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Null and overt subject pronouns in topic continuity and topic shift: An investigation of the narrative productions of Italian Natives, Greek Natives and near-native second language speakers of Italian with Greek as a first language

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In this work we analyze the anaphoric devices employed in topic continuity and topic shift in the semi-spontaneous narrations of three groups of speakers: Italian Natives, Greek Natives and near-native second language speakers (L2ers) of Italian with Greek as a first language (L1). According to some recent literature, near-native speakers of a null subject language over-use overt pronouns even when their L1 is also a null subject language. It is still unclear whether this over-use is tied to differences in the languages involved (e.g. Italian and Spanish, Filiaci *et al*. 2014) and hence might be the result of cross-linguistic influence. Our data reveal that in Italian *pro* has a more specific function than in Greek in signaling topic continuity. The characteristic of *pro* in Italian is preserved in the L2ers productions. We also found that L2ers over-use overt pronouns, particularly in topic continuity, despite the similarity of their two languages in this respect. Finally, we single out an additional factor that influences speakers' choice of anaphoric devices, i.e. the number and kind of active referents, proving evidence that all speakers' groups employ overt pronouns particularly when there are two active animate referents that differ for gender and/or number, and L2ers significantly more than the other two groups. Our findings thus show that micro-variation in the use of anaphoric devices is attested among null subject languages, while the over-use of overt pronouns by L2ers stems from their difficulty in establishing topicality under higher degrees of cognitive load.

Keywords: anaphoric devices; null subject languages; native speakers; near-native speakers; topicality; active referents

1 Introduction

In null subject languages, both overt and null pronouns (conventionally indicated as *pro*s) can occupy the subject position of finite sentences, as shown in (1) for Italian (a. and. b.), Spanish (c. and d.) and Greek (e. and f.):[1]

(1)   a.   *pro* ha   parlato.
                    has spoken

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[1] In Italian and Spanish, the 3rd person singular overt subject pronoun has the same form as the object pronoun. Italian has also a dedicated 3rd person singular subject pronoun (*egli/ella*), which is nowadays very rarely used, and only in the formal written register. In Greek the 3rd person overt subject pronoun has the form of the proximal (*aftos*) or distal (*ekinos*) demonstrative and is inflected for case.

   b.   Lui ha parlato.
         he   has spoken

   c.   *pro* habló.
             spoke.3SG

   d.   Él habló.
         he spoke.3SG

   e.   *pro* milise.
             spoke.3SG

   f.   Aftos   milise.
         he.NOM spoke.3SG
         'He spoke.'

One question that the relevant literature has investigated concerns the constraints that guide the interpretation and production of null and overt pronouns in their anaphoric use.

It is widely assumed, since Calabrese (1986), that Italian null subject pronouns pick up the 'subject of primary predication', or topic (i.e. *Carlo* in (2)), while overt subject pronouns are employed when an 'unexpected', non-topic antecedent is intended (*Antonio* in (2)):[2]

(2)   Calabrese (1986: 1)
      a.   Quando Carlo$_i$ ha picchiato Antonio$_j$, *pro*$_i$ era ubriaco.
          when   C.   has hit   A.   was drunk

      b.   Quando Carlo$_i$ ha picchiato Antonio$_j$, lui$_j$ era ubriaco.
          when   C.   has hit   A.   he   was drunk
          'When Carlo hit Antonio, he was drunk.'

Another case in which an overt pronoun must be used in Italian is, of course, when the (pronominal) constituent is focused.

(3)   Calabrese (1986: 9)
      Lui ha   fatto questo (non Carlo).
      he   has done this   not C.
      'He did this (not Carlo).'

Experimental evidence provided by Carminati (2002) confirms that, particularly in environments like (2) above (but see footnote 4 below) in Italian the null pronoun is interpreted as co-referent with a 'prominent' antecedent (i.e. with an antecedent in the subject position, Spec, IP) while the overt pronoun is interpreted in co-reference with a non-prominent antecedent (i.e. with an antecedent which is not in the Spec, IP position).

Belletti, Bennati & Sorace (2007) found that adult near-native speakers of L2 Italian with L1 English over-use overt subject pronouns, employing them also in case of topic continuity. Results are matched in comprehension (see also Sorace & Filiaci 2006), where overt pronouns are interpreted also in co-reference with a topical antecedent by near-native speakers. Similar results had been found in L1 attrition studies as Tsimpli, Sorace, Heycock & Filiaci (2004), who studied attrited speakers of Italian and Greek living in the UK. Sorace (2006) proposes the picture in Table 1 to characterize Italian natives' and near-natives' options in this respect.[3]

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[2] In Calabrese (1986), the 'subject of primary predication' is called 'Thema', and defined as 'the referential expression predicated in a predicational sentence' [*ibidem*: 20].

[3] As in much current literature, we use the term 'near-native' to refer to the almost-native competence of a speaker (see Section 2.2 for further details), while we use the term 'native' to refer to speakers which were exposed to the language since birth and have reached what we may call a 'complete' ultimate attainment

Table 1: Null and overt subject pronouns in natives' and near-natives' grammars (Sorace 2006: 510).

Native grammar	Near-native grammar
OVERT=STRONG=[+TS]	OVERT=STRONG=[+TS]
NULL=WEAK=[-TS]	OVERT=WEAK=[-TS]
	NULL=WEAK=[-TS]

Near-natives' options are assumed to be determined, at least in part, by the grammar of English: according to the representational hypothesis, proposed in Tsimpli *et al.* (2004), the more economical choice, i.e. the one attested in English (a non-null subject language, where only overt pronouns are attested) influences the speaker's representation which becomes underspecified so that it can fit both languages.

Lozano (2016) provides corpus evidence of the over-use of overt pronouns in another null subject language, i.e. Spanish, by advanced adult L2 learners with English as an L1.

Sorace, Serratrice, Filiaci & Baldo (2009) compared the preferences towards null and overt subject pronouns in Italian, in a [+Topic Shift] and [−Topic Shift] condition in different groups of subjects: Italian monolingual adults, Italian monolingual children (6–7 y. o. and 8–10 y. o.), English-Italian bilingual children (6–7 y. o. and 8–10 y. o., living in Italy and living in the UK), Spanish-Italian bilingual children living in Spain (6–7 y. o. and 8–10 y. o.)

They used an acceptability judgment task which followed the presentation of a short video clip. In the experimental items, one character performed an action which was commented upon, either by the character himself ([−topic shift] condition) or by a second character that witnessed the action but was not involved in it ([+topic shift] condition), as shown in the examples below for the Italian task (from Sorace *et al.* 2009: 467):

(4)   − topic shift condition (−TS)
        (Minnie and Daisy in the foreground; Mickey and Donald in the background)
        Minnie: Sono caduta!
                'I've fallen'
        Donald: Minnie ha detto che è caduta.
        Mickey: Minnie ha detto che lei è caduta.
                'Minnie has said that (she) has fallen.'

(5)   + topic shift condition (+TS)
        (Minnie and Daisy in the foreground; Mickey and Donald in the background)
        Minnie: Daisy è caduta!
                'Daisy has fallen.'
        Donald: Minnie ha detto che è caduta.
        Mickey: Minnie ha detto che lei è caduta.
                'Minnie has said that (she) has fallen.'

Italian adult native speakers would prefer Donald's report in (4) (i.e. a null pronoun in case of topic continuity) and Mickey's report in (5) (i.e. an overt pronoun in case of topic shift).

In the (−TS) condition, the authors found that Italian monolingual children aged 6–7 chose significantly more sentences containing an overt pronoun than adults and older children; Spanish-Italian bilinguals were significantly more likely to opt for sentences containing an overt pronoun than the monolinguals, but they were not significantly different

in the language, as is generally the case in the absence of related specific impairments. A native speaker can (at least temporarily, see Chamorro, Sorace and Sturt 2016; Genevska-Hanke 2020 a. o.) perform like a near-native speaker under attrition.

from the English-Italian bilinguals. In the (+TS) condition bilingual children (regardless of the language combination) accepted more null subject pronouns than monolingual children. These results show that pronoun resolution (or, better, establishing the appropriate conditions for it) is a competence acquired later in life, in part independent from cross-linguistic influence: the choices of Spanish-Italian bilingual children differed from those of Italian monolingual children and did not differ from those of English-Italian bilinguals, even though Italian and Spanish are both null subject languages. A self-paced reading study by Filiaci, Sorace & Carreiras (2014) has shown, however, that pronominal preferences may not be the same in Italian and Spanish (see also Filiaci 2010). While no differences between Italian and Spanish were found for sentences containing null pronouns, the authors found that sentences containing an overt pronoun referring back to an object antecedent were read significantly faster than sentences containing an overt pronoun referring back to a subject antecedent in Italian (6.a–6.b), but not in Spanish (6.a'–6b'):

(6)   a.   Dopo che Giovanni$_i$ ha criticato Bruno$_j$ così
           ingiustamente, lui$_j$ si è sentito offeso.
     a'.   Después de que Bernardo$_i$ criticó a Carlos$_j$ tan
           injustamente, él$_j$ se sintió muy ofendido.
     b.   Dopo che Giovanni$_i$ ha criticato Bruno$_j$ così
           ingiustamente, lui$_i$ si è scusato ripetutamente.
     b'.   Después de que Bernardo$_i$ criticó a Carlos$_j$ tan
           injustamente, él$_i$ le pidió disculpas.
           'After that G./B. has criticized B./C. so unjustly, he felt offended/
           apologized (repeatedly).'

This result has been interpreted as suggesting that overt pronouns in Spanish (but not in Italian) are also compatible with a subject/topical antecedent (but see Chamorro 2018).[4] Italian and Spanish thus appear to differ in the division of labor between null and overt subject pronouns, and this difference, as explicitly noted by Filiaci *et al.* (2014: 17) might

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[4] Chamorro's (2018) Iberian Spanish speakers expressed instead a clear preference for the object as the antecedent of an overt pronoun, but no preference for the subject as the antecedent of a null pronoun. The experimental materials used in this study were complex sentences in the main-subordinate order (with the antecedent in the main clause) as in (i):

(i)   La madre saludó a la chica cuando *pro*/ella cruzaba una calle con mucho tráfico.
     'The mother greeted the girl when she crossed a street with much traffic.'

It is possible that in this particular construction (which differs from (2) and from the sentences used by Filiaci *et al.* 2014, see (6) above) the overt pronoun bias is more clear and the null pronoun bias is weaker.
    In this particular clause order/position of the antecedent, an unclear subject preference in the interpretation of the null pronoun has been found in some (but not all) of the relevant literature also in Italian (Carminati 2002; Tsimpli *et al.* 2004; Sorace & Filiaci 2006 a.o.), compared to the consistent subject interpretation of *pro* in sentences like (ii):

(ii)   Quando *pro*/lei attraversa la strada con molto traffico, l'anziana signora saluta la ragazza.
     'When she crosses the road, the old lady greets the girl.'

