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Topics and the interpretation of referential null subjects*

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ABSTRACT

This paper discusses the interaction of syntactic structure, information structure and discourse pragmatic inferences in the interpretation of null subjects in Italian and Spanish. After a brief presentation of some of the generally assumed core data concerning null subjects, which suggest that a null subject refers to a topical antecedent, one recent syntactic theory of null subjects is described in detail. It is shown that the theory has internal as well as conceptual problems. The latter are partly caused by a too restricted data set for null subjects. Therefore, a more extensive data set is provided, which shows that null subjects not only refer to topical antecedents, but to antecedents that raise the coherence of the discourse. Thus, the interpretation of null subjects is understood as the interplay of grammatical conditions and general pragmatic inferences and coherence principles. Crucially, syntactic conditions do not include any constraint on the topical status of antecedents.

1. Introduction

Most of the advances in contemporary research on null arguments, and in particular null subjects, concern the problem of licensing, i.e. what the conditions are for a language to display null arguments (see the discussion in Biberauer et al. (eds.) 2010, Duguine 2013, 2014, Camacho 2013, Sheehan 2016, a.o.). Since not all languages display null subjects, the problem of licensing must be seen as a strictly grammatical issue.¹ A related problem concerns the interpretation of null subjects, i.e. how they are assigned a referential value in languages that do feature them. It is reasonable to assume that the problem of interpretation involves the interaction of the grammatical system and general pragmatic principles, since determining the reference of null subjects is a context dependent task. Thus, how hearers choose the optimal discourse antecedent for a null subject is not a strictly grammatical issue, but rather a matter of interplay between grammar and pragmatics; moreover, this is also true for the interpretation of overt pronouns in discourse (Arnold 2010, Gundel, Hedberg and Zacharski 1993, 2012, Gundel 2010, Kehler 2002, a.o.). According to this view, the central research question in this area should be how the grammar contributes to interpretation, in particular,

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¹ Not necessarily syntactic. See Duguine (2013).

how it constrains possible interpretations of null arguments, given that they apparently encode no instructions for reference assignment.

In this paper my aim is to address the problem of interpretation of null subjects (NSs), by investigating how the division of labour between grammar and pragmatics is established. I will not deal with the problem of licensing – though the connection between formal licensing and interpretation is surely worth examining, and is still a major issue for many researchers (see section 4.1 for some discussion). Instead, I will focus on the role of a well-known factor that contributes to determining the interpretation of NSs: topicality of the antecedent. The starting point will be the preference of NSs for topical antecedents that has been discussed in the literature from different perspectives (see Frascarelli 2007, 2018, Camacho 2013 for a formal approach, and di Eugenio 1990, Filiaci 2011, Filiaci, Sorace, Carreiras 2013, Taboada 2008, Taboada and Wiesemann 2010 for a processing approach). If we assume that the grammar of null subject languages (NSLs) encodes some kind of restrictive information-structural condition on the antecedents of NSs, we obtain a plausible way to model the contribution of the grammatical system to interpretation, while still keeping a complementary role for pragmatic inference. In a nutshell, the idea could be that the requirement of a topical antecedent guarantees that a discourse antecedent for the NS has to be identified; in order to satisfy this requirement, general pragmatic principles, like the communicative principle of relevance, should determine the choice of an adequate antecedent and thus specify the optimal reading. This seems to be a simple, reasonable view of the division of labour between grammar and pragmatics: for each construction, the grammatical system sets the constraints on interpretation, and pragmatic inference supplies the contextual assumptions needed to reach a relevant interpretation. However, there are reasons to believe that, for NSs, the contribution of grammar is not exactly the one just sketched in this picture. I will try to show that this contribution is actually reduced to a minimum², and the role of pragmatics, on the other hand, is decisive. More precisely, I intend to show that syntactic accounts like the one put forward in Frascarelli (2007, 2018) and Frascarelli and Jiménez-Fernández (2019), although quite successful and seldom challenged in the tradition of formal linguistics, are ill-oriented, because they are based on an inadequate view of the interaction between grammar and pragmatics. To make clear how the basic *grammar – pragmatics* distinction is conceived in this paper I will say that I am simply assuming that what is conventionally encoded in the features of lexical items, in rules and in constraints belongs to the grammar, and what is inferred by speakers in the interpretive process belongs to pragmatics (see Ariel 2008).

Though the critical review of Frascarelli's proposal is the main goal of this paper, the paper is also meant to address a whole trend of research in current grammatical theory that is based on the general assumption that every aspect of the interpretation of an utterance is represented in its syntactic structure, which, on the one hand, leads to positing quite complex structures, and on the other hand leads to accepting a very strict isomorphism between the syntactic and the interpretive component. Frascarelli's approach is a paradigmatic example of this line of thought.

A few brief remarks will be enough to set the limits of this investigation explicitly. First of all, I will discuss only so-called *referential null subjects*, thus excluding the case of expletive and arbitrary null elements. Second, I will only analyse data from consistent null subject

² As is well known, in languages like Italian and Spanish the central condition imposed by the grammar on the identification of antecedents is established by subject agreement, i.e. by person and number features. My claim is that the grammar does not encode any further condition on antecedents, like definiteness or topicality. One might think that the mere fact that the phenomenon is limited to subjects reveals another syntactic condition: this is true, but it is related to the licensing problem, not to the interpretation problem.

languages (NSLs) like Spanish and Italian; this excludes other kinds of NSLs from consideration, i.e. partial NSLs like Finnish and Brazilian Portuguese (Holmberg, Nayudu, Sheehan 2009, Frascarelli 2018, Frascarelli and Jiménez-Fernández 2019) and discourse or radical NSLs like Chinese. Third, I only consider third person subjects. In a sense, I concentrate on the familiar data that constitute the core of the literature on NSs.

The paper is organized as follows. Section 2 reviews some ideas in the literature on the role of topicality in the interpretation of NSs; these assumptions should provide the context for the discussion in the following sections. Section 3 presents a critical view of the proposal in Frascarelli (2007, 2018) and some related work; the problem with this account is that (a) there is no reason for including a condition on topics in the grammar of NSs, and (b) the often signalled preference for topical antecedents, when it is in force, is simply a pragmatic effect. Section 4 comments on some theoretical consequences and some pending questions, and aims at placing the whole discussion inside a wider context. Section 5 presents some conclusions.

2. The preference for topical antecedents

In the recent literature on NSs it is usually assumed, at least for consistent NSLs like Spanish and Italian, that referent identification in referential NSs is topic-oriented, i.e. it depends on a matching relation between the subject and a preceding topic³ (see Calabrese 1986, Cordin 1988, Grimshaw and Samek-Lodovici 1998, Frascarelli 2007, 2018, Sigurðsson 2011, Camacho 2013 a.o. from a formal perspective; di Eugenio 1997, Carminati 2002, Alonso-Ovalle et al. 2002, Gelormini-Lezama and Almor 2011, Filiaci 2011, Filiaci, Sorace, Carreiras 2013, Taboada and Wieseemann 2010, Godoy, Weissheimer, Araújo Mafra 2018 from a processing perspective). Here *topic* must be understood as what the sentence is about (Reinhart 1981). A preference for topic antecedents is in fact noticeable in well-known contrasts in Italian like the one in (1)–(2), from Samek-Lodovici (1996: 31); the NS in the second clause is represented as *e*, for ‘empty’, to avoid any commitment with respect to the nature of the gap (but see section 4.1 for some remarks on this issue).

(1)	Questa	mattina,	la	mostra	è	stata	visitata	da	Gianni _i
	this	morning	the	exhibition	be.PRS.3SG	been	visit.PPT	by	Gianni
	‘This morning, the exhibition was visited by John. Later on, he visited the university.’								

	Più	tardi,	<i>e</i> * _i	ha	visitato	l’	università.	
	more	late		have.PRS.3SG	visit.PPT	the	University	

(2)	Questa	mattina,	Gianni _i	Ha	visitato	la	mostra.	Più	tardi,
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³ The literature on pronominal anaphora in discourse often mentions a preference for subject antecedents, instead of a preference for topic antecedents. I assume that the tendency to choose subjects as antecedents of pronouns is mostly a consequence of the prominence of subjects as sentential topics, so that ultimately it is the notion of topic that is relevant: the right generalization should not concern grammatical functions, since there is a natural motivation for topics to be chosen as antecedents, but no clear motivation for the privileged status of subjects.

