammatical items were further analyzed by the variable of Pronoun Reference Type\(^3\) and are presented in Figure 2.

![Graph](image)

**Figure 2: PGJT Rejection Scores of null CoR vs. null DjR items – INT, ADV, NS1**

Within-group comparisons revealed that the INT were significantly more accurate in rejecting null pronoun items of the disjoint than of the coreferential type (\( p < 0.001 \)). The ADV rejected more readily ungrammatical disjoint than ungram-

\(^3\) We are allowed to do so, since the interactions between Group and Grammaticality and Group and Pronoun Reference Type were significant.
TRANSFER AT THE SYNTAX–DISCOURSE INTERFACE

mathematical coreferential items, but this difference did not reach significance \( (p > 0.05) \). Native performance did not differ in the two conditions. As for between-group comparisons, all three groups differed from one another in the coreferential condition, and, crucially the ADV from the NS1 group, as predicted (INT vs. NS1, INT vs. ADV, ADV vs. NS1: all \( p < 0.001 \)). In the disjoint condition, as anticipated, there is an improvement, since although the INT are significantly less accurate than the controls, the ADV \( (p < 0.001) \) perform native-like \( (p > 0.05) \).

Figure 3 presents VA and NS2 accuracy rates in the coreferential items:

![Figure 3: PGJT Accuracy in CoR Items – VA & NS2](image)

Between-group comparisons showed that, in line with our predictions, in the coreferential type the VA allow for significantly more null subject pronouns than the NS2 \( (p < 0.001) \). The acceptance rates of the grammatical sentences did not differ \( (p > 0.05) \).

2.2.2 The SCT

A logistic regression analysis returned a main effect of Group in both reference conditions (CoR: Wald test = 53.333, \( p < 0.001 \), DjR: Wald test = 21.230, \( p < 0.001 \)). This was further explored through between-group comparisons on pronominal subject use rates organized by reference type (see Figure 4):

![Figure 4: SCT Pronominal Subject Use: CoR vs. DjR – INT, ADV, NS1](image)

In the coreferential condition there were across group differences. Interestingly,
the ADV produced significantly fewer overt subject pronouns than the NS1 group, as predicted (all \( ps < 0.01 \)). By contrast, in the disjoint condition, the ADV were as accurate as the controls exhibiting improved performance (INT vs. ADV: \( p < 0.05 \), INT vs. NS1: \( p < 0.01 \), ADV vs. NS1: \( p > 0.05 \)). Additional comparisons conducted between coreferential and disjoint items in each group revealed that the INT and, crucially, the ADV produce more null pronominal subjects when these refer to the higher-clause subject than when they are referentially disjoint from it, as anticipated (both \( ps < 0.0001 \)). No similar difference was detected in the NS1 group (\( p > 0.05 \)).

Focusing again on the coreferential items, a separate analysis of the VA and NS2 data was conducted. The relevant scores are given in Figure 5:

![Figure 5: SCT Pronominal Subject Use in CoR Items – VA & NS2](image)

As in the PGJT, VA learners were less successful than the NS2 group in the coreferential items producing significantly fewer overt subject pronouns (\( p < 0.01 \)).

2.2.3 The CT

The logistic regression analysis indicated a highly significant main effect of Group (Wald test = 77.200, \( p < 0.001 \)) and a main effect of Pronoun Reference Type (Wald test = 19.152, \( p < 0.01 \)). However, no significant interaction was detected between Group and Pronoun Reference Type. Figure 6 demonstrates overall pronominal subject use rates.

![Figure 6: CT Pronominal Subject Use Overall Scores – INT, ADV, NS1](image)

The analysis revealed that the INT group produces null subject pronouns at a significantly higher rate than the ADV (\( p < 0.001 \)) and the NS1 group (\( p < 0.001 \)). As predicted, the ADV also performs significantly less accurately than the NS1 group (\( p < 0.05 \)).
TRANSFER AT THE SYNTAX–DISCOURSE INTERFACE

Next, group performance is organized by Pronoun Reference Type. The relevant rates are given in Figure 7:

![Figure 7: CT Pronominal Subject Use: CoR vs. DjR – INT, ADV, NS1](image)

The above scores reveal that the L2 groups produce more null subject pronouns in cases of coreference than of disjoint reference. However, this tendency did not reach significance (both $p > 0.05$). In contrast, the controls produce overt subject pronouns irrespective of reference type ($p > 0.05$).

Finally, the performance of the VA and NS2 group was contrasted in the coreferential items of the CT. See Figure 8:

![Figure 8: CT Pronominal Subject Use in CoR Items – VA & NS2](image)

According to our hypotheses, VA learners were found to produce significantly fewer overt pronominal subjects than the NS2 group ($p < 0.05$).

Summarizing, the comparison between INT, ADV and NS1 has shown that regarding overall null pronoun acceptance and overt pronoun use all groups differed from one another and, interestingly, the ADV from the NS1 across all three tasks. As for the differential performance in coreferential and disjoint items with the former inducing higher rates of inaccuracy, this was evinced for the INT group in the PGJT and for both the INT and ADV groups in the SCT, but for neither L2 group in the CT. Finally, the comparison between the VA and NS2 group revealed that the L2 group differed significantly from the controls in null pronominal subject acceptance (PGJT) and overt subject pronoun production (SCT & CT).
3. Discussion

Starting the discussion with the issue of licensing, it was predicted that due to the involvement of parameterized formal features, the L1 syntactic option of null pronominal subjects will be active in L2 grammars even in advanced and very advanced stages of proficiency. Overall scores from all experimental tasks have verified this prediction: not only INT, but crucially ADV and VA learners accept and produce significantly more null pronominal subjects than the controls.

