

Tracking reference with null subjects*

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Null-subject languages are said to track reference and discourse-pragmatic information exploiting the array of specialized forms provided by their grammar. This argument is normally used as the baseline against which language acquisition and contact varieties (L1, 2L1, L2, L1-attrition) are evaluated. However, recent studies on Italian question the empirical validity of this pattern and call for an analysis of these issues from an empirical perspective. This paper presents the results of a study on mechanisms for introduction and tracking of reference in narratives (Frog Stories) in Italian L1/Dutch L2, Dutch L1/Italian L2, Italian/Dutch bilinguals and age-matched monolingual Italian controls. All utterances were scrutinized for form, antecedent, and discourse-pragmatic function. The results so far show an overextended use of null subjects, also in contexts of topic-shift, where overt subjects would be expected. These constructions are not ambiguous, as speakers make use of alternative devices for anaphora interpretation that exploit contextual cues.

Keywords: null subjects, discourse interface, tracking reference, Italian/Dutch, mental representations.

1. Introduction

Languages have specific devices for introducing new referents into the discourse and for keeping track of them while conversation develops*. In the case of nominal subjects, a pro drop language like Italian is said to have a number of forms, each associated with a specific discourse function.

- (1) C'era una volta un bambino
'There once was a boy.'
- (2) Questo bambino aveva un cane e una rana
'This boy had a dog and a frog.'

- (3) Una mattina NS si svegliò
 ‘One morning (he) woke up.’
- (4) E NS vide che la rana era sparita
 ‘And (he) saw that the frog had disappeared.’

In (1) the new referent *un bambino*, ‘a boy’, is introduced into the conversation by a presentational sentence and an indefinite predicate. In (2) this referent becomes the topic of the clause and takes the form of a definite description. In (3) the topic of the new clause has not changed: The subject here is realized as a null subject.¹ Finally, (4) is a conjoined sentence, the topic does not change, and hence a null subject is used. English, however, shows a different pattern. In (3) the subject must be overtly realized, whereas in (4) it can be omitted. Normative grammars like, for instance, the *Enciclopedia dell’italiano Treccani* (Palermo 2011), normally state that in Italian the subject is omitted unless it is emphasized or contrasted. The pronoun cannot be omitted in a few cases where the verbal inflection does not distinguish the first from the second and the third singular person form. In these cases the use of an overt subject disambiguates the sentence.

Discourse anaphora have come to the foreground since a number of studies involving Italian and English have shown that the discourse pragmatic rules governing the form and the distribution of subjects in Italian seem to be particularly hard to acquire for L2 speakers with English L1 (Sorace & Filiaci 2006; Belletti, Bennati & Sorace 2007; Sorace, Serratrice, Filiaci & Baldo 2009)²; these rules also seem to be vulnerable to attrition in situations of language contact (Tsimplici, Sorace, Heycock & Filiaci 2004). The pattern emerging from these studies shows that these varieties of Italian are characterized by an overextended use of overt forms with respect to the Italian L1 control group. In other words, the experimental groups accept more overt forms than the control group in contexts where the topic does not change, thus providing a redundant interpretation. However, the repetition of one of these experimental tasks, the PVT, with Italian L1 Dutch L2 gives different results. First, overextension of overt subjects to contexts of topic maintenance occurs in both the experimental and the control group at nearly the same rate, respectively 24% and 28%.³ In addition, both groups use null subjects in contexts of topic shift: The rate is around 30% (Pinto, in press). Hence, the important observations in this comprehension study are that 1) there are hardly any differences between the performance of the two groups, and 2) that since the control group does not perform according to the norm, these results seriously question the validity of the baseline so far assumed for Italian.

The study presented in this paper concentrates on one part of this problem, the null subjects, and seeks to answer the following questions: 1) How are null subjects distributed and interpreted in Italian L1? 2) How can theory of grammar

account for their anaphoric properties? And 3) which of these properties are vulnerable in acquisition and contact varieties?

The paper is organized as follows: Section 2 introduces the theoretical framework in which this research is placed; particularly the assumed baseline for the distribution and interpretation of subject pronouns in Italian L1. Section 3 discusses anaphora resolution in English/Italian bilingual varieties. Section 4 comments upon a previous comprehension study and discusses some drawbacks of the method used. Section 5 presents the methodology adopted in this study for the collection of the data. The results and the discussion of the narratives are presented in Section 6. The paper closes with some conclusions and suggests directions for future research.