	This	morning	Gianni	have.PRS.3SG	visit.PPT	the	exhibition	more	late
	'This morning, John visited the exhibition. Later, he visited the university.'								

	e _i	ha	visitato	l'	università.				
		have.PRS.3SG	visit.PPT	the	University				

In (1), the DP *Gianni* is inside a *by*-phrase and, according to Samek-Lodovici, can hardly be taken as the antecedent of the NS in the second clause,⁴ whereas the same DP provides an adequate antecedent for the NS in (2), where it appears as the subject of the first clause. As preverbal subjects are naturally interpreted as topics, and *by*-phrases are not, it is reasonable to conclude that the availability of a topic antecedent is a crucial condition for the licensing of NSs in languages like Italian (see Rizzi 2018: 515 for similar data). This fits in quite well with the well-established correlation between zero forms and discourse-given information (Givón 2017). Samek-Lodovici (1996: 29) puts forward the generalization in (3) and shows that it holds for data from Italian, Greek, Hebrew and Chinese.

(3) Null subjects must be licensed by topic antecedents.

A related fact is the asymmetry between null and overt subjects that can be observed in (4)-(5). In both Italian examples there is coordination between two clauses; the first one includes two potential antecedents, and the second one includes an anaphoric item, either a NS, as in (4), or an overt pronoun, as in (5).

(4)	Maria _i	ha	salutato	Paola _j ,	E	poi	e _i	l _j '	ha
	Maria	have.PRS.3SG	greet.PPT	Paola	And	then		her	have.PRS.3SG
	'Mary greeted Paula and then hugged her.'								

	abbracciata.
	hug.PPT

(5)	Maria _i	ha	salutato	Paola _j ,	e	poi	lei _j	l _i '	ha
	Maria	have.PRS.3SG	greet.PPT	Paola	and	then	she	her	have.PRS.3SG
	'Mary greeted Paula and then she hugged her.'								

	abbracciata.
	hug.PPT

The examples show that whereas NSs tend to choose topics as antecedents, overt pronouns tend to prefer non-topic antecedents: in (4) the NS, in its strongly preferred reading, refers to Maria –the preverbal subject, which is also the unmarked topic–, and in (5) the pronoun *lei* is preferably understood as referring to Paola. The diverging behaviour of NSs and overt subject pronouns is related to the competition, and the resulting division of labour, between the two forms in NSLs. As null forms are more economical than overt forms and carry less grammatical

⁴ In (1) the intended coreferential reading is marked as ungrammatical, with an asterisk. Here, as in the rest of this section, I am just following the usual *modus operandi* in the syntactic literature, in particular in Samek-Lodovici (1996). The discussion in section 4 will make clear that such reading is simply infelicitous or anomalous.

features, it is expected that they will be only helpful in pointing towards the intended referent when such referent is highly accessible, i.e. when it is maximally salient, and thus easy to identify, for the addressee. Referents that count as topics of previous predications in the discourse are prototypically accessible, which makes them ideal candidates for reference by means of a NS; in general, when referents are not highly accessible, null elements, being deficient or not informative enough, are not adequate for retrieving them, and an overt anaphoric device is usually preferred. Thus, the preference for topical antecedents explains, on the one hand, the interpretations that speakers tend to assign to NSs, and, on the other hand, the interpretive contrasts between NSs and overt pronouns in NSLs.⁵ Both aspects were addressed, on the basis of data from Italian, in some seminal papers by Andrea Calabrese (notably, Calabrese 1986) in which he resorted to the term *Thema*, understood as subject of predication, to characterize the preferred antecedents of NSs in Italian. According to Calabrese (1986: 26–27), the contrast between (6) and (7) shows that the NS in the main clause tends to pick out the topical subject –the *Thema*– of the preceding adverbial clause as its antecedent, instead of choosing a complement, whereas the overt pronoun *lui* exhibits the opposite preference and tends to pick out the complement –a non-topical expression– as antecedent. This is the same pattern observed in (4)–(5).

(6)	Quando	Mario _i	ha	picchiato	Antonio _j ,	<i>e_{i/*j}</i>	era	ubriaco.
	When	Mario	have.PRS.3SG	hit.PPT	Antonio		be.PST.3SG	drunk
'When Mario hit Antonio, he was drunk.'								

(7)	Quando	Mario _i	ha	picchiato	Antonio _j ,	lui _{?i/j}	era	ubriaco.
	When	Mario	have.PRS.3SG	hit.PPT	Antonio	he	be.PST.3SG	drunk

The association of NSs with topical subjects –the “Calabrese effect”, in Rizzi’s terms (Rizzi 2018) is explained in Calabrese (1986) along the following lines. Calabrese claims that overt pronouns are used only when the mention of their referents is not expected in discourse, which implies that their weak, unstressed or null competitors –i.e. clitic and null pronouns– are used under the opposite condition, i.e. when the occurrence of their referents is expected. This principle, in combination with another principle that states that a subject pronoun is expected to have the referent of another subject, accounts for the salient readings of (6)–(7): the NS in (6) takes the expected antecedent, the preverbal subject *Mario*, and the overt pronoun in (7) takes the less expected antecedent, the object *Antonio*. The possibility that the NS takes some other discourse topic as antecedent is also predicted by the principles, but is not represented in the examples. Calabrese (1986: 31) reformulates his second principle by substituting the term *subject* with the term *Thema*, as in (8), which is in fact an explicit statement of the preference for topical antecedents (notice that NSs are considered as instances of *Themas*, i.e. as preverbal topical subjects):

⁵ A reviewer rightly points out that, although in principle this generalization holds true across Romance languages, recent research shows that there are intriguing differences concerning the division of labour between null and overt subjects (see Filiaci, Sorace, Carreiras 2013 for a comparison of Italian and Spanish, Torregrossa, Bongartz, Tsimpli 2015 for Italian and Greek, and Dufter 2011 for a comparison of Old and Modern Spanish). This is, in fact, one of the main trends in current research on the interpretation of null subjects. I cannot deal with this issue here, but the data of cross-linguistic variation suggest that we face a multifactorial problem that involves grammar and information structure. Thus, such data could fit much better in an account based on the interaction of syntax and pragmatics like the one I defend here than in a purely syntactic one.

(8) A pronominal in position of Thema is expected to have a referent of another Thema.

This principle leads us to conclude that NSs are a specialized device for marking *topic continuity* (Givón 1983, 2017), since they contribute to maintaining the discourse topic. One of the strong predictions of the principle is that NSs should be unable to take antecedents in focus. The prediction is actually false, as will become clear later, in section 3.3, but this does not make Calabrese’s observations less interesting. He was aware of the fact that his principle has to be constrained in some way (Calabrese 1986: 33, Rizzi 2018: 518), by taking into consideration different factors that interact in a complex way, such as the type of subordinate clause in contexts like the one in (6)–(7), and the relative order of main and subordinate clauses.⁶ I cannot deal with this important issue in this paper, and I will merely stress the value of Calabrese’s findings, without even discussing the nature of generalizations like the principle in (8).

Another interesting piece of evidence pointing towards the same direction comes from the contrast in Italian in (9)–(10), from Cordin (1988: 548), which concerns backwards anaphora and the properties of preverbal and postverbal subjects (see also Calabrese 1992: 99). In the examples, the NS appears in an adverbial clause, and its potential antecedent, the DP *Gianni*, is the subject of the main clause (I discard readings with another possible discourse antecedent, since they are irrelevant here).

(9)	Dopo	che	e_i	è	arrivato,	Gianni _i	ha	parlato.
	After	that		be.PRS.3SG	arrive.PPT	Gianni	have.PRS.3SG	speak.PPT
	'After he arrived, John spoke.'							

(10)	Dopo	che	e^*_i	è	arrivato,	ha	parlato	Gianni _i .
	After	that		be.PRS.3SG	arrive.PPT	have.PRS.3SG	speak.PPT	Gianni

The contrast shows that the preverbal subject in (9) is an adequate antecedent for the NS in the subordinate clause, but the postverbal subject in (10) is not. It is commonly accepted that the basic difference between the two positions for the subject is associated with information structure: preverbal subjects tend to be topics, and postverbal ones are usually foci. This again suggests that NSs require topical antecedents. Though the contrast in (9)–(10) is straightforward, it is not clear that it holds systematically in every context with an anaphoric link between a main clause and an adverbial clause, due to the complex interplay of different factors mentioned above. However, the same contrast involving preverbal and postverbal overt subjects as potential antecedents of NSs shows up again in other environments, such as control constructions, including absolute clauses, which suggests that in fact there is something robust and systematic in it. Depending on the chosen analysis, in control structures the NS may have different properties from the ones that NSs display in finite clauses, but in any case it is worth including this case in the discussion; the Italian examples in (11)–(12), from Calabrese (1992: 99), show how only preverbal subjects –and not postverbal ones– are able to trigger control of NSs in gerundival and participial constructions.⁷

⁶ It has often been noted that the distinction between forward and backward anaphora has remarkable consequences for the interpretation of NSs (see, for example, Tsimpli et al. 2004).