In sentences like (ii), the overt pronoun had a weak object base, instead, and a preferred interpretation as coreferent with an external referent.
    As for Greek, Kaltsa *et al.* (2015) found a similar weak bias for the null pronoun in constructions like (i) in their 'older monolinguals' group (mean age 59), but not in their 'younger monolingual' group (mean age 29). Factors like clause order and direction of the anaphoric dependency seem thus to influence, together with age of the participants, pronouns interpretation. The fact that these diverging results are found in different languages (Spanish, Italian, Greek) suggests that rather than revealing micro-differences among null subject language, they highlight the role of these factors in pronouns interpretation.

be at the root of the over-use of overt pronouns by Spanish-Italian bilingual children found by Sorace *et al.* (2009). This implies that a wider range of uses corresponds to a higher distribution (a fact confirmed by experimental work by Contemori & Di Domenico 2019), and that this characteristic is then transferred to the language in which the overt pronoun has a more specific use (and a lower distribution): note that over-use of overt pronouns has also been noted by Bini (1993) in adult L2ers of Italian with Spanish as an L1. Quite surprisingly, however, over-use of overt pronouns has been documented also in the case of adult L2 speakers of Spanish with Greek as an L1 (Margaza & Bel 2006; Lozano 2006; 2018) and of adult L2 speakers of Italian with Greek as an L1 (Di Domenico & Baroncini 2019).[5]

Two interrelated questions thus arise: the first is whether a difference in the division of labor between null and overt subject pronouns is more widespread among null subject languages, i.e. whether micro-variation can be observed beyond the case of Spanish and Italian; the second is whether the over-use of overt pronouns by L2ers can also be found in the absence of such a difference: if so, it can be expected that over-use of overt pronouns by L2ers is caused by factors other than cross-linguistic influence.

With respect to the first issue, Mayol (2010) and Mayol & Clark (2010) suggest that Catalan exhibits the same properties of the Italian pronominal system rather than those of the Spanish one.

As for Greek, corpus data provided by Miltsakaki (2001; 2007) as well as experimental studies by Prentza & Tsimpli (2013) and Papadopoulou *et al.* (2015) show that Greek adults prefer to link null pronouns to topic antecedents, while they interpret overt pronouns as indicating topic shift (unless extra factors such as contrast or emphasis are involved, see Prentza & Tsimpli 2013: 198, footnote 1), suggesting that the division of labor between null and overt pronouns in Greek is similar to that attested in Italian, and not to that attested in Spanish. Di Domenico & Baroncini (2019) found that the amount of overt and null subject pronouns is similar in the narrations of Italian native speakers and Greek native speakers. Dimitriadis (1996) seems to suggest, however, that the preference of the Greek null pronoun towards a topic antecedent is less strong than the preference of the null-pronoun towards a non-topic antecedent.[6] Torregrossa, Bongartz & Tsimpli (2015), furthermore, grounding their conclusions on a multifactorial analysis of the referring expressions produced in the context of a story-telling task by adult Italian and Greek speakers, argue that while in Italian the antecedent of *pro* must be a subject, the resolution of *pro* in Greek is less constrained by the antecedent argument status. Given this partially diverging evidence concerning Greek and Italian, in this work we first address the question of whether micro-variation can be observed between Italian and Greek, by examining the production of subject anaphoric devices by native monolingual adult speakers of the two languages.[7]

We will also investigate whether any differences in this respect are observed in near-native adult L2 speakers of Italian with Greek as an L1, and whether they might be related

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[5] In a comprehension study analogous to Sorace & Filiaci (2006), Kraš (2008), however, did not find differences between Italian native speakers and L2 speakers of Italian with L1 Croatian. Both Italian and Croatian are null subject languages.

[6] In Dimitriadis' (1996: 8) words "*pro* in Greek shows a strong but by no means categorical association with Continue transitions. The overt pronominals (especially *aftos*) show a marked, but again not categorical, dispreference for Continue transitions". Cast in the frame of Centering Theory (Grosz, Joshi & Weinstein 1995), Dimitriadis (1996: 9) proposes The Overt Pronoun Rule, which states that an overt pronominal subject in Greek should not be construed with the preferred Centre, or Cp, (i.e. the most likely to be talked about in the next sentence) of the previous utterance.

[7] The term 'monolingual' refers to the fact that these speakers have been exposed since birth to just one language. They might have learned a second language later in life. Further details on the participants will be given in Section 2.

to possible differences between Italian and Greek. The comparison of the L2ers productions with the productions of two groups of native speakers (two control groups, so to say) will allow us to see, in case of any differences, whether L2 speakers' productions are more akin to those of the native speakers of their L1 (Greek) or of their L2 (Italian).

For this purpose, we analyze the semi-spontaneous narrative productions of a group of 15 near-native L2 speakers of Italian with Greek as an L1 (henceforth L2ers) and compare them with the productions of a group of 15 native monolingual speakers of Italian (henceforth Italian Natives) and a group of 15 native monolingual speakers of Greek (henceforth Greek Natives), in order to investigate the specific contexts of occurrence, in terms of topic continuity and topic shift, of null and overt pronouns, as well as of other referring expressions (such as lexical DPs), in the three groups of speakers.

We will do so through two complementary analyses. First of all, we will examine the distribution of anaphoric devices in terms of topic continuity and topic shift (Section 3). We will then examine their distribution according to the number and kind of active discourse referents, finally matching the two analyses (Section 4). We decided to examine this additional factor since, according to Arnold & Griffin (2007), the presence of an active additional character influences the kind of anaphoric device employed by the speakers. A preliminary analysis of the data, furthermore, suggested that overt pronouns, particularly those produced by L2ers, were mainly attested in the segments of the narrations where two referents were active.

Some conclusions will be drawn, and some indications for future research will be sketched, in Section 5. We will start illustrating the data collection (participants, materials and procedure) as well as the overall quantitative results in Section 2.

2 Participants, materials, procedure and overall results

2.1 Participants
As we mentioned in Section 1, 45 subjects participated in this study: 15 Italian Natives; 15 Greek Natives, 15 L2ers of Italian with Greek as their L1.

Italian Natives (9 male; 6 female) had a mean age of 28 (range 19–58). They were born in Italy and had been living there until the time of testing. Six of them had a university degree, while nine had a high school degree and were attending university. All reported at least a basic knowledge of an additional language, other than Greek.

Greek Natives (7 male; 8 female) had a mean age of 30 (range 19–58). They were born in Greece and had been living there until the time of testing. Seven of them had a university degree, while eight had a high school degree and were attending university. All reported at least a basic knowledge of an additional language, other than Italian.

L2ers (6 male; 9 female) had a mean age of 32 (range 21–52). They were born in Greece and had lived there for at least the first 18 years of their lives. They were tested in Italy, where they were living at the time of testing. The length of their residence in Italy was 8 years on average (range 1–17). Their mean age of onset of exposure to Italian was 20, ranging from 15 to 28. As for their education, eight of them had a university degree and seven had a high school degree and were attending university in Italy. All reported at least a basic knowledge of an additional language, other than Italian and Greek.

A Welch t-test reveals no significant group differences as far as age is concerned: Italian Natives and L2ers (p = 0.19), L2ers and Greek Natives (p = 0.65), Italian Natives and Greek Natives (p = 0.65).

2.2 The near-nativeness test
Since one of the aims of this study is to compare native and near-native speakers, participants were first administered an adaptation of White & Genesee's (1996)

near-nativeness test. This test was developed by its authors precisely to identify very advanced L2 speakers, which are 'virtually indistinguishable from native speakers' (White and Genesee 1996: 242). In our adaptation, three native speakers of Italian and three native speakers of Greek evaluated the oral productions of the participants (in Italian and in Greek respectively), pointing out, on a line of 10 cm., their judgment with respect to five distinct aspects: morphology, syntax, vocabulary, pronunciation, fluency. A speaker is considered near-native if her mean value ranges from 8.5 to 9.5.[8] Our L2ers had a mean near-nativeness value in Italian of 8.89 (range 8.50–9.33; Standard Deviation 0.265). Italian Natives had a mean value of 9.76 (range 9.64–9.96; SD 0.107) and Greek Natives had a mean value of 9.82 (range 9.60–10; SD 0.116), as shown in Figure 1.

The data appear to be normally distributed (a Shapiro test reveals a p-value of 0.295). An ANOVA reveals a highly significant group difference ($p < 0.001$). A post-hoc pair-wise t-test reveals that this difference is highly significant between L2ers and Italian Natives ($p < 0.001$) and between L2ers and Greek Natives ($p < 0.001$), but non-significant between Italian Natives and Greek Natives ($p = 0.29$).

2.3 Elicitation procedure and definition of the Reference Total

Subjects were asked to watch a short movie containing no linguistic material (The Pear Film, Chafe 1980) and then tell the story. They were tested individually in a quiet room and the interviewer did not linguistically interact with them during their narration. Italian Natives and L2ers were tested in Italian, Greek Natives were tested in Greek. Their productions were recorded and then transcribed with the help of the CLAN system (part of
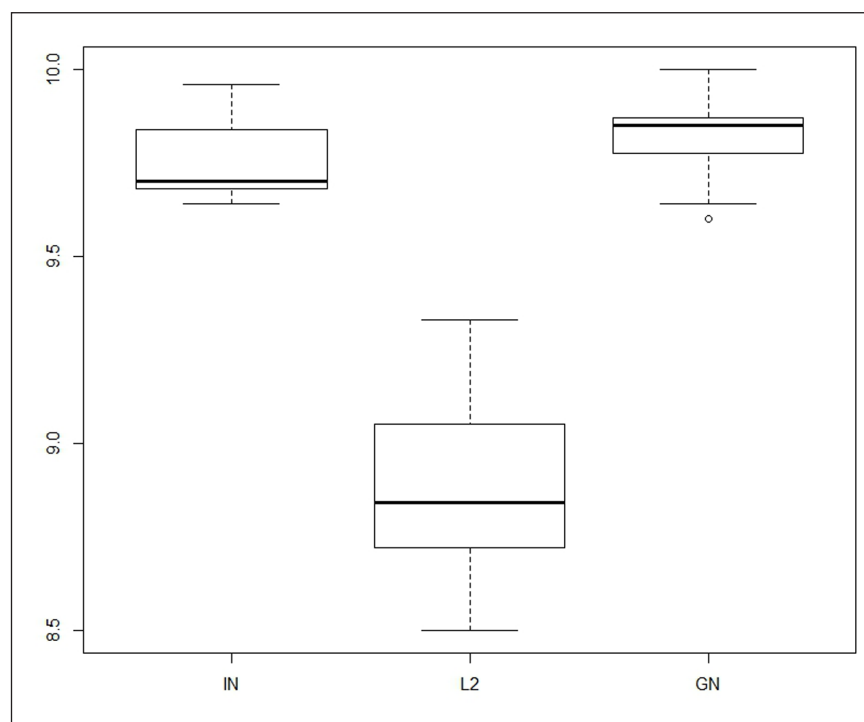

Figure 1: Near-nativeness values in Italian Natives (IN), L2ers (L2) and Greek Natives (GN).

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[8] We followed Contemori, Dal Pozzo & Matteini (2015) and Dal Pozzo & Matteini (2015) in this adaptation. White & Genesee (1996) used instead an eighteen-point scale of 9 cm., with 18 as the 'native' value. Near-natives had a rating between 17 and 18 with a maximum of one exception falling below 17. With respect to our adaptation, White & Genesee had an extra 'overall impression of nativeness' judgment and they had two (instead of three) judges.

Table 2: General Total.

