Interrogatives in the Greek / English interlanguage: a minimalist account

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1 INTRODUCTION
The present paper is an attempt to reformulate the theory of L2A originally suggested by Tsimpli & Roussou (1991), in the light of the minimalist program. It is argued that a minimalist approach to L2A can be implemented to specify the status of the features which are least accessible to re-setting in the L2A process, given (i) constraints on their learnability, and (ii), their setting in the L1 grammar. The phenomenon discussed concerns the use of the resumptive strategy in wh-object and subject extraction.
Tsimpli & Roussou's (1991) account of L2A makes crucial use of the distinction between UG principles and parameters which have been assumed to determine cross-linguistic variation (Chomsky 1986, 1995, Ouhalla 1991, Pollock 1989). This account suggests that UG is available to the process of L2A but parameters cannot be reset given that feature values on functional categories other than those selected by the L1 grammar, are not accessible to the L2 learner (Tsimpli & Smith 1991, Smith & Tsimpli 1995). In this theory, the domain of the functional lexicon in the Language Faculty ceases to be accessible once L1A is complete. The functional features determining parameters in L1 are available to the L2 learner and transferable to the L2 grammar. On the other hand, (non-parameterised) UG principles are fully operative and in this sense, the L2 grammar is a UG construct represented similarly with the native language. This account falls within the approaches suggesting Full Access insofar as principles of syntactic computation and the corresponding universal constraints on PF and LF representations are concerned (UG Principles). It falls within the Partial Access set of approaches in that the parametric specification of functional categories is inaccessible and thus resists 'setting' in the L1A sense (see also Hawkins 1993, Hawkins & Chan 1997).

The notion of interlanguage grammars is understood as a collection of L1 settings which may appear target-like if alternative UG routes can give rise to a PF representation that resembles more or less the L2 equivalent (see references above for examples). For example, it is argued that the pro-drop parameter in the Greek / English interlanguage is not reset to the negative value even at stages where English subject pronouns are used; rather, there is a reanalysis of English subject pronouns as agreement markers which, in turn, is responsible for their (target-like) obligatory
occurrence (Tsimpli & Roussou, op.cit.). Morphological reanalyses of this type are widely attested across languages both synchronically (cf. Roberge (?) for French subject clitics) and diachronically (cf. Cardinaletti & Starke 1994), indicating that it is a UG-based option.

Consistent with this theory is the claim that the morpho(phono)logical component is dissociated from syntax proper (cf. Chomsky's (1995) model of a system of syntactic computation, subject to UG principles and constraints, but independent from parameterisation). Whereas in L1A the mapping from functional feature matrices to morpho(phono)logical properties is successful, in L2A (as well as in pathological cases, e.g. Christopher's case (Smith & Tsimpli 1995) or SLI children (Gopnik 1990 among many others)) the two systems develop independently (or, in the pathological cases, they are selectively impaired) and the mapping between them is not a straightforward process.

The data from this study pertain to the claim that the L2 representation of formal features like Case and Agreement in the verbal inflectional heads, i.e. light v and T, is not target-like with respect to a) their resumptive use in interrogative structures and b) the null subject option. Specifically, it is claimed that L2 learners adopt the L1 choice whereby subject-verb agreement subsumes the resumptive function in cases of subject extraction out of embedded clauses. Furthermore, it is suggested that L2 object pronouns are misanalysed as having functions associated with L1 object clitics in that they can also be used resumptively. In addition to the role of phi-features and Case in English L2, the data from this study also address the question of the interaction of [animacy] and [D-linking] with the resumptive use of English pronouns in the Greek/English interlanguage. The motivation for this further distinction between resumptive uses is twofold: first, Greek and English differ with regard to the grammaticalisation of the animacy feature on the pronominal system of clitics and wh-pronouns. Thus, the results obtained from animate and inanimate subject and object resumptive pronouns are important insofar as the question of parameter-resetting of that particular feature is concerned. In addition, both [animacy] and [D-linking] are assumed to be LF-interpretable: as such, L2 data will raise interesting implications with respect to the possibility of refining the claim of ‘no parameter-resetting’ to accommodate the minimalist distinction between interpretable and non-interpretable features.

Specifically, the theory presented addresses the question of transfer and reanalysis affecting PF representations, by distinguishes between LF-interpretable and non-interpretable features in the process of developing an L2. According to these notions, it makes certain predictions for the question of ultimate attainment (Birdsong 2000). The empirical study presented includes a group of advanced L2 learners; thus, the analysis of this data is
used to evaluate these predictions. The data is also shown to provide further
evidence to theoretical claims concerning L1 transfer and
morphophonological reanalysis of resumptively-used pronouns, as a
developmental option in L2A. Finally, on the basis of the data from [+/animate] and [+/D-linked] subject and object pronouns in wh-extraction, it
evaluates the minimalist distinction between LF-interpretable and non-
interpretable features in terms of their learnability and the possibility of
parameter-resetting.

2. NULL AND POSTVERBAL SUBJECTS, AND WH-EXTRACTION:
GREEK VS ENGLISH
It has been suggested (Rizzi 1982, 1986) that three properties cluster
together in null subject languages: null subjects, postverbal subjects and an
apparent lack of that-t effects. Greek and English indeed exhibit a contrast in
these properties:

(1) a. Efíje.
left-3s
"(he/she) left."
b. Efíghan ta pedhia.
left-3p the-nom children.
"*(The children left.) (cf. The children left."
c. Pji ipe oti efíghan?
who-pl-nom said-3s that left-3p
"*Who said that left?" (cf. Who did he say left?)

The ungrammaticality of the English translation of (1c) has also been
contrasted with object-extraction out of embedded clauses. The contrast in
grammaticality is an instance of subject-object asymmetries in English. Null
subject languages like Greek, however, do not exhibit such asymmetries
(Rizzi 1982). Moreover, whereas English exhibits island effects of a stronger
(e.g. (2a)) or weaker (e.g. (2b)) status, Greek only shows a weak island
effect in the corresponding cases (cf. (3a&b)):

(2) a. *Who do you wonder if t gave the book to John?
b. ??What don’t you know if John bought?

(3) a. ??Pjós dhen kseris an edhose to vivhio sto Yani?

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1 The common property of the examples in (1), is related to the AGR-S category in
null subject languages which can both license and identify a pro subject.
2 The lack of such asymmetries in extraction is assumed to stem from the possibility
of subject extraction out of a postverbal position which, in the earlier framework,
was taken to be a properly governed position thus circumventing an ECP violation.
who-nom not know-2s if gave-3s the book to-the Yani
"*Who don't you know if gave the book to Yani?"

b. ??Pjon dhen kseris an sinandise o Petros?
what not know-2s if met the-nom Petros
"??Who don't you know if Petros met?"

An additional difference between the two languages with respect to the properties of wh-interrogatives concerns the use of resumptive pronouns. In particular, structures like (3b) also optionally allow for a resumptive clitic pronoun co-indexed with the extracted wh-phrase as shown in (4a). Note, furthermore, that a clitic pronoun is also available, again optionally, in object extraction out of an embedded declarative where no (weak) island violation ensues (see (4b))³:

(4) a. ??Pjon dhen kseris pote tha (ton) sinantisis?
whom not know-2s when will him-meet-2s
"Who don't you know when you will meet (*him)?"

b. Pjon ipes oti (ton) prosevalan xoris logho?
whom said-2s that him-insulted-3p without reason
"Who did you say that they insulted (*him) without a reason?"

The only exception to the possibility of a resumptive clitic in an object wh-interrogative of the type in (4) is when it is a what-question as in (5) below:

(5) a. *Ti nomizis oti tha to dhiavasun?
what think-2s that it will read-2
"What do you think that they will read?"

b. *Ti anarotjesan an tha to sizitisun?
what wonder-2s if it will discuss-3p
"*What do you wonder if they will discuss?"

The difference between (4) and (5) has to do with the difference between ti (what) and pjos/pja/pjo (who-masc/fem/neuter) in Greek. In particular, ti is the only wh-word unspecified for phi-, gender features or Case in contradistinction with pjos which is specified for all these features. The ungrammaticality of the examples in (5) is, then, related to the lack of feature-matching between the resumptive clitic and what. Note, crucially, that unlike English wh- and personal pronouns, Greek clitics and wh-phrases are not specified for the [animacy] feature. Furthermore, the who/which

³ That an object clitic is optionally available in both (3b) and (4b) shows that, at least in these structures, the clitic is not used as a Last Resort strategy (cf. Shlonsky 1992).
distinction is not expressed with a different wh-word in Greek except, again, for the \textit{ti} question word:

\begin{itemize}
  \item[(6)]
    \begin{enumerate}
      \item Pjos (mathitis) / Pja (kopela)  
        \begin{itemize}
          \item who/which-masc-sing-nom (student-masc-sing-nom) /  
          \item who/which-fem-sing-nom (girl fem-sing-nom)  
          \end{itemize}
        \end{enumerate}
      \end{itemize}

    \begin{itemize}
      \item Ti / *Ti pedhi  
        \begin{itemize}
          \item what / what child-neuter-sing-nom (which-neut-sing-nom child-neut-sing-nom)  
        \end{itemize}
    \end{itemize}

    "Who / Which student / Who / Which girl"

b. Ti / *Ti pedhi  
\begin{itemize}
  \item what / what child-neuter-sing-nom (which-neut-sing-nom child-neut-sing-nom)  
\end{itemize}

"What /*Which child"

To summarise, whereas the English who/what distinction encodes the animacy distinction, in Greek, the gender distinction overrides differences in animacy. All wh-phrases in Greek except \textit{ti} are specified for case, gender and number features. Turning to non-wh-pronouns now, a similar contrast between the two languages is found. In particular, whereas English pronouns distinguish between \textit{[+/-animate]} in the use of \textit{he, she} on one hand and \textit{it} on the other, Greek marks gender contrasts and not animacy in both clitic and strong pronouns.

3. RESUMPTIVE FEATURES IN MINIMALISM

Recall from the data in section 1, that wh-questions in Greek do not exhibit subject-object asymmetries (cf. (3)). Furthermore, object clitics can be used resumptively, in case extraction of a wh-phrase from the embedded clause takes place (cf. (4)). Let us assume that, similarly with subject agreement, object clitics are the phonological realisation of ‘strong’ case and phi-features on light \textit{ν} (Tsimpli, 1999). On the assumption that verb-raising to Inflection in Greek is overt, raising to \textit{ν} is a prerequisite for convergence of the derivation. If this assumption about the status of clitics in wh-structures is correct, we can derive the parameterisation facts as, in this case, the features concerned are formal non-interpretable features, stripped away at Spell-Out and converted into a phonetic realisation. Note, crucially, that the claim is that wh-structures crosslinguistically can only satisfy Full Interpretation at LF, if an operator-variable dependency is formed. Therefore, resumptive clitics must be a PF phenomenon, whereas the computation after Spell-Out has these formal features checked and erased leading to an LF representation of an operator-variable structure.

Object clitics, like subject clitics (or subject agreement), lack a referential index because they are nominal features on a non-nominal head, hence non-interpretable. If clitics were assumed to originate in a nominal head (with semantic features and a theta-role) their phi-features would be interpretable, i.e. they would have a specificity or definiteness feature which
could not be erased during the computation after checking. This, in turn, would imply that they would not be able to occur in structures where their interpretation at LF should be that of a ‘pure’ variable.

On the basis of the discussion above, the similarity between subject and object wh-interrogatives in Greek can be accounted for. In both cases, subject agreement and object clitics function resumptively. We can thus suggest the following definition of resumptive elements (Tsimpli, 1997):

(7) Resumptive elements are the phonological manifestation of formal, nominal features on non-nominal X^φ^nuX.

The fact that resumptive clitics, but not subject agreement, are optional in the wh-interrogatives discussed here, has to do with a morphological difference in the verbal form. In particular, verb forms in Greek are affixal in nature and subject agreement morphology is required to satisfy the verb’s morphological well-formedness condition. Subject agreement morphology is thus required for independent reasons. The optionality in the phonetic realisation of the formal features converted into object clitics, on the other hand, is not problematic: optionality at the PF level does not reflect optionality in the derivation (cf. Chomsky 1995). Thus, the optionality concerns the conversion of spelled-out phi- and D features of light ν, into phonological material, namely clitics.

4. A MINIMALIST THEORY OF L2A
In order to formulate a theory of L2A within minimalism, I will maintain what I consider to be the default hypothesis, namely that all grammar-building processes make use of the same cognitive mechanism, the language module. Thus, adult L2A would still make use of the same computational system for natural language from the onset of L2 development. The distinction between principles and parameters in UG could thus be formulated accordingly. More precisely, principles like Merge/Move, and whatever economy constraints are operative in the selection of derivations are available to the language learner at all stages of development. If the computation and the principles underlying it are operative in all language acquisition processes, the implication is that LF representations should be convergent, in that feature-matching and the Principle of Full Interpretation at LF would provide an output interpretable at the C-I systems. Briefly, this is what “UG is available” could be understood as, in minimalist terms.

Consider parameters. Parameterisation is expressed as language differences at the feature-level; in particular, whether a specific feature is spelled-out or not in a language and how this spell-out takes place (i.e. via Merge or Move). So, for example, the Q feature in yes-no questions can be
realised either as a question particle (e.g. in Chinese), as an inflectional element (e.g. in English) or has no PF-realisation (e.g. in colloquial French) (cf. Cheng, 1991, Roberts & Roussou, 1999, Roberts & Roussou, in press). Further crosslinguistic differences may involve the option of phonological material corresponding to a category or a subset of ‘strong’ features that have completed their function in the computation; resumptive elements are taken to be examples of this parametric type. Thus, assuming that the overt syntax will include instances of the two options, namely Merge and Move, parameterisation will reflect crosslinguistic differences.

On these assumptions, L2A could be affected by differences in the morphophonological realisation of the feature specified as a language-specific property in terms of parameterisation (see note 11). Assuming, as is standardly the case, that parameters are problematic for L2A primarily when L1 values differ from the L2 target setting, then re-setting in terms of feature-spell-out could be formulated accordingly. It is crucial, however, to consider the difference between LF-interpretable and non-interpretable features at this stage. Specifically, the claim is that whereas spell-out of resumptive features is assumed not to give rise to LF-differences given that resumptive features are non-interpretable at this level, the animate / inanimate distinction, grammaticalised in English but not Greek pronouns, involves an interpretable feature; thus, the prediction made with respect to the L2 grammar is that it could be acquired, hence specified on pronouns in L2 English.

5. THE STUDY
Two groups of Greek learners of English were included in the study (based on their performance in the Oxford Placement Test); the Intermediate group (n=21) and the Advanced group (n=27). All advanced subjects are students at the Aristotle University of Thessaloniki whereas Intermediates were studying the language at a private English language institute. A control group of 26 native speakers of English, all of them students at the University of Cambridge is also included. The test was a paced Grammaticality Judgement Task consisting of 51 sentences (26 grammatical and 25 ungrammatical items). 30 test items and 21 distractors were included. The scale used was a five-point scale from -2 (certainly ungrammatical) to +2 (certainly grammatical), including 0 as the ‘not sure’ option (White et al., 1998). Incorrect performance was measured on the basis of all choices made on the ‘wrong’ side of the scale (0 choices excluded). Thus, for a sentence judged as grammatical (+1 or +2) by the control group, learners’ responses of -1 and -2 are considered ‘incorrect’.
The test items included matrix wh-interrogatives with [+/- Animate] and [+/- D-linked] wh-phrases, extracted from subject or object position of the embedded clause:

Grammatical and Ungrammatical Object extraction
(8)a. *Which book / What do you remember that Peter read it carefully?
   b. *Which student / Who do you think that Jane likes him?