⁷ Camacho (2011, 2013) analyses parallel contrasts in Spanish. In his approach, the NS in absolute constructions is treated as a small *pro*, i.e. like NSs in finite clauses.

(11)	a.	e_i	passeggiando	nel	parco,	Carlo _i	l'	ha	abbracciata.
			walk.GER	in-the	Park	Carlo	her	have.PRS.3SG	hug.PPT
		'Walking in the park, Carlo hugged her.'							

	b.	Appena	e_i	uscito	di	casa,	Carlo _i	l'	ha	vista.
		As soon as		leave.PPT	of	House	Carlo	her	have.PRS.3SG	see.PPT
		'As soon as he left the house, Carlo saw her.'								

(12)	a.	e^*_i	passeggiando	nel	parco,	l'	ha	abbracciata	Carlo _i .
			walk.GER	in-the	Park	her	have.PRS.3SG	hug.PPT	Carlo
		'Walking in the park, CARLO hugged her.'							

	b.	Appena	e^*_i	uscito	di	casa,	l'	ha	vista	Carlo _i .
		As soon as			of	house	her	have.PRS.3SG	see.PPT	Carlo
		'As soon as he left the house, CARLO saw her.'								

Whatever the analysis of the NSs in control structures may be, the contrast in (11)–(12) looks clearly related to all the previous ones and confirms that there is enough evidence for assuming that NSs in languages like Italian and Spanish show a strong preference for antecedents that are interpreted as topics.

Finally, it is also worth mentioning an interesting argument supporting the crucial role of topics, taken from Frascarelli (2007: 715) (see also Jiménez Fernández 2016). The argument is based on the scopal interaction between indefinite subjects and quantified phrases. Frascarelli points out that in Italian, whereas (13) is scopally ambiguous, (14) is no longer ambiguous, due to the presence of the null subject in the second clause⁸.

(13)	Un	poliziotto	stava	a	guardia	di	ogni	angolo.
	a	policeman	be.PST.3SG	at	guard	of	each	corner
		'A policeman guarded each corner.'						

(14)	Un	poliziotto	stava	A	guardia	di	ogni	angolo, e
	a	policeman	be.PST.3SG	at	guard	of	each	corner and
		'A (single) policeman guarded each corner and...						

	e	fumava	in	continuazione.				
		smoke.PST.3SG	in	continuation				
		'...was smoking continuously.'						

In (13), the indefinite subject *un poliziotto* may be assigned a wide scope reading –i.e. a specific reading– and also a narrow scope, non-specific one. The reason why the subject *un poliziotto* can only receive a specific, wide scope reading in (14), and no longer a narrow scope one, is

⁸ As one of the reviewers points out, the reason why (14) is not ambiguous like (13) is probably due to general conditions on the inaccessibility of indefinites as antecedents when they are in the scope of other operators. Thus, it is not clear that the contrast actually supports Frascarelli's analysis.

that the wide scope reading is usually associated with the topical status of the DP,⁹ and this seems to be crucial for the licensing of the NS in the second clause; in the distributive (narrow scope) reading, the indefinite subject is not interpreted as a topic and is not an adequate antecedent for the NS, which is the reason such reading disappears in (14). Briefly, the NS in the second coordinated clause takes the preverbal subject in the first clause as its antecedent, and this forces the overt subject to be interpreted as specific, because indefinite topical DPs receive either a specific reading or a generic one –this last option being discarded here by the context.

To sum up, there is evidence for a robust tendency of NSs to establish anaphoric links with topic antecedents. Such links explain how reference is assigned to the null element. It is an open issue what the best strategy is to give an account of the facts. The fundamental question is whether we should integrate the facts into the grammatical system, by means of some syntactic condition, or alternatively account for them by resorting to extra-grammatical principles. Frascarelli (2007, 2018) explicitly argues in favour of the first option. The following section is devoted to presenting and discussing her proposal.

3. A syntactic condition on topics?

3.1 Frascarelli (2007, 2018): licensing of NSs by an Aboutness Topic

In Frascarelli (2007, 2018) and Frascarelli and Jiménez-Fernández (2019) the preference for topic antecedents is considered as a property of the grammar of NSs. This is, in the author's view, the way in which grammar contributes to establishing the referent. Frascarelli adopts the classical approach to NSs as empty categories containing pronominal features (*pro*). The central idea is that the interpretation of a topical/referential *pro* always depends on a matching relation between the empty category and a specific kind of topic in the left periphery, namely the so-called 'Aboutness-Shift Topic' (Frascarelli and Hinterhölzl 2007). This kind of topic provides a value for *pro* through a feature agreement relation (Agree), a syntactic relation that links *pro* with the closest 'Aboutness-Shift Topic'. The intuition behind this approach is that in tensed sentences,¹⁰ *pro* plays the same role as resumptive clitics do in Clitic Left Dislocation (CLD) constructions (for instance, *Las brochetas, las serviremos al final*, 'The skewers, we will serve them at the end' in Spanish). Thus, according to this view, a *pro* is always bound by a topic, which in turn can be empty in cases of referential continuity. In this way, Frascarelli tries to capture two crucial properties of *pro*: (i) the need for a discourse antecedent, and (ii) the topichood requirement that constrains the search for that antecedent. The configuration is the one in (15), where the dislocated topic is found in Shift Phrase (the position for Aboutness-Shift Topics) and from that position it binds the *pro* located in vP:

(15) [_{ShiftP} DP_i [_{AgrP} [_{vP} *pro*_i [_{vP}]]]]

⁹ The assumption that topics receive specific interpretations is in itself incorrect, if related to dislocated topics. I cannot discuss this idea here (but see Leonetti 2014 for some basic remarks).

¹⁰ Frascarelli and Hinterhölzl (2007) suggest that different kinds of topics (namely, Aboutness Topics, Familiar Topics and Contrastive Topics) occupy different syntactic positions at the left periphery, following a cartographic approach to sentence structure. I will not discuss this idea here, since it is orthogonal to the point of this paper. In what follows, then, I will merely reproduce Frascarelli's (2007, 2018) views.

In this approach both the licensing of NSs and their interpretation follow from grammatical principles only; actually, the two facets of the problem are reduced to a single condition on interpretation, reproduced in (16).

(16) Frascarelli’s (referential) NS interpretation

Let YP be the Aboutness-Shift topic in the local C(OMP)-domain of an occurrence of *pro*: then *pro* –sitting in edge position– obtains the grammatical specification of the features on Y through a matching (Agree) relation.

In the same vein, Frascarelli (2007: 31) recasts Chomsky’s (1981) classical *Avoid Pronoun Principle* as a purely syntactic condition related to information structure: “Avoid strong pronoun, whenever it agrees with the local Aboutness-Shift Topic.”

For a proper understanding of Frascarelli’s hypothesis, it is crucial to consider whether the topic antecedent is itself overt or not. When it is implicit, a topic chain has to be formed, with a series of empty copies of the initial overt topic. Topic chains are needed to guarantee both the locality of the identification of *pro* and topic continuity in discourse. The Italian example in (17), in which *Maria* is intended as the antecedent of the *pro* found in the embedded clause, is represented by the structure in (18) (from Frascarelli 2018: 217):

(17)	Maria _i	pensa	che	e _i	vincerà	la	gara.
	Maria	believe.PRS.3SG	that		win.FUT.3SG	the	Race
	‘Mary believes that she will win the race.’						

(18) [_{ShiftP} Maria_k [_{AgSP} pro_k pensa [che [_{FamP} <Maria_k> [_{AgSP} pro_k vincerà la gara]]]]]]

The representation in (18) shows that the subject of the main clause is itself treated as a dislocated Aboutness-Shift topic¹¹ that serves as the antecedent of a *pro* sitting in the canonical subject position (i.e., the specifier of a Subject Agreement Phrase), whereas the *pro* in the embedded clause is linked not by the subject of the main clause, but by an empty copy of it located in the extended COMP domain of the embedded clause, namely, the position of a Familiar Topic Phrase, which forms a chain with the previous topic. I cannot dwell here on a detailed discussion of this proposal, nor can I go into the role of the Syntax-Phonology interface in the analysis. It is important, however, to take a closer look at the formation of topic chains, given that this process plays a crucial part in Frascarelli’s approach. According to her, a NS can only occur if a dislocated topic has been already introduced in the representation. That begs the question, then, of what happens in cases like the Spanish example in (19), where the subject *Juan* cannot be a topic but nevertheless is the antecedent of *pro* in the answer (Frascarelli 2007, fn. 29):

(19)	A:	¿Qué	Hizo	Juan _i ?	
		what	do.PST.3SG	Juan	
	‘What did Juan do?’				

