Probing the adult initial state of non-native Greek: a case study

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Abstract: This is a case study on the initial state of Greek as a second language within the Universal Grammar framework. We administered three oral and four written tasks to an adult Italian-English bilingual with little exposure to Greek. The results showed above chance-level performance on subject-verb agreement and on articles across tasks, indicating the presence of the functional categories Inflection and Determiner. These results support Schwartz and Sprouse’s (1994) ‘Full Transfer/Full Access’ hypothesis and disprove theories which suggest that the mental grammar of the L2 initial state contains lexical categories only (Vainikka & Young-Scholten 1994). However, the findings revealed low scores in nominal agreement, suggesting that this is a problematic area in L2 Greek.

Keywords: L2 initial state, Greek interlanguage, universal grammar, determiners, subject-verb agreement, nominal agreement, case study

1. Introduction
This study investigates the very early Greek interlanguage grammar of an adult Italian/English bilingual speaker. Assuming that second language (L2) acquisition in post-puberty is constrained by the principles of Universal Grammar, we test the following two hypotheses. The ‘Minimal Trees’ hypothesis (MT) (Vainikka & Young-Scholten 1994, 1996a,b) holds that only L1 lexical categories, for example, V(erb)P(hrase), N(oun)P and the headedness values of their projections transfer to the initial L2 grammar, while functional categories are acquired incrementally through exposure to L2 input. On the other hand, the ‘Full Transfer/Full Access’ hypothesis (FT/FA) (Schwartz & Sprouse 1994, 1996) suggests that the entire L1 grammar transfers from the L1 to the L2 initial state. This entails functional categories too, such as D(eterminer), Infl(ection) and C(omplementizer) and their respective projections, that is, DP, InflP and CP, with the L1 parametric properties.

We focus on articles and S(ubject)-v(erb) agreement to probe the instantiation of the functional categories D and Infl at the Greek L2 initial state. Moreover, we explore nominal agreement, which is an under-investigated area in very early adult interlanguage. Given that this is a case study, we will only offer some speculation regarding L1 transfer in the feature specification of the target functional categories.

In what follows, first we briefly review the relevant literature, then we detail the method and the results of the present study and finally we discuss the implications of our findings.

* We would like to thank our informant for his willingness to perform all the tasks of our study. This paper would not have been possible without his help.
1 Although for our informant Greek is his third language, here we adopt the general term ‘second language acquisition’.
2. Previous studies on the adult L2 initial state
At present, the richest source of information on the adult L2 initial state is the findings of the European Science Foundation (ESF) project (see Perdue 1993). This project collected oral data from forty migrant workers who were speakers of various L1s acquiring five different European languages (English, German, Dutch, French and Swedish) without instruction. The findings revealed that all very early interlanguages generally lacked a system of articles or inflection marking case, number, tense, aspect or agreement. Verbs were often produced in their stem or infinitive form and nominals in their singular form (Klein & Perdue 1997: 311). This may indicate lack of functional categories3, in favor of MT. Vainikka and Young-Scholten (V&YS) carried out a number of studies drawing on corpora of spontaneous oral data by adult beginners of German (references in White 2003, Chapter 3). The focus of these studies was the verbal functional domain. Again, the learners mostly produced seemingly infinitive verb forms; for example, in V&YS (1996b: 154) the data from four L1 Romance speakers showed that successful performance in S-V agreement ranged from 24% to 54%. Based on this, as well as on the lack of modals and auxiliaries in the data, the authors concluded that there is no functional projection for inflection in the L2 grammar.

Still, omission of grammatical morphemes is possibly due to that the learners do not yet know or cannot produce the particular language-specific morphemes and therefore they may not reflect lack of the corresponding functional categories (e.g. Lardiere 1998, 2000; Prévost & White 2000). Schwartz (1997: 396) has pointed out that some clausal word order in Klein & Perdue’s (1997) interlanguage data requires overt movement of elements outside the VP, which implicates the existence of some strong feature of a functional category. Other research too has evidenced that L2 beginners know about L2 verb movement properties, despite their inability to inflect verbs (van de Craats 2009).

Parodi et al. (2004) analyzed oral data of untutored L2 German to investigate use of determiners, number agreement between nouns and determiners, as well as noun-adjective order. The learners were adult immigrants in Germany and their L1s were Korean, Romance and Turkish, all different from German in various ways regarding their DP properties. Importantly, postnominal adjectives canonically occur only in Romance. This crosslinguistic difference has been accounted for by postulating a functional Num(ber) category between the NP and the DP. It is assumed that in Romance Num has a feature with [+strong] value that can attract the noun from within NP, which leaves behind the adjective at the specifier of NP. In languages with canonical adjective-noun order, the respective Num feature is weak (references therein). The results demonstrated that all of the L2 German beginners had poor performance in determiners. On the other hand, only the Romance learners produced postnominal adjectives. This supports FT/FA as it indicates the existence of the functional category Num in the learners’ L2 grammar, transferred from the L1. Last, given that there were very few contexts for obligatory number agreement in DPs, no conclusion can be drawn in this respect.

Proof for functional categories in the early adult interlanguage comes also from Leung’s (2005, 2006) research that compared L2 acquirers with L3 (third language) acquirers of French who had already learned English. The learners were L1 speakers of Chinese or Vietnamese, both languages that generally lack article systems and nominal or verbal inflection, unlike French or English. The data showed that the L2ers were significantly worse than the L3ers in articles and S-V agreement, indicating transfer of

3 In fact, according to K&P (: 337) these data support the existence of a universal early interlanguage with functional categories whose features are weak (but cf. Schwartz (1997)).
functional categories at the initial non-native language acquisition state from the L1 or from the L2. This research interests us also because its method bears some resemblance to ours. Namely, the learners had received formal instruction in French and were tested through oral and written tasks. Moreover, all of the French L3ers were university students. Let it be noted that the latter’s performance in functional categories was considerably better than that of the learners’ in the previously mentioned studies. In an oral picture description task they correctly supplied articles at 78% (Leung 2005); in two written tasks, one sentence completion and one preference task, their performance in S-V agreement was 94% (Leung 2006). We return to this when discussing our results.

3. The current study

Our hypotheses were formulated as follows.

1. If Minimal Trees is correct, the learner will not exhibit sufficient knowledge of elements related to IP, that is, S-V agreement or to DP, that is, article use.
2. If ‘Full Access/Full Transfer’ is correct, the learner will exhibit sufficient knowledge of all the above.

Although nominal agreement in the L2 initial state has been scarcely investigated, based on research with more advanced L2 learners showing difficulties in this domain (Dimitrakopoulou et al. 2006; Agathopoulou et al. 2008), we expect that nominal agreement will be a problematic area for our informant.

3.1 The informant

The participant of our study, who we call Mauro, is a 21-year-old Italian-English male bilingual. He came to Greece to attend University courses at a private English-speaking college. At the time of testing, he was a beginner learner of Greek. In particular, he had spent eight months in Greece and he had attended Greek courses for twenty-five weeks, four hours per week. In addition, he had received fifteen hours of private instruction. The informant had very little exposure to Greek outside the classroom because he communicated with his classmates mainly in English.

3.2 The tasks

We investigated whether the functional categories Infl and D are present in the learner’s interlanguage by examining his performance on S-V agreement and the use of articles. The verb in Greek carries a suffix which unambiguously denotes the person and the number of the subject (cf. (1) – (2)).

1. Iρθαν χθες i φιτίτες.
   came-PERF.3PL yesterday the-MASC.PL.NOM students-MASC.NOM
   ‘The students came yesterday.’

2. Iρθε χθες ο Πέτρος.
   came-PERF.3PL yesterday the-MASC.SG.NOM Petros-MASC.SG.NOM
   ‘Petros came yesterday.’

Moreover, Modern Greek does not have infinitives, though it has a non-finite form which is used for the formation of the perfect tenses:

3. exον/εκίν/εκι έρθθι
   have-1SG/2SG/3SG come-PERF
   ‘I/You(S)He has come’
Studies in L1 Greek have argued that the non-finite form is overgeneralized in the initial stages of first language acquisition (Varlokosta et al. 1996; 1998).

The definite article in Greek is used for specific referents (4), but it also has expletive use and is employed for non specific referents (cf. the generic use of the DP *tis ghates in (5)), in front of proper names (5) and in polydefinite constructions (6). The indefinite article is introduced to introduce new referents in the discourse as well as for specific (7) and non-specific entities (8). The zero article is used for plural or non count nouns which have not been previously mentioned in the discourse (9).

(4) *(To) forema pu mu arese itan poli akrivo.
    the-NEUT.SG.NOM dress-NEUT.SG.NOM that me liked-3SG was very
do-NEUT.SG.NOM expensive-NEUT.SG.NOM

“The dress that I liked was very expensive.”

(5) *(I) Maria aghapai *(tis) ghates.
    the-FEM.SG.NOM Maria-FEM.SG.NOM loves the-FEM.PL.ACC cats-FEM.ACC

‘Mary loves cats.’

(6) to trapezi *(to) kokino
    the-NEUT.SG table-NEUT.SG the-NEUT.SG red-NEUT.SG

‘the red table’

(7) Xtes idha *(ena) ergho.
    yesterday saw-1SG a-NEUT.SG.ACC film-NEUT.SG.ACC

‘Yesterday I saw a movie.’

(8) *(Enas) fititis apetixe stis eksetasis ala dhen ksero pios.
    a-MASC.SG.NOM student-MASC.SG.NOM failed-3SG in-the-FEM.PL.ACC exams-FEM.ACC but
    not know-1SG who-MASC.SG.NOM

‘A student failed the exams but I do not know who.’

(9) Aghorasa ∅ fruta ke zaxari.
    bought-1SG fruit-NEUT.PL.ACC and sugar-FEM.SG.ACC

‘I bought fruit and sugar.’

Moreover, Greek exhibits nominal agreement, in that the article and the adjective have to agree with the noun in gender, number and case. The agreement requirement is obligatory in predicate constructions and within DPs (cf. (4)).

These phenomena were investigated through seven tasks, three oral and four written. The oral tasks included sentence repetition, story telling and picture elicitation. The sentence repetition task examined all phenomena and consisted of thirty-nine sentences each four to six words long. A female native speaker of Greek read each sentence and the learner had to repeat it. The story telling task comprised four stories illustrated with pictures and targeted the use of articles, S-V and nominal agreement. The learner saw each set of pictures and was asked to narrate the story depicted. All stories involved daily activities performed by various individuals. The picture elicitation task aimed at examining the agreement between adjectives and nouns and contained fifty-four items. The learner was presented with two pictures of the same referent, say, a book, which differed with respect to a specific aspect, for example their size (a big and a small book) and had to respond with an adjectival form describing the one of the two objects that had been included in a circle. The learners’ responses from all oral tasks were recorded.

The written data were elicited through a cloze task, a multiple choice task and two grammaticality judgement tasks. The cloze task consisted of two paragraphs (45 gaps) and twenty single sentences (31 gaps) and targeted the use of articles and article-noun agreement. The multiple choice task contained fifty-four sentences followed by six answer-options, one of which was the correct one, and examined S-V as well as nominal agreement. The first grammaticality judgment task contained twenty sentences involving nominal agreement and the learner was asked to correct the sentences that he considered ungrammatical. The second grammaticality judgment task investigated S-V and adjective-noun agreement and included ninety pairs of sentences. In each pair one sentence was grammatical and one ungrammatical and each sentence was accompanied by a scale from -2 (totally incorrect) to +2 (totally correct). The learner was asked to rate the sentences in each pair.

3.3 Results
In all the tables displayed below, the accuracy scores are provided in percentages and the raw numbers within parentheses. First, we present the findings on the functional category of Infl, which in our study was investigated with respect to S-V:

**Table 1. Accuracy on S-V Agreement**

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Story Telling</th>
<th>Sentence Repetition</th>
<th>Multiple Choice</th>
<th>Grammaticality Judgment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>73% (19/26)</td>
<td>87% (13/15)</td>
<td>92% (11/12)</td>
<td>95% (19/20)</td>
</tr>
</tbody>
</table>

As shown in Table 1, the learner’s performance on S-V agreement is very good. In the multiple choice and the grammaticality judgment tasks he scored above 90% and, though his accuracy dropped at 73% in the story telling task, he provided significantly more correct than incorrect responses ($\chi^2 = 5.538, p < .02$). The errors he produced always involved the incorrect use of the 3rd singular; namely, in eight cases he used the 2nd singular and in three cases the 1st singular.

Next, we turn to the data concerning articles. Table 2 illustrates the learner’s correct performance on articles irrespectively of morphological errors regarding grammatical agreement with their complement nouns.