Clausal type	Italian Natives	L2ers	Greek Natives	Example
finite	561	464	678	(8.a), (9.a), (13.a), (14.a), (15.a) (16.a), (17.b), (18.a), (18.c)
copular	25	25	37	(7)
non-subject relative	30	19	41	(8.b)
subject relative	54	33	55	(9.b)
pseudo-relative	48	47	17	(10.b), (20.b)
existential	21	36	–	(10.a)
echi presentative	–	–	6	(11)
ine presentative	–	–	5	(12)
infinitive	91	69	–	(13.b)
V *na* V	–	–	47	(14.b)
V *ke* V	–	–	3	(15.b)
other *na*	–	–	62	(16.b)
gerundive	17	18	28	(17.a)
participial	9	5	2	(18.d)
adjectival	39	23	11	(18.b)
prepositional	85	41	64	(17.c)
cleft	2	0	3	(19)
other[9]	4	6	26	(20.a), footnote 9
total	986	786	1085	

the CHILDES tools, Mac Whinney 2000), deriving the General Total. As shown in Table 2, and exemplified in (7)–(20), a great variety of clausal types are attested:

(7)   L2ers2, s. 13[10]
        Forse   era   anche una   sua   amica.
        maybe was   also   a.F   his.FSG friend.FSG
        'Maybe she was also a friend of his.'

(8)   IN1, ss. 40–41
        a.   Dà   loro   delle….   delle   pere
             gives them some-of-the.FPL some-of-the.FPL pear.FPL

        b.   che aveva rubato.
             that had   stolen
             'He gives them some of the pears that he had stolen.'

(9)   IN7, ss. 9–10
        a.   Raccoglie la   pera
             picks   the.FSG pear.FSG

        b.   che gli   era caduta.
             that him was fallen
             'He picks the dropped pear.'

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[9] This category includes all non-canonical sentence chunks, such as 'caption' contexts, idiom chunks as Italian '*mamma mia*' (lit. mother my, 'oh mum') or Greek *re pedi mu* (lit. VOC son my, 'oh my son') as well as the closing chunk '*Afto*' ('this'), quite common in the Greek corpus, or It. '*Questo*', at the end of the narration. We treat them as sentences since they all have assertive import.

[10] In the examples from the corpora we indicate first the group and participant's number, then the sentence(s) number.

(10)   IN3, ss. 3–4
   a.   C' è   un   contadino
        ci is a.MSG peasant.MSG

   b.   che raccoglie delle   pere.
        that picks   some.FPL pears.FPL
        'There's a peasant picking some pears.'

(11)   GN4, s. 4
       Giati echi parapoli   ilio.
       since has very-much.MSG sun.MSG.ACC
       'Because there is a lot of sun.'

(12)   GN2, s. 1
       Lipon ine enas   agrotis.
       so   is a.MSG.NOM farmer.MSG.NOM
       'So, there is a farmer.'

(13)   IN2, ss. 30–31
   a.   Poi alla   fine   decide
        then at-the.FSG end.FSG decides

   b.   di   prendere tutta   la   cesta.
        of to take   all.FSG the.FSG basket.FSG
        'Then he finally decides to take the whole basket.'

(14)   GN8, ss. 15–16
   a.   O   kirios   sinechizi
        the.MSG.NOM man.MSG.NOM continues

   b.   na mazevi ti   sodia   tou.
        na picks the.FSG.ACC harvest.FSG.ACC his
        'The man keeps on picking his harvest.'

(15)   GN1, ss. 2–3
   a.   Kapios   kokoras   archizi
        some.MSG.NOM cock.MSG.NOM starts

   b.   ke fonazi.
        ke shouts
        'A certain cock starts shouting.'

(16)   GN5, ss. 7–8
   a.   Theli
        wants

   b.   na to gemisi.
        na it fills
        'He wants to fill it.'

(17)   IN1, ss. 30–32
   a.   Andando via
        going   away

   b.   si   scontra con un'altra   bambina
        REFL.*si* crashes with another.FSG child.FSG

   c.   in bicicletta.
        in bike
        'While he was going away, he crashes against a girl on a bike.'

(18)   IN6, ss. 31–34
    a.   Prende   questo   cesto   di pere
        takes   this.MSG basket.MSG of pears

    b.   pieno
        full.MSG

    c.   e   se   ne   va   via
        and   REFL.*si* LOC goes away

    d.   indisturbato.
        undisturbed.MSG
        'He takes this basket full of pears and goes away undisturbed.'

(19)   GN2, s. 36
    Eki   ine pou   tous dini ta   achladia.
    there is   where them gives the.NPL pear.NPL
    'It's there that he gives them the pears.'

(20)   IN5, ss. 1–2
    a.   Video
        video

    b.   che racconta scena pastorale.
        that tells   scene pastoral
        'This is a video showing a rural scene.'

In many of these clausal types, however, no true choice between a lexical or pronominal (null or overt) subject is possible, because their subject is syntactically determined. This is so in Italian infinitival sentences, where the subject is generally assumed to be PRO, and in the corresponding Greek *na* and *ke* clauses embedded under certain kinds of predicates (see Spyropoulos 2007 a. o.). This is so also in Italian existential constructions and in the corresponding Greek *ine* and *echi* presentatives (Creissels 2014), in gerundive, participial, adjectival and prepositional Small Clauses (Stowell 1983), in pseudo-relatives (Cinque 1992), and in subject relatives. Finally, in subject clefts the (focused) subject cannot be null, hence no true choice is possible. For this reason, we extracted from the General Total only those clausal types in which the subject can be chosen clause-internally by the speaker, i.e., finite (including 'independent' Greek *na* clauses, 'other *na*' in Table 2) and copular sentences as well as non-subject relatives and non-subject clefts. We then excluded those sentences where a discourse referent was introduced for the first time, since first mentions are always lexical. We also excluded finite sentences referring to the narrator, or narrator + interviewer, since they were in the first person (singular or plural) and hence only pronouns, and not lexical DPs, could be chosen in these contexts. In this way we obtained what we call the Reference Total, which consists of 495 sentences for Italian Natives, 370 sentences for L2ers and 640 sentences for Greek Natives.

2.4 Overall results

Within this Reference Total we counted the occurrences of referential null pronouns, overt pronouns and lexical DPs. We identified also a fourth category of anaphoric devices, that we call 'other', which consists of quantified expressions without lexical restriction, such as e.g. It. *uno* (lit. 'one'), *tutti* ('all') or Gr. *enas apo aftous* ('one of them'). Results are shown in Table 3.

As Table 3 shows, *pro* is by far the anaphoric device most employed by all groups, followed by lexical DPs. Overt pronouns are quite few, as well as 'other'. For what concerns

Table 3: Reference Total.

Subjects	*N* of sentences	pro	lexical DP	overt pronoun	other
Italian Natives	495	329 (66.46%)	123 (24.84%)	31 (6.26%)	12 (2.42%)
L2ers	370	230 (62.16%)	85 (22.97%)	49 (13.24%)	6 (1.62%)
Greek Natives	640	465 (72.66%)	131 (20.47%)	26 (4.06%)	18 (2.81%)

between-group comparisons, we note, first of all, a higher use of overt pronouns by L2ers with respect to Italian Natives and Greek Natives.

As far as the statistical analysis is concerned, for pair-wise comparisons among groups we performed non-parametric chi-squared (χ^2) tests with absolute counts, while for testing overall individual variability we performed ANOVA – whenever applicable, see below – or the Kruskal-Wallis rank sum test – otherwise – to percentages of use. In case of overall significant comparisons, we performed specific post-hoc tests (t- or Nemenyi, respectively) to highlight possible pair-wise differences.

Pair-wise comparisons through Pearson's χ^2 test reveal that the difference concerning the use of overt pronouns is highly significant between L2ers and Italian Natives ($\chi^2 = 11.4752$ with Yates correction, significant at $p \leq 0.005$) and L2ers and Greek Natives ($\chi^2 = 27.4266$ with Yates correction, significant at $p \leq 0.005$) but not between Italian Natives and Greek Natives ($\chi^2 = 2.3901$ with Yates correction, n. s.).[11] This highly significant difference is confirmed by a Kruskal-Wallis rank sum test ($p = 0.004$). Post-hoc pair-wise comparisons using Nemenyi's test reveal significant differences between L2ers and Greek Natives ($p = 0.012$) and between L2ers and Italian Natives ($p = 0.023$).

As for *pro*, pair-wise comparisons through the χ^2 test reveal a significant difference between Greek Natives on one side and L2ers and Italian Natives on the other: Greek Natives/Italian Natives $\chi^2 = 5.0911$ significant at $p \leq 0.05$: Greek Natives/L2ers $\chi^2 = 12.0309$, significant at $p \leq 0.005$; Italian Natives/L2ers $\chi^2 = 1.7145$, n. s. This significant difference, however, is not confirmed by the Kruskal-Wallis test, which reveals a p-value of 0.799 (n. s.).

No significant differences are found with respect to 'other' (L2ers/Italian Natives $\chi^2 = 0.3334$ with Yates correction, n. s.; L2ers/Greek Natives $\chi^2 = 0.9659$ with Yates correction, n. s.; Italian Natives/Greek Natives $\chi^2 = 0.0474$ with Yates correction n. s.; Kruskal-Wallis rank sum test: $p = 0.779$) or lexical DPs (L2ers/Italian Natives $\chi^2 = 0.4078$, n. s.; L2ers/Greek Natives $\chi^2 = 0.8745$, n. s; Italian Natives/Greek Natives $\chi^2 = 3.0822$ n. s); Kruskal-Wallis rank sum test: $p = 0.295$, n. s.).

Results of the statistical analysis are summarized in Figure 2.

A Shapiro-Wilk normality test reveals furthermore that individual percentages of use are not always normally distributed, as shown in Table 4 and as appreciable from the distributions depicted in the boxplots in Figure 3.

The fact that individual percentages of use are not normally distributed has some consequences as far as the statistical analysis is concerned, in that tests which do not require a normal distribution of the data among subjects (such as the Kruskal-Wallis test or the χ^2 test) are to be preferred to tests that instead presuppose it (e.g. ANOVA) when analyzing our data.

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[11] Significance between L2ers and the other two groups (as well as non-significance between Greek and Italian Natives) is preserved when collapsing overt pronouns and 'other': L2ers/Italian Natives $\chi^2 = 7.4412$ with Yates correction, significant at $p \leq 0.01$; L2ers/Greek Natives $\chi^2 = 15.2620$ with Yates correction, significant at $p \leq 0.005$; Italian Natives/Greek Natives $\chi^2 = 0.8508$ with Yates correction n. s.
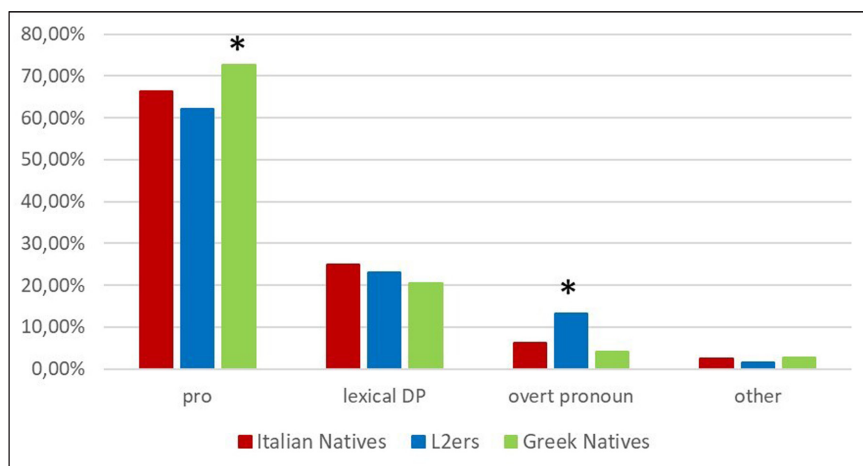
Figure 2: Subject anaphoric devices in Italian Natives, L2ers and Greek Natives.