However, studies conducted by Liceras, Diaz & Maxwell (1999) and Belletti, Bennati & Sorace (2007) report that the production of null pronominal subjects in the L2 acquisition of NSLs by speakers of NNSLs was not distinguishable from that of native speakers. Two points can be made on that: First, the direction of acquisition (i.e., acquisition of a null form when the L1 has only/also overt forms or vice versa) may involve different levels of difficulty (see Parodi & Tsimpli 2005). Second, these studies used only production tests, while the current experiment used both judgement and production tasks, which may have affected results.

Returning to our study, the obtained data allows us to assume that parameterized uninterpretable features related to the obligatorily overt manifestation of English subjects are inaccessible in adult L2 acquisition. For this reason, L2 learners transfer the L1 option of null pronominal subjects in developing, advanced and possibly end-state L2 grammars. Based on that, it can be argued that accounts like the Interpretability Hypothesis, which propose that uninterpretable features are not acquirable in adult acquisition, are supported by our data.

Moving on to interpretation, it was hypothesized that L2 learners but not the NS will accept and produce more null pronominal subjects when these refer to the higher-clause subject than when they are referentially disjoint from it, transferring an L1 property. Data from the PGJT and the SCT have supported this hypothesis. Findings from the CT attest only a tendency towards that direction. This could stem from the fact that the CT is a more demanding task, as test items were presented in short texts the meaning of which participants had to grasp in order to complete the task. So, they may have been more reluctant to omit subject pronouns in the CT than in the SCT where, test items appeared in independent sentences presented one after the other.

Nevertheless, given the obtained data, we can maintain that the parametric choice of null subjects which, as previously discussed, appears to be active in L2 grammars, seems to be exploited by Greek learners to encode interpretative effects in the interlanguage system exactly in the way implemented in L1: null pronominal subjects in topic-continuity, overt pronominal subjects in topic-shift. In other words, the semantic distinctions encoded by parameterized syntactic options (i.e., null pronouns denoting topic-continuity) are made available to L2 learners and enforced in interlanguage systems as L1 syntactic structures are resorted to in L2 acquisition in structures where uninterpretable features are involved. Reasoning along these lines, it
can be claimed that the transfer of L1 parameterized options in L2 acquisition and
the defective with regards to featural composition syntactic representations thereby
generated, could be held responsible for the L2 optionality related with pronominal
subject realization at the syntax–discourse interface.

However, near native learners were not included in the L2 groups of this study,
or at least such a claim cannot be made (see Section 2.1). Therefore, any assump-
tions about the effect of transfer and LF-uninterpretable features on interface insta-
bility should be made with caution.

Notwithstanding this methodological issue, and given that the interpretable fea-
ture of [topic-shift] exploits a parametric option, instability in pronominal subject
realization, which was found to persist at least even in very advanced stages of de-
velopment, cannot be viewed isolated from the consistent pattern of unsuccessful
L2 performance evinced through null pronominal subject use. This data strongly
suggests that there is a causal relationship between parameterized uninterpretable
features and inconsistent L2 performance. From this viewpoint, the possibility that
L2 optionality in pronominal subject use and interpretation could be related to a
problem with LF-uninterpretable features is something that should be seriously con-
sidered. Consequently, the assumptions of Interface Vulnerability Hypothesis ac-
cording to which variability at the syntax–discourse is attributed to a problem with
interpretable features and is thus unrelated to a problem with uninterpretable fea-
tures are questioned.

In conclusion, approaches based on the interpretability of features could greatly
contribute towards a clearer understanding of vulnerability at the interface. Revis-
itig the role of transfer and its effect – if any – on L2, optionality is one area that
accounts examining the distinct role of LF-interpretable and uninterpretable features
can elucidate. Within the framework adopted in this study, L1 transfer is redefined
as transfer of L1 uninterpretable features where structures related to parameterized
syntactic options are involved. Under this reasoning, crosslinguistic influence could
be related to the instability attested in L2 pronominal subject realization at the syn-
tax–discourse interface.

References

and EPP-Checking”, Natural Language and Linguistic Theory 16, 491–539.


Beck, M. L. 1998: “L2 Acquisition and Obligatory Head Movement: English-Speaking Learn-
ers of German and the Local Impairment Hypothesis”, Studies in Second Language Ac-
quisation 20, 311–48.

Belletti, A., E. Bennati & A. Sorace. 2007. “Theoretical and Developmental Issues in the Syn-
tax of Subjects: Evidence from Near-Native Italian”, Natural Language and Linguistic
Theory 25, 657–89.

Bini, M. 1993. “La adquisición del italiano: Más allá de las propiedades sintácticas del pará-


Key-words: second language acquisition, pronominal subjects, features, interpretability, transfer, interfaces.