**Table 2. Correct suppliance of definite/indefinite/zero article**

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Story Telling</th>
<th>Cloze</th>
<th>Multiple Choice</th>
<th>Sentence Repetition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>71% (60/84)</td>
<td>85% (46/54)</td>
<td>100% (6/6)</td>
<td>98% (64/65)</td>
</tr>
</tbody>
</table>

The learner’s accuracy is again very high and even in the story telling task where he obtained the lowest score his correct responses significantly outnumbered his incorrect ones ($\chi^2 = 15.429, p < .001$). Looking at the type of the determiner in more detail, we observe that the learner never substituted the indefinite for the definite article and vice versa. Moreover, the learner always provided the indefinite article when needed in the cloze task (10 instances) and only once he omitted it in the story telling.

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5 Data from native speakers of Greek are not included, because all of the tasks are very easy for Greek literate adults. This has been confirmed by the results of a pilot study with a small number of Greek speakers who were 100% accurate.
task (one obligatory context). Furthermore, the learner incorrectly produced the definite instead of the zero article in three cases of the cloze task (seven obligatory contexts; 57% accuracy), in three cases of the sentence repetition task (five obligatory contexts; 40% accuracy) and in three cases of the story telling task (fifteen obligatory contexts; 83% accuracy). Finally, the learner omitted the definite article only in contexts where the use of the determiner was expletive. For example, in the story telling task all cases of article omission were attested in phrases such as *to eksi ora (= the-NEUT.SG six hour-FEM.SG), where the definite article is required before the noun ora (= hour). In the cloze task, the learner omitted the determiner before the postnominal adjective in polydefinite structures such as *to pandeloni kafe (= the-NEUT.SG trousers-NEUT.SG brown).

In what follows we present the learner’s performance on nominal agreement. Table 3 shows the accuracy scores on article-noun agreement. In this analysis we counted the definite and indefinite phrases produced by the learner irrespectively of whether a determiner was required in this specific context.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Story Telling</th>
<th>Cloze</th>
<th>Sentence Repetition</th>
<th>Multiple Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>31% (15/48)</td>
<td>78% (35/45)</td>
<td>82% (49/60)</td>
<td>83% (5/6)</td>
</tr>
</tbody>
</table>

Most of the agreement mismatches between the definite article and the noun involved the overgeneralization of the neuter gender of the article, i.e. *to vivliothiki (the-NEUT bookcase-FEM). Three out of the ten errors produced by the learner in the cloze task involved agreement between the indefinite article and the noun.

To have a clearer picture of the learner’s performance on nominal agreement we also examined morphological agreement between adjectives and nouns. This data set is displayed in Table 4:

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Picture Elicitation</th>
<th>Grammaticality Judgment</th>
<th>Multiple Choice</th>
<th>Sentence Repetition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>38% (16/42)</td>
<td>78% (31/40)</td>
<td>94% (34/36)</td>
<td>95% (19/20)</td>
</tr>
</tbody>
</table>

The learner scored above 90% in the multiple choice and the sentence repetition tasks. In the grammaticality judgment tasks, he scored below 90% but he produced significantly more accurate than inaccurate responses ($\chi^2 = 12.100, p < .01$). However, he exhibited poor performance in the picture elicitation task, where his accuracy is at chance level ($\chi^2 = 2.381, p = .123$). Most of the errors produced involved phonological harmony (37%), in that the learner copied the noun suffix and supplied it onto the adjective (cf. 11). The next most frequent type of error was overgeneralization of the suffix –o (29%) (cf. 12).

(11) i obrela ine *aspra
    the-FEM umbrella-FEM is white-FEM(WRONG SUFFIX)

(12) i karekl ine *ghalazo
    the-FEM chair-FEM is blue-NEUT
Table 5 presents Mauro’s performance on each phenomenon investigated separately for the oral and the written tasks:

Table 5. Successful performance on Oral vs. Written tasks

<table>
<thead>
<tr>
<th>Phenomenon</th>
<th>Oral</th>
<th>Written</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-V agreement</td>
<td>78%</td>
<td>94%</td>
<td>85% (62/73)</td>
</tr>
<tr>
<td>Articles</td>
<td>83%</td>
<td>87%</td>
<td>84% (176/209)</td>
</tr>
<tr>
<td>Art-N agreement</td>
<td>59%</td>
<td>78%</td>
<td>65% (104/159)</td>
</tr>
<tr>
<td>Adj-N agreement</td>
<td>56%</td>
<td>86%</td>
<td>72% (100/138)</td>
</tr>
</tbody>
</table>

Overall, the learner obtained higher accuracy scores on the written than on the oral tasks. However, this difference did not reach significance in the S-V agreement and the article use ($p > .1$), whereas it did reach significance in the agreement between the articles and the nouns ($\chi^2 = 7.098, p < .01$) and between the adjectives and the nouns ($\chi^2 = 12.077, p < .001$).