2. Nominal subjects in Italian

In Italian a nominal subject can be realized as a proper name, a full DP, and indefinite, an overt pronoun, or a null subject. The availability of different pronominal forms in a language — in the case at stake, the overt subject and the null pronoun — is determined by a parametric choice at the level of core grammar. However, the decision of using one form over the other is related to a choice at the level of discourse pragmatics.⁴

For Italian the generalization provided by normative grammars (Palermo 2011) says that subject pronouns are normally omitted, unless the subject conveys a contrastive interpretation, or it carries emphasis, or it is ambiguous. With regard to the distribution of subject pronouns, Chomsky (1981) argued that whenever possible, overt pronouns must be avoided (Avoid Pronoun Principle). The nature of this principle, however, is not clear. With regard to the referential properties of overt and null pronouns, Samek-Lodovici (1995) and Grimshaw & Samek-Lodovici (1998) formalized these observations arguing that null subjects in Italian, as opposed to overt pronouns, must refer back to discourse topics.

In a more recent study on processing strategies in anaphora resolution in Italian, Carminati (2002, 2005) found that Italian L1 speakers have a bias towards interpreting a null subject as referring to the element in Spec IP, whereas an overt subject is normally associated with an antecedent in a lower position. Carminati called this processing preference PAS (Preference of Antecedent Selection) and provided empirical evidence for the claim that when the context forces a different interpretation, the processing load increases.

3. Anaphora resolution in bilingual varieties

The syntactic and interpretive rules involved in anaphora resolution in Italian have taken a central position in the current discussion on how young bilinguals and adult second language learners acquire rules that belong to different modules of grammar. Since Hulk and Müller's (2000) and Müller & Hulk's (2001) seminal work on language influence in bilingual contexts, and Sorace and colleagues' research on L2 at the interfaces, many studies have explored the acquisition of anaphora in Italian L2 with English L1, and in English/Italian young bilinguals (Serratrice, Sorace & Paoli 2004; Sorace & Filiaci 2006; Belletti et al. 2007; Serratrice 2007; Sorace et al. 2009). What all these studies have in common is the observation that the experimental group produces more overt subjects than the control group. In a similar vein, Tsimpli et al.'s (2004) study on L1 attrition reports that L1 Italians with near-native English L2 show the same overextension of overt subjects in topic maintenance contexts where a null subject would be expected.

This overproduction of redundant constructions indicates that for young bilinguals and second language learners the discourse pragmatics rules governing the mapping of discourse interpretation into syntactic forms are problematic. Initially, these studies capitalized on a mentalist view of language acquisition and sought to spell out the formal conditions under which interference is expected to occur (Tsimpli et al. 2004; Sorace & Filiaci 2006; Sorace et al. 2009). More recently, however, the representational approach tends to be discarded in favor of an analysis in terms of processing. From this perspective, the difficulties that L2 learners encounter at the interfaces would derive from the complexity of the task, since it requires integration of information belonging to different modules of grammar (Sorace 2011, 2012). Although processing effects may play a relevant role in a bilingual context, they have not been examined in this investigation. The aim of this study is to pin down which aspects of the rules that determine the distribution and interpretation of subjects may be vulnerable to interference. An analysis couched into a representational framework may shed light on these aspects, and it may facilitate the formulation of more detailed predictions with respect to the interaction of two languages at different stages of acquisition.

4. Comprehension of null subjects

The processing approach makes an important prediction: If it is correct to assume that interference is not the result of an evaluation of derivational processes but just an inherent feature of contact varieties, fully independent of the typological properties of the languages involved, then differences between the experimental group

and the target group should be expected in all language combinations. This, however, does not seem to be the case. In a comprehension task (a Picture Verification Task) on overt and null subjects administered to 19 adults L1 Italian and to 12 adults L1 Italian L2 Dutch redundancy was found in both groups (Pinto, in press). In addition, both groups used an average of 30% null subjects in new topic contexts. The task was modeled on Tsimpli et al.'s (2004) Picture Verification Task and tested the interpretation of overt subject pronouns and null subjects in a context of inter-sentential anaphora and cataphora. The 20 test sentences consisted of a main clause, containing a 3rd person singular subject, a transitive verb, and a 3rd person singular object, matching the subject in gender and number, and in a temporal clause consisting of either a NS or an explicit 3rd person singular pronoun, an (in) transitive verb, and, possibly, an object. Eight fillers completed the task. As illustrated below, these constructions are ambiguous, as the antecedent of the pronoun in the embedded clause can either refer to the subject of the main clause or to the object, or to an exophoric antecedent (indicated with *l*). Participants were asked to choose out of three pictures the one (or more than one) that best represented the sentence. Multiple choices were grouped into a separate category, 'undecided', and as such they were treated in the statistical analysis and represented in the graphs.

- (5) Il bambino_i accarezza il cane_k mentre lui_{i/k/l}/Ø_{i/k/l} mangia.
 'The boy_i strokes the dog_k while he_{i/k/l} / Ø_{i/k/l} eats'
- (6) Mentre lui_{i/k/l}/Ø_{i/k/l} mangia, il bambino_i accarezza il cane_k.
 'While he_{i/k/l}/Ø_{i/k/l} eats, the boy_i caresses the dog_k'

Italians L1 with Dutch L2 accept redundant subject pronouns, thus confirming the findings of previous studies involving Italian and English. What is new, however, is that the control group performs almost in the same way as the experimental group and that both accept null subjects in contexts of topic shift, hence in constructions where the null subject does not take the subject of the main clause as antecedent. The first issue is predicted by a representational analysis: Both languages have specialized forms for topic shift and for topic maintenance. This means that the mental representations of the two feature systems are equally complex and thus do not trigger interference (for details see Pinto, in press). The second issue, the overproduction of overt subjects by native speakers, can be accounted for as proposed by Frascarelli (2007), namely that Italian has two overt subject forms, a strong pronoun and a weak pronoun, that differ only in their prosodic properties.⁵ The strong pronoun indicates topic shift, the weak pronoun is used in contexts of topic maintenance, as an idiosyncratic alternative to null subjects. On the basis of empirical evidence, Frascarelli shows that Italian L1 speakers do use overt pronouns in contexts of topic maintenance. However, the third issue, the overextension of

null subjects to topic shift contexts is unexpected and calls for an explanation. The first question that arises is whether these null subjects are ambiguous, and in case they are not, how is the correct antecedent retrieved?

5. Production of null subjects

The L1 attrition study reported above did not show any significant difference between the experimental and the control group in the use of subject pronouns in Italian. However, it did reveal an unexpected overproduction of null subjects in topic shift contexts, a pattern that not only emerged from the data of the experimental group, but that was found in the data of the control group as well. This was the reason to set up a new study, one that would focus on the use and interpretation of null subjects, and that would take into consideration different acquisition varieties of Italian.

5.1 Participants

In this second study the experimental group includes populations speaking different varieties of Italian, in order to be able to determine whether sociolinguistic factors like L1 and L2 language proficiency, length of permanence in the L1 and the L2 country, education, occupation, use of the L1 and the L2, and language dominance may affect the linguistic production. Hence, all participants of the experimental group were invited to fill in a sociolinguistic questionnaire. As a measure for the L2 proficiency, we had adults take a Cloze-test, the L1 Italian L2 Dutch group a C-test in Dutch, the L1 Dutch L2 Italian a C-test in Italian. For the children, we calculated the MLUw of the Frog Story narratives. In what follows, a more detailed description of the different groups is presented.

Adult Italian L1-Dutch L2. This group consists of 12 participants who, at the time of testing, had been living in the Netherlands for at least 8 years (Mean 33; S.D.: 16,11; Range: 8–54). With regard to the C-test, 5 had a score between 57% and 73% (we classified this as intermediate proficiency), 5 between 86% and 97% (advanced proficiency). Two did not take the test. Mean: 77.20; S.D.: 13.84; Range: 57%–97%. Four of them had a basic level of education, 3 an intermediate level, and 5 had a university degree. With regard to their occupation, 6 had a technical job, 2 worked in the business sector, and 4 in higher education.

Child Italian/Dutch bilinguals. 10 children, age between 3;7.21 and 10;1.24, MLUw: 5.69, Range 5.1–6.7, living in Italy from birth, Italian dominant, with one Dutch and one Italian L1 parent.

Adult Dutch L1-Italian L2 (in progress). Since most of the participants are university students in Italian Studies, their proficiency in Italian has first been determined on the basis of the courses they had completed at the moment of recording and, according to the Common European Framework of Reference, classified as B2/C1. However, since this group is intended to match the Italian control group with respect to the age range, all participants are now asked to fill in a cloze-test in Italian, in order to guarantee an objective measure of their proficiency in the L2.

Adult Italian L1. Control group for the Italian language. 19 participants, living in Italy, with no knowledge of Dutch.

The table below gives a general impression of the empirical data used.

Table 1. Description of the empirical data

Language variety	N of participants	Age	Language proficiency	N of utterances examined
Italian L1 Dutch L2	12	18–70	L1: Mean years of residence in the NL 33; S.D.: 16,11; Range: 8–54. L2: advanced/near native	154
Italian L1 Dutch L1	10	3;7–10;1	Early bilinguals, born and living in Italy	290
Dutch L1 Italian L2	<i>in progress</i>	18–70	B2/C1 (according to the CEFR)	120
Italian L1	19	18–70	Adult resident in Italy, hardly or no proficiency in other languages	94

5.2 Testing material

The test sentences in the PVT of the previous study were not contextualized. The matching pictures represented three interpretations that, when embedded in the right context, were all perfectly fine. Therefore a PVT may not be the right instrument to test how speakers track referents in discourse. In order to tap this kind of competence, the participants of the second study were offered a production task, narratives elicited by a Frog Story book (Berman & Slobin 1987, 1994). Since the story consists of 28 pictures, the story-teller may forget the experimental setting and just use a natural way of telling. In such a task the speaker is free to choose the constructions (s)he wants and may circumvent ambiguities in reference by using different cognitive/linguistic tools that make the interpretation of pronouns more straightforward. The presence of a clear context makes the detection of ambiguities easier and it helps discriminate those mechanisms that are necessary for reference, from those that provide information about the function of these elements in the discourse.

The narrative task was expected to provide an answer to the following questions:

- How do speakers introduce new referents and keep track of them in discourse?
- Which forms are used for which discourse function?

To this extent, only third person subject pronouns were considered, and all constructions received a qualitative analysis. For some items, frequencies are provided, yet statistical calculations have been postponed to a later stage, when more empirical data will be available.

In order to reduce to a minimum the use of gestures and deictic forms, participants were asked to pretend to tell the Frog Story to an imaginary child that would hear the recordings afterwards. The narratives were video-taped with *Flip* and transcribed following the CLAN conventions. All unclear utterances and all comments of the experimenter were obviously not included in the analysis. Similarly, direct speech, impersonal constructions, and idioms were not considered. For each new referent introduced into the conversation its form was reported and also the type of construction it was embedded in. So a main character in Italian is often introduced by means of a presentational sentence. However, a less important character can be introduced as an indefinite in the complement position of a lexical verb. Each utterance containing a finite verb was considered as a unit. All units were scrutinized for their formal properties, i.e. DPs, overt pronouns, null subjects and so on, and for their anaphoric properties, i.e. the antecedent (the boy, the dog, the frog, the deer, etc.) the pronouns refers to. In addition, the discourse-pragmatic function of each subject was examined and assigned to one of the following three categories: new topic, topic maintenance, and re-introduction of an old topic or of part of it. Importantly, the first occurrence of a referent into the discourse was not sufficient to mark it as a new topic. True new topics were considered those elements that for the first time showed up in subject position. A crucial distinction was made between new topics (the first occurrence) versus topic re-introduction. The latter is the case of a referent that was already topic, then moved to the background, and finally comes back again as a topic or as a part of it. Topic maintenance is the case of subsequent units in which the topic does not change.

6. Results of the narrative task

6.1 The control group

The first question concerns the distribution and interpretation of null subjects in the control group. New topics are realized by Italian L1 as overt subjects, mostly a

DP or a name, yet hardly any pronoun. In topic maintenance contexts, the results are very consistent, only null subjects are used. Finally, in contexts where the topic is re-introduced, various forms can be found, yet null subjects are a frequent option (20%). In what follows these data are discussed in more detail.

- (7) C'era una volta un bambino.
'Once upon a time there was a boy'
- (8) La mattina il bambino si sveglia.
'In the morning the boy wakes up'

In (7) the indefinite *un bambino* is introduced in the discourse by means of a presentational sentence. In (8) this referential expression is presented as the topic of the clause. It has now the form of a full DP. In addition to full DPs, other frequently used forms to indicate a new topic are definite descriptions, proper names and constructions with a relative pronoun (there's a boy who ...).

In (9) and (10) topic maintenance is illustrated:

- (9) Il bambino e il cane non vedono più la rana
'The boy and the dog don't see the frog any longer.'
- (10) NS decidono di uscire a cercarla.
'They decide to go out and look for her'

The topic and sentential subject in (9) is maintained in (10), so here the subject can be replaced by a null subject. The default interpretation selects as antecedent the referent in the subject position of the previous clause, as predicted by Carminati's PAS. In (9) this antecedent is formed by the boy and the dog together. The data from the native speakers show a solid coherence in the choice of the correct pronominal form for topic maintenance: Almost only null subjects are found in these constructions.

The third discourse function examined is that of topic re-introduction. Different subject forms have been found in this case, among them also null subjects. A few examples are reported below:

- (11) Il bambino e il cane cercano la rana.
'The boy and the dog are looking for the frog.'
- (12) NS è sparita stamattina presto.
'(She) disappeared early this morning.'
- (13) NS cominciano a chiamarla.
'(They) start calling her.'

In (11) the topic of the sentence is represented by the boy and the dog. In (12) the topic changes. Now the sentence is about the frog. This character had already been introduced into the conversation but, in the meanwhile, he had shifted to the background. Note, however, that despite the topic shift, no overt subject form is used in (12). On the other hand, this sentence is not ambiguous. The only possible antecedent of the null subject is the frog. This is similarly the case in (13). Here the topic shifts back again to an old topic, the boy and the dog. Despite this shift, the subject can be omitted without causing ambiguity. Hence both in (12) and (13) an old topic is re-introduced by means of a null subject. The latter is not ambiguous. In both sentences the correct antecedent of the null pronoun is identified through cues in the context. In the examples above, the semantics of the verbs provides the relevant cues. Given the narrative context, it is clear that it is the frog that disappeared, and that the boy and the dog are calling him.

6.2 The experimental groups

The recordings of the experimental groups are still in progress. So far 658 utterances have been analyzed. The preliminary results are as follows:

- Italian L1/Dutch L2 pattern like the Italian L1 control group;
- Italian/Dutch L1 (older bilinguals) pattern like the Italian L1 control group, too
- Dutch L1/Italian L2: The advanced speakers pattern like the control group, whereas the intermediate speakers produce more overt subjects in context of topic maintenance

The percentages of null subjects used for topic re-introduction is similar in all these groups and fluctuates between 19% and 30%. Topic shift in combination with null subjects appears to occur in environments where the context provides cues for the identification and interpretation of null subjects. Below, two such cases are illustrated. Under each fragment the alternation of different topics is marked with indexes.

(14) Topic-Shift with null subjects and contextual information:

C'era una volta un bambino di nome Peppe, che amava gli animali e aveva un cagnolino e una piccola rana che teneva dentro un barattolo per evitare che scappasse.

“Once upon a time there was a boy called Peppe, who loved animals and Ø had a little dog and a small frog that Ø kept in a jar to prevent that Ø would run away.”

[a boy ...]_i [who_i loved ...] [*pro*_i had a frog, ...] [*pro*_i kept ...] [*pro*_i run away]

(15) Topic-Shift with null subjects and grammatical cues

A un certo punto il bambino col cane si svegliano e cercano il ranocchio.

Cos'è successo? Il ranocchio non c'è più dentro il vaso, è scappato. E quindi si mettono alla ricerca del ranocchio.

“At a certain point the boy with the dog wake up and Ø look for the frog.

What happened? The frog is no longer in the jar, Ø is gone. So Ø start looking for him.”

[[the boy with the dog]_i wake up] [*pro*_i look for [the frog]_j] [[the frog]_j is ...]
 [*pro*_j is gone] [*pro*_i start looking ...]

(14) and (15) show that Italian has more resources for signaling a change in the topic. In (14) the context supplies sufficient semantic information for the identification of the referent of the null subject and for its discourse function. Similarly in (15), the presence of grammatical cues — agreement morphology on the verb — makes the use of an overt pronoun redundant. Orsolini, Rossi & Pontecorvo (1996), in a study of Italian children's narratives, observe similar facts. Hence, production data show that in the case of spontaneous speech the PAS plays a minor role; null subjects are frequently used and ambiguity is avoided by exploiting cues from the context.

7. Discussion

The data analyzed in this study show that in Italian L1 null subjects are the default form in contexts of topic maintenance and that they can be used in contexts of topic re-introduction. However, they never show up in contexts of a new topic. In addition, with the exception of Dutch L1 Italian L2 intermediate speakers, acquisition and language contact varieties reveal the same distribution and interpretation of null subjects as in Italian L1.