	B:	<i>pro</i> _i	Habló	con	María.
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¹¹ In her system, all preverbal subjects in NS languages are analyzed as dislocated constituents (Frascarelli 2007: § 5). Therefore, all categorical (topic/comment) sentences would contain a dislocated subject. See Camacho (2013) for the relation between this hypothesis and the analysis of NSs.

			speak.PST.3SG	with	Maria
'(He) spoke with María'					

To account for such cases, Frascarelli is forced to assume that *Juan* counts in fact as a topic, because it is actually linked to an empty Aboutness-Shift Topic that occurs both in the question and in its answer. Then, it is this empty topic in the answer that binds the *pro*. The possibility to generate empty topics whenever they are needed without further restrictions is, of course, a very problematic solution. Frascarelli then argues that the fact that an explicit Aboutness Topic always becomes the antecedent of a NS at its right (excluding other possible candidates) indicates that the identification of *pro* must be, therefore, a local process: this, she claims, supports the idea of inserting empty topics to satisfy the requirement that *pro* is licensed by a topic. It is worth noting that Aboutness Topics cannot be iterated in the left periphery: only one of them is allowed; hence, if this topic is overt, the possibility of having an implicit topic is no longer available and so the overt one is the only one that can count.

The Italian example in (20) (also from Frascarelli 2007: § 6.2) illustrates the case of a postverbal subject –clearly the focus of its clause– that is nevertheless the antecedent of *pro*.

(20)	Quando	ha	parlato	Leo _i ,	<i>pro</i> _i	ha	convinto	tutti.
	when	have.PRS.3SG	speak.PPT	Leo		have.PRS.3SG	convince.PPT	all
'When Leo spoke, he convinced everyone.'								

Frascarelli does not consider this case as a counterargument to her proposal. On the contrary, she claims that postverbal subjects can be coreferential with empty local topics, which are in turn responsible for the identification of *pro*. A topic can be silent even in its first occurrence, as the head of a topic chain. Therefore, the representation of (20) would contain an initial empty topic in the local COMP domain, coindexed with both the postverbal subject and *pro*. In this way, Frascarelli argues, the licensing conditions for *pro* can be maintained. To motivate her claim, Frascarelli invokes again the effects of inserting an overt topic in the structure, as the extrasentential DP *Marco* in (21):

(21)	Marco _i ,	quando	ha	parlato	Leo _i ,	<i>pro</i> _{j/*i}	ha	convinto	tutti.
	Marco	when	have.PRS.3SG	speak.PPT	Leo		have.PRS.3SG	convince.PPT	all
'Marco, when Leo spoke, convinced everyone.'									

If a new, explicit topic is introduced, it is this topic that identifies *pro*, not the postverbal subject: in (21) coreference is only possible with *Marco* (notice that the subject of the main clause in (21) has to be implicit). According to Frascarelli, the fact that coreference with another topic is excluded in (20) implies that the DP *Leo* must be present in the local COMP domain as a silent Aboutness-Shift topic. Thus, an overt topic always has precedence as an antecedent and guarantees that *pro* is bound in its local domain; this is supposed to be evidence for the syntactic relation between the topic and the NS. Notice that this proposal leads to assuming that in (20) *Leo* is, at the same time, focal and coindexed with a topic, which does not sound plausible. Frascarelli's arguments seem not convincing at this point, and sentences like (20) look like real counterexamples to her proposal (see § 3.2.1 for discussion).

One of the predictions of Frascarelli's hypothesis should be that the subject of a thetic sentence, being non-topical, cannot be the antecedent of *pro*. This prediction, however, does

not seem to be borne out. Consider the Spanish examples in (22) (see Rizzi 2018: 519 for a confirmation of the same fact on the basis of Italian data):

(22)	a.	Está	saliendo	el	sol.	Y	e	ya	calienta.
		be.PRS.3SG	go-out.GER	the	sun	And		already	warm.PRS.3SG
		'The sun is rising. And it already warms the air.'							

	b.	Entra	Quique	en	el	campo.	e	sustituye	a	Jiménez.
		Enter.PRS.3SG	Quique	in	the	field		replace.PRS.3SG	to	Jiménez
		'Quique enters the field. He is replacing Jiménez.'								

The NS of the second sentence in (22a) takes the postverbal subject in the first sentence as its antecedent; however, there is no topic in the sentence (with the exception of a possible spatiotemporal or stage topic, which is not relevant to the current discussion). The same goes for (22b). As a reviewer observes, in this case Frascarelli would probably resort to the same analysis provided for (20), with a null topic. If that is the case, her strategy seems not only unconstrained, but completely unrelated to the real informational articulation of the sentence.

After this short and schematic presentation of Frascarelli's hypothesis, one question that arises is whether the evidence we have for a connection between null subjects and topics is enough to justify a purely syntactic approach. The preference of null subjects for topic antecedents could in fact be explained in an alternative way, as an effect of the need for highly accessible antecedents –topics are discourse-prominent, and thus easily accessible as antecedents–, which is in turn a consequence of the competition and the division of labour between null subjects and strong, overt pronouns. Under this alternative view, the link between null subjects and topics depends on interpretive principles that lie outside of the grammatical system. As indicated above, the issue will be discussed in section 4. Before considering this option, I will present some arguments against an approach based on topic chains and silent topics.

3.2 Against a syntactic approach

Frascarelli's hypothesis represents an explicit attempt to build the preference of NSs for topical antecedents into the grammatical system, by means of a specific syntactic condition. An account along these lines requires exploiting a rich and articulated view of the left periphery in sentences and resorting to a massive display of null elements. It is in principle a legitimate strategy, but certainly not a simple and economic one as far as syntax is concerned. As already mentioned, the opposite stance would consist in avoiding any syntactic condition on topics and explaining the preference for topical antecedents by means of general principles external to the grammatical system, i.e. processing factors and pragmatic inference. Since such principles are independently justified, this second option looks simpler and less costly (see Duguine 2014: 533 for a similar argument against Frascarelli and in favour of argument ellipsis as a unified account of NSs).

I believe that there are strong reasons to choose a pragmatic/processing approach to the preference of NSs for topical antecedents, and reject a syntactic analysis based on topic chains. This section is devoted to presenting a series of arguments against this kind of analysis. Before I proceed to lay out such arguments, I would like to comment on a puzzling basic feature of Frascarelli's proposal. As the reader may have noticed, among the arguments that

support the preference of NSs for topical antecedents in section 2, only one fact is mentioned by Frascarelli: the contrast between (13) and (14), related to the interplay between NSs and quantifier scope. None of the remaining facts concerning grammatical relations, word order, and the competition with overt subject pronouns is included in her discussion, though they represent a significant body of evidence for a dominant tendency of NSs in languages like Italian and Spanish, and have been known for a long period. Thus, it seems that Frascarelli builds her proposal without paying attention to what looks like the strongest and most visible kind of evidence in favour of a salient role of topicality in the interpretation of NSs. More specifically, she avoids considering the huge amount of empirical evidence collected in research on linguistic processing of NSs, in particular Carminati (2002). This seems to me surprising, because it suggests that we are dealing with two unrelated, independent problems in theoretical syntax and in processing. My view is just the opposite: the problem is one and the same, and evidence from processing and from pragmatically inspired analyses should be integrated in a unified view. In what follows, I take into account all kinds of evidence.

The fundamental problem with accounting for the data presented in section 2 by means of a syntactic constraint is that there are counterexamples for the basic generalizations that show that the preference for topical antecedents is just that, a preference, or a strong tendency, but not a rule of syntax. I assume that a true syntactic condition would not allow for violations in such a natural way. The counterexamples provide us with instances of NSs that take non-topical DPs as antecedents and are still acceptable for native speakers. I review four different cases: NSs with antecedents inside *by*-phrases, NSs with objects as antecedents, NSs with postverbal subjects as antecedents, and NSs with narrow scope quantified antecedents.