4. Discussion and conclusion

The analysis of the data showed that Mauro performed above chance levels on S-V agreement across tasks. Even his lowest score, noted in the story-telling task, was 73%, surpassing the 60% (arbitrary) accuracy criterion for the acquisition of V-inflection set by V&YS (1994: 279). Additionally, the learner did not overgeneralize a specific verb form which could lack agreement features. We take this as evidence for the presence of the functional projection InflP in the learner’s interlanguage. Also above chance levels was his performance in articles with his worst score being 71%, again in the story-telling task. We interpret these data to indicate the existence of the functional projection DP. The above seem to disprove our first hypothesis concerning MT’s prediction of there being only lexical categories at the L2 initial state; instead the findings comply with our second hypothesis in favor of FT/FA, which proposes the existence of functional categories too at this L2 stage.

Turning to nominal agreement, Mauro’s performance was rather successful except as concerned article-noun agreement in the story-telling task (31%) and adjective-noun agreement in the picture elicitation task (38%). Notice that these were the only tasks where there was no clue regarding the gender of the noun in the form of a determiner. It is then possible that Mauro’s problem has to do with correct gender assignment on the noun rather than with nominal agreement (Dewaele and Véronique 2001; Prodeau 2005; Varlokosta 2005). Hence, he either overgeneralizes the neuter gender (on determiners and adjectives) or he employs phonological agreement between the adjective and the noun suffixes (e.g. Tsimpi 2003).

So far we have presented evidence for the instantiation of the functional categories Infl and D at the L2 Greek initial state. An arising question is whether projections above Infl are also available. Even though we did not systematically test this issue, we can offer some relevant data. His accuracy on complementizers across three tasks (sentence repetition, cloze and grammaticality judgments) was 51% (24/47). However, when we examined the data from each type of complementizer separately, we found that complementizers lacking interpretable features (oti = that) were omitted significantly more than those with interpretable features, such as $pu$ (= that) ($\chi^2 = 4.033, p < .05$) and

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6 The accuracy criterion employed as evidence for the acquisition of a linguistic item in L2 is arbitrary and of varying strictness. For a recent review see Pallotti (2007).
Based on this data, we may tentatively assume the existence of C, although there seem to be difficulties with specific features of this functional category. A noteworthy issue is that our learner was more accurate than the learners in some previous studies on the L2 initial state, such as those by Klein and Perdue (1997) and by Vainika and Young-Sholten (1994, 1996a,b). This may be due to the following reasons. First, the data in the latter studies came solely from informal oral interviews, while our oral tests were structured and we also included written tests. Second, our learner was bilingual, which has been demonstrated to be an advantage in additional language learning (Klein 1995). Third, Mauro’s high educational level may have had a beneficiary impact particularly on his performance in the written tasks. Similar performance was exhibited by learners of the same educational level in Leung’s (2005, 2006) studies. Since we did not use spontaneous oral production data, we cannot discard the possibility that Mauro employed metalinguistic knowledge in performing the tasks. Finally, we may speculate that Mauro’s acquisition of Greek is facilitated by positive transfer of feature value specifications relating to Infl and D from his L1 Italian. Namely, D and Infl have strong features in both languages, realized in the form of expletive articles (Longobardi 2001) and rich verbal morphology respectively. Support for this argument has been provided by research showing that in adult language acquisition cross-linguistic transfer occurs more between languages that are typologically similar with respect to features and feature values (Foote 2009).

To conclude, bearing in mind the methodological limitations mentioned above as well as that this is a case study and, hence, the results may not be generalizable, our findings support the existence of functional categories in the L2 Greek initial state. The difficulties encountered by the learner seem to stem either from morphological complexity, as found in nominal agreement, or from feature properties, such as interpretability, as found in complementizers.

References

For an analysis of the Greek CP see Roussou (2000; 2006); for the role of feature interpretability in the acquisition of the Greek CP see Mastropavlou & Tsimpli (2011).
Even though we attempted to collect spontaneous oral data, it proved impossible because Mauro’s oral production was very poor. This, we think, clearly shows that the learner was indeed at a very initial state in acquiring Greek.


