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***Exploring the Partial Pro-drop Property in Modern
Hebrew***

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Overview of the dissertation

The present work intends to provide a more in-depth understanding of the identification and interpretation of *pro* in Modern Hebrew through authentic examples from spoken language. It is based on the assumption that syntactic derivations are pragmatically driven when they contain null pronouns. Accordingly, the thesis promotes the view that the omission of the subject should be considered a mere pragmatic phenomenon and seek to provide answers to the following key questions:

- ❖ How, and to what extent, are the syntactical and/or pragmatic components operative in determining the referent of 3rd person *pro*?
- ❖ In Hebrew, what part of pro-drop theory is regulated by syntactic mechanisms, and what part by semantic and/or pragmatic mechanisms?

Pro-drop in Modern Hebrew is a complex phenomenon. To gain a richer understanding of its fascinating nature, and looking for cues to solve the puzzle¹, during my doctoral studies I have been exploring a vast variety of approaches across a number of different disciplines. Hence, the literature discussed encompasses work in psycholinguistics (Chafe 1976, Carminati 2005), syntactics (Homberg 2010; Shlonsky 2009, 2014), pragmatics (Ariel 1990, 1999), and syntactic-pragmatics analysis (Frascarelli 2007, 2014; Franscarelli and Hinterhölzl 2007; Sigurdsson 2011) and to a semantics contribution (Bianchi 2006). Each of these remarkable scholarly contributions helped me greatly in formulating my hypothesis, which will be discussed in Chapter 3.

It should be clarified forthwith that this work is mainly focused on the third person singular null pronouns in Hebrew *spoken language* (colloquial speech), although comparisons with Italian - and occasionally Finnish - will be provided throughout the chapters. Hebrew *written language*, however, works quite differently - with subject omissions being more largely allowed when compared to spoken Hebrew. Substantial differences between literary, written, and spoken Hebrew have been, in part, discussed in Ariel (1990: 48), who maintains that ‘Hebrew first- and second-person pronoun distribution (as well as third person pronouns) is crucially dependent on speech style. Formal Hebrew has fewer such pronouns, while colloquial Hebrew has them more frequently’. Such insights seem now highly relevant as I look back at the corpus I used for my

¹ Its mixed pro-drop system is problematic in a theory based on economy such as the Minimalist Program, this is one reason I decided to examine it.

Bachelor dissertation (*The Harry Potter* novel in Hebrew), noticing that it was actually rather simple to run into pro-drop occurrences. Here an example:

- (i) hu_r ivir la-daf hašeni ba-takhtsir, lama zman še-ze
 he turn.PST-3SM the-page second of-report how.much time that-it
 lakakh, ve **pro** mevater al-zhe keilu zu
 take.PST.3M and give.up.PST-3MS on-this as-if it
 avoda garva. [Rosh ha-memshala]_r matakha et
 undertaking hopeless head of-government stretch.PST-3MS ACC
 zrootav meal rosh-o ve **pro** histakel saviv
 arms above head-3MF.GEN and look.PST-3MS around
 misrado be-agmumiut.
 office with-pain

‘he turned the second page of the report, (he saw) how much time it took and (he) gave up as if it were a hopeless undertaking. The president stretched arms above his head and (he) looked around sorrowful’

In the generative literature, linguistic theories postulate many variables for the realization of a third person covert pronoun in Hebrew. Apparently, Hebrew subject omissions vary on the basis of persons, tenses, environments or it is said that the subject is generally required (Levy and Vainikka 1999). Nevertheless, the hypothesis that will be tested in this thesis is the possibility that pro in Hebrew may be always optional (i.e., the non-spontaneous choice): in order to guarantee topic continuity, Hebrew may also employ *shortened pronominal form* where Italian uses pros.