Table 4: Normality distribution: mean (M), standard deviation (SD) and p-value.

	pro M SD	lexical DP M SD	overt pronoun M SD	other M SD
Italian Natives	0.65 0.153 normal p = 0.798	0.27 0.127 normal p = 0.799	0.05 0.055 non-normal p = 0.010	0.02 0.036 non-normal p < 0.001
L2ers	0.61 0.132 non-normal p = 0.041	0.22 0.088 normal p = 0.805	0.15 0.142 non-normal p = 0.003	0.01 0.020 non-normal p < 0.001
Greek Natives	0.72 0.096 normal p = 0.933	0.20 0.088 normal p = 0.867	0.04 0.021 normal p = 0.094	0.03 0.055 non-normal p < 0.001

Figure 3: Distribution of individual percentages of use.

2.5 Discussion

The analysis reveals two main results:

    a) a higher use of overt pronouns by L2ers. The difference is highly significant both with respect to
        Italian Natives and Greek Natives.
    b) a higher use of *pro* by Greek Natives, which is nearly significant.

The first result supports the finding reported by much current literature that near-native speakers over-use overt pronouns in Italian (with English as the other language: Tsimpli *et al.* 2004; Belletti *et al.* 2007; Sorace *et al.* 2009; with Spanish or Greek as the other language: Bini 1993; Sorace *et al.* 2009; Di Domenico & Baroncini 2019) as well as in other null subject languages (Margaza & Bel 2006; Lozano 2006; 2018 for Spanish L2 speakers with L1 Greek; Lozano 2016 for Spanish L2 speakers with L1 English), and beyond (Contemori & Doussias 2016 for English L2 speakers with L1 Spanish).

Our data does not support the finding that advanced L2ers over-use lexical DPs (instead of overt-pronouns which, in some studies, are claimed to be under-used) as shown, among others, by Ryan (2015) for Mandarin learners of English, Chini (2005) for German learners of Italian, Leclercq & Lenart (2013) for French learners of English and English learners of French (see Ryan 2015 for an overview), or, for German-Italian bilingual adolescents, by Torregrossa & Bongartz (2018). We will come back to these interesting findings in the final part of the paper (Section 5).

Going back to the significant over-use of overt pronouns that we found in L2ers, this result is particularly interesting because the L1 of these L2ers (Greek) is a null subject language. This in turn suggests that cross-linguistic influence from the L1 cannot be held responsible for the result, provided that differences between Greek and Italian are not observed. Indeed, differently from Di Domenico & Baroncini (2019), we found a nearly significant quantitative difference between Greek and Italian, but in the use of *pro* (see b) above), not of overt pronouns, which, as lexical DPs and 'other', are employed at a comparable rate by Italian Natives and Greek Natives. The higher use of overt pronouns by L2ers, thus, cannot be considered as due to transfer from their L1.

As far as the higher use of *pro* by Greek Natives is concerned, though the difference is not properly significant, it certainly deserves a closer inspection, particularly in the light of Dimitriadis' (1996) and Torregrossa, Bongartz & Tsimpli's (2015) proposals outlined in Section 1, which suggest, respectively, that *pro* in Greek has a less specific function than the overt pronoun and that it is more likely to co-refer with a non-subject antecedent when compared to Italian.

In the next section we analyze the distribution of the four subject anaphoric devices in each group's Reference Total (Table 3 and Figures 2 and 3) in terms of topicality: since topics are d-linked (Lambrecht 1994; Rizzi 2005; 2018 a.o.) we had of course to consider them with respect to all the sentences in the General Total.

3 Subject anaphoric devices in topic continuity and topic shift

3.1 Topic conditions

When investigating semi-spontaneous productions, a division between topic continuing and topic shifting expressions appears insufficient to characterize a situation which is more variegated.

As a general rule, we code as 'Topic Shifting' (TS) the cases in which the topic is different from the one of the previous sentence, and 'Topic Continuing' (TC) the cases in which the topic is the same as in the previous sentence.[12]

There are two main exceptions to this general rule: what we call 'parenthetical sentences' and thetic (i.e. topic-less) sentences. Parenthetical sentences are mainly sentences which refer to the narrator or to the narrator + interviewer ('*non lo sappiamo*' [we don't know about it]; '*penso*' [I think]); they are 'parenthetical' with respect to the narration, and do not interfere with it: hence, we consider the possible shift or continuity with respect to the previous non-parenthetical sentence.

In some cases, the previous sentence is a thetic (i.e. topic-less) sentence. Thetic sentences may not introduce a new topic. In this case we calculate the possible shift or continuity with respect to the previous categorical sentence.[13]

There is, however, a further possibility: a thetic sentence introduces (or re-introduces) a referent which becomes the topic of the following sentence. In this case, we have a topic shift with respect to the previous categorical sentence, but not with respect to the (immediately preceding) thetic sentence. We code these cases as 'non-topic continuing' (NTc). An example is shown in (21) below:

(21)   GN7, ss. 3–4
  a.   Ine enas   variestimenos   agrotis$_1$
       is   a.MSG.NOM bored.MSG.NOM farmer.MSG.NOM

  b.   ke   *pro*$_1$ mazevi achladia.
       and   picks   pears.NPL
       'There is a bored farmer and he picks pears.'

Non-topic subjects are coded as Non-Topic (NT): they are mainly the subject of a thetic sentence (as we have seen above), but in few cases they are the subject of sentences in which the object is the topic, such as left and right dislocation constructions (see also footnote 16 below).

A further possibility is that a constituent is in an inclusion relation with (i.e. is part of) a previously introduced referent which is the topic of the previous sentence: this is neither a case of complete shift nor a case of continuity proper. We call it 'Tincl'. An example is shown in (22), where '*uno di loro*' is included in the previous topic, realized through *pro*:

(22)   IN11, ss. 47–48
  a.   *pro* vedono il   suo   cappello
         see.3PL the.MSG his.MSG hat

  b.   quindi uno di loro gli   fischia.
       so   one of them to-him whistles
       'They see his hat, so one of them whistles to him.'

The distribution of the different conditions, in terms of topicality, is shown in Figure 4.

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[12] Since sentences may have more than one topic (Lambrecht 1994; Rizzi 1997; Frascarelli & Hinterhölzl 2007 a.o., but see Reinhart 1982 for a different view), in some of the TS cases, the subject topic was the object topic of the previous sentence. We will deal with these cases (which we call 'topic switch') in 3.3.1. Serratrice (2007: 1067) also includes these cases within her topic shift ('referent re-introduction' in her terms) definition.

[13] In case of continuity with respect to the topic of the previous categorical sentence, the presence of a referent in the intervening thetic sentence might have some impact, however, on the choice of the anaphoric device. We shall discuss some cases in Section 4 (examples (32) and (35)).
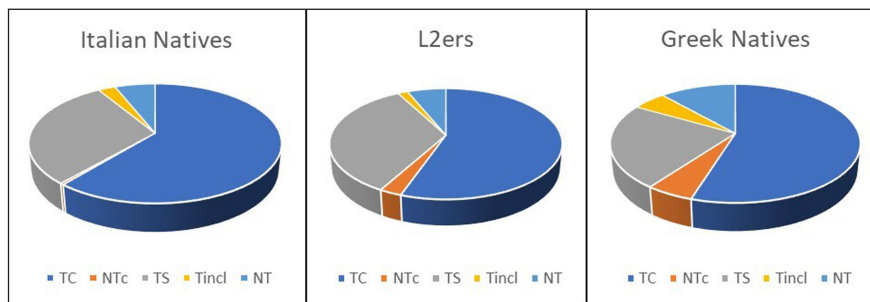
Figure 4: Topic conditions in the three groups.

The different conditions are equally distributed among groups with the exception of NTc, which are quite rare in the Italian Natives corpus (and few in the L2ers corpus). This fact is not very surprising, in that Italian Natives generally restate in subject position a referent introduced as a non-subject through a pseudo-relative, a subject relative, or an acc-ing construction (see Di Domenico *to appear*). Topic shift or topic continuity is then calculated with respect to the latter clausal types.

3.2 Subject anaphoric devices in the different topic conditions

Subject anaphoric devices in each group's Reference Total were then characterized in this respect. Results are shown in Figure 5.

In case of topic continuity (TC), all groups mostly resort to *pro* (Italian Natives 92.71%; L2ers 90.24%; Greek Natives 94.58%). Lexical DPs are seldom used (Italian Natives 5.96%; L2ers 1.46%; Greek Natives 3.70%). As far as overt pronouns are concerned, they are seldom used in this case by all groups (Italian Natives 1.32%; L2ers 7.80%; Greek Natives 1.70%). As far as 'other' is concerned, we find only a single instance in the L2ers group (0.48%).

In non-topic continuing contexts (NTc), *pro*s are used in the 50% of the cases by Italian Natives, 80% by L2ers and 82.35% by Greek Natives. Lexical DPs are used in the 50% of the cases by Italian Natives, 10% by L2ers and 17.64% by Greek Natives. We find only a single occurrence of overt pronouns (10%) as well as of 'other' in the L2ers group.

In case of topic shift, *pro*s are used in the 29.72% of the cases by Italian Natives, 28.57% by L2ers and 56.75% by Greek Natives. Lexical DPs are used in the 51.35% of the cases by Italian Natives, 46.03% by L2ers and 27.70% by Greek Natives. Topic shift contexts are the contexts in which we observe a higher use of overt pronouns by all groups: 16.21% in Italian Natives, 23.80% in L2ers, and 12.83% in Greek Natives. As for 'other', they are not particularly used in these contexts (2.70% by Italian Natives, 1.58% by L2ers, 2.70% by Greek Natives).
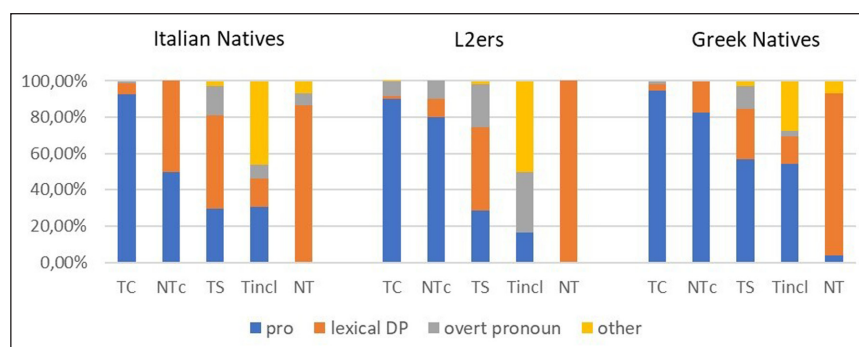

Figure 5: Subject anaphoric devices in the different topic conditions.

The case in which a topic is 'included' in the previous topic (Tincl) is the context in which 'other' devices are more used compared to other contexts: 46.15% in Italian Natives; 50% in L2ers; 27.27% in Greek Natives. Lexical DPs are also employed in this condition by Italian Natives (15.38%) and Greek Natives (15.15%), but not by L2ers (0%). Overt pronouns are seldom used in this condition by Italian natives (7.69%) and Greek Natives (3.03%), but more often by L2ers (33.33%). *pro*s are employed in the 30.76% in Italian Natives, 16.66 % in L2ers, 54.54% in Greek Natives.

Non-topics are mostly realized as lexical DPs by all groups (86.66% by Italian Natives, 100% by L2ers, 89.18% by Greek Natives). Some occurrences of 'other' appear in Italian Natives ($N = 2$, 6.66%) and Greek Natives' ($N = 5$, 6.75%) productions, and 2 occurrences of overt pronouns (6.66%) are attested in Italian Natives' productions. Three occurrences of *pro* (4.05%) are produced by Greek Natives in this condition.

As far as between-group differences are concerned, the statistical analysis (Kruskal-Wallis and post-hoc Nemenyi tests) reveals that the higher use of overt pronouns by L2ers is highly significant in the TC condition only ($p < 0.001$) both with respect to Italian Natives ($p = 0.023$) and Greek Natives ($p = 0.001$). See Figure 1 of the Appendix.

The analysis also reveals some interesting differences related to *pro*. Greek Natives resort to *pro* significantly more than Italian Natives and L2ers at least in two conditions: TS ($p = 0.031$ with respect to Italian Natives; $p = 0.004$ with respect to L2ers) and Tincl ($p = 0.055$, nearly significant, with respect to Italian Natives; $p = 0.004$ with respect to L2ers).[14] See Figures 2 and 3 of the Appendix.

We also found a significant difference concerning lexical DPs in the TS condition, with a global p-value of 0.041. Post hoc pair-wise comparisons reveal that significance is reached only between Italian Natives and Greek Natives ($p = 0.04$). See Figure 4 in the Appendix.

3.3 Discussion

Results reveal that L2ers significantly over-use overt pronouns with respect to Italian Natives and Greek Natives in case of topic continuity. This difference is highly significant. Similar results, placing the over-use of overt pronouns precisely in topic continuity contexts have been reported in many studies: by Sorace *et al.* (2009) for Spanish-Italian and English-Italian bilingual children, by Lozano (2018) for L2 learners of Spanish with L1 Greek, and by Lozano (2016) for L2 learners of Spanish with L1 English, while Sorace (2006; 2016) underlines a similar finding for English-Italian late bilinguals (i.e. both attrited speakers of Italian with L2 English and L2 speakers of Italian with L1 English). As noted by many (see also Section 1 and 2.3), a similar behavior in speakers of two null subject languages and speakers of a non-null and a null subject language suggests that transfer (or attrition) might not be called into question.

Where does this over-use of overt pronouns by L2ers stem from? Sorace (2011) proposes that overt pronouns are simpler than null pronouns and that interface properties (such as topicality) are hard to compute for bilinguals which are known to have processing difficulties, and 'shallower' processing strategies with respect to monolinguals (Clahsen & Felser 2006). It is not clear, however, in which precise sense should overt pronouns be

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[14] A significant difference for *pro* is also found in the NTc condition ($p < 0.001$) significant between Greek Natives and Italian Natives ($p < 0.001$) and slightly significant between L2ers and Italian Natives ($p = 0.094$). This result, as well as the following one (concerning lexical DPs in the same condition), is possibly not entirely reliable, since we had a lot of 0 values (recall that we had very few occurrences of the NTc condition in Italian Natives, and few in L2ers) so the differences are due only to the few values different from 0.

As far as lexical DPs in the NTc condition are concerned we found a globally significant difference ($p = 0.041$), with Greek Natives using less lexical DPs, which decreases however in pair-wise comparisons (Greek Natives/Italian Natives $p = 0.091$; Greek Natives/L2ers $p = 0.091$).

simpler than null pronouns, at least for L2ers with an L1 in which there are null pronouns, and in which overt pronouns are used, apparently, in the same contexts (topic shift or focalization) as in the L2. There are also signs that our L2ers are indeed able to cope with topicality: this is so in their use of *pro*. We will therefore turn to the differences concerning *pro*, leaving a more careful examination of overt pronouns to the next section.

As for the differences concerning the use of *pro*, we found no between group differences in topic continuity. Highly significant differences emerge instead in topic shift and Tincl contexts, and, with the caution suggested in footnote 14, in NTc contexts: here, Greek Natives use significantly more *pro*s than Italian Natives and L2ers. We interpret this finding as follows: while in Italian *pro* is preferred to signal topic continuity, this preference is not so strong in Greek. At least in topic shift contexts (and NTc but, again, see footnote 14), Greek Natives use, correspondingly, less lexical DPs then Italian Natives, as we have seen.

L2ers, however, are well aware that Italian works differently from Greek, and they do not transfer the property of their L1 into their L2. This also means that these L2ers are indeed able to cope with topicality.

3.3.1 *pro* in proper topic shift and topic switch

With the aim of better understanding the nature of this difference, we analyzed more closely the occurrences of *pro* in case of topic shift. For this purpose, we distinguished, within this category, the cases in which there is a proper topic shift, as in (23), and the cases in which there is rather a topic 'switch', as in (24):

(23)   GN17, ss. 11–12
         a.   Kapou pro_1 chtipise   se   mia   petra   telos   panton   se
              somewhere   hit.P.3SG   on   a.FSG stone.FSG   end.NSG   all.PL.GEN   on
              kati.
              something.NSG

         b.   ke pro_2 tou_1 pesane   kato.
              and   him fell.3PL   down
              'Somewhere he hit on a stone anyway, or something. And they fell down (to him).'

(24)   GN1, ss. 55–56
         a. pro_1 tou_2 dinoune ena   cheri   voithias.
                   him   give.PL   a.NSG   hand.NSG   help.FSG.GEN

         b. pro_2 xeskonizi to   panteloni   tou.
                   dusts   the.NSG   trouser.NSG   his
              'They give him a hand (of help). He dusts his trousers.'

In (23) a proper topic shift context is illustrated: the topic of (23.b) was not present in the previous sentence (23.a); (24) illustrates a topic switch context: the subject topic in (24.b) was the object (secondary) topic in the previous sentence (24.a), see also footnote 12 above.

While topic switch cases are attested in all groups of speakers, in Greek Natives they occur at a consistently higher proportion, as shown by the occurrences in Table 5 (see also Figure 5 of the Appendix).

If we look at Table 5, we note that, of the 44 cases of *pro* in global topic shift in Italian Natives, 38 are in proper topic shift and only 6 in topic switch; in L2ers we have 36 occurrences of *pro* in global topic shift: 28 are in proper topic shift and 8 in topic switch; in

Table 5: Anaphoric devices in proper topic shift and topic switch contexts in the three groups.

		pro	Lexical DP	Overt pronoun	other	Total
Italian Natives	p. shift	38	71	16	4	129
	switch	6	5	8	0	19
L2ers	p. shift	28	53	19	2	102
	switch	8	5	11	0	24
Greek Natives	p. shift	47	34	7	4	92
	switch	37	7	12	0	56

Greek Natives we have 84 occurrences of *pro* in global topic shift: 47 are in proper topic shift and 37 in topic switch. But the proportion of topic switch contexts in Greek Natives is higher than in the other groups in general, and not only in the cases in which *pro* is used, as we can see in the last column of Table 5.[15] We interpret this finding as suggesting that in Greek there are possibly more object topics (instantiated e.g. by clitic pronouns) than in Italian, or, in other words, that the correlation between topic and subject (Rizzi 2005; 2018) in Greek is perhaps less strong than in Italian.[16]

To conclude this section, we have seen that *pro* in Greek is used not only in case of topic continuity, but also in (all) the other topic conditions, contrary to Italian. Furthermore, there are possibly more object topics in Greek than in Italian. The weak correlation between *pro* and the argument status of the antecedent found by Torregrossa *et al.* (2015) might be a consequence of the combined effect of this less specific function of *pro* and of the fact that the subject/topic correlation in Greek is less strong than in Italian.

L2ers are well aware of these differences, and they do not transfer these properties of Greek into Italian: hence, they are sensitive to topicality, in their L2 as well.

We have also seen that overt pronouns are over-used by L2ers in topic continuity. Provided that this cannot be due to difficulties in computing topicality, in the next section we will examine more in detail the distribution of overt pronouns in L2ers as well as in the other groups of speakers.

4 A closer look at overt pronouns

4.1 Anaphoric devices and the number and kind of active referents

As we have seen in the previous section, the higher use of overt pronouns by L2ers (with respect to Italian Natives as well as of Greek Natives) is particularly significant in topic continuity contexts. At the same time, however, we have seen that L2ers are able to cope with topicality since they employ *pro* to signal topic continuity, as Italian Natives do, so difficulties in computing topicality cannot be held responsible for their use of overt pronouns in topic continuity.

Examining the contexts in which L2ers use an overt pronoun, we noticed that there were often two active referents differing for gender and/or number. This observation could be interesting also in the light of Arnold & Griffin's (2007) proposal that the presence of an additional character influences the kind of anaphoric device employed: through their elicited production experiments, they found that English native speakers prefer an overt pronoun when they are asked to continue a sentence containing only one referent, while lexical DPs are used more often than pronouns when two referents are introduced in the preceding discourse, even when the two antecedents mismatch in gender features.

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[15] Unfortunately, no statistics could be applied to these data due to their extremely non-normal distribution and the high proportion of 0 values among participants' productions.

[16] Clitic left and right dislocations are instead virtually absent in the three corpora here considered, see 3.1 above.

In order to verify the observation that L2ers use overt pronouns particularly when there are two active referents differing for gender and/or number, and to see whether this was a peculiarity of L2ers, we have examined the sentences in the Reference Corpus of the three groups according to the number and kind of active discourse referents. Lambrecht (1994) considers 'active' those referents who are present in the short term memory. As a working definition, we consider a referent to be active when it is present in the sentence (in the form of a pronoun or a lexical DP) or explicitly mentioned in the previous one.[17] As before (see Section 3), we do not consider the referents contained in a 'parenthetical' sentence.

We distinguished four cases: a) sentences in which only one referent is active (1r); b) sentences in which two referents matching for animacy/humanness, gender and number are active (2rno); c) sentences in which there are two active referents with an animacy mismatch (2rA); and d) sentences in which there are two referents matching for animacy/humanness, but with a mismatch in gender and/or number (2rgn).[18] The distribution of the sentences in each group's Reference Corpus according to the four conditions is shown in Figure 6.

The four conditions are almost equally distributed among groups. As far as L2ers are concerned, we may note a lower distribution of the 2rA condition (and a higher distribution of the 1r condition), which is possibly related to the more essential style of their narrations, where reference to inanimate or non-human referents is moderate and reference to one single referent is preferred.
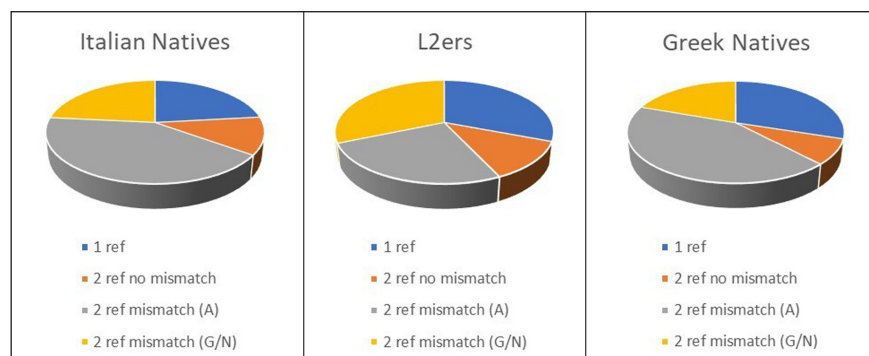

Figure 6: Referents conditions.

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[17] This 'backwards looking' definition of active referents is perhaps problematic in the specific case of some contrastive overt pronouns (especially those occurring in pre-posed adjunct clauses) which, while co-referring with a previous antecedent, somehow 'activate' the following one which they contrast with. Some of these cases will be discussed at the end of this section (examples (28), (29), (32), (33)).

[18] In some sentences the active referents are more than two. In order to avoid the over-proliferation of subcases, we coded them as containing 2 referents (i. e. 2 means '2 or more'). If there is a different kind of mismatch involved among them, we consider first the animate referents (and the possible mismatches between them). As an example, a sentence like (i) is coded as 2rgn:

(i)   IN9, s. 24
       Il ragazzino dà tre pere ai ragazzini.
       'The young boy gives three pears to the three young boys.'

Mismatches in animacy between two referents are coded as 2rA, regardless of possible number mismatches between them as in (ii) below:

(ii)   IN2, s. 22
       Il ragazzino nota le pere.
       'The young boy notes the pears.'

See Lozano (2016) for a partially different coding.

We then analyzed the occurrence of the different subject anaphoric devices according to the number and kind of active referents. The results are shown in Figure 7.

In the condition with one referent (1r), we observe that all groups mainly resort to *pro* (Italian Natives 53.91%; L2ers 61.40%; Greek Natives 64.06%) and lexical DPs (Italian Natives 42.60%; L2ers 32.45%; Greek Natives 28.12%). Overt pronouns are rarely attested (Italian Natives 0.86%; L2ers 5.26%; Greek Natives 2.08%), as well as 'other' (Italian Natives 2.60%; L2ers 0.87%; Greek Natives 5.72%). In the condition with two matching referents (2rno), as well, all groups mainly resort to *pro* (Italian Natives 50%; L2ers 53.33%; Greek Natives 58.82%) and lexical DPs (Italian Natives 37.93%; L2ers 31.11%; Greek Natives 33.33%). Overt pronouns are a bit more attested than in the preceding condition (Italian Natives 8.62%; L2ers 16.26%; Greek Natives 5.88%), while similar rates can be observed for 'other' (Italian Natives 3.44%; L2ers 2.22%; Greek Natives 1.96%). In the condition in which we have two referents with an animacy/humanness mismatch (2rA) we found a higher use of *pro* (Italian Natives 77.66%; L2ers 78.94%; Greek Natives 81.98%) and less lexical DPs (Italian Natives 17.96%; L2ers 14.73%; Greek Natives 14.33%). Overt pronouns are not particularly attested (Italian Natives 3.88%; L2ers 5.26%; Greek Natives 1.83%) as well as 'other' (Italian Natives 0.48%; L2ers 1.05%; Greek Natives 1.83%).

Finally, in the condition with two referents with a gender and/or number mismatch (2rgn) we have a high rate of *pro* (Italian Natives 67.24%; L2ers 52.58%; Greek Natives 71.20%), while lexical DPs consistently decrease (Italian Natives 12.93%; L2ers 17.24%; Greek Natives 16.80%). Overt pronouns are consistently more used in this condition (Italian Natives 14.65%; L2ers 27.58%; Greek Natives 11.20%). 'Other' devices are employed similarly as in the other conditions (Italian Natives 5.17%; L2ers 2.58%; Greek Natives 0.80%).

The statistical analysis reveals significant between-group differences only for what concerns overt pronouns. These between-group differences for overt pronouns, furthermore, appear to be significant only in the condition in which two referents which differ for gender and/or number are active (Kruskal-Wallis p = 0.030). A post-hoc Nemenyi test reveals that these differences reach significance when comparing L2ers and Italian Natives (p = 0.033). It appears that the use of overt pronouns when there are two active referents which differ in gender/or number is a peculiarity of L2ers, which emerges particularly with respect to Italian Natives.

In order to be sure, however, that the use of overt pronouns particularly in the 2rgn condition is a peculiarity of L2ers, we also undertook a within-group analysis. Interestingly,
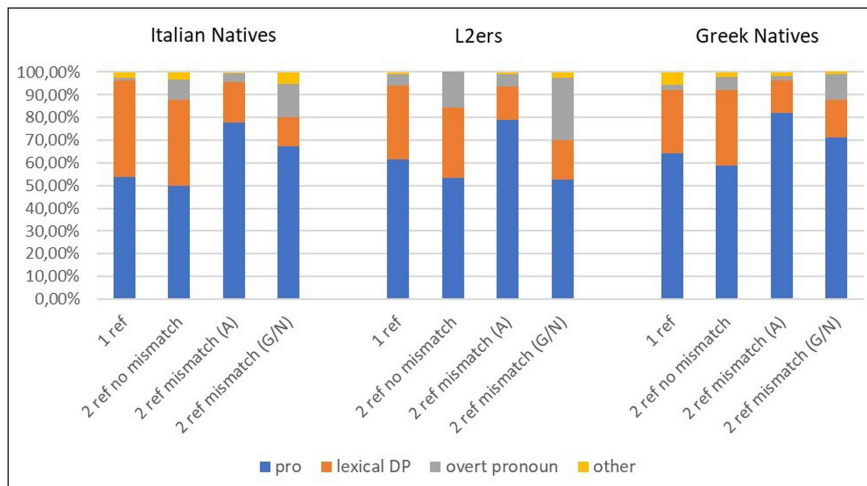

Figure 7: Anaphoric devices in the different referents conditions.

the analysis reveals that in all groups overt pronouns are more used when there are two active referents which differ in gender and/or number. In Italian Natives ($p = 0.013$) the difference reaches significance between this condition and the 1-referent condition ($p = 0.017$). In L2ers ($p < 0.001$) the difference is significant with respect to all other conditions (1-referent: $p < 0.001$; 2-referents no mismatch: $p < 0.001$; 2-referents animacy mismatch: $p < 0.001$). In Greek Natives, as well, the difference ($p < 0.001$) is significant with respect to all other conditions (1-referent: $p = 0.005$; 2-referents no mismatch: $p = 0.004$; 2-referents animacy mismatch: $p = 0.004$). See Figure 6 of the Appendix.

Summing up, in all groups overt pronouns are significantly more employed in the 2rgn condition, but in L2ers at a significantly higher rate with respect to the other two groups.

4.2 Overt pronouns, active referents and topic conditions

Let us now examine Tables 6, 7 and 8, in which overt pronouns in the three groups of speakers have been characterized with respect to the two conditions (and sub-conditions) examined in this study, i.e. topicality and number and kind of active referents.

Comparing the data in the three tables, we can clearly see that overt pronouns are more used in the 2rgn condition by all groups of speakers. Crucially, however, while Italian Natives and Greek Natives use them only in case of topic shift (with some exceptions which we will consider right below), L2ers do so also in case of topic continuity.

Table 6: Overt pronouns in the different topicality/referents conditions in Italian Natives.

	TC	NTc	TS	Tincl	NT	TOT
1r	0	0	0	0	1	1
2rno	1	0	4	0	0	5
2rA	1	0	6	0	1	8
2rGN	2	0	14	1	0	17
TOT	4	0	24	1	2	**31**

Table 7: Overt pronouns in the different topicality/referents conditions in L2ers.

	TC	NTc	TS	Tincl	NT	TOT
1r	4	0	2	0	0	6
2rno	2	0	4	0	0	6
2rA	1	0	4	0	0	5
2rGN	9	1	20	2	0	32
TOT	16	1	30	2	0	**49**

Table 8: Overt pronouns in the different topicality/referents conditions in Greek Natives.

	TC	NTc	TS	Tincl	NT	TOT
1r	1	0	3	0	0	4
2rno	1	0	2	0	0	3
2rA	2	0	3	0	0	5
2rgn	2	0	11	1	0	14
TOT	6	0	19	1	0	**26**

Still, they are able to cope with topicality, since, as we have seen in Section 3, they are well aware of the fact that *pro* in Italian (though not in Greek) is used to signal topic continuity.

This suggests that L2ers apply the strategy attested in their L2 (and their L1) according to which overt pronouns are preferably used when there are two active referents which differ for gender and/or number. In this particularly costly condition (Arnold & Griffin 2007), they fail to compute topicality, and the overt pronoun is employed in topic shift (as we see in (25), a case of switch, see Section 3) as well as in topic continuity (26):

(25)   L2ers1, ss. 36–37

        a.   *pro*$_i$ lo$_j$ mettono sulla   bicicletta

                  him   set.3PL   on-the.FSG bike.FSG

        b.   e   lui$_j$ se   ne   va.

              and he   REFL.*si* LOC goes

              'They set him on the bike and he goes away.'

(26)   L2ers3, ss. 10–11

        a.   *pro*$_i$ incontra una ragazzina$_j$

                  meets   a.F   young-girl

        b.   Lui$_i$ rimane colpito dal   suo$_j$ fascino.

              he   remains hit.MSG from-the.MSG POSS.3MSG charm.MSG

              'He meets a young girl. He is charmed by her.'

In cases like (26), the use of overt pronouns appears qualitatively different from the native speakers' use. A qualitative difference also emerges, in few occasions, when considering the cases in which an overt pronoun is used in case of topic continuity by the native participants, and by L2ers beyond the 2rgn condition.

In some of these cases, native speakers use the overt pronoun in topic continuity to express a contrast with respect to another referent, which has just been introduced (27), or is going to be introduced after, as shown in (28) and (29):

(27)   IN8, ss. 34–37

        a.   *pro*$_i$ inciampa su un sasso

                  trips   on a   stone

        b.   e   cade il   cestello

              and falls the.MSG basket

        c.   e   quando cade il   cestello

              and when   falls the.MSG basket

        d.   lui$_i$ si   rialza.

              he   REFL.*si* ITER.stands

              'He trips over a stone and the basket falls down and when the basket falls down he stands up again.'

(28)   IN2, ss. 14–16

        a.   Mentre lui è sceso   dalla   scala [.......]

              while   he is climbed-down from-the.FSG   ladder.FSG

        b.   passa   un, *pro* presumo, allevatore.

              passes a   guess.1SG farmer

              'While he is down the ladder a, I guess, farmer passes by.'

(29) GN15, ss. 4–5
  a. Oso   mazevi achladia   aftos
      while picks   pears.NPL he.MSG.NOM

  b. pernai ke   enas   ktinotrofos.
      pass   also one.MSG.NOM shepherd.MSG.NOM
      'As long as he picks pears, a shepherd passes by.'

In very few cases, however, there is no contrast involved, and the overt pronoun is apparently used just to restate the current topic, as shown in (30) and (31) below:

(30) GN19, ss. 1–3
  a. Lipon sto   video   *pro* ida   ena   tipa
      then in the.NSG video.NSG   saw.1SG one.MSG.ACC guy.MSG.ACC

  b. pou katevaze   kati   achladia   apo   dentro.
      that brought.3SG down some pears.NPL from tree.NSG

  c. Malon echi ktima   aftos   me   achladies.
      maybe has field.NSG he.MSG.NOM with pear-trees.FPL
      'So in the video I saw a guy, that was drawing down some pears from the tree. Maybe he has a field with pear trees.'

(31) IN11, ss. 70–72
  a. Magari *pro*ᵢ non si   ricordava [….].
      maybe   not REFL.*si* remembered.3SG

  b. Passano i   tre   bambini con le   pere   in mano.
      Pass.3PL the.MPL three kid.MPL with the.FPL pear.FPL in hand

  c. Quindi luiᵢ li   guarda
      so   he them looks
      'Perhaps he did not remember. The three boys with the pears in their hands pass by. So he looks at them.'

This use of the overt pronoun has been noted for Italian by Cardinaletti (2004a and b, see also Frascarelli 2007), and described as a possible ongoing change in the language. The overt pronoun in these cases is analyzed as a weak pronoun (in the sense of Cardinaletti & Starke 1999) rather than as a strong pronoun. Similarly, Prentza & Tsimpli (2013) refer to an 'emphatic' use of the overt pronoun in topic continuity in Greek, as we have seen in Section 1.

  Our data show that this use of the overt pronoun in topic continuity never occurs in the 1r condition in the native speakers' corpora. It is possible that the presence of other intervening referents (in the pseudo-relative in (30.b) or in the event-reporting thetic sentence in (31.b)) prompts the use of an overt pronoun to restate the current topic.

  Indeed, we have only one occurrence of an overt pronoun in the TC-1r condition in the natives' corpora, specifically in the Greek Natives corpus, where contrast is involved, as shown in (32) below:

(32) GN5, ss. 56–57
  a. Fevgi   aftos
      goes away he.MSG.NOM

  b. ke   *pro* epistrefoume ston   agroti.
      and   return.1PL   at-the.MSG.ACC farmer.MSG.ACC
      'He goes away and we go back to the farmer.'

In the L2ers corpus, too, beyond the cases pertaining to the 2rgn condition, overt pronouns are used to express a contrast (33), and possibly to restate the current topic (34):

(33)   L2ers5, ss. 2–3
    a.   Poi   mentre   lui   allora   sta   sugli   alberi
          then   while   he   then   stays   on-the.MPL   trees

    b.   passa   con   la   sua   bici   un   piccolo   bambino.
          passes   with   the.FSG   his.FSG   bike   a.M   little.MSG   child.MSG
          'Then, while he is still on the trees, a little boy with his bike passes by.'

(34)   L2ers5, ss. 2–3
    a.   C'   è   un   signore
          ci   is   a.M   lord

    b.   che   sta   raccogliendo   le   pere   da   un   albero.
          that   stays   picking   the.FPL   pears   from   a.M   tree

    c.   Appena   cade   una   pera
          when   falls   a.F   pear

    d.   lui   scende   dalla   scala.
          he   climbs-down   from-the.FSG   ladder
          'There's a man picking pears from a tree. When a pear falls he climbs down the ladder.'

Some cases, however, seem to reveal the possibility of a different trend. The first is illustrated in (35) below, where, after two instances of *pro* in topic continuity (35.a and .b), we have two topic shifts in (.c and .d, realized through an 'other' device and a lexical DP) with a final topic continuity context (e.) in which the overt pronoun is employed:

(35)   L2ers5, ss. 27–31
    a.   E   poi   *pro*$_i$ guarda   anche   l'uomo$_j$
          and   then   looks   also   the man

    b.   e   *pro*$_i$ vede
          and   sees

    c.   che   l'   ultimo$_j$ manco   se   ne   è   accorto   che
          that   the   latter.MSG   not-even   REFL.*si* PART   is   aware.MSG   that

    d.   il   ragazzino$_i$ stava   laggiù.
          the.MSG   young-boy   stayed   there

    e.   Allora   lui$_i$ non   perde   l'   occasione.
          so   he   not   misses   the   chance
          'And then he$_i$ looks at the man$_j$ as well and he$_i$ sees that the latter$_j$ didn't even realize that the young boy$_i$ was there. So he$_i$ doesn't miss the chance.'

Of course, the cognitive load is high in this context, but the output appears to be really at odds. The problem here is not only the overt pronoun in topic continuity (35.a), but the lexical DP in (35.d), which appears rather as a violation of Principle C of the Binding Theory (Chomsky 1981).

   Another case is illustrated in (36) where the overt pronoun is used in topic continuity in the 1r condition in (36.a) and (36.c):

(36)   L2ers8, ss. 11–13
    a.   E   lui$_i$ forse   tornava   a   casa
          and   he   maybe   went-back   to   home

b. *pro* non so
     not   know.1sg

c. e   ad un certo   punto lui₍ᵢ₎ cade.
     and at aм certain point he   falls
     'Maybe he was going home, I don't know, and suddenly he stops.'

We might hypothesize that for this particular speaker even the parenthetical sentence (36.b) is sufficient to create a cognitively demanding situation so that an overt pronoun is used.[19]

Though sometimes reported as an example of near-natives' productions in Italian (e.g. Sorace 2016: 672, ex. (1)), use of an overt pronoun in the TC-1r condition is quite rare in our L2ers corpus and, as we have seen above, never attested in the natives' corpora (unless in the contrastive use seen in (32)), while it is possibly more common in L2ers of Italian with English as an L1 (Bellucci 2018–2019; but see Lozano 2016).

4.3 Discussion

Summing up, in this section we have seen that all groups of speakers use overt pronouns particularly when there are two active referents which differ for gender and/or number. In this context, L2ers use significantly more overt pronouns than native speakers: while native speakers use overt pronouns when topic shift is involved, L2ers use overt pronouns also in topic continuity.

At the same time, as we have seen in the previous section with respect to *pro*, L2ers are indeed able to compute topicality, as they employ *pro* mostly in topic continuity as Italian Natives do.

We may hypothesize that it is the 2rgn context that makes more difficult for L2ers to compute topicality.

Arnold & Griffin's (2007) have shown that the presence of an additional character influences the kind of anaphoric device employed: through their elicited production experiments, they found that English native speakers prefer an overt pronoun when they are asked to continue a sentence containing only one referent, while lexical DPs are used more often than pronouns when two referents are introduced in the preceding discourse, even when the two antecedents mismatch in gender features, and so a pronoun (necessarily overt in English) would be sufficient to disambiguate between the two referents. Assuming that attention is a limited resource, Arnold & Griffin (2007) propose that the presence of an additional character decreases a referent's activation, as an effect of cognitive load: two entities compete with each other, lowering the overall activation that each entity has in the speaker's mind. As a result, they observe the use of over-explicit expressions (lexical DPs in English), i.e. of expressions encoding lower level of activation (Ariel 1990; 2001).

Going back to our data, if we assume, in agreement with Sorace (e.g. 2016: 8) that bilinguals' processing resources are more taxed, it is not surprising that, in the particularly costly condition in which two referents are active, L2 speakers have difficulties in computing topicality. Decreased activation makes the topic/non-topic distinction less clear: if it is unclear which is the 'expected' (Calabrese 1986) antecedent, a null pronoun cannot be used to retrieve it, and only overt pronouns can be employed.

As highlighted in much current literature, and confirmed by our data, overt pronouns are used by L2ers instead of null pronouns to retrieve topical antecedents, but not the reverse. This well known asymmetry is well explained assuming that the problem is not

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[19] We do not consider *casa* in (36.a) an active referent, since *tornare a casa* in Italian does not have a compositional meaning.

with anaphoric devices but with referents' activation: what appears as an 'over-explicit' form (i.e. an overt pronoun instead of a null pronoun), is instead the right device if a referent's activation is lower.

With respect to this asymmetry, Lozano (2016) proposes that (advanced) L2 learners will violate pragmatic principles banning redundancy more often than pragmatic principles banning ambiguity, being more redundant than ambiguous (Pragmatic Principles Violation Hypothesis). Our proposal is instead that they are not redundant: if a topic's activation decreases, an overt pronoun is not redundant, but necessary.

This cannot be the whole story, however. We found indeed that L2ers use overt pronouns in TC particularly in the 2rgn condition, while we would expect them to use overt pronouns in TC also in other 2r contexts (2r no mismatch, 2r animacy mismatch): as we have seen in Table 7, however, the 2rgn context is the one in which overt pronouns are more used by L2ers.

Quite surprisingly, overt pronouns are used more frequently in the 2rgn condition also by Italian Natives (and Greek Natives), though not as topic continuing devices. If overt pronouns signal topic shift, they should be used as topic shifting devices at a comparable rate at least in all contexts with two active referents, but, as we have seen, this is not the case.[20]

One possibility is that the 2rgn condition is the condition in which there are more topic shifts. An examination of the Italian Natives corpus in this respect reveals, however, that TS contexts are only slightly more attested in the 2rgn condition (28.37%) with respect to the other conditions (1r: 22.97%; 2rno: 22.29%; 2rA: 26.35%). So we must conclude that the 2rgn condition is the condition where overt pronouns are preferred by Italian Natives (and Greek Natives), although, as highlighted by Calabrese (1986) and Carminati (2002), an overt pronoun has a bias towards a non-topic antecedent also in case of morphological ambiguity (i.e. the 2rno, see (1) above). A possible explanation for this preference is that the competition effect is lower when the two antecedents mismatch in phi-features (Arnold & Griffin 2007) and so a pronoun is the preferred device in this condition, but not when the antecedents match and the competition effect is higher.[21]

The choice of overt pronouns by L2ers, thus, is not the choice of a 'default' form (Sorace 2011; 2016 a. o.), i.e. the choice of an unambiguous form that is easy to select and produce. Rather, it is the same choice that is made by native speakers (all groups of speakers prefer overt pronouns in the 2rgn condition), though at a significantly higher rate. This higher rate, in turn, is due to the possible de-activation of the topic when there are two active referents (given L2ers limited processing resources), as discussed above.

The following observations confirm that overt pronouns are not chosen by L2ers because they are easy to select. As highlighted by much relevant literature (see, among many others, Ransdell & Fischer 1987; Bialystok, Craik & Luk 2008; Schwartz & van Hell 2012 and, on bilingual children, Torregrossa, Bongartz & Tsimpli 2019), lexical retrieval might be costly for L2ers (and bilinguals in general): overt pronouns, therefore, can be thought of as less costly in this respect (Hendriks, Koster & Hoeks 2014 a. o.; but see Ryan 2015; Chini 2005 and the other studies reporting over-use of lexical DPs quoted in Section 2). Our data, however, does not support the hypothesis that, in general, our L2ers avoid lexical DPs.

As we have seen in Section 2 and Section 3, L2ers do not seem to differ from Italian Natives and Greek Natives as to the frequency of lexical DPs in the Reference Corpus

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[20] A topic shift in the 1r condition entails that the referent is more distant (hence less accessible, according to Ariel 1990; 2001) and so a pronoun is perhaps a not sufficiently explicit device to pick it up.

[21] Lexical DPs are indeed preferred as topic shifting devices in the 1r condition (27/34) and also in the 2rno condition (19/33).

(see Section 2, Figure 2 in particular). When distinguishing the contexts of occurrence of lexical DPs in terms of topicality, furthermore, L2ers behave basically like Italian Natives in their higher use of lexical DPs in topic shift contexts, when compared to Greek Natives (Section 3, and Figure 4 of the Appendix). A difference (which does not reach statistical significance with the Kruskal-Wallis test, see Section 3) can be appreciated however in topic continuity contexts, where Italian Natives in particular, but also Greek Natives, use lexical DPs at a higher rate with respect to L2ers (see Figure 5).[22] We could interpret this result as suggesting that L2ers may exhibit difficulties in lexical retrieval, which are not revealed in topic shift contexts due to their awareness of the fact that in these contexts Italian, contrary to Greek, requires lexical DPs (see 3.3.1 above), and appears only in topic continuity contexts. But it is unclear whether this lesser use of lexical DPs in topic continuity is the cause, or rather a consequence of the higher use of overt pronouns by L2ers in this condition.

It seems thus that an overt pronoun in the 2rgn condition is not chosen by L2ers because they might have difficulties in lexical retrieval, but because it is the appropriate device in this condition in Italian: for native speakers this is true provided that there is a topic shift; for L2ers it could also apply in topic continuity, if topic activation decreases due to the presence of an additional character.

This in turn suggests that, despite their similarity for what concerns the parameters proposed by Ariel (1990; 2001) to characterize NP types (informativity, rigidity and attenuation), overt pronouns in Italian play a different role as accessibility markers with respect to English.

Although Arnold & Griffin's (2007) data and our data are not directly comparable (besides a difference related to the tasks employed – picture description vs. story-telling – the most important difference is that Arnold & Griffin's task is explicitly designed to elicit topic maintenance continuations, while we have a high number of topic shifts in our data) some general trends in the results deserve a comparison. English native speakers use overt pronouns mostly in the 1r condition, while in this condition overt pronouns are virtually absent in Italian and Greek Natives productions. Provided that there is a topic shift, the 2rgn condition is the condition where overt pronouns are more attested in Italian and Greek, while in English pronoun use decreases (though to a lesser extent than in the 2rno condition, due to a 'gender effect') in these contexts.[23] Overt pronouns are sufficiently explicit in these contexts in Italian and Greek, while more explicit forms (lexical DPs) are preferred in English.

This in turn might reveal, provided it can be extended to other null subject languages (and Arnold & Griffin's results to other non-null subject languages), that this different use of the overt pronoun is possibly tied to the presence of null pronouns in null subject languages, which makes overt pronouns apt to retrieve a referent with a lower degree of activation than in non-null subject languages.

Data provided by Lozano (2016) also suggest that native speakers of Spanish use overt pronouns particularly in the same condition as our native speakers of Greek and Italian, while Hendriks, Koster & Hoecks (2014) suggest that Dutch speakers prefer lexical DPs with two active referents.

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[22] Italian Natives: 18/123 (5.96%); L2ers: 3/85 (1.46%); Greek Natives: 13/131 (3.7%). The difference between Italian Natives and L2ers reaches a p ≤ .05 significance with the χ^2 test ($\chi^2 = 5.6602$ with Yates correction).

[23] Additional evidence for a clear difference between English native speakers and the speakers investigated here can be found comparing our results in the 2rA condition to Fukumura & van Gompel's (2011). As we have seen, overt pronouns are not particularly used in this condition by our speakers (L2ers included) compared to the 2rgn condition: this is exactly the reverse pattern of what observed by Fukumura & van Gompel for English native speakers.

5 Conclusions

In this work we have examined the distribution, in topic continuity and topic shift contexts, of the subject anaphoric devices produced by three groups of speakers (Italian Natives, Greek Natives and near-native L2ers of Italian with Greek as an L1). As we have seen in Section 2, four kinds of anaphoric devices have been identified: null pronouns (*pro*s), overt pronouns, lexical DPs and quantified expressions without lexical restriction ('other'). As shown in Section 3, we identified five different contexts in which subject anaphoric devices are employed. 'Other' devices, as we have seen, are typically used in the Tincl condition, and are very rarely or never used in the other conditions.

Null pronouns are preferred in topic continuity, but they are also present in topic shift contexts, as well as in the NTc and Tincl condition in all speakers groups.[24] Here, however, a significant between-groups difference emerges: Greek Natives use significantly more *pro*s in TS, NTc and Tincl compared to the other groups of speakers. We have interpreted this result as indicating that *pro* in Italian has a more specific function than in Greek, i.e. that of signaling topic continuity. This result supports Dimitriadi's (1996) suggestion that *pro* in Greek could have a less specific function compared to overt pronouns. L2ers, as we have seen, have acquired this property of Italian, confirming that they are able to cope with topicality in their L2.

The less specific function of the Greek null pronoun is enhanced by another characteristic of Greek that emerges from our data: a weaker correlation, with respect to Italian, between subject and topic.

In the Greek corpus, many of the topic shifts (realized through a *pro*, but also through other devices) are rather topic 'switches' (i.e. the current subject topic was the object topic of the previous sentence). As we have suggested in Section 3, Torregrossa *et al.*'s (2015) finding that the resolution of *pro* in Greek is less sensitive to the argument function of the antecedent when compared to Italian, might be due to the combination of two factors: the higher use of *pro* in topic shift and a possible weaker correlation between topic and subject in Greek compared to Italian. In this respect as well, L2ers' choices were similar to those of Italian Natives.

The less specific function of *pro* in Greek correlates with another finding: in the topic shift condition, Greek Natives use significantly less lexical DPs when compared to Italian Natives. In this respect, as well, L2ers' choices were very similar to those of Italian Natives (see Figure 4 of the Appendix) although they do not differ significantly from Greek Natives.

This finding is particularly interesting because it testifies to the fact that micro-variation among null subject languages can be observed in relation to anaphoric devices and their division of labor also beyond the Spanish-Italian language pair. In Spanish and Italian *pro* seems to have a specific function, and the Spanish overt pronoun a less specific function (but see footnote 4). However, a different picture emerges when comparing Italian and Greek. While overt pronouns appear to have a specific function in both languages (see below), a difference emerges in the use of *pro*, which has a more specific function in Italian, and a less specific one in Greek: *pro* is used much more frequently in Greek than in Italian in the conditions different from topic continuity. This correlates with a lesser use of lexical DPs in topic shift contexts in Greek.

Moving to lexical DPs, we have seen that they are used in the NT condition (where they are basically the only device employed by all groups of speakers). Lexical DPs are also used frequently in the case of topic shift (with the between-group difference outlined above) and in topic continuity. Lexical DPs, thus, appear to share some of the functions of null pronouns, in that they may be used as topic continuing devices. They also share

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[24] They are virtually absent in the NT condition, see Section 3 (Figure 5 in particular).

some of the functions of overt pronouns (and, possibly, also of *pro* in Greek) in being used as topic shifting devices.[25]

Signaling topic shift seems to be the specific function of overt pronouns, as emerges from our data: all groups resort to overt pronouns especially in the TS condition. As we have shown, however, L2ers resort to overt pronouns in topic continuity as well, and the difference with the other two groups of speakers is significant. We have also seen that overt pronouns are significantly more used by L2ers in a specific condition which relates to the number and kind of active discourse referents, i.e. when there are two referents which differ in gender and/or number. We have assumed, following Arnold & Griffin (2007) that an additional character decreases referents' activation. We have also assumed, following Sorace (2011; 2016 and the references quoted there), that processing resources in L2ers are more taxed. As a consequence, particularly in these contexts, L2ers might have difficulties in establishing which is the topic. In particular, decreased activation of the topic makes an overt pronoun the right device to pick it up: hence, L2ers' supposed over-explicitness is just outward. This proposal provides a natural explanation for the well-known asymmetry whereby overt pronouns are used by L2ers instead of null pronouns but not the reverse.

As we have seen, overt pronouns are preferred by all groups of speakers in the 2rgn condition: L2ers' choice of overt pronouns, thus, is not the choice of a default form, but is the same choice made by native speakers (though also in topic continuity for the reasons discussed above).

Furthermore, L2ers do not employ overt pronouns because they may find lexical retrieval difficult, since lexical DPs are employed at a comparable rate by all groups of speakers.

As a final consideration, we observed that in Italian overt pronouns are used in contexts where a lexical DP would be preferred in English. If this observation can be extended to other null and non-null subject languages, we may say that overt pronouns in null subject languages encode a lower degree of activation of their referents when compared to overt pronouns in non-null subject languages.

If there is such a difference, we can explain why some L2ers are (seemingly, as we have shown) over-explicit in using a higher rate of overt pronouns, while other L2ers are (seemingly) over-explicit in using a higher rate of lexical DPs, as reported in some studies. In all the studies that report an over-use of lexical DPs, a non-null subject language is at least involved, whether as target or source language, or as one of the two L1s of bilinguals.[26] Similarly, whenever over-use of overt pronouns is reported, a null subject language is involved. Assuming that cross-linguistic 'influence' is an option which L2ers and bilinguals may resort to (Di Domenico 2015), due to the possibilities made available by their multilingual competence (Caloi, Belletti & Poletto 2018), some speakers may choose overt-pronouns, while other speakers may choose lexical DPs when they need a more explicit form. So, as we have seen in the previous sections, the choice of overt pronouns is documented for the L1 English-L2 Spanish speakers studied by Lozano (2016), for the L1 Italian-L2 English speakers studied by Tsimpli *et al.* (2004) and for the L1 English-L2 Italian studied by Belletti *et al.* (2007), while the choice of lexical DPs is documented for German learners of Italian (Chini 2005), L1 Mandarin-L2 English speakers (Ryan 2015), and German-Italian bilingual adolescents (Torregrossa & Bongartz 2018). Some additional

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[25] Recall that we are analyzing subject anaphoric devices. Hence, the role of lexical DPs in introducing discourse referents is beyond the scope of this work, and indeed sentences in which discourse referents are first introduced are not included in the Reference Total, as described in Section 2.

[26] To our knowledge, the only exception to this observation consists in the Greek-Albanian children studied by Torregrossa *et al.* 2017. Since the use of pronouns appears as a late acquired competence (as in Sorace *et al.*'s 2009 study reviewed in Section 1) data from bilingual children may not represent a counterevidence to our claim.

factors might of course influence speakers' choice, such as level of proficiency, use, and dominance in general (see Ryan 2015 and Torregrossa & Bongartz 2018 for some discussion and some proposals).

When two non-null subject languages are involved, not surprisingly, lexical DPs are over-used by L2ers (Leclercq & Lenart 2013) while when two null subject languages are involved, overt pronouns are over-used by L2ers, as we have seen in this study. We hope that future research will lead to a more careful examination of this rather incomplete proposal.

Another issue which deserves a careful examination is whether the core of our proposal (i.e. that the higher use of overt pronouns in topic continuity by our L2ers is a case of outward over-explicitness) can explain all the cases in which bilinguals over-use overt pronouns in a null subject language, as reported in the relevant literature. In particular, L1 speakers of a non-null subject language might use overt pronouns in topic continuity in their null subject L2 for a different reason, i.e. because in their L1 overt pronouns are also used in topic continuity: this might in turn entail representational differences concerning overt pronouns (Tsimpli *et al.* 2004). Of course, we do not exclude this possibility, but we predict that if this were the case we should observe a partially different distribution of overt pronouns from the one depicted here, with overt pronouns more attested in the 1r condition (and possibly more lexical DPs in all conditions with two active referents). We leave this interesting issue to future research.

List of abbreviations
1 = first person, 3 = third person, ACC = accusative, F = feminine, GEN = genitive, ITER = iterative, LOC = locative, M = masculine, N = neuter, NOM = nominative, P = past, PART = partitive, PL = plural, POSS = possessive, REFL = reflexive, SG = singular, VOC = vocative

Additional File
The additional file for this article can be found as follows:

- **Appendix.** Additional Figures for 'Null and overt subject pronouns in topic continuity and topic shift'. DOI: https://doi.org/10.5334/gjgl.1009.s1

Competing Interests
The authors have no competing interests to declare.

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