This phenomenon involving an overproduction of null subjects has already been observed in other studies (Montrul 2004; Montrul & Rodríguez Louro 2006; Rothman 2007, 2009; among others). Providing comments on Montrul and colleagues' work, Licerias et al. (2010) argue that lack of ambiguity is the crucial condition for distinguishing pragmatically odd null subjects from 'illicit' null subjects. Hence, the occurrence of null subjects in topic shift context (topic re-introduction) is not at chance, and it is certainly not a sign of low proficiency in Italian. As suggested by Licerias's et al., non-ambiguous null subjects may be the only pragmatically accessible option in contexts where an overt subject pronoun would create ambiguity. L1 speakers exploit contextual cues, as the ones described above, in order to recover the antecedent of the null subject. That these mechanisms indeed

apply is supported by Carminati's study on processing strategies for anaphora resolution in Italian. Accordingly, violation of the PAS results in a more costly operation, but it does not convey ambiguity. Being able to apply these costly operations may be a prerogative of L1 speakers or of L2 speakers with a higher competence level.

The data examined in this study raise two new questions. The first one concerns the mechanisms involved in the evaluation of the most suitable antecedent for each pronominal form. The second question concerns whether and how these mechanisms are acquired by L2 speakers. With regard to the first question, the traditional anaphora resolution procedure of null-subject languages — grammatical recoverability by means of rich agreement on the finite verb — does not seem to be the only strategy adopted by native speakers, who seem to take into consideration contextual information as well. The semantics of the constituent involved and the logic of the story appear to be some of the contextual cues that make possible the identification of the antecedent. This is an interesting phenomenon, as relying on contextual information for the recovery of null arguments is the strategy adopted for the identification of the antecedent in topic-drop languages, and Dutch is such a language. What seems to emerge from these data is a continuum in antecedent accessibility, as suggested by Ariel (1990). From this perspective, grammatical recoverability of the antecedent (rich verbal agreement) could gradually move over into pragmatic recoverability (contextual cues), when grammatical features are not available. Following Ackema & Neeleman (2007), it may be argued that when grammatical agreement is less rich, the antecedent of the null pronoun must be contextually more salient. Speculating further on this issue, it may be suggested that this continuum is available in null-subject as well as non-null-subject languages. This appears to be confirmed by the data examined in this study, showing that both a grammatical and a pragmatic recoverability strategy are applied in Italian. The question remains, however, what determines the choice between the two strategies.

With regard to the second question, it may be plausible to assume that L2 speakers' choice for the most suitable anaphora resolution strategy is influenced by the options available in the L1. Also in this case, it must first be sorted out which factors determine this choice. However, the fact that Dutch is a topic-drop language, hence a language using null arguments, whereas English has neither topic-drop nor null subjects, may account for the differences that were found between the English/Italian versus the Dutch/Italian studies referred to above.

8. Conclusion

The production study reported in this paper shows that null subjects can occur in topic-shift contexts (in terms of topic re-introduction). Alternative interpretive strategies that exploit contextual cues make the recovery of the correct antecedent possible, without causing ambiguity. These strategies are familiar both to Italian L1 speakers as to speakers of a contact or acquisition variety; thus, as such they do not indicate lack of grammar competence. We speculated that this may indicate the existence of an accessibility markers' continuum, independent of the language typology. However, the following questions remain: What determines the choice along this continuum, and what is the effect of the L1 on the acquisition of these rules for the L2?

Notes

* Thanks to the TIN-dag audience for the interesting questions, and thanks to two anonymous reviewers for their critical comments and insightful suggestions that helped very much to improve the quality of this paper. All errors are exclusively mine.

1. Note, however, that (3) would be perfectly fine with an overt DP like in (i), whereas this would sound odd in (4), repeated here in (ii):

- (i) Una mattina il bambino si svegliò
'One morning the child woke up.'
- (ii) E il bambino/lui vide che la rana era sparita
'And the child/he saw that the frog had disappeared.'

2. Similar data have been found for German-Italian simultaneous bilinguals (Schmitz 2007; Patuto 2008; Schmitz, Patuto & Müller 2012).

3. The frequencies obtained for each choice of antecedent and for each of the four conditions were transformed into percentages (the two groups did not have the same number of participants) and submitted to a χ^2 test. The p obtained in each of the four statistics was not significant, as expected.

4. It is beyond the scope of this paper to address the issue of how morphosyntax interacts with discourse pragmatics. As suggested by an anonymous reviewer, López (2010) may provide an interesting framework for a detailed analysis of how this interplay takes place in Italian.

5. A strong pronoun has a L*+H prosodic contour and it is base-generated in the C-domain. When a strong pronoun is used, it signals the introduction of a new topic into the discourse. A weak pronoun is characterized by a L* contour, and it corresponds in both syntactic position and its referential distributive properties with *pro*. Both *pro* and the weak overt pronoun are argued to be in Spec, AgrS and signal a familiar topic.

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