Grammatical and Ungrammatical Subject extraction (+/- C)
(9) a. *Who / Which politician have you suggested that he should not resign?
   b. *Which party / What does John think it was very boring?

5.1 The Results
The results presented below include only the comparisons which reached statistical significance. In Table 1, the results of the Advanced group of learners based on the comparison between the percentages of non-target performance on ungrammatical test items is presented.

<table>
<thead>
<tr>
<th>RESUMPTIVE PRONOUNS</th>
<th>% non-target performance</th>
<th>p of t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject vs Object</td>
<td>30</td>
<td>19</td>
</tr>
<tr>
<td>Animate vs Inanimate Subj</td>
<td>20</td>
<td>41</td>
</tr>
<tr>
<td>Animate vs Inanimate Obj</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>Inanimate Subject vs Inanimate Object</td>
<td>41</td>
<td>27</td>
</tr>
<tr>
<td>Non-D-Linked vs D-Linked Subjects</td>
<td>23</td>
<td>40</td>
</tr>
<tr>
<td>Animate vs Inanimate D-Linked Objects</td>
<td>14</td>
<td>44</td>
</tr>
<tr>
<td>Animate vs Inanimate D-Linked Subjects</td>
<td>24</td>
<td>41</td>
</tr>
</tbody>
</table>

For the Advanced group of learners subject pronouns are more likely to be used resumptively than object pronouns in L2 English. On the other hand, animate pronouns in either subject or object position are more easily rejected in their resumptive uses than inanimate pronouns. Finally, D-linked wh-phrases are more easily accepted with a co-indexed resumptive pronoun in subject position than non-D-linked wh-phrases.

For the Intermediate Group, the results are shown in Table 2.

<table>
<thead>
<tr>
<th>RESUMPTIVE PRONOUNS</th>
<th>% non-target performance</th>
<th>p of t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animate vs Inanimate Subj</td>
<td>22</td>
<td>47</td>
</tr>
<tr>
<td>Animate vs Inanimate Obj</td>
<td>20</td>
<td>53</td>
</tr>
<tr>
<td>Non-D-Linked vs D-Linked Subjects</td>
<td>25</td>
<td>46</td>
</tr>
<tr>
<td>Animate vs Inanimate D-Linked Objects</td>
<td>19</td>
<td>57</td>
</tr>
<tr>
<td>Animate vs Inanimate D-Linked Subjects</td>
<td>28</td>
<td>52</td>
</tr>
</tbody>
</table>
With respect to the results from the Intermediate group, the animate/inanimate distinction gives rise to different acceptability judgements for interrogatives with resumptive pronouns in subject and object position. As with the Advanced group of learners, subject pronouns co-indexed with non-D-linked wh-phrases are significantly less frequently accepted than with D-linked wh-phrases.

<table>
<thead>
<tr>
<th>RESUMPTIVE PRONOUNS</th>
<th>Advanced</th>
<th>Intermediate</th>
<th>p of t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object</td>
<td>19</td>
<td>36</td>
<td>.005</td>
</tr>
<tr>
<td>Non D-Linked Object</td>
<td>14</td>
<td>42</td>
<td>.0004</td>
</tr>
<tr>
<td>Inanimate Object</td>
<td>27</td>
<td>53</td>
<td>.002</td>
</tr>
</tbody>
</table>

In the between-groups comparison, significant results are shown only with regard to the use of resumptive pronouns in the object position, both for D-linked and inanimate objects. L2 development is thus seen to affect the acceptability rate of object pronouns in interrogatives; subjects continue to be used resumptively by the Advanced group of learners.