3.2.1 Antecedents inside *by*-phrases

The contrast in (1)–(2) involves *by*-phrases as antecedents of NSs: *by*-phrases are notoriously bad as antecedents. It is true that preverbal subjects make better antecedents than *by*-phrases, but if the context is conveniently modified, a DP inside a *by*-phrase can make an adequate antecedent for a NS, as shown in the following Italian examples.¹²

(23)	A:	Il	guasto	è	stato	riparato	da	Gianni.
		the	damage	be.PRS.3SG	be.PPT	repair.PPT	by	Gianni
		'A: – The damage was repaired by John.'						

	B:	e_i	È	proprio	bravo,	eh?
			be.PRS.3SG	really	good	ah?
		'B: – He is really good, isn't he?'				

(24)	Siamo	stati	convinti	dalla	venditrice.
	be.PRS.1PL	be.PPT	convince.PPT	by-the	Saleswoman
	'We have been persuaded by the saleswoman.'				

	e_i	ci	Ha	spiegato	tutto	in	modo	chiarissimo.
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¹² See Samek-Lodovici (1996: 37) for related examples in Italian *wh*-interrogatives where *by*-phrases can be antecedents of NSs. According to this author, not all Italian speakers would fully accept examples like (23) and (24) with the intended interpretation.

		LOC	have.PRS.3SG	explain.PPT	all	in	way	very-clear
'She explained us everything very clearly.'								

In (23) and (24) the *by*-phrase is not topical. However, it counts as an acceptable antecedent for the NS in the following clause because an additional factor, which was absent in the examples in (1)–(2), becomes relevant: it is the coherence relation of Explanation holding between the two clauses. Whereas in (1)–(2) the coherence relation is one of Narration (see Kehler 2002, Jasinskaja and Karagjosova 2020 for an overview of the role of coherence relations in anaphora), because the two clauses are linked by a relation of temporal succession, in (23) and (24) the coherence relation is Explanation: there is no temporal succession, and the second clause is understood as an explanation of the situation described in the first one. Under these conditions, for reasons that are well beyond the scope of this paper, a NS can be anaphorically linked to a non-topical antecedent. If these remarks are on the right track, we happen to be facing a rather familiar scene in the recent literature on discourse anaphora: on the one hand, we evaluate the impact of two different kinds of factors, i.e. prominence or salience –according to which more prominent expressions, such as topics, being highly accessible, make better antecedents for NSs– versus coherence; on the other hand, we can verify how coherence is able to override prominence and favour an interpretation that contradicts the predictions based on the discourse salience of antecedents exclusively (despite being non-topical, antecedents contained in a *by*-phrase can be linked to NSs when a coherence relation like Explanation is established). The interplay of prominence and coherence is not an idiosyncratic feature of the search for adequate antecedents with NSs. It is, rather, a pervasive property that has been extensively investigated in the literature on discourse anaphora in several languages (Kehler 2002, Kehler et al. 2008). Besides providing us with a reasonable account for the unexpected facts observed in (23) and (24), these considerations lead us towards certain interesting consequences: if the topical/non-topical nature of a phrase, as a factor determining the retrieval of an antecedent for an anaphoric expression, can be overridden by the need to establish coherence relations, then the preference for topics cannot be a principle of core grammar. It is softer than true syntactic constraints, and must originate from some motivation that is external to the grammatical system.

3.2.2 *Objects as antecedents*

The same conclusion applies to other basic data that apparently support the role of topic antecedents, such as the general preference of NSs for topical subjects, against objects, as antecedents (see the contrasts in (4)–(5) and (6)–(7)). Here, again, it is possible to find counterexamples. Calabrese (1986: 33) himself notices that in contexts like the one in (25), from Rizzi (2018: 516), the NS in the subordinate clause can take both the subject and the object in the main clause as antecedents, and tries to introduce some additional notion to account for this kind of exceptions; Rizzi (2018) resorts to *c*-command, more precisely to the basic assumption that a subject pronoun is expected to have the referent of a *c*-commanding DP: as both *Francesca* and *Maria* in (25) *c*-command the NS, it can be linked to any of these DPs (intuitively, this means that NSs can be tied to any prominent antecedent, but not necessarily to a topic).

(25)	Francesca _i	ha	fatto	notare	a	Maria _j	che	<i>pro</i> _{i,j}	
	Francesca	have.PRS.3SG	make.PPT	realize.INF	to	Maria	that		
	'Francesca made Maria realize that she was very tired.'								

	era	molto	stanca.
	be.PST.3SG	very	tired

Why is the subject/object asymmetry absent in (25), whereas it holds in the case of (6)–(7)? In (6)–(7) (*Quando Mario ha picchiato Antonio, pro/lui era ubriaco*), the possible antecedents are inside a subordinate adverbial clause and do not c-command the NS, and Calabrese's principle (8) is in force, thus forcing the anaphoric link with the topical subject and blocking the alternative link with the object. In (25) the two DPs c-command the NS, as already mentioned, and principle (8) seems to be inactive (Rizzi 2018: 516). This solves the problem of the contrast between (25) and (6). Notice that the new landscape emerging does not support a view of the preference for topical antecedents as a grammatical constraint. On the one hand, principle (8), which is a plausible formulation of such preference, must be supplemented by a complementary principle that introduces a new factor, syntactic prominence (realised as c-command); moreover, principle (8) is only relevant when there are no c-commanding antecedents, which heavily reduces its range. As a result, it is no longer the central principle governing the interpretation of NSs; there is no evidence in favour of Frascarelli's version of the principle. On the other hand, even considering only contexts where principle (8) is in force –for instance, anaphoric links between independent sentences–, it seems that under the appropriate circumstances NSs may choose objects, instead of preverbal subjects, as antecedents: this is what happens in (26), where a coherence relation of Explanation forces an interpretation of the NS as referring to *Arturo*.

(26)	Carlo	ascolta	solo	Arturo _i	<i>e</i> _i	è	il	suo	migliore	amico.
	Carlo	listen.PRS.3SG	only	Arturo		be.PRS.3SG	the	his	best	friend
	'Carlo listens to Arturo only. He is his best friend.'									

3.2.3 Postverbal subjects as antecedents

After reviewing *by*-phrases and objects as possible antecedents for NSs, now I turn to the case of postverbal subjects. The contrast in (9)–(10) suggests that postverbal subjects, being focal, cannot be proper antecedents of NSs. However, this should exclude an example like (20), which is perfectly acceptable (see Calabrese 1986: fn. 3 and Rizzi 2018: 518 for postverbal subjects in different contexts). Examples (10) and (20), repeated here as (27) and (28), differ in the position of antecedent and NS in the main clause or the subordinate clause, which may have effects on c-command, and in the relative order of the two subjects (in fact, (27) is a case of cataphora or backwards anaphora, but (28) is not). Such factors interact with topic and focus in complex ways.

(27)	Dopo	che	<i>e</i> _{*i}	è	arrivato,	ha	parlato	Gianni _i .
	after	that		be.PRS.3SG	arrive.PPT	have.PRS.3SG	speak.PPT	Gianni
	'After he arrived, Gianni spoke.'							

(28)	Quando	ha	parlato	Leo _i ,	e _i	ha	convinto	tutti
	when	have.PRS.3SG	speak.PPT	Leo		have.PRS.3SG	convince.PPT	all
	'When Leo spoke, he convinced everyone.'							

I believe that it is the well-known incompatibility between cataphora and focal antecedents, rather than a specific constraint on the interpretation of NSs, that rules out coreference in (27), together with the parallel examples with gerunds and absolute constructions in (11) and (12). The constraint affects cataphora when a pronominal and an R-expression (for instance, a name) are involved, and the R-expression is in focus. Reinhart (1986: 138–140) gives the following formulation (see also Erteschik-Shir 1997: 78, and Bianchi 2009 for a general discussion):

- (29) Topic – antecedent hypothesis for backward anaphora
 Backward anaphora is possible only if the antecedent is in sentence-topic position.

The impossibility of coreference with postverbal subjects in (10), (11) and (12) is, thus, explained by the constraint in (29), which concerns a particular relation between pronouns and antecedents, but is not specifically related to null pronouns. Given this, plus the well-formedness of (20 / 28) under the relevant coindexation, the conclusion is that NSs are perfectly compatible with focal antecedents, at least when such antecedents are clearly salient and there are no competing topical candidates (see also Lubbers-Quesada and Blackwell 2009, and Clements and Domínguez 2017 for similar observations). As shown by the counterexamples discussed in this section, there may be a preference of NSs for topical antecedents in a set of contexts, but it is not operating in all contexts, and cannot be taken as a principle of core grammar. It is difficult to see how the data can be accommodated in Frascarelli's model without resorting to an unconstrained proliferation of null topics in the left periphery.

3.2.4 Antecedents with narrow scope

Finally, something must be said on Frascarelli's argument based on wide and narrow scope readings of indefinite subjects and their relation to NSs in (13)–(14). It is not impossible to have NSs linked to indefinite DPs with narrow scope. In the Italian example in (30), adapted from Frascarelli (2007), the NS in the second sentence can take the indefinite subject in the first sentence – *qualche studente* 'some student' – as its antecedent, in spite of its non-specific interpretation (I assume that the indefinite subject is interpreted with narrow scope with respect to the modal element *parere* 'seem').

(30)	Pare	che	qualche	studente	abbia	archiviato	quel	libro.
	seem.PRS.3SG	that	some	student	have.PRS.SBJV.3SG	file.PPT	that	Book
	'Apparently some student filed that book.'							

	e	l'	avrà	sicuramente	fatto	con	l'	aiuto	della	bibliotecaria.
		it	have.FUT.3SG	surely	do.PPT	with	the	help	of-the	Librarian
	'(S)he surely did it with the help of the librarian.'									

The non-specific indefinite subject is a non-topical antecedent, and still the link with the ensuing NS holds, against the predictions in Frascarelli (2007). It seems that maintaining in the second sentence the same modal context created in the first one by the verb *parere* ‘seem’ is the crucial factor for the link to survive (see the notion of ‘modal subordination’ in Roberts 1989). The Spanish example in (31) shows the role of modal subordination: the modal context created by the future tense in the first sentence extends to the second sentence and enables the anaphoric connection between the NS and the preceding indefinite subject *un agente*, despite its non-specific interpretation (Jiménez-Fernández 2016 reaches similar conclusions on Spanish NSs).

(31)	Un	agente	recogerá	a	cada	testigo,
	an	agent	pick-up.FUT.3SG	to	each	Witness
'An agent will pick up each witness...						

	y	e	lo	acompañará	al	aeropuerto.
			him	accompany.FUT.3SG	to-the	Airport
...and take him to the airport.'						

The interpretation of NSs in (30) and (31) does not support Frascarelli’s conclusions: it provides new evidence that NSs do not necessarily require topical antecedents. Although the arguments gathered in section 2 are powerful enough to suggest that NSs clearly tend to choose topics as antecedents, this tendency cannot be modelled as a ‘hard’ grammatical principle.

Despite the inadequacies mentioned so far, Frascarelli’s hypothesis has had a remarkable impact on the field. Quite often her views have been simply taken for granted and then integrated into major theories on NSs or applied to new data, with the risk of making established truth out of a series of controversial assumptions. Her contribution must be placed in a wider context that includes related proposals such as the ones in Sigurðsson (2011) and Camacho (2013); a common feature of all these proposals is the formulation of generalizations on discourse phenomena intended as grammatical principles that involve the left periphery in sentential structure. This is not new in the formal tradition, and it is basically misguided, in my opinion. Also Calabrese’s (1986) rules for the interpretation of NSs and pronouns are actually discourse/pragmatic generalizations presented as grammatical principles: they deal with discourse expectations, parallelism and competition between elements displayed along a scale -factors that should be best treated as components of inferential processes that contribute to specifying the propositional content of an utterance.

If, in fact, the alleged grammatical principles suggested in the reviewed literature have to be discarded in favor of extra-grammatical processes –which seems to be more in consonance with the current minimalist framework in generative grammar–, other proposals should be reconsidered too. One significant case is the way Frascarelli’s hypothesis is exploited in Holmberg (2010) to solve a technical problem with the features of finite inflection in NSLs. Also interesting is the role attributed to topics as licensors of NSs in Old French (Ingham 2018), Old English (van Gelderen 2013) and Arabic (Shormani 2017). However, I cannot discuss these extensions here. I will rather concentrate on some general issues in the next section, with the aim of looking back at the central research question I mentioned in the introduction: how grammar contributes to the interpretation of NSs.

4. The interpretation of referential null subjects: how much depends on grammar?

4.1 Conceptual problems with the notion of *topic*

Before addressing the consequences of the previous discussion for the theoretical debate on the interplay between grammar and pragmatics, in this section I would like to dwell on some conceptual problems related to the use of the notion *topic* in Frascarelli (2007, 2018). I intend to raise the following points: 1. Two different types of topic must be distinguished, which in this hypothesis are erroneously conflated into a single syntactic device. The idea of having silent copies of left-dislocated phrases is misguided. 2. The management of discourse referents, which is not a strictly syntactic operation, is represented as an effect of left dislocation. 3. The strategy of resorting to null copies of dislocated topics is too powerful, and seems to be unconstrained. 4. Accounting for the interpretation of NSs by means of topic chains is merely stipulative, and blurs the real motivation that lies beyond the frequently noted connection between NSs and topics.

Combined with the empirical problems reviewed in the previous section, these conceptual flaws should lead us, in my opinion, to discard an approach based on topic chains.

4.1.1 *Topic ≠ Left Dislocation*

It is probably an effect of viewing the syntax–discourse relation through a cartographic lens –although by no means a logical consequence of it– that sentence topics and discourse topics are systematically represented as instances of (Clitic) Left Dislocation in Frascarelli (2007, 2018). Left Dislocation is certainly the most salient grammatical device for topic marking in Romance NSLs. However, not all sentence topics –in particular, preverbal subjects– are to be equated with left dislocated phrases. This has been a debated issue in the literature on preverbal subjects in Romance in the last three decades (see discussion in Sheehan 2006, Villa-García 2012, Rizzi 2018 a.o.).

I think that there is a general consensus nowadays in avoiding an identification of sentence topics with dislocated topics in Romance: sentence topics may appear as dislocated expressions, but they may also appear inside IP/TP, either as preverbal subjects or as other preverbal constituents (for instance, fronted indirect objects in constructions like *Ad Andrea interessa l'iconografia* ‘Andrea is interested in iconography’, adapted from Calabrese 1986). In NSLs, preverbal subjects are predominantly interpreted as topics in categorical predications, and this does not imply that they are syntactically dislocated; a topic interpretation may be imposed by dislocation, but is also typically associated with the preverbal subject position. There are, then, two ways to express the topic. Against this line of thought, Frascarelli assumes that Romance preverbal subjects are syntactically dislocated. This assumption, subjected to severe criticism by Sheehan (2006), Villa-García (2012) and other authors, leads to the unwelcome result of identifying the notions of *sentence topic* and *left-dislocated topic*, thus taking a strategy for the expression of marked topics (left dislocation) as the default way of expressing unmarked topics. As will become clearer below, the distinction between marked and unmarked topics is needed for descriptive and theoretical reasons. The basic idea, along the lines of Dobrovie-Sorin (2000), Brunetti (2009) and Leonetti (2013), is that unmarked topics are integrated in the sentential domain –let’s say, in Spec, IP/TP and their association with topic interpretation is only a default condition: I assume that there is no [aboutness] feature encoded in the preverbal position, and topic interpretation is, rather, pragmatically inferred on the basis of information related to different factors (thematic prominence, first of all, but also lexical aspect and definiteness). The phrase that is the best

candidate for aboutness topic raises to the preverbal slot and is interpreted as topic, except when athetic, all-focus reading is favoured. Unmarked topics are unmarked in the sense of representing the participant that under normal conditions is the most salient candidate to count as an address for information update. In case the speaker wants to mark as topic a phrase that is not the best candidate –i.e. a phrase that would not be taken as topic otherwise–, the unmarked strategy is not available and he has to resort to a marked one, which is Left Dislocation. In a few words, dislocation is selected when the involved phrase is not a natural topic by itself or when a special effect is looked for that cannot be obtained through the unmarked strategy. As special tools are used for special purposes, marked, detached topics may contribute an additional interpretive flavour, contrastiveness, which can hardly be conveyed with unmarked topics; moreover, and crucially for our purposes here, marked topics are best suited for topic shifting in discourse (Leonetti 2013, 2014 a.o.), whereas unmarked topics are the ideal device for establishing topic continuity. The result is a balanced division of labour between unmarked and marked strategies. Most Romance languages exploit this system.

Now, in Frascarelli’s model the basic distinction is lost, and a single notion of topic, the one corresponding to marked topics (Left Dislocation), is used to account for the properties of NSs. This yields a distorted view of the facts: the formal device responsible for introducing marked topics is presented as the licensing factor of the prototypical expression of unmarked topics. If dislocation is associated to topic shifting and NSs are associated to topic continuity, how can dislocation, with the corresponding ‘topic chains’, be presented as the central mechanism for maintaining the same topic? The problem is that topic continuity is typically obtained by means of NSs, and nothing is gained by relating NSs to dislocation. The source of this misconception is the identification of *topic* with *dislocated topic*. Finally, it is worth recalling that all the evidence collected in section 2 to illustrate the preference for topical antecedents concerns unmarked topics, and not left dislocation.

In my opinion, the most serious weakness in the topic chains hypothesis is the very idea of having silent copies of left dislocated topics: if the distinction between unmarked and marked topics is assumed, the proposal is quite difficult to accept. Left Dislocation is a marked strategy for introducing topics: as such, it is typically associated with topic shift and contrast –notice that these are just the interpretive values that a NS cannot express. Thus, if this is a correct characterization, there should not be null dislocated topics. Dislocation should always be overt. A marked construction is there to convey marked readings, and it could not carry out its tasks if it were null. On the contrary, unmarked topics can be null. In fact, NSs are a natural manifestation of unmarked topics. Then, they cannot be licensed by dislocation, if they have different properties from dislocated phrases. Topic continuity cannot be made of chains of dislocations. The problem is, once again, the wrong identification of *topic* and *left dislocation*.

4.1.2 Discourse referents

In a topic chains account, it is necessary to assume that silent topics are merged to build topic chains and ensure topic continuity across sentences. When a null subject is linked to an antecedent occurring in a focal position (for instance, in *Vorrei presentarti Leo*, *pro*_i è *il mio migliore amico* ‘I’d like to introduce Leo to you. He is my best friend’, from Frascarelli 2018: 221), a silent topic must be posited in the COMP domain in the second clause to identify *pro*. Now, it is true that in the example the DP *Leo* introduces a discourse referent that can become the topic of a subsequent predication, but this does not imply that a dislocated topic

has to be merged in the syntax; it rather shows that null subjects may be linked to non-topical antecedents, if the antecedents are salient enough. At the source of the topic chains approach lies a wrong strategy that has serious consequences: it treats a non-syntactic process, the introduction of discourse referents in the semantic representation, as if it were a syntactic operation, merging of left-dislocated topics. The two notions cannot be equated. The management of referents in discourse representation and their contribution to discourse coherence have been thoroughly analysed in Centering Theory (Walker, Joshi, Prince (eds.) 1998) and other recent models; in these theories a processing perspective is taken, and the rules for interpretation are not supposed to be a part of core syntax. Following this line of thought, I assume that the introduction and activation of discourse referents is governed by principles external to syntax.

4.1.3 Null topics

So far it has been made clear that the idea of null topic is an essential component in Frascarelli's system. The problem is that there is no clear evidence in favour of such silent topics. Their alleged effects can always be explained in some alternative way. Null topics are certainly not required when the apparent antecedents of NSs are in focus, as in (20), (23), (24) and (26): it is enough to abandon the rigid assumption that antecedents must be topics and choose the more flexible and perfectly plausible idea that NSs simply require the most salient, accessible antecedents in the context. In many cases this will in fact single out topical antecedents, but in contexts where no sentence topic is particularly salient, a discourse referent just introduced by a focal DP will make an optimal antecedent for a NS. This is what happens in the examples just mentioned.¹³ One could think that null topics are still required to ensure that the antecedent–NS link obeys locality in some sense, but, again, there is no strong evidence showing that the anaphoric connection has to obey locality in a strict, syntactic sense (see Frascarelli 2018 for some discussion on the role of locality at the interface): the most obvious obstacle is the fact that the connection survives in discourse contexts, among independent sentences.

The dubious motivation for null topics is just one side of the problem. The other side is that postulating the existence of topic chains in the syntax is an unconstrained move, apparently *ad hoc*. There are no obvious answers for important questions like the following ones: under what conditions is it possible to establish silent copies of aboutness topics?¹⁴ How is the link between overt referential expressions in discourse and topic chains constrained? How are interpretations established when there is more than one silent topic, or more than a

¹³ The effect of adding an explicit topic in example (21), reproduced here, deserves some attention. The NS has to be coreferent with the overt topic, and cannot be coreferent with the postverbal subject *Leo*. This is due to the need to connect the topic *Marco* with some argumental slot in the adjacent sentence: the subject slot in the main clause is the obvious solution. Otherwise, the dislocated topic would be cut off from the predication, as if it were a hanging topic, which is impossible in (i). The requirement of a link for the external topic overrides the possibility of establishing a link with the postverbal subject. Nothing here supports the assumption that NSs obligatorily must be licensed by dislocated topics.

(i) Marco_j, quando ha parlato Leo_i, pro_{j/*i} ha convinto tutti.
 Marco, when Leo spoke, convinced everyone.

¹⁴ Recall that overt dislocated topics can usually be iterated in Romance: this is one of their defining properties. Thus, it is legitimate to wonder whether null copies of topics can be freely iterated too.

potential antecedent? Introducing a powerful hypothesis without specifying appropriate restrictions on its application results in an undesirable strategy.

4.1.4 A stipulative proposal

A syntactic approach to the preference for topic antecedents is merely stipulative. Frascarelli argues that in consistent NS languages the interpretation of NSs depends on a matching relation with a specific type of topic. This leaves some questions unanswered: why should there be any relation between NSs and topics? Why can't NSs be licensed in some other way, maybe unrelated to Information Structure? Why do certain languages display left dislocations but lack NSs (for instance, French, among Romance languages)? If the proposal were empirically sound, one could still accept it and expect that future research will provide at least partial answers to our questions. But, as the proposal does not cover the data adequately and suffers from conceptual inadequacies, it seems clearly preferable to look for an alternative hypothesis that is able to offer a motivated explanation for the facts.

A pragmatic account of the interpretation of NSs can provide this kind of motivated explanation, in a very simple way. In particular, it offers a natural answer for the first question in terms of accessibility (Ariel 1990, Gundel, Hedberg, Zacharski 1993). Briefly, for obvious reasons, NSs are the least specified elements in the toolbox for (pro)nominal reference in a NSL. Being devoid of conceptual content, they are unable to access discourse referents whose representation is not already activated in the working memory of the addressee: actually, they can only be used to retrieve given, activated referents that are in focus of attention for the addressee, i.e. maximally salient/accessible antecedents. This arises from the competition between null elements –ellipsis– and other pronominal and lexical DPs that can be located across a range of positions on an Accessibility Scale or a Givenness Hierarchy, and it is the reason why NSs behave like clitics and unstressed pronouns in many respects. The preference of NSs for topical antecedents is a natural consequence of their limitations in retrieving given discourse referents: topics make particularly salient antecedents, and thus, they are chosen instead of other competing candidates, especially when different options are contextually available. This is enough to give a response to the question about NSs and topics, and is at the same time compatible with two issues raised in the previous discussion: one is the role of syntactic prominence as c-command –syntactically prominent antecedents are also cognitively more prominent and thus favoured against other competitors–, and the other is the possibility to link NSs with focal antecedents –if they are accessible because they have been recently mentioned and do not compete with higher rated candidates, the resulting reading should be acceptable. In an approach along these lines, everything is derived from the informational status of NSs with respect to other DPs, without unwarranted stipulations. There seems to be no room for considerations of this kind in Frascarelli's proposal.

4.2 Why a pragmatic approach is to be preferred

Once we assume that the problem of interpretation of NSs lies partially outside the limits of grammatical theory, the main question raised in the introduction –how much of the interpretation of NSs depends on the grammar, and how it contributes to such interpretation– acquires a central status. It is initially plausible to think that the grammar contributes just some constraint, i.e. some way to restrict the search for an antecedent by placing a condition on it, instead of fully specifying the final interpretation. It is quite obvious that in consistent

NSLs the basic condition imposed by the grammar is the matching relation between the antecedent and the person and number features of verbal inflection; I will have nothing to add on this. Another indirect contribution of the grammar is provided by the system of DP forms that alternate with NSs, that is, the internal articulation of the accessibility scale in each language; notice that the scale does not specify any inherent property of null pronouns: it just shows the relative order of the forms as for accessibility marking. This is surely relevant, and I will take for granted that the articulation of the scale must be carefully considered, but here I want to focus on specific constraints on the interpretation of NSs.

There are two possible candidates for these constraints: one is a condition that states that there must be a topic antecedent, and the other one is a condition that states that the antecedent must be uniquely identifiable, i.e. that the interpretation must be definite. The first option has been discussed at length in sections 2 and 3 and has been discarded. The grammar does not need to include a condition on topical antecedents, neither along the lines of Frascarelli (2007) nor in a different version. The second option consists in positing a [+definite] feature either in the NS (for instance, in a null pronoun) or in the element that licenses it (verbal inflection), so that definiteness can guide the search for an antecedent. It is reasonable to think of definiteness as a basic condition for interpretation, just because referential/thematic NSs typically display definite readings. I will briefly discuss this point in section 4.3. Now I would like to go back to the data in sections 2 and 3 to draw some conclusions on how to account for them, given that postulating a condition on topics does not seem adequate. I will argue for a pragmatic approach.

The first fact, or set of facts, that one needs to explain is that NSs show a true preference for topical antecedents, especially when more than one potential antecedent is available, and this is supported by asymmetries between preverbal and postverbal subjects, and by asymmetries between preverbal subjects and complements. The second fact is that this preference is not always in force: NSs may also be linked to non-topical antecedents, and in some cases this is due to the pressure imposed by discourse coherence. The third fact is the relevance of syntactic prominence (c-command) for determining the adequate antecedents. As already shown in 4.1.4, a pragmatic account inspired by accessibility theories is able to cover all these empirical requirements: the preference for topical antecedents is nothing more than an effect of the need for accessible antecedents that happens to be particularly noticeable in a series of environments. This implies that the grammar does not impose any condition on topics, as argued above. I am aware that I am not offering a fully worked out theory based on accessibility and pragmatic inference, but that is not among the goals of this paper. The crucial point is that accessibility (together with related notions like discourse prominence or salience; see Jasinskaja et al. 2015, von Heusinger and Schumacher 2019 for an overview of the role of topicality with respect to the prominence structure of discourse) is the key concept.

A pragmatic account is preferable for a number of reasons. Here are some of them:

(a) Pragmatic processes are more or less successful depending on the assumptions that the context makes available. This implies that certain inferences may lead to the optimal interpretation in a particular context, but may be overridden by the salience of some different assumptions in another context. Pragmatic inference is known to be cancellable. The flexibility and the context-dependence typical of pragmatic processes is precisely what we observe in the counterexamples to the original generalization on topics (section 3.2.1).

(b) As noted before, the hypotheses that attempt to build a condition on topical antecedents in the syntax do it in a stipulative fashion, without actually explaining why such condition should exist. The pragmatic perspective, on the contrary, offers a natural motivation for the tendencies observed in the interpretation of NSs.

(c) A syntactic representation of the link between NSs and antecedents, such as the one provided in Frascarelli (2007), requires some ad-hoc machinery: null dislocated topics are the clearest example. A pragmatic account does not impose any complication to the syntax, and it is thus preferable for its simplicity. Moreover, it exploits only general principles that are independently justified, and it is the optimal solution on economy grounds. In a model like Duguine's (2013, 2014), for instance, if ellipsis of nominal arguments is possible in a language, all that is needed is that pragmatic inference solves the reference of the elided expression on the basis of the same factors that determine the resolution of other types of ellipsis; the grammar is no longer involved in this task.

(d) One interesting advantage of pragmatic accounts is that they allow us to connect the data with the results of recent research on processing of null subjects (Arnold 2010, Filiaci 2011, Di Eugenio 1998, Taboada 2008), and, from a general perspective, to integrate the facts into the wider panorama of psycholinguistic research on the resolution of anaphora, including also overt pronouns. This connection is usually neglected or obscured in syntactic accounts, which is an undesirable effect.

(e) The relation of NSs with overt pronouns is usually modelled on the basis of the Avoid Pronoun Principle. Such principle states that null pronouns are preferred over overt pronouns, unless certain special conditions are given. It highlights the effects of the competition between the two kinds of pronominal elements. I contend that every aspect of interpretation derived from the competition between options inside a scale or a paradigm is pragmatically inferred and does not need to be stipulated in the grammatical system. The consequence is that a pragmatic perspective is best suited to account for the relation between NSs and overt pronouns, and, more generally, for an adequate view of pronominal reference in discourse anaphora. Both for null and overt pronouns, the key factor is the interplay of linguistic prominence (accessibility) and discourse coherence. According to this, the Avoid Pronoun Principle is pragmatic and external to grammar.

This view of the problem of interpretation of NSs is in consonance with the general hypothesis defended in Duguine (2013, 2014): NSs are best treated as a case of argument ellipsis, both in consistent NSLs and in radical NSLs like Chinese.

4.3 Definiteness

Let's suppose that NSs in consistent NSLs are always assigned definite interpretations, as noted above.¹⁵ This could be explained by postulating a [+definite] feature encoded in agreement morphology; according to this proposal, the grammar would constrain the search for an antecedent by means of the condition imposed by definiteness –unique identifiability.

¹⁵ I will stick to this usual assumption, though it seems to me that certain indefinite interpretations are possible, at least in Spanish, when NSs have bare nominals as antecedents. If this is correct, it could favour a pragmatic approach to the prevailing definiteness of NSs. I leave this issue for future research.

However, I believe that definiteness as an encoded feature can be dispensed with (against Holmberg 2010 and many others). To ensure that NSs will get definite readings, it is enough to know that they cannot be interpreted if an antecedent is not retrieved. The search for an antecedent guarantees that (at least) one adequate antecedent must be selected, and this requirement equals the effects of encoded definiteness: the referent has to be given information, and has to be properly identifiable. Nothing else is needed. Definite readings are obtained without NSs including any definiteness feature.

My conclusion is that, if the grammar neither imposes any condition on the topical status of antecedents nor imposes any condition like definiteness, there is no way in which the grammar constrains the interpretation of NSs (apart from subject agreement). There is argument ellipsis –if the relevant conditions are met–, and the resolution of ellipsis depends on processes which are external to the grammatical system.

5. Conclusions

The main issue addressed in this paper is the problem of the interpretation of referential NSs in languages like Spanish and Italian. Interpreting NSs means determining their reference. Assuming that a number of factors, both grammatical and non-grammatical, are involved in the determination of reference, two research questions come to the forefront: 1. How is the division of labour between grammar and pragmatics established in the interpretation of NSs? 2. What is the status of topicality? Here I focussed on the second question, and in particular on a specific proposal about the role of topicality: Frascarelli's claim that Romance NSs are licensed through an Agree relation with an Aboutness-Shift Topic in the sentential left periphery. In Frascarelli's model, the grammar includes the condition that NSs must be linked to an antecedent that occurs as a dislocated topic; thus, the role of topicality in the licensing and interpretation of NSs is set by the grammatical system, and the role of pragmatics in interpretation is not specified. I have tried to argue against this approach along the following lines.

First of all, in section 2 I reviewed significant evidence from the literature on Spanish and Italian supporting the idea that NSs tend to choose topical antecedents. Most of the evidence comes from asymmetries between two sets of antecedents: preverbal subjects, on one hand, and postverbal subjects and complements, on the other. The data show that NSs are preferably linked to preverbal subjects, and it is reasonable to think that this is due to the default topical status of preverbal subjects in NSLs.

Once the preference for topical antecedents has been introduced, the relevant question is how to account for it. In section 3, I presented an overview of the ideas in Frascarelli (2007, 2018) followed by some critical observations: I tried to show that the mentioned preference for topical antecedents is not always in force and cannot be integrated into the grammatical system as a syntactic principle.

Finally, section 4 deals with some of the consequences of my critical review of the topic chains approach. It starts with additional critical remarks on the way the notion of *topic* is used in this proposal and, in particular, on the idea of null copies of dislocated topics. I conclude that the role of topicality in the interpretation of NSs should not be captured by means of a syntactic constraint, in particular one based on Clitic Left Dislocation. The problem of licensing of NSs and the problem of their interpretation must not be conflated: the grammar should explain how NSs are licensed in a language, but not how their referents/antecedents are chosen and identified, because this does not pertain to the domain of grammar. Another obvious consequence is that the preference for topical antecedents, together with all other

aspects of the identification of referents, must be explained from a pragmatic perspective; I suggest that this can be done relying on available theories of discourse anaphora based on accessibility, and that this view of the problem has a number of advantages, among them the possibility of finding a natural motivation for the way speakers use and interpret NSs.

As for the question concerning the division of labour between grammar and pragmatics, my conclusion is that the grammar contributes only minimally to the interpretation of NSs: in languages like Spanish and Italian, its contribution is limited to the features of subject agreement. There is no constraint due to a [definite] feature, and there is no condition on the topical status of antecedents.

From a more general viewpoint, and transcending the particular issue of how NSs are linked to their antecedents, the ideas in this paper could be considered as a small contribution to reinforcing the claim that (pro)nominal reference is only minimally determined by syntax (along the lines of previous proposals on the role of pragmatic principles in anaphora resolution, like Reinhart 1986).

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