This dissertation is divided in four chapters. Chapter 1 introduces all the theoretical assumptions that are essential to the analysis of the pro-drop phenomenon in Modern Hebrew. Chapter 2 provides the empirical terrain for Chapter 3 in which the analysis of collected data will lead to the formulation of the abovementioned hypothesis. An overview of findings and indications for future research are the subject matter of the fourth and last chapter.

To conclude, I will explore in depth the peculiar partial pro-drop nature of the language in question, considering that the interaction between syntax, pragmatics and semantics could provide a clearer insight into the factors responsible for the omission of third person null subjects in Modern Hebrew.

Chapter 1 - Introducing the pro-drop phenomenon

1.1 Introduction

In the literature on licensing of referential null subjects, the morphological richness of verb agreement is often understood as responsible for the realization of null pronouns: a rich inflection could license a *pro* in subject position. This approach, however, has been more recently questioned since it cannot account for pro-drop languages such as Chinese, which presents a poor INFL system, or, conversely, for morphological ‘rich’ languages lacking the pro-drop property such as Irish (cf. Huang 2000). In light of these conflicting factors, Chomsky himself, in the Minimalist Program, expressed doubts regarding the connections between the pro-drop property and a rich inflectional system.

Commonly, it is also assumed that control and c-command play a crucial role in the identification of a null subject, being considered a *distinctive feature* of the *partial pro-drop property*. However, this assumption could be questioned: for example, in Italian pro-drop does not simply mean that this language allows dropping the subject both in matrix and in subordinate clauses; rather, this is a strategy to reach specific communicative goals. As an illustration, imagine a context where a person, call him Dimitri, is being discussed:

- (ii) mi spiace, di te, non **gliene** importa niente
‘I’m sorry, about you, (he) doesn’t care’

This is a typical example of Italian left dislocation. However, the point here is that the subject *Dimitri*, in (ii), has been omitted to maintain it as the current topic of the discourse: perhaps the speakers were discussing Dimitri’s sentimental situation, therefore he remains the silent topic of the discourse. Uttering the full NP would lead to confusion (is it the same Dimitri?) or it would be redundant. The resumptive pronoun (in bold) helps to connect the dislocated constituents in the Left Periphery to the sentence, and, more importantly, it cause the dislocated PP ‘di te’ to activate a [contrastive] feature. In other words, (ii) does not merely mean that *Dimitri* does not care about the

hearer, but he cares about someone else. The functions of Italian topics will be illustrated in the following paragraphs.

A further attempt in order to go beyond the crystallized assumption that a rich INFL system containing the [person] feature can license a *pro* is found in the work provided by Homberg (2010). Indeed, his proposal of the D(efinite)-feature on T (discussed in §2.4, Chapter 2) could be illustrated by the following statement: ‘the crucial notion is not referentiality, but definiteness’. Also Roberts (2010) argues that since in ‘consistent’ pro-drop languages T bears a D-feature, then definiteness is *recovered* even though the Spec,TP’s position is empty. These authors, rethinking the *Extending Projection Principle* (Chomsky 1981)², assume that English-type languages that display ‘poor’ phi-feature on T, i.e., do not bear a D-feature and, as a consequence, weak subject pronouns need to be overtly realized.

In opposition to such views, Ariel (1990) proposes a pure pragmatic approach to account for the interpretation of zero subjects. Although her work dates back more than three decades ago, it can still account for pro-drop in typologically different languages including Chinese. Ariel points out that in the Minimalist Program, it has been proposed to distinguish languages such as Chinese as topic-drop languages requiring a more pragmatic approach, as opposed to other languages that apparently follow syntactic mechanisms. By contrast, she proposes a unified pragmatic theory to account for zero subjects, the *Accessibility Theory*. This hypothesis will be discussed in more details in §2.1, Chapter 2.

To conclude, it is widely recognized that the Null Subject Parameter is not binary, since ‘micro-parametric’ diversifications emerge across languages, which mainly concern reference, phi features and morphological richness. The idea, therefore, is to reconsider these ‘micro-parameