The Interpretability of Features in Second Language Acquisition: Evidence from Null and Postverbal Subjects in L2 English

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Abstract

We examine the microparameters of null and postverbal subjects in the Greek L1/English L2 interlanguage, exploring the role of interpretability in interlanguage representations. Our results suggest that while uninterpretable features are inaccessible in L2 acquisition, interpretable features are available and play a compensatory role. Although the abstract L1 properties of subject-verb agreement seem to transfer to the L2 representation, the effects appear scattered and transfer is not direct. We thus suggest that Greek-learner L2 English grammar exhibits non-random optionality in the properties of null and postverbal subjects, regulated by parameter-resetting (feature re-valuation) which is, however, neither the L1 (Greek) nor the target L2 (English) option.

Keywords

null subjects; postverbal subjects; features; interpretability; Logical Form (LF); Phonological Form (PF)

1. Introduction

In this paper we investigate the syntax of null and postverbal subjects in the Greek/English interlanguage. Our aim is to investigate the status of the relevant microparameters (cf. Kayne 2005) in developing and in end-state L2 English grammars, as well as to evaluate the role of feature interpretability in relation to learnability issues and developmental constraints in the process of second language acquisition (SLA).

The issue of feature interpretability has been investigated in recent studies and has largely contributed to understanding linguistic growth either in normal development, be it L1 or L2 acquisition, or in developmental language disorders namely, in Specific Language Impairment. In particular, in the field of L2 acquisition the much debated issue of ‘variability’ (Tsimpli 2005) or ‘optionality’ (Sorace 2000, 2005) i.e. adult L2 learners’ inconsistent linguistic behaviour

has been addressed with reference to the interpretable vs. uninterpretable feature distinction with two main hypotheses having been formulated about the locus of the attested permeability: on the one hand, the Interface Vulnerability Hypotheses (Belletti et al. 2007; Hulk & Müller 2000; Goad & White 2004; Sorace & Filiaci 2006; Sorace & Serratrice 2009 among others) which describe the interfaces (namely, the syntax-discourse/pragmatics interface, the syntax-semantics and the syntax-morphophonology interface¹) and the related interpretable features as the areas related to learnability problems and, on the other hand, the Formal Features Deficit Hypotheses (see Beck 1998; Hawkins & Chan 1997; Smith & Tsimpli 1995; Tsimpli & Roussou 1991 for earlier accounts and Hawkins & Hattori 2006; Tsimpli & Dimitrakopoulou 2007 for more recent accounts) which postulate that optionality in L2 acquisition is attributed to a deficit in uninterpretable formal features.

In the present study we focus on two of the syntactic properties traditionally associated with the Null Subject Parameter (NSP, see Rizzi 1982, 1986) in order to examine how both the uninterpretable and interpretable features relevant to null and postverbal subject permutations affect L2 acquisition. The features under investigation include features interpretable at LF but also, arguably, at PF. Specifically, the semantically interpretable features are pronominal referentiality and verb argument structure, while the morphophonological ban on verb-initial English clauses constitutes the PF-interpretable feature of the research. As will be explained in more detail in Section 2, we investigated whether L2 English sentences including XP-preposed material with null or postverbal subjects would be more problematic than verb-initial L2 structures for Greek learners, since the former satisfy the morphophonological requirement of English for no verb-initial clauses, but the latter do not.

The article is organized as follows: Section 2 discusses the issue of feature interpretability in relation to the NSP phenomenon with the aim of analyzing the differences between Greek and English under a minimalist perspective. Section 3 outlines the Interpretability Hypothesis to SLA which will be adopted in our work and Section 4 provides an overview of previous L2 findings on null and postverbal subjects. Next, Section 5 presents the current study, the predictions formulated and the results. Section 6 discusses our findings and, finally, section 7 presents the general conclusions of our work.

¹) See also Goad & White's Prosodic Transfer Hypothesis (2004, 2006, 2009a,b) according to which the domain of cross-linguistic influence is the syntax-prosody interface.

2. Feature Interpretability and the NSP

The role of interpretable and uninterpretable features in grammatical representations has recently been investigated in generative studies of second language acquisition. The standard distinction between +/-interpretable features considers [Case] and *phi*-features on adjectives and verbs devoid of semantic import, i.e. invisible to the semantic component and hence not legible at LF. Phi-features on adjectives are considered uninterpretable since they are the result of the agreement of the adjective with the subject. They are therefore resumptive and not intrinsic. Interpretable features on the other hand, include [Referentiality] on nouns and pronouns and *phi*-features on nouns. Interpretability implies visibility at the interface and relevance to the conceptual-intentional systems of cognition in the sense that features contribute to the semantic interpretation of syntactic expressions.

Besides the categorization of features according to interpretability at LF, a further distinction for interpretability at PF has also been proposed (see Tsimpli 2003; Tsimpli & Dimitrakopoulou 2007). PF-interpretability refers, among other things, to whether certain features are realized in a given language or not and, as such, is related to a high degree of cross-linguistic variation. PF-interpretability cuts across LF interpretable and uninterpretable features, the result being that four distinct categories of features seem to exist: features that are interpretable at both PF and LF (e.g. [Focus] in Greek, [Definiteness] and [Referentiality] in both Greek and English), features which are LF-interpretable but PF-uninterpretable (e.g. [Focus] in English), features which are LF-uninterpretable but PF-interpretable features (e.g. *phi*-features on V and [Case] on N in Greek) and finally, LF/ PF-uninterpretable features (e.g. [Case] and *phi*-features on V and N in English).

On the background of minimalist assumptions about the architecture of the language system, the locus of cross-linguistic variation (i.e. parameterization) is supposed to be associated with the feature specification of functional categories and in particular with the PF-realization of LF-uninterpretable features (Chomsky 1995, 2001). Interpretable features by contrast are not hypothesized to be subject to parameterization but can exploit parametric options, as will be discussed later.

A characteristic example of a parametric difference following from the properties of feature interpretability is language variation with respect to null and postverbal subject availability: languages like Greek allow null subjects in matrix and subordinate clauses, while languages like English lack this grammatical option requiring overt subjects in all finite clauses, as the gloss in (1) illustrates.²

²) Grammatical subject omission in English can only be attested in highly restricted contexts: in

In addition, expletive subjects are obligatorily null in Greek while English has expletive *it* and *there* subjects as also shown in (1).

- (1) *_Ipe oti _ tha vrekxi*
 said.3SG that will rain.3SG
 *(he/she) said that *(it) will rain
 '(S)he said that it will rain'

Postverbal subjects are also associated with the NSP. Therefore, in Greek, but not in English, the subject can appear in postverbal position irrespective of the transitivity or the (un)ergative status of the predicate involved, as examples (2) and (3) illustrate:

- (2) *irθe/Jelase o Janis* (unaccusative/unergative)
 arrived.3SG/laughed.3SG the.NOM John.NOM
 *Arrived/ Laughed John
 'John arrived/laughed'
- (3) *Efage (ti soupa) i Maria (ti soupa)* (transitive)
 ate.3SG (the.ACC soup.ACC) the.NOM Maria.NOM (the.ACC soup.ACC)
 'Maria ate the soup'

English has a strict SV(O) order although in *there*-existential structures inversion is obligatory (see 4a). Moreover, locative inversion is also grammatical although it is usually found with a small class of verbs and in particular registers as (4b&c) show:^{3,4}

abbreviated writing, i.e. in diaries, letters and informal notes (see Schmerling 1973; Rizzi 1994, Bromberg & Wexler 1995; Haegeman 1990, 1994, 1997 among others), as well as in sentential coordination (see Haegeman 1997; Verstraete 2005; Haspelmath 2004, 2007, for an account within LFG see Sadler 2006, for derivational accounts see Johannessen 2005; Rebuschi 2005; Borsley 2005 and Rouveret 2006).

³ The class of unaccusatives is not homogeneous semantically and syntactically. Levin & Rappaport-Hovav (1995) distinguished unaccusative verbs into those that signal a change in state and those that denote existence and appearance and pointed out that only the second subcategory can appear in *there*-constructions in English. Compare (ia) and (ib):

- (i) a. There appeared a horrific sight.
 b. *There broke a vase.

In the design of the illicit test items for the grammaticality judgement task of this study, neither verb type was used.

⁴ In English, sentences like (ii) below which include direct quotation allow for a kind of inversion called *Quotative Inversion* (Collins 1997; Collins & Branigan 1997).

- (ii) 'I am tired' said Paul.

- (4) a. There are three men in the garden.
 b. Once upon a time there lived an evil witch.
 c. On the other side of the river was a meadow with bright green grass.

In these structures, *there* or the PP in (4c) satisfy the EPP by moving to SpecTP, hence allowing the subject to remain inside the VP (Branigan 1993; Collins 1997; Culicover & Levine 2001).

Within minimalism, syntactic differences between null and non-null subject languages have been accounted for as differences in the way the uninterpretable *phi*-features on T are valued and subsequently deleted. In non-null subject languages like English the formal *phi*-features of T⁵ are valued by Move/Merge of an overt subject or expletive in the Spec,TP position. By contrast, in null subject languages like Greek verbal agreement morphology which is assumed to be nominal in nature values the uninterpretable *phi*-features of T, hence the SpecTP/IP position need not be occupied by an overt subject⁶ (Alexiadou & Anagnostopoulou 1998; Barbosa 1995, 2000, 2009; Kato 1999; Platzack, 2004; Roussou & Tsimpli 2006; Spyropoulos & Philippaki-Warbuton 2001, among others).⁷ Regarding postverbal permutations, the standard account is that in null subject languages such structures are available because there is a possibility of establishing a relation, through Agree, between the uninterpretable *phi*-features of T and the interpretable *phi*-features of the subject in its thematic position (Chomsky 2001, 2004).⁸ In other words and under the assumptions regarding cross-linguistic variation outlined above, the difference between Greek and English regarding the properties of the NSP under investigation amounts to a divergence in the feature specification of the functional

We restrict the presentation of English inversion to *there*-VS and locative inversion structures since these are related to our experimental items. For a recent discussion on the issue of locative inversion see Culicover & Winkler (2008).

⁵ Chomsky (1998) argued that English T carries uninterpretable person and number features ([*uPerson*], [*uNumber*]) but not an uninterpretable gender feature ([*uGender*]) since no subject-verb agreement with respect to gender is instantiated in English.

⁶ If the position projects at all (Alexiadou & Anagnostopoulou 1998; Spyropoulos & Philippaki-Warbuton 2001 for different analyses).

⁷ A possible implication is that verbal agreement affixes in typical null subject languages are interpretable, have a theta-role and therefore referential *pro* could be dispensed with (see Holmberg 2005; Manzini & Roussou 2000). Although this is a discussion which goes beyond the scope of the present paper we would like to point out that the consequences of eliminating *pro* (i.e. reconsidering theta-theory, as Alexiadou & Anagnostopoulou (1998) point out) are wide-ranging and extensive (see also Barbosa 2009 for an overview).

⁸ Under such an analysis, the Spec,TP position is occupied by an expletive *pro*. For an alternative proposal see Alexiadou & Anagnostopoulou (1998) where expletive *pro* is eliminated, since Spec,TP is not projected in the absence of an overt argumental subject therein.

head(s) associated with subject-verb agreement. An alternative account regarding the distribution of overt subjects in Greek has been put forward by Spyropoulos & Revithiadou in their 2009 work. Noticing the various positions in which overt subjects in Greek may surface, Spyropoulos & Revithiadou proposed that the syntactic derivation of Greek subjects involves a movement operation the output of which is a sequence of copies, one in the EPP Spec,TP position and another at the relevant theta-position. The linearization of this chain at PF determines whether the subject will appear preverbally or postverbally. For example, Spyropoulos & Revithiadou claim that the obligatoriness of postverbal subjects in subjunctive clauses results from the requirement of pronouncing the low copy since, if the higher copy were uttered, it would intervene between the particle *na* ('that') and the verb form blocking their merge. In indicative clauses, they argue that either copy can be pronounced, however, factors like the nature of the predicate (transitive vs. intransitive) and constituent heaviness set the surface distribution of subject copies and, thus, regulate word order variation. This approach is interesting in that it attempts to present a unified account of the distributional properties of overt subjects in Greek observing evidence from interpretation and prosodification. However, as the authors also note, the EPP specifier position assumed to be occupied by preverbal subjects needs to be safely identified.

Although postverbal subjects are not only licit but may also be informationally unmarked⁹ in L1 Greek (Alexiadou 1999; Alexiadou & Anagnostopoulou 1998; Philippaki-Warbuton 1982, 1985, 1987; Tsimpli 1990, 1995 among others), the distribution of postverbal and preverbal subjects reflects thematic properties of predicates only to some extent, in that the unaccusative-unergative distinction seems to play some role as in (5a&b) (cf. Burzio 1986; Chomsky 1981; Perlmutter 1978, and more recently Alexiadou & Anagnostopoulou 1999; Hertel 2003; Lozano 2003, 2006; Sorace 2000). Consider example (5) below:

- (5) a. Eftase o Janis
 arrived.3SG the.NOM Janis.NOM
 *Arrived John
 'John arrived'
- b. o Janis jelase
 the.NOM Janis.NOM laughed.3SG
 'John laughed'

⁹ As opposed to the corresponding structures in Spanish and Italian; see Cardinaletti (2001), Belletti (2001, 2004) on Italian, Zubizarreta (1998) and Zagana (2002) on Spanish, Roussou & Tsimpli (2006) and Haidou (2006) on Greek.

As illustrated in (5), unaccusative verbs having a VS underlying order with the single argument being internal prefer postverbal subjects, whereas unergative verbs having an SV underlying order with the argument being external choose preverbal subjects.^{10,11} Given that the argument of unaccusative verbs is a theme (or patient), while the argument of unergative verbs is typically an agent, it could be assumed that the syntactic distinction between the two classes of verbs results from this semantic distinction (see also Lozano & Mendikoetxea 2010). Notice crucially, that, although the thematic difference between unaccusative and unergative predicates is not language specific, languages like Greek which have the postverbal subject option may manifest the contrast overtly, while in languages like English this is not possible (but see the caveat above on locative and existential structures). Summarizing, in Greek, interpretable features related to the thematic properties of verbs exploit parametric options independently available in the language.

Apart from the agreement-based accounts of the distinction between null and non-null subject languages discussed above, in recent years, work within the syntax-phonology interface has given rise to phonological accounts of the EPP feature which maintain that any elements with phonological content are legitimate EPP satisfiers.¹² In Holmberg's analysis of Finnish (2000 et seq.), a

¹⁰⁾ At this point, it should be mentioned that a further distinction exists in the class of unergative verbs. As Pinto (1997) claims, the structure of 'work'-type verbs includes an additional locative argument (overt or null) that can satisfy the EPP requirement, the result being that the DP-argument appears in postverbal position. On the other hand, 'laugh'-type verbs require that their subject appears in preverbal position.

- (iii) a. Se afto to yrafio δulevi o Janis
In this.ACC office.ACC works.3SG the.NOM John.NOM
- b. # Se afto to yrafio o Janis δulevi
In this.ACC office.ACC the.NOM John.NOM work.3SG
- c. Se afto to simio o Janis yelase
At this.ACC point.ACC the.NOM Janis.NOM laughed.3SG
- d. Se afto to simio yelase o Janis
At this.ACC point.ACC laughed.3SG the.NOM Janis.NOM

However, such differences within the class of unergative verbs will not be examined in the present study.

¹¹⁾ Note that word order alternations based on the thematic properties of the verbs (thus constrained by the lexicon-syntax interface) are manifested in neutral contexts. In presentationally focused contexts it has been argued that the preferred order in Greek is SV irrespective of predicate type (Antonopoulou & Sifianou 2003; Georgiamentis 2004; Georgiamentis & Sfakianaki 2004; Keller & Alexopoulou 2001).

¹²⁾ What this postulation entails is that phonologically null elements like *pro* cannot be included in the list of EPP satisfiers.

partially null subject language, the EPP feature is related to a selectional P(honological) feature and, therefore, it can be locally satisfied by a fronted phonologically overt element (argument, overt expletive or adverbial) or, in other words, by XP-preposing, with the grammatical subject having no privileged status.¹³ It must be noted however, that the explanatory force of the phonological accounts seems to encounter some problems with respect to the issue of null subject *phi*-feature recovery, as also noticed by researchers who endorse this view (see for example Sifaki & Sitaridou 2007). In this paper we adopt an agreement approach to EPP according to which null and postverbal subject availability in Greek is related to nominal agreement on V. However, given that English disallows verb-initial structures, XP-preposing was used as a variable in the test design. In particular we exploited the XP-preposing mechanism in order to investigate whether sentences including non-subject, XP-preposed material with null or postverbal subjects would be more problematic than verb-initial structures in L2 English.

3. The Interpretability Hypothesis and SLA

Various accounts addressing the issue of variability in L2 acquisition have capitalized on the distinction between interpretable and uninterpretable features. A proposal which makes an explicit claim about the restrictions on the acquisitional capacity in post-puberty L2 learners is Tsimpli & Dimitrakopoulou's (2007) Interpretability Hypothesis. According to this account, while UG aspects like the computational device and the related operating principles are accessible in L2 acquisition, uninterpretable features are inaccessible to L2 acquirers. More specifically, it is claimed that if uninterpretable features are not selected from the UG inventory of features within the critical period these features become inaccessible to L2 learners in the sense that learners cannot use them to analyze the L2 input (Tsimpli & Mastropavlou 2007). Therefore, the IH specifically predicts that L1-L2 LF-uninterpretable feature mismatch will result to problems that persist even at advanced levels of L2 development. Interpretable features on the other hand, are predicted to be available in L2 acquisition from the early stages of development, whether similarly grammaticalized in L1 and L2 or not, and to be ultimately attained. This is based on the assumption that interpretable features escape maturational constraints due to their

¹³ For similar analyses see also Ndayiragije (2000), Miyagawa (2001, 2005), Bobaljik (2002), Landau (2007). For Greek such an analysis was postulated by Sifaki & Sitaridou (2007). See also Spyropoulos & Philippaki-Warbuton (2001) for a discussion on Greek impersonal verb constructions as indicative of the possibility that the featural composition of EPP is related to a [P] rather than a [D] feature.

non-modular status, that is, their dual representation in language and cognition (Smith & Tsimpli 1995). Crucially, according to the IH, interpretable features are also assigned a compensatory role in the process of L2 acquisition: on the hypothesis that L2 representations are instances of defective feature composition, it is maintained that L2 learners will assign interpretable features to the problematic L2 items in order to regularize their distribution eliminating in this way real optionality from the system (Tsimpli & Mastropavlou 2007). Notice crucially however, that the supportive use of interpretable features by L2 learners does not imply that L2 grammars will be indistinguishable from L1 grammars, but rather that L2 grammars will approximate the native norm more when interpretable features are assigned in the L2 input analysis than when they are not.

Within the syntax-phonology interface and in line with Holmberg's analysis of Finnish (2000 et seq.) the prediction concerning the alleviating role of semantically interpretable features could be extended to phonetically or morphophonologically interpretable features too. Thus, under the IH, features interpretable at PF could also play a supportive role at the morphophonological level in the development of L2 grammars, the result being that learner performance appears to improve in a systematic yet superficial way remaining target-deviant at all times. This is an important point for the present research, as one of its aims is to evaluate the compensatory role of both LF and PF interpretable features in the process of L2 acquisition, as already discussed.

4. Previous Studies on Null and Postverbal Subjects

Beginning with null subjects, one of the basic findings reported in L2 research is the differential acquisitional routes of referential and expletive subjects. As early as 1985, White comparing Spanish beginner, intermediate and advanced learners of English to French learners of matching proficiency found that although there was a gradual development with increasing proficiency regarding ungrammatical null subject rejections in all groups, low-level French learners encountered problems with expletive rather than referential subjects omitting them 33.3% of the times. Phinney (1987) tested Spanish learners of English in the omission of subject pronouns in obligatory L2 contexts and reported that expletive subjects were dropped considerably more frequently than referential ones: the intermediate learners of his study did not provide expletive subjects in 56% of the cases, while the corresponding rate for referential subjects was only 6%. Tsimpli & Roussou (1991) investigated the status of the NSP in the L2 grammars of intermediate and post-intermediate Greek learners of English. Greek learners, as Spanish learners in Phinney's study, were found to accept ungrammatical null expletive subject structures in 80% of the cases, while accurately

rejected null referential subject structures. In a later study Al-Kasey & Pérez-Leroux (1998) approached the issue of the NSP in the L2 through the interlanguage of English learners of Spanish examining not only the production but also the interpretation of null expletive subjects. They reported that lower proficiency learners exhibited problems with null expletive subject comprehension and production, but more advanced learners showed improvement; intermediate English learners were inaccurate in 24.02 % of the cases regarding null expletive interpretation opting for an L2 illicit referential reading for the expletive 'it' rather than a generic interpretation.¹⁴ The advanced group on the other hand, exhibited non-target performance in only 8.33 % of the times improving towards the Spanish native norm.

Turning next to postverbal subjects, the L2 literature reports two types of findings that are of relevance to the present study: speakers of null subject languages learning a non-null subject language, first, produce more ungrammatical postverbal subjects with unaccusative than with unergative verbs, and, second, produce ungrammatical XP-VS and *there*-VS structures like the following:

- (6) a.* ... and *from this moment* begins chaos.
b.* *There* were presented *no conclusions* in this report.

Regarding the first type of finding, Zobl (1989) and Rutherford (1989) conducting production studies, albeit of a limited quantity of VS occurrences, report that English learners of null subject L1s resort to VS orders mostly with unaccusative verbs. According to Zobl's results, speakers of Japanese, Spanish and Arabic occasionally produce postverbal subjects with unaccusatives, like the following (the note in brackets is ours):

- (7) a. I was just patient until dried my clothes. (-XP structure)
b. *Sometimes* comes a good regular wave. (+XP structure) (Zobl 1989: 204)

Similarly, Rutherford (1989) based on a written corpus of L2 English reports that Spanish and Arabic L2 learners produce postverbal subjects with unaccusative but never with unergative verb types:

- (8) a. *In the town* lived a small Indian.
b. The bride was very attractive, *on her face* appeared those two red cheeks.
(Rutherford 1989: 178–179)

¹⁴ Examples (translated into English from Spanish) from Al-Kasey & Pérez-Leroux (1998):

- (iv) a. P. likes this blue kite. This is fun to fly. (referential interpretation)
b. P. likes this blue kite. (*It) is fun to fly. (generic interpretation)
(Al-Kasey & Pérez-Leroux 1998: 169)

More recently, Oshita (2004) using a large electronic corpus¹⁵ examined compositions written by L1 Spanish, Italian, Korean and Japanese English learners regarding the production of 10 common unaccusative and 10 common unergative verbs. According to his results, Spanish and Italian speakers produced VS only with unaccusative verbs and never with unergative ones. Notice crucially that Oshita found that the ungrammatical VS productions were largely not instances of verb-initial structures, but rather structures that featured either an expletive subject (namely, 'it') or an adverbial in sentence initial position, as illustrated in (9):

- (9) a. ... *in every country* exist criminals.
 b. ... *it* arrived the day of his departure. (Oshita 2004: 119–120)

Moreover, Palacios-Martínez & Martínez-Insua (2006) investigating existential postverbal constructions¹⁶ report that such structures were produced by Spanish learners of English only when the verb involved was the unaccusative verb *exist*.¹⁷ To the best of our knowledge, the most recent study investigating interface conditions on postverbal subjects is the one conducted by Lozano & Mendikoetxea (2010). Learner corpora of Spanish upper-intermediate L2 learners of English were examined against native English corpora in an attempt to explore whether unaccusative and unergative SV/SV structures are produced under the same interface conditions in L1 and L2 English. According to their results, Spanish learners produced significantly more postverbal subjects with unaccusative verbs (7.1 %) than the English natives (2.3 %) did. Conversely, and in line with previous research, Spanish learners, were not found to produce any VS orders with unergative verbs (0 %), despite the fact that such unergative VS structures are manifested in their L1.¹⁸ Also crucially, L2 learners were found to produce significantly more ungrammatical XP–VS structures (10a), as well as ungrammatical VS structures (10b) than the English natives (13.8 % vs. 0 % and 8.6 % vs. 0 % respectively) did.

- (10) a.* ... *In 1760* occurs the restoration of Charles II in England.
 b.* ... because exists the science technology and industrialization. (Lozano and Medikoetxea 2010: 29–30)

¹⁵ The Longman Learners' Corpus, version 1.1, March 1993.

¹⁶ Through the use of native and non-native corpora: the International Corpus of Learner English (Granger 1998) and the Santiago University Learner of English Corpus constituted the non-native set, while the Louvain Corpus of Native English Essays, the Longman Spoken and Written English (Biber et al. 1999) and a subcorpus of the British National Corpus (Martínez-Insua 2004) constituted the native set.

¹⁷ To be more precise, Palacios-Martínez & Martínez-Insua (2006) also report an instance of a postverbal existential construction with the copula.

¹⁸ Albeit not as frequently as unaccusative VS structures (see Hertel 2003; Lozano 2003, 2006).

Crucially, what the data concerning XP–VS and existential postverbal permutations suggests is that L2 English learners disprefer verb-initial structures, a tendency that is explored and analysed in the current study as well.

5. The Present Study

5.1. Focus and Predictions

As we have demonstrated above, the syntax of subjects (null and postverbal) is a domain where both interpretable and uninterpretable features are involved. Hence, it constitutes an excellent field for investigating issues like feature (un)interpretability and learnability. Moreover, the present research will provide us with insights on the status of the microparameters of null and postverbal subjects in the Greek/English interlanguage elucidating the nature of developing and, more importantly, advanced L2 grammars. The above mentioned points of divergence between L1 (Greek) and L2 (English) were used as variables in designing the tasks which tested participants in: i) the degree of acceptability and production of L2 ungrammatical null referential and expletive subjects in verb-initial and XP-preposed structures and ii) the degree of acceptability of illicit postverbal structures across verb classes in both verb-initial and XP-preposed structures.

Thus, in the light of the findings from relevant studies, adopting a UG-based approach to L2 acquisition and assuming the Interpretability Hypothesis as both a predictive and an explanatory framework, the following predictions are put forward:

5.1.1. Null Subjects

Given that overt subjects in English are a parametric choice associated with the status of verbal agreement, i.e. parameterized formal features, in English as opposed to Greek, *pro*-licensing is expected to be active and accessed in the L2 grammars of Greek learners even at advanced stages of development. We thus expect that null subjects will be acceptable by L2 learners more than by native controls.

Compensation Effects

Referentiality: The LF interpretable [person] feature of referential subjects is expected to be used in a compensatory way by Greek learners inducing lower acceptance and production rates of referential null subjects. Referential subjects are thus expected to give rise to improved performance especially with increased proficiency; however, performance is not predicted to reach

native-speaker standards. By contrast, more non-referential null subjects are expected to be present in the Greek-English interlanguage even at advanced stages of development due to the L1 property of null expletives and the LF uninterpretable [D] feature involved (Tsimpli & Roussou 1991; Tsimpli 1997). Non-referential (i.e. expletive) subjects lack an interpretable [person] or [referential] feature to compensate for the overuse of null subjects in the Greek-English interlanguage.

XP-preposing: Greek learners are predicted to accept more null subjects in XP preposed structures than in verb-initial structures. As they will become gradually sensitive to the fact that no verb-initial structures are allowed in L2 English, Greek learners are expected to use the XP-preposing mechanism as a compensation strategy at the morphophonological level (cf. Holmberg's analysis of Finnish).

5.1.2. Postverbal Subjects

Assuming that English preverbal subjects are regulated by the LF-uninterpretable EPP feature, by hypothesis inaccessible to L2 learners, postverbal subjects—available in L1—are predicted to be attested in the Greek-English interlanguage even at advanced stages of development. In particular:

Compensation Effects

XP-preposing: Greek learners are expected to accept more XP-preposed postverbal structures than their verb-initial counterparts at all stages of development: observing that verb-initial structures are never attested in the L2 input, Greek learners will once again use the no-verb-initial strategy in a compensatory way at the morphophonological level. A specific case of XP-structures tested are existential structures. The prediction in this case is that due to the non-referential status of *there*, acceptability of postverbal subjects in existential structures would be higher than in other XP-initial structures with postverbal subjects, the reason being that *there* carries no information but satisfies the phonetic and morphophonological requirement for no-verb-initial English clauses.

Predicate type: Given that the underlying order of unaccusatives is VS (the single argument being internal) whereas that of unergatives is SV,¹⁹ more postverbal subjects are expected with unaccusative than with unergative verbs (see

¹⁹ In presentational focus contexts on the other hand, regardless of the verb class, SV is the acceptable word order for Greek (see for Greek Georgiafentis 2004; Georgiafentis & Sfakianiaki 2004; Antonopoulou & Sifianou 2003; Keller & Alexopoulou 2001).

also Lozano 2006; Lozano & Mendikoetxea 2010). With respect to the acceptance rates of postverbal subjects in unaccusative and unergative predicates on the one hand, as opposed to transitive predicates on the other, it is expected that the presence of an object will lead to improved L2 performance which will raise learner awareness of their ungrammaticality. Thus, more postverbal subjects are expected to be accepted with single-argument predicates.

5.2. Method

5.2.1. Participants

The participants of the study formed an experimental group of seventy-two Greek learners of English and a control group of twenty-five English natives. The Greek learners were divided into two proficiency levels: the intermediate group (INT) ($n = 35$) and the advanced group (ADV) ($n = 37$). Participants were tested by means of the 'Oxford Quick Placement Test' (2001). Those who received a score from 30–47 were categorized as intermediate learners, while participants who scored from 48–60 entered the advanced group. Both experimental groups were exposed to English in a classroom setting, the INT group for an average of 5.5 years (range: 4–7 years, SD: 1.04) and the ADV group for an average of 8.2 years (range: 6–12 years, SD: 1.62). Their age range was from 18–27 (mean: 20.3 years). In the control group, seventeen out of the twenty-five participants were speakers of British English and the remaining six were speakers of American English.^{20,21} Care was taken so that only the American natives whose performance did not differ from that of the English natives were finally included in the control group. The age range of the control group was 22–45 (mean: 31.2 years).

5.2.2. Materials

Two tasks were used: A Paced Grammaticality Judgement Task (PGJT) and a production task in the form of a Cloze Test (CT).

The PGJT incorporated two experiments: Experiment 1 tested the acceptability of null and overt subjects in English and Experiment 2 tested the acceptability of postverbal and preverbal subjects in English. Experiment 1 consisted of 40 items, while Experiment 2 consisted of 106 items. Besides the 146 test items,

²⁰⁾ American and British English natives were used to form speaker groups in other studies too (see Belletti et al. 2007).

²¹⁾ American subjects were students of the University of Washington (Seattle, U.S.A.) who were participating in a two-month training programme on Greek language and culture organised by the University of Ioannina. After we obtained permission from the head of the organising committee of the programme, the experiment was administered during their Greek language classes.

150 distractor items were designed. The experimental and distractor sentences were randomized and the test was administered in two sessions.²² The difference in the number of items in the two experiments is associated with the number of levels the variables in each experiment incorporated, as is explained in what follows.

The variables used in the design of Experiment 1 were Grammaticality (i.e. whether items were grammatical or ungrammatical in English), subject Referentiality (i.e. whether the null or overt subject is referential or expletive) and XP (i.e. whether the null or overt subject structure involves XP-preposition (+XP) or not (-XP)). By means of the variable of Referentiality we look for compensation effects at LF, whereas, by means of the XP variable for alleviating mechanisms operative at PF. Table 1 summarizes Experiment 1 variables and conditions.

Table 1. Experiment 1 variables & conditions

Subject Referentiality	XP	Grammaticality	Conditions	Tokens
Expletive	+XP	Ungrammatical	Condition 1	5
		Grammatical		5
	−XP	Grammatical	Condition 2	5
		Grammatical		5
Referential	+XP	Ungrammatical	Condition 3	5
		Grammatical		5
	−XP	Ungrammatical	Condition 4	5
		Grammatical		5
Total				40

In (11)–(14) examples of the null subject item types and the corresponding grammatical types are provided.

- (11)

*Unfortunately, _ seems that the thief managed to get in.
In my father's library there are lots of books.²³

(Condition 1)
- (12)

*Is _ very obvious that John will not come to the party.
It seems that Susan did not get the job she wanted.

(Condition 2)
- (13)

*Right now _ is reading his newspapers drinking coffee.
This time tomorrow I will be flying to Athens.

(Condition 3)

²² After extensive piloting and revisions, it was ensured that all the sentences of the PGJT were of comparable length and complexity and as natural as possible. Modifications regarding vocabulary, as these came up in the pilot experiment, decreased the risk of unreliable results due to problems with unknown words. Moreover, a balance in terms of item number was kept between declarative, on the one hand and interrogative, pseudo-cleft and exclamative sentences, on the other hand.

²³ The choice of designing grammatical items which are lexically different than ungrammatical ones reflects a common practice in off-line experiments, unlike on-line ones in which the similarity of items across conditions is required for the elimination of any lexical effects.

- b. *Last night was crying a baby in the apartment next door. (Condition 5b)
In the evenings many people walk by the lake.
- c. *Two years ago published his last book the writer. (Condition 5c)
At this moment the children are cleaning their rooms.
- (16) a. *Is leaving Anna for Milan the day after tomorrow. (Condition 6a)
Their skin dried in the hot wind of the dessert.
- b. *Talk the employees during the coffee break. (Condition 6b)
My older sister is studying hard this year.
- c. *Are showing their passports some passengers. (Condition 6c)
Someone ate the last piece of the cake.
- (17) *There have been chosen some students for the trip. (Condition 7)
A verdict has been reached by the jury.²⁴

Participants had to indicate their judgements using a five-point Likert type scale from -2 to +2 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. Note that, according to these instructions, the 'o' category was not used to encode pure indeterminacy and, therefore, the items judged in this way were not eliminated in the statistical analysis. Participants were also given two more choices encoding ungrammaticality and grammaticality respectively: -1 and +1: they were instructed that they ought to use these choices when they were not as certain about the (un)grammaticality of a sentence as they were when they used the -2 and +2 choices. In other words, the difference between the extremes of the scale (-2, +2) and the intermediate categories of -1 +1 is related to whether the subjects judge the status of a sentence categorically or not. Consequently, in data analysis and in the interpretation of the results the two points on the negative and positive part of the scale were not conflated into one choice denoting 'accurate' or 'inaccurate' judgment, a decision which together with the use and interpretation of the 'o' category differentiates this experiment from much of L2 acquisition research regarding methodology. For statistical purposes and in order to capture the aforementioned contrasts, during data inputting we matched the -2 to +2 scale to a five-point positive scale ranging from 1 to 5. The advantage of this scale is that for both the grammatical and the ungrammatical items of the task

²⁴) The use of structures with referential subjects as the grammatical counterpart of existential postverbal structures and not of structures with expletive subjects reflects our decision to focus on the contrast between the different types of postverbal permutations, i.e. XP-VS vs. 'there'-VS, as regards acceptability in L2 English. Therefore, as in the XP-VS type, the grammatical counterpart for the 'there-VS' type would have to be a preverbal referential subject structure. The contrast between the acceptability of referential vs. expletive subject structures is examined in our study in the null subject experiment by means of conditions 1–4 (see Table 1).

the categories of this scale encoded the same choices regarding both accuracy and certainty in judgement from the speaker’s perspective.²⁵ (18) presents the interpretation for each category of the 5-point scale:

- (18) 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 (using an overhead projector) and at the same time listened to the test items which were recorded with the help of a native speaker of English. From one sentence to another there was a gap of five seconds,²⁶ during which the subjects had to judge the grammaticality of each test item by circling the appropriate number on the scale next to the corresponding sentence. On the answer sheet in front of them there were only the numbers of sentences in ascending order followed by the relevant scale.

The Cloze Test aimed to test the production of null subjects in English matrix clauses and was comprised of 22 test items and 62 fillers²⁷ instantiating the variables and conditions shown in Table 3.

Table 3. Cloze Test item conditions

Subject Referentiality	XP	Conditions	Tokens
Expletive	+XP	Condition 1	5
	–XP	Condition 2	5
Referential	+XP	Condition 3	6
	–XP	Condition 4	6
<i>Total</i>			22

²⁵) If number 3 is subtracted from each category of the 1 to 5 scale, then the –2 to +2 scale could be used instead: in this case 2 would replace 5 and encode the ‘accurate-categorical choice’ while –2 would replace 1 and encode the ‘inaccurate- not categorical choice’. However, in this way, the original –2+2 scale could be used, but with different interpretation: while in the original scale –2 and –1, for example, were related with accuracy for ungrammatical items, now they would be related with inaccuracy in both (un)grammatical items, something which may cause confusion in the presentation of this experiment. So, the use of 1–5 scale was preferred.

²⁶) This time was allocated in order to allow non-native speakers enough time to see the sentence projected on the screen and subsequently indicate their judgements on the answer sheet. The three-second gap used in the pilot version did not seem enough especially for the intermediate group.

²⁷) The original CT also tested subject use in English subordinate and coordinate clauses, as well as subject extraction items and therefore included 64 test items. For the purposes of this paper we will restrict our attention to subject use in the matrix items of the test.

In sentences (19–22), examples of each condition in the CT are provided. The anticipated answer is given in italics.

- (19) Clearly, ... *there* ... are may ways to avoid taking pills and still have a good night's sleep. (Condition 1)
- (20) ... *It* ... is obvious that things will get worse. (Condition 2)
- (21) In particular, ... *she* ... enjoys trying to guess who the criminal really is. (Condition 3)
- (22) ... *She* ... realized it only when it was too late. (Condition 4)

Participants were presented with 11 short passages each one introduced by a short title that could lead them to the theme of the text. They were instructed to read through each passage once and then fill in the numbered blanks as quickly as possible using only one word if necessary. They were not allowed to go back and change any of their answers. The task had to be completed in 40 minutes.²⁸ Participant performance was analyzed with respect to target and non-target responses which corresponded to the production vs. omission of overt subjects in matrix clauses respectively.

5.2.3. Analysis

The statistical analysis of the results 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, after controlling for possible outliers. This approach contributed to accounting for repeated responses, while errors were tested for independence and normality. After defining main effects of all possible variables (e.g. Group, XP, Grammaticality) on Response, interactions between them were tested. Any p -value < 0.05 was considered statistically significant in the final model.²⁹ Tukey HSD post-hoc tests were conducted to assess significant effects of all parameters, i.e. to test for between and within-group differences, where necessary. For the CT which is a binary response test analyses of main effects and interactions were performed through a logistic regression model.

²⁸) The time allocated to the subjects was decided after the tests were given to two advanced and two intermediate learners (different from those participating in the study) who were asked to complete them at a regular pace.

²⁹) Statistically significant factors were initially chosen at a $p < 0.20$ level and were subsequently used in a multivariate model reduced with backward elimination where significance was set to 0.10. Non significant variables were retested using forward selection at $p < 0.10$. Final pruning of the main effects model was carried out with a stepwise selection at $p < 0.05$. Interactions under the hierarchical principle were finally considered.

5.3. Results

5.3.1. The PGJT

5.3.1.1. Experiment 1

Beginning with the null subject items, participant overall accuracy scores in the relevant ungrammatical and grammatical sentences are presented in Table 4:

Table 4. Accuracy in null and overt subject items

	INT	ADV	NS
Ungrammatical	3.09 (<i>SD</i> : 0.70)	3.93 (<i>SD</i> : 0.66)	4.57 (<i>SD</i> : 0.32)
Grammatical	4.39 (<i>SD</i> : 0.40)	4.65 (<i>SD</i> : 0.33)	4.94 (<i>SD</i> : 0.16)

Multiple $3 \times 2 \times 2 \times 2$ analyses were performed on the results in order to examine the four variables involved: Group (INT/ADV/NS), Grammaticality (grammatical/ungrammatical), XP (+XP/-XP) and subject Referentiality (Referential/Expletive). The analysis yielded a highly significant main effect of Group ($F_{2,752} = 172.16$, $p < 0.001$). This finding was supported by pairwise comparisons between groups; all three groups differed from one another, irrespective of the variables involved with the INT being the least accurate and the NS the most accurate (INT vs. ADV, INT vs. NS, ADV vs. NS: $p < 0.001$). There was also a highly significant main effect of Grammaticality ($F_{1,752} = 333.28$, $p < 0.001$) suggesting that participants responded more accurately in grammatical than in ungrammatical items. The effect of Referentiality was highly significant too ($F_{1,752} = 46.82$, $p < 0.001$) confirming that subject (non)referentiality affects learnability, as expected. Finally, a significant main effect of XP ($F_{1,752} = 5.47$, $p < 0.05$) was attested. The current main effects analysis (as well as the relevant mean scores presented in Figures 2 and 4) indicated that the variable of Referentiality affects learner responses in null subject items more than the variable of XP. Regarding two-way interactions, Group x Grammaticality, Group x XP and Group x Referentiality interacted significantly indicating that all three variables induced distinct effects on participant groups ($F_{2,752} = 37.67$, $p < 0.001$, $F_{2,752} = 3.46$, $p < 0.05$ and $F_{1,752} = 5.14$, $p < 0.001$ respectively). Tests for three-way interactions showed that neither Group x XP x Grammaticality or Group x Referentiality x Grammaticality interacted significantly (Group x XP x Grammaticality: $F_{2,752} = 0.13$, $p > 0.05$, Group x Referentiality x Grammaticality: $F_{2,752} = 1.39$, $p > 0.05$). The four-way interaction between Group, Grammaticality, Referentiality and XP was not found significant either ($F_{2,752} = 0.84$, $p > 0.05$). Figure 1 illustrates the interaction of Group x Grammaticality:

Figure 1. Group x Grammaticality

Within-group comparisons, conducted through Tukey HSD tests, revealed that the INT and ADV learners were significantly more accurate in judging grammatical than ungrammatical items (grammatical vs. ungrammatical items: INT, ADV: $p < 0.001$), a finding also attested in native speaker data, yet with a p value that was marginally significant ($p = 0.043$). We will return to this issue in the analysis following Figure 5.

Between-group pairwise comparisons showed that all three groups differed from one another across the ungrammatical and in the grammatical items (INT vs. NS, INT vs. ADV, ADV vs. NS: $p < 0.001$), a finding indicating an improvement in L2 grammar, which however does not lead to native-like competence.

The interaction of Group x XP is represented in Figure 2:

Figure 2. Group x XP

As demonstrated in Figure 2, the two learner groups fare worse in the +XP condition than in the -XP condition, while the NS group shows comparable accuracy rates in both conditions ($p > 0.05$). However, within-group comparisons by

means of Tukey HSD tests indicated that this difference reached significance only for the INT group ($p = 0.06$) but not for the ADV group ($p > 0.05$).³⁰

Turning next to between-group comparisons in the +XP and –XP conditions separately, significant differences were attested across all three groups (INT vs. ADV, INT vs. NS, ADV vs. NS: $p < 0.001$), confirming again that L2 grammars develop with increasing proficiency, yet they do not reach native speaker standards even at advanced levels of proficiency. Although the three-way interaction of Group x Grammaticality x XP was not significant, between and within-group differences were tested by means of Tukey HSD post-hoc tests in an attempt to define whether the XP factor influences the acceptability of ungrammatical items.³¹ Figure 3 illustrates group scores when grammatical and ungrammatical items are teased apart:

Figure 3. Group x XP x Grammaticality

Within-group tests revealed no significant differences for any group in comparisons between the ungrammatical set of items (ungrammatical +XP vs. ungrammatical –XP), as well as in comparisons between the grammatical set of items (grammatical +XP vs. grammatical –XP) (all $ps > 0.05$). Additionally, the analysis yielded a grammaticality effect for the two Greek learner groups across both XP conditions: INT and ADV groups were significantly more accurate in judging grammatical items of the –XP condition than ungrammatical items of the –XP

³⁰) This could stem from the fact that the XP variable did not interact with Group as significantly as Grammaticality and Referentiality did. However, the significant interaction between Group and XP is attributed to the fact that the +XP condition is related to lower accuracy scores for the two learner groups, but not for the NS group, as mentioned previously.

³¹) From a statistical point of view, we are allowed to do so, since the two-way interactions between Group and XP, and Group and Grammaticality were found to be significant.

condition (INT, ADV: $p < 0.001$), as well as grammatical items of the +XP condition than ungrammatical items of the +XP condition (INT, ADV: $p < 0.001$). Regarding English native scores on the other hand, the grammaticality effect was restricted to the –XP item set: controls were more accurate in judging grammatical –XP items than ungrammatical –XP items ($p < 0.005$). No differences were detected in the control group accuracy rates in ungrammatical vs. grammatical +XP items ($p > 0.05$). Based on these findings and in anticipation of subsequent discussion, we claim that the grammaticality effect attested in the NS data, also demonstrated in Figure 1, could be attributed to the English natives' lower rejection scores of ungrammatical null expletive items in verb-initial position. This point will be further discussed in the analysis that follows Figure 5 and Table 5.

Turning next to between-group differences, all three groups differ between one another in the rejection scores of the ungrammatical items, irrespective of whether an XP is preposed or not (INT vs. NS, INT vs. ADV, ADV vs. NS: $p < 0.001$). Concerning grammatical items, we found that intermediate learners are significantly less successful than native speakers in judging –XP items ($p < 0.001$), a finding not attested in advanced learner data since more proficient learners are as accurate as the control group in that respect ($p > 0.05$). Finally, in the grammatical +XP condition, INT and ADV learners accept the relevant items at a comparable rate ($p > 0.05$), yet both groups are less accurate than the NS group (INT vs. NS: $p < 0.001$, ADV vs. NS: $p < 0.05$).

Continuing with the interaction of Group x Referentiality, this is illustrated in Figure 4:

Figure 4. Group x Referentiality

Pairwise within-group comparisons on the above scores indicated that while the two learner groups are significantly more accurate in judging items of the referential than of the expletive condition (INT, ADV: $p < 0.001$), the controls are equally accurate in both conditions ($p > 0.05$). Between-group comparisons revealed that all three groups differ from one another in judging both expletive items (INT vs. NS, INT vs. ADV, ADV vs. NS: $p < 0.001$) and referential items (INT vs. NS, INT vs. ADV, ADV vs. NS: $p < 0.001$). This constitutes evidence for improved L2 performance in more advanced stages which, however, does not seem to match native speaker competence. Again, although the three-way interaction of Group x Grammaticality x Referentiality was not significant, we continued with breaking down the mean accuracy scores presented in Figure 4 by Grammaticality in an attempt to further explore the effect of Referentiality on the acceptance of ungrammatical subjectless structures:³²

Figure 5. Group x Referentiality x Grammaticality

Within-group comparisons revealed that INT and ADV Greek learners accept significantly more ungrammatical null expletive items than ungrammatical null referential items (INT, ADV: $p < 0.001$), as anticipated. Conversely, they were found to judge grammatical items with overt expletive and referential subjects at comparable rates (INT, ADV: $p > 0.01$). Further comparisons conducted by Grammaticality showed that the Greek learner groups fared significantly worse in ungrammatical items than in the grammatical ones in both Referentiality conditions (INT, ADV: $ps < 0.001$). The English controls on the other hand, exhibited a grammaticality effect only with respect to expletive items: null expletive items were judged less accurately than overt expletive ones ($p < 0.05$). Although the four-way interaction of Group x Grammaticality x XP x Referentiality was

³²) Again, we could do so because the two-way interaction between Group and Referentiality was significant.

not found to be significant, the NS mean scores were further broken down by these variables in order so that we could further examine the grammaticality effect in NS data. Table 5 presents the relevant scores:

Table 5. Native speaker accuracy in null and overt subject items organized by XP

	Ungrammatical		Grammatical	
	+XP	–XP	+XP	–XP
Expletive	4.36 (SD: 0.23)	4.53 (SD: 0.28)	4.92 (SD: 0.1)	4.93 (SD: 0.09)
Referential	4.65 (SD: 0.31)	4.75 (SD: 0.33)	4.96 (SD: 0.07)	4.94 (SD: 0.08)
<i>Total</i>	<i>4.5</i>	<i>4.64</i>	<i>4.94</i>	<i>4.94</i>

Observing the scores in Table 5, the more accurate performance of the control group in the grammatical –XP than in ungrammatical –XP items reported in Figure 3 could be explained as follows: the ungrammatical –XP type consists of ungrammatical verb-initial expletive and referential items; as illustrated in Table 5, English controls rejected less readily null expletive than null referential items since in spoken English expletive subject drop in verb-initial contexts is frequent (see Haegeman & Ihsane 1999; Weir 2008). Thus, the lower rejection scores of the null expletive verb-initial items could cause the lower rejection scores of the ungrammatical verb initial items in general.

Continuing with scores in Figure 5, between-group comparisons revealed that all three groups differ from one another in the ungrammatical expletive items (INT vs. NS, INT vs. ADV, ADV vs. NS: $p < 0.001$). As predicted, null expletive subjects are related to learnability problems even in advanced L2 grammars due to the uninterpretable [D] feature involved. Differences were attested across groups in ungrammatical referential items as well; the INT accepted more null referential items than the ADV group with the difference between the two groups being highly significant ($p < 0.001$). What is interesting is that the ADV also accepted more null referential subjects than the NS group ($p < 0.05$). In grammatical items, on the other hand, the INT fared significantly less successfully than the NS group in both Referentiality conditions ($ps < 0.001$), but no differences were detected between the ADV and the NS group in either Grammaticality condition ($p > 0.05$).

Summary of Results from Experiment 1

Overall, we have found that null subjects in English clauses were acceptable by Greek learners more than by native controls, as expected. A developmental trend was evinced with ADV learners allowing fewer null subject structures than INT learners, but both L2 groups, and, crucially, the more proficient one fared less accurately than the English native group in both referential

and expletive null subject structures. As regards compensation effects, Referentiality affected learner responses as anticipated: fewer null referential than null expletive subjects were accepted. Finally, a differentiation of null subject acceptability by (non)referentiality was not attested in NS data. With respect to the XP variable, Greek learners were not found to accept more null subjects in XP-preposed than in verb-initial structures.

5.3.1.2. Experiment 2

Table 6 presents participant overall accuracy scores in the postverbal items of the PGJT and in the corresponding grammatical items. Existential postverbal items (*there*-VS) will be analyzed separately, as the lower accuracy scores that we expect in these structures could be concealed if grouped with the other VS items of the task, thereby producing lower accuracy scores in general.

Table 6. Accuracy in postverbal and preverbal subject items

	INT	ADV	NS
Ungrammatical	3.46 (<i>SD</i> : 1.05)	4.37 (<i>SD</i> : 0.79)	4.70 (<i>SD</i> : 0.37)
Grammatical	4.22 (<i>SD</i> : 0.76)	4.53 (<i>SD</i> : 0.58)	4.83 (<i>SD</i> : 0.29)

Multiple $2 \times 3 \times 2 \times 3$ analyses were conducted on group scores in order to examine the four variables relevant in this type of items: Group (INT/ADV/NS), Grammaticality (Grammatical/Ungrammatical), XP (+/-XP) and Verb Class (Transitive/Unaccusative/Unergative). The analysis revealed that all variables had a significant effect on participant response (Group = $F_{2,3071} = 363.4, p < 0.001$, Grammaticality = $F_{1,3071} = 196.1, p < 0.001$, XP = $F_{1,3071} = 66.1, p < 0.001$ and Verb Class = $F_{1,3071} = 8.4, p < 0.01$).³³

Turning next to two-way interactions, the analysis showed that the Group variable interacted in a highly significant way with the Grammaticality variable ($F_{2,3071} = 67.9, p < 0.001$) and in a significant way with the XP variable ($F_{2,3071} = 5.1, p < 0.01$). The interaction between Group and Verb Class was not found significant though ($F_{2,3071} = 1.6, p > 0.05$). Finally, as regards three-way interactions, the analysis suggested no significant results (Group x Grammaticality x XP = $F_{1,3071} = 1.11, p > 0.05$, Group x Grammaticality x Verb Class = $F_{2,3071} = 1.07, p > 0.05$).

³³) The finding concerning the main effect of Group was further explored by additional pairwise comparisons which indicated that, leaving aside the other variables involved, all three groups performed distinctly, with the INT faring the worse, the NS the best and the ADV group differing from both of them (INT vs. NS, INT vs. ADV, ADV vs. NS: $ps < 0.001$).

Figure 6 illustrates the interaction of Group x Grammaticality:

Figure 6. Group x Grammaticality

The finding that Grammaticality affects participant groups in a different way was further supported by conducting Tukey HSD post-hoc within-group comparisons on the scores above. These indicated that while the INT and the ADV Greek learners fare significantly better in the grammatical than in the ungrammatical items ($p < 0.001$), the English controls reject the ungrammatical sentences as readily as they accept the grammatical ones ($p > 0.05$).

Between-group comparisons showed a clear developmental pattern in the two learner groups, since the ADV are significantly more accurate than the INT in both the ungrammatical and in the grammatical items (INT vs. ADV: $ps < 0.001$). However, both learner groups and, crucially, the ADV are not as accurate as the NS in their judgments in either Grammaticality condition (INT vs. NS, ADV vs. NS: all $ps < 0.001$). Next, we present participant mean scores by Group and XP:

Figure 7. Group x XP

Within-group comparisons by means of Tukey HSD tests showed that Greek learners of both proficiency levels are significantly more accurate in judging

items of the –XP condition than items of the +XP condition ($p < 0.001$), as predicted. English natives on the other hand, appear equally accurate in both conditions of the XP variable ($p > 0.05$).

In order to test for development in learner L2 grammar, we continued with between-group comparisons. According to the results, the performance of the ADV group is significantly improved in both XP-preposed and verb-initial sentences compared to the performance of the INT group (INT vs. ADV: $p < 0.001$). However, in neither condition are the learner groups as accurate as the NS group (INT vs. NS, ADV vs. NS: $p < 0.001$).

Although the three-way interaction of Group x XP x Grammaticality did not reach significance as already pointed out, the participant mean scores in Figure 7 were further broken down by Grammaticality in an attempt to examine the extent to which the XP variable induces acceptance of ungrammatical post-verbal English structures. Figure 8 shows mean scores by Group, XP and Grammaticality:

Figure 8. Group x XP x Grammaticality

Planned within-group comparisons showed that both the INT and the ADV group accepted ungrammatical +XP items more often than ungrammatical –XP items (INT: $p < 0.001$, ADV: $p < 0.003$). Moreover, both learner groups were more accurate in judging grammatical –XP items than grammatical +XP items (both $ps < 0.001$). The widely attested grammaticality effect on learner accuracy scores was detected here too: the INT group performed significantly more successfully in the grammatical sentences of both +/-XP conditions than in the ungrammatical sentences in the corresponding conditions (both $ps < 0.001$). The ADV were significantly more accurate in the grammatical –XP than in the ungrammatical –XP items ($p < 0.05$), but in the +XP sentences no significant differences were found between the grammatical and the ungrammatical items, perhaps due to the overall lower accuracy scores induced by these structures ($p > 0.05$). The English controls, by contrast, judged +XP ungrammatical sentences as accurately as they judged ungrammatical –XP sentences ($p > 0.05$). The same

accuracy pattern was observed with grammatical set too ($p > 0.05$). Finally, the (un)grammaticality of sentences did not seem to affect NS accuracy since no differences were found in their judgments of ungrammatical and grammatical items in either condition ($ps > 0.05$).

Concerning between-group comparisons, although ungrammatical items and, particularly, ungrammatical +XP items are related to lower accuracy scores for the Greek speaker groups, learner performance seems to improve with increasing proficiency, as the ADV group fares significantly better than the INT group in ungrammatical items of both XP conditions ($p < 0.001$). The ADV are more accurate than the INT in grammatical –XP items too ($p < 0.001$), but not in the grammatical +XP items ($p > 0.05$) in which the INT are significantly worse only in comparison with the NS group ($p < 0.001$). Finally, the control group is significantly more accurate than the INT group and, crucially, than the ADV group in the ungrammatical set in both XP conditions (INT vs. NS, ADV vs. NS: $p < 0.001$). In the grammatical items, the INT are significantly less successful than the NS (NS vs. INT: $p < 0.001$), while the ADV are less accurate than the English control only in grammatical +XP items ($p < 0.05$).

In what follows we will proceed to the results from the existential postverbal items. Table 7 presents group accuracy scores in the ungrammatical *there*-VS items and in their grammatical counterparts (SV).

Table 7. Accuracy in *there*-VS items and in grammatical counterparts

	INT	ADV	NS
Ungrammatical	2.49 (SD: 0.65)	3.31 (SD: 0.78)	4.63 (SD: 0.3)
Grammatical	4 (SD: 0.52)	4.57 (SD: 0.39)	4.72 (SD: 0.15)

Within-group comparisons on the above scores revealed that both learner groups fared significantly better in the grammatical set than in the ungrammatical set ($p < 0.001$). No similar grammaticality effect was detected in the NS group: grammatical and ungrammatical items were judged equally accurately ($p > 0.05$). Between-group comparisons showed that INT learners and, more importantly ADV ones were significantly less successful than the English natives in rejecting ungrammatical existential postverbal structures (INT vs. NS: $p < 0.001$. ADV vs. NS: $p < 0.05$), as expected. Nevertheless, the results indicated that L2 grammars seem to develop with increasing proficiency as far as this structure is concerned since more proficient L2 learners were found to be more successful than less proficient ones (INT vs. ADV: $p < 0.001$).

As anticipated, *there*-VS items were related to rather low accuracy scores for Greek learners; both the INT and the ADV group fared worse in existential postverbal than in null subject items and in postverbal items (compare scores on Tables 4, 6 and 7). Moreover, as scores in Figure 8 and Table 8 reveal

and according to our predictions, INT and ADV learners accepted more readily postverbal structures in existential structures than in other +XP VS structures. Table 8 illustrates the comparison between existential postverbal and XP-preposed postverbal structures.

Table 8. Accuracy in *there*-VS and in +XP-VS items

Groups	<i>there</i> -VS	+XP-VS
INT	2.49 (SD: 0.65)	3.47 (SD: 0.9)
ADV	3.31 (SD: 0.78)	4.25 (SD: 0.65)
NS	4.63 (SD: 0.3)	4.68 (SD: 0.27)

Tukey HSD tests on the above scores showed that in both learner groups the rejection rate of XP-preposed postverbal structures was significantly higher than the rejection rate of existential postverbal items (INT, ADV: $p < 0.001$). By contrast, the English controls were found to be equally accurate in both item types ($p > 0.05$), as anticipated. This discrepancy in the accuracy rates seems to stem from the fact that *there* satisfies the morphophonological PF requirement for no-verb-initial English clauses, like other adverbial or prepositional phrases comprising the XP-preposed type, but, unlike them, carries no information and has a non-referential status.

Let us examine now the last variable instantiated in the postverbal item types, the Verb Class variable. Although, as already mentioned, the interaction between Group x Verb Class x Grammaticality was not found to be significant, we will present here group scores organized by these variables in order to explore whether predicate type affects postverbal subject acceptability in non-native data, particularly in the advanced group. Figure 9 presents participant scores organized by Group, Verb Class and Grammaticality:

Figure 9. Group x Verb Class x Grammaticality

Starting with ungrammatical items, planned within-group comparisons showed that both the INT and the ADV group accept significantly more postverbal permutations with unaccusative verbs than with transitive verbs (both $p < 0.001$), as expected. For the INT group the acceptance rate of ungrammatical unaccusative items is significantly higher than the acceptance rate of unergative items ($p < 0.001$), again as predicted. No such difference is found for the ADV group ($p > 0.05$) though. The acceptance rate of ungrammatical unergative structures and ungrammatical transitive structures does not differ in either learner group (both $p > 0.05$), contrary to what was hypothesized. English natives, according to our hypotheses, reject the ungrammatical items of different verb classes at comparable rates ($p > 0.05$). In the grammatical items, the INT accept significantly more transitive structures than unaccusative and unergative structures (unaccusative vs. transitive $p < 0.05$, unergative vs. transitive $p < 0.001$), whereas in the ADV group the acceptance rates across different verb class categories do not differ (all $p > 0.05$). English natives do not differ in their judgements in grammatical items either (all $p > 0.05$). Overall, these findings suggest that the thematic properties of unaccusative verbs are related to higher acceptance of VS permutations for Greek learners, as hypothesized.

Turning now to between-group comparisons, in the ungrammatical items all groups differ from one another: the INT fare significantly worse than the ADV group ($p < 0.001$) who are significantly less successful in rejecting L2 illicit postverbal structures than the English natives (in unaccusative and unergative $p < 0.001$, in transitive $p < 0.05$). In grammatical items, in the unergative type, although there is development with the ADV performing significantly better than the INT ($p < 0.001$), both groups differ from the English controls (INT vs. NS $p < 0.001$, ADV vs. NS $p < 0.01$). In the unaccusative and transitive grammatical items the two learner groups do not seem to differ ($p > 0.05$), yet, while the INT judge the relevant grammatical items in a significantly less successful way than the NS ($p < 0.001$), the ADV fare less accurately than the NS only in the unaccusative type ($p < 0.01$).

Summary of Results from Experiment 2

Overall scores in postverbal subject structures have shown that L2 learner performance improves with increasing proficiency, yet systematically deviates from the native norm: while ADV learners allow fewer VS structures than INT learners, they accept postverbal items more than the English controls. With respect to compensation effects, we have found that Greek learners, but not the native speakers, allow significantly more XP-preposed than verb-initial postverbal permutations. As regards the case of existential postverbal structures, results have shown that Greek learners accept them as grammatical signifi-

cantly more than other XP-preposed structures, as hypothesized. Regarding the contrast related to the type of predicate involved, it was found that unaccusative verbs induce inconsistent L2 behaviour, since Greek learners allowed more VS structures with these predicates than with unergative or with transitive ones.

5.3.2. The Cloze Test

A logistic regression analysis was conducted on participant responses aiming at examining the possible main effects and interactions of the relevant variables: Group (INT/ADV/NS), subject Referentiality (Referential/Expletive) and XP (+/-XP). The analysis revealed a highly significant main effect of Group (Wald test = 84.015, $p < 0.001$) and a main effect of Referentiality (Wald test = 10.053, $p < 0.01$), as in the PGJT. The XP variable was found to affect group performance at only a marginally significant level (Wald test = 4.241, $p = 0.046$). However, no significant interactions were found between Group and XP (Wald test = 0.267, $p > 0.05$) or between Group and Referentiality (Wald test = 0.113, $p > 0.05$). The three-way interaction between Group, XP and Referentiality was not significant either (Wald test = 0.004, $p > 0.05$) Figure 10 illustrates the production rates of null and overt subjects per groups.

Figure 10. Null and overt subject production

The analysis revealed that ADV learners produce target-deviant null subjects at a significantly lower rate than INT ones ($p < 0.001$) exhibiting improved performance. Both learner groups however and, importantly, the ADV group, fare significantly worse than the NS group using more ungrammatical null subjects than the English natives (INT vs. NS, $p < 0.01$, ADV vs. NS, $p < 0.05$).

Although Group and subject Referentiality did not interact significantly, we proceeded with breaking down the group overall scores in Figure 10 into referential and expletive subject rates in order to examine whether expletive subjects are associated with lower overt subject production rates. See Table 9:

Table 9. Null and overt subject production rates (%) organized by Referentiality³⁴

	INT		ADV		NS	
	Expletive	Referential	Expletive	Referential	Expletive	Referential
Overt subj.	76	84.24	92.16	94.59	100	100
Null subj.	24	15.71	7.84	5.41	0	0
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

As the rates in Table 9 reveal, Referentiality affects the performance of INT learners, since more null subject responses are produced when the targeted response is an expletive subject than when the targeted response is a referential subject (24 % vs. 15.71%). Even though this difference did not reach significance ($p > 0.05$), it nonetheless supports the findings attested in the PGJT regarding the learnability problems caused by the LF-uninterpretable [D] feature on expletive subjects. By contrast, the ADV and the NS groups showed comparable overt subject production rates irrespective of the (non)referentiality of the subject.

In order to explore compensation effects of the XP variable, we continued with grouping the overall scores of Figure 10 according to whether the English clauses involve XP-preposition or not. Table 10 depicts the relevant descriptive statistics:

Table 10. Null and overt subject production rates (%) organized by XP³⁵

	INT		ADV		NS	
	+XP	–XP	+XP	–XP	+XP	–XP
Overt subj.	77.4	83.64	93.12	93.86	100	100
Null subj.	22.6	16.36	6.88	6.14	0	0
<i>Total</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

As also attested in the relevant items of the PGJT, +XP items are related to lower overt subject production rates than –XP items, yet, as shown in Table 10, for the Cloze Test, this effect was only evident in the responses of the INT group. The relevant difference however was not significant ($p > 0.05$). The ADV and the

³⁴) An anonymous reviewer has suggested that the data presented in Table 9 should also be described with the use of SDs. However, the relevant data are the response rates for each category of Referentiality, which is a nominal (i.e. categorical) variable, and therefore the presentation of any associated results with the use of SDs is not considered appropriate.

³⁵) The XP variable is also nominal; therefore the presentation of the response rates in Table 10 with the use of SDs is not appropriate either.

NS groups on the other hand, produced overt subjects at similar rates in both +XP and –XP conditions.

Summary of Results from the Cloze Test

In the production task we have found that, although L2 performance improves with increasing proficiency, Greek learners of the ADV group provide fewer overt subject structures than the English natives, as predicted and in line with the relevant findings from the PGJT. As regards compensation effects, the analysis attests only a tendency towards the direction of our predictions: only the INT group produced fewer overt expletive subjects than referential ones, as well as fewer overt subjects in +XP than in –XP structures without however the aforementioned contrasts being significant.

6. Discussion

With respect to null subjects in English L2, our prediction was that they will be active even at advanced stages of development, due to the involvement of parameterized formal features. The obligatory overt manifestation of English subjects as opposed to Greek subjects reflects a parametric difference between the languages, i.e. a mismatch in the LF-uninterpretable features associated with the status of verbal agreement in L1 Greek and L2 English. Following the Interpretability Hypothesis, we have assumed that the semantically uninterpretable features regulating the syntax of English subjects which, by hypothesis, are not instantiated in L1 will be inaccessible to adult Greek learners. The unavailability of formal features in adult L2 acquisition renders interlanguage grammars defective with respect to L2 formal feature composition, the result being that L2 acquirers cannot switch off the relevant L1 properties deviating thus from the English norm even at advanced levels. Our results have shown that both learner groups, and, crucially, the ADV group are clearly distinguishable from the native controls in accepting and producing significantly more null subject structures. This finding verifies the relevant prediction.

As regards compensation effects, we predicted that L2 learners but not the native speakers will use the semantically interpretable [person] feature of referential subjects in order to regulate the acceptance and production of null subjects, the result being that null referential subject structures will be fewer than non-referential, i.e. expletive ones, given the lack of an interpretable [person] or [referentiality] feature in the latter. However, notice, that the analysis of L2 input by means of interpretable features was not predicted to make L2 performance reach native speaker standards. The relevant data has shown that Greek learners, as opposed to native controls, accepted fewer null subject structures

when the subject was referential than when it was expletive, confirming our hypothesis. A similar analysis in the production task (Cloze Test) has attested only a tendency towards that direction. This could be attributed to the fact that Greek learners may accept more readily null subjects than produce ones. Additionally, although learner performance improves through the supportive use of LF interpretable features, a clear discrepancy was attested between native and non-native data: Greek INT and ADV learners fare worse than the English controls not only in null expletive items, but also in null referential structures in both tasks. This pattern, namely improved performance due to the compensatory application of interpretable features in the L2 input, but, at the same time, inaccuracy compared to native controls, is consistent with what the Interpretability Hypothesis predicts for L2 grammars.

Turning next to compensation at a morphophonological level, we predicted that Greek learners will use the no-verb-initial strategy of English clauses in the distribution of null subject structures accepting and producing fewer null subjects in verb-initial than in XP-preposed structures. Our results have shown that Greek learners tended to accept and produce fewer null subjects in verb-initial than in XP-preposed structures, but this trend was not significant in either task. Notice that even in the verb-initial set, L2 performance was less successful than native speaker performance. With the above given, regarding the XP variable, the null subject data cannot offer any conclusive results and confirm our prediction.

On the whole, results from null subjects lend support to the idea that there is a distinct acquisitional route for interpretable and uninterpretable features with the former being more readily available than the latter as a means of analyzing L2 input. We thus contend that the prolonged problems of the advanced group in null subject acceptability and use cannot be adequately explained by Interface Vulnerability Hypotheses, which attribute the attested L2 optionality to interface problems and the related interpretable features.

Furthermore, besides the issue of parameter resetting (i.e. feature re-evaluation) in L2 acquisition, what also needs to be further examined is the possibility that acquisition may involve different levels of difficulty depending on the morphological salience of cues and their similar or distinct realization in L1 and L2. Our data has revealed that Greek learners of English have persistent problems in acquiring the overt realization of English expletives. Although our findings are in line with relevant findings of the majority of L2 studies (White 1985; Phinney 1987; Tsimpli & Roussou 1991), Lozano (2002) reported that the English learners of his experiment were successful in accepting null expletive Spanish subjects. This may be attributed to the fact that L1 English exhibits two distinct lexical entries for expletive subjects, namely *it* and *there*, while Spanish, and Greek have no corresponding overt lexical item. Based on Parodi and

Tsimpli's (2005) assumptions regarding the directionality of difficulty according to morphological cues, it could be claimed that English learners of Spanish moving from more to less may be inclined to look for overt expletives in L2 and, thus, be faced with a less demanding task when they have to acquire a null form. On the contrary, Greek learners of English, like the participants of our study, going from less to more, may encounter more problems in the absence of relevant L1 morphological cues, which may give rise to persistent optionality.

Moving on to postverbal subjects, our prediction was that, due to the inaccessibility of the LF uninterpretable (EPP) feature which is associated with the preverbal position of the English subjects, Greek learners will not be able to abandon the L1 syntactic option of postverbal subjects accepting more VS permutations in L2 than the English controls. Our results revealed that although learner performance showed signs of progress, as VS acceptability rate decreased at more advanced levels, nonetheless the ADV group accepted significantly more V(O)S(O) permutations than the NS group. This finding corroborates our assumption that parameterized formal features are unavailable in post-puberty acquisition, the result being that the abstract L1 Greek features of subject-verb agreement are transferred as parametric options in developing, and, more importantly, advanced L2 grammars.

With respect to the compensatory use of interpretable features we have predicted that, as in the null subject experiment, Greek learners, but not the native controls, will use the no-verb-initial strategy as compensation at the morphophonological level accepting thus fewer postverbal subjects in verb-initial than in XP-preposed structures. This prediction was supported by our findings since Greek learners, unlike the English natives, fared more successfully in rejecting verb-initial than XP-preposed postverbal structures. Concerning this item set, our data is in line with Oshita's (2004) and Lozano and Medikoetxea's findings on L2 VS production. Turning next to existential postverbal structures, we anticipated that L2 learners, unlike the control group, will accept significantly more *there*-VS than +XP VS structures the reason being that *there* satisfies the phonetic or morphophonological requirement for no-verb-initial English clauses but lacks an interpretable [person] or [referentiality] feature that learners can use to accommodate L2 input. This hypothesis was also confirmed by our findings: both learner groups were significantly less accurate in rejecting *there*-VS than +XP VS structures. A similar pattern was not attested in the NS data. Finally, with respect the Verb Class variable which examined compensation at LF, it was predicted that Greek learners will accept more postverbal subjects with unaccusative than with unergative verbs, as well as with single-argument predicates than with two-argument predicates. The analysis has revealed that predicate type contrasts affected Greek learners but not native controls: for

both learner groups unaccusative items are associated with higher rates of VS acceptability compared to transitive items. However, the predicted discrepancy between unaccusative and unergative items was only attested for the INT group, while the expected distinction between unergative and transitive items was not attested for either group. The above findings partially verify our predictions and show that VS acceptability is related to the thematic properties of unaccusative verbs only and not to one-place vs. two-place predicate type contrasts or to the semantic contrast between unaccusative and unergative verbs. Previous L2 studies reported high VS production with unaccusative predicate types as well (Zobl 1989; Rutherford 1989; Oshita 2004; Lozano & Medikoetxea 2010), but also found a difference in VS production between unaccusative and unergative items along the lines outlined above (see Rutherford 1989; Lozano & Medikoetxea 2010). Notice however, that both these studies were based on written corpora of English L2 and did not employ a judgement task, which could have affected responses.

Closing the discussion pertaining to the predictions we have formulated and the obtained results, we argue that our findings are in line and lend further support to the Interpretability Hypothesis, as this was outlined for second language acquisition. The fact that the L1 syntactic options of null and postverbal subjects are active in advanced L2 grammars validates the claim that uninterpretable features are inaccessible in adult L2 acquisition causing prolonged learnability problems. Conversely, on the background of our data, we claim that semantically and, as the relevant data has revealed, morphophonologically interpretable features are more readily available and have a mitigating role, thereby improving learner target-deviant performance in a systematic way.

An interesting point raised by our study is that semantically and morphophonologically interpretable features may be more readily available to L2 learners but may not be used in the same way. Consider the overwhelmingly inaccurate performance of Greek learners in null expletive items and in existential postverbal structures, as opposed to their higher performance in null referential and in +XP/-XP postverbal structures. In addition, null subject items are judged more readily than postverbal subjects by Greek learners in both +XP/-XP structures. Such results suggest that semantic features (i.e. subject Referentiality) are more reliably used by L2 grammars than morphophonological features (i.e. XP-preposing) in the sense that the L2 learners of our study are more successful in abandoning verb-initial structures than null expletive subjects. The difference between the role of Referentiality and XP implies that not only are the acquisitional patterns of null and postverbal subjects diverse in L2 acquisition, but interestingly, that within a microparameter, namely the one regulating postverbal subjects, interlanguage mechanisms exploiting semantic and

morphophonological features lead to distinct acquisitional routes. We believe that this constitutes a challenging point that could be further pursued in future research. Additional support for the differential status of microparameters of null and postverbal subjects comes from the examination of the XP-preposing mechanism across both structures. Our data showed that the +XP/-XP contrast affected the acceptability of postverbal but not of null subjects. This finding essentially reveals that the exploitation of the morphophonologically interpretable feature related to XP-preposing affects the L1 syntactic properties of null and postverbal subjects in a different way. From the point of view of compensation via interpretable features what these results suggest is that different microparameters, namely null and postverbal subjects, may exploit PF-interpretable features differently in the L2. The implication is once again that the relevant microparameters have a differential status in interlanguage systems. Given that, as we have shown, the supportive mechanisms of the interlanguage affect differentially the microparameters of null and postverbal subjects, as well as that within each microparameter features interpretable at LF and PF yield distinct acquisitional patterns related to varying levels of L2 accuracy, we argue that properties deemed as syntactic consequences of parameters should be viewed with caution in linguistic research.

7. Conclusions

The Interpretability Hypothesis predicts that L2 grammars, even at advanced levels, cannot be represented in a way identical to the native speaker's grammar for reasons to do with the inaccessibility of formal, uninterpretable features. The role of interpretable features in the L2 grammar is at the same time crucial: interpretable features play a compensatory role in analyzing the input in a way that would allow the grammar to be constrained on UG grounds.

Accordingly, we have argued that the English L2 of Greek native speakers regulates subject expression in terms of Referentiality, a semantic feature and the requirement for no-verb-initial clauses, prosodically motivated. These constraints give rise to non-random optionality in the syntactic properties of null and postverbal subjects. Thus, in the VS syntactic property the Greek/English interlanguage, at the level of linear ordering, exhibits attributes of a partially null subject language like Finnish.

One of the many open questions, however, is how the selection of PF- or LF-interpretable features operates for each part of input which fails to be analyzed by the L2 learner; in other words, why is Referentiality used by the L2 grammar to regulate postverbal subjects and how are PF-interpretable features selected to condition word-order production. These issues need to be addressed from a theoretical learnability perspective.

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