The distinct performance in subject vs object interrogatives is also shown by the results of the two groups in grammatical interrogatives, i.e. those with an empty category in the position of extraction. Table 4 shows that subject extraction with an empty category in the extraction site is problematic for both groups of learners, whereas grammatical object extraction is accepted.

<table>
<thead>
<tr>
<th>Ec</th>
<th>Intermediate</th>
<th>Advanced</th>
<th>NS</th>
<th>p of t (Int.NS / Adv.NS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object</td>
<td>12</td>
<td>10</td>
<td>7</td>
<td>ns</td>
</tr>
<tr>
<td>Subject</td>
<td>26</td>
<td>24</td>
<td>2</td>
<td>4.93 3.63</td>
</tr>
</tbody>
</table>

On the basis of the performance of learners on target subject extraction, it can be argued that the requirement for overt morphological material in the extraction site represents an L2 grammatical choice. On the other hand, grammatical interrogatives involving extraction from the object position are not considered ungrammatical by the two groups of learners.

6. CONCLUSIONS

On the basis of the results presented in the previous section it can be concluded that L1 effects are clear on subject wh-interrogatives even in the Advanced group. The L1 effects attributed to the L2 grammar are not direct though. Specifically, there are three pieces of evidence which support L1-transfer in subject extraction cases: (i) the higher level of acceptability of resumptive pronouns in the subject position, (ii) the absence of a significant
developmental change in such ungrammatical questions and (iii) the higher percentage of incorrect performance in the judgements of grammatical subject extraction cases. The data then suggests that the role of subject-verb agreement in L1 Greek can also function resumptively in subject extraction cases. In this sense, the null-subject property interacts with the relative freedom in subject extraction in Greek. In L2 English, Greek learners transfer the requirement for morphological features in the extraction site, hence the acceptability judgements on resumptive pronouns in subject interrogatives. Note crucially that subject agreement is necessarily present in all verb forms in Greek. This is taken to be responsible for the strength of the transfer tendency evidenced in both groups of learners. Given that subject agreement is not available in English, transferring the resumptive use of subject agreement requires a reanalysis and a misanalysis of English pronouns as also allowing for resumptive uses, i.e. as ‘weak’ pronouns in Cardinalletti and Starke’s (1994) sense. On the other hand, the L1 optionality in the use of resumptive clitics in the object position gives rise to the developmental pattern available the L2 data. In particular, the Advanced group opts for the empty category in object interrogatives as a result of the interaction of the L1 optional presence of a resumptive clitic and the L2 input.

With regard to the suggestion that interpretable features requiring spell-out in L2 will be acquired—in the parametric sense—even if the corresponding feature is not grammaticalised in L1, this seems to be supported by the results on animate and inanimate English pronouns. In particular, in both groups of learners resumptive pronouns in English L2 are accepted more when inanimate than when animate in both subject and object interrogatives. Recall that in the Greek pronominal system, grammatical gender overrides differences in the animacy feature, hence the latter is not grammaticalised in the language. Despite this contrast between L1 and L2 pronouns, learners succeed in acquiring the relevant feature which appears to have a significant effect on the learners’ acceptability rate of resumptive pronouns in L2 English. Therefore the interpretable / non-interpretable distinction seems to be supported by the L2 data presented in this study.

The data concerning the distinction between D-linked and non-D-linked phrases did not give rise to significant differences except for subject interrogatives. This suggests that the resumptive strategy in interrogatives is basically determined by the features associated with the elements in the extraction site rather than the nature of the wh-phrase as such.

Assuming then that parameter-resetting in L2 is problematic but not impossible, we can reformulate the relevant hypothesis argued by Tsimpili & Roussou (1991) and claim, instead, that parameter-resetting can take place when the features requiring spell-out, i.e. those that are PF-interpretable, are
LF-interpretable too. An example of this type is [animacy] which is specified in a binary way on English pronouns. Features which are non-interpretable at LF but are involved in a parametric distinction between L1 and L2 will not be reset, at least not via the standard route of acquisition. An example of this type is the resumptive use of phi-features as these are expressed on pronominal clitics and on the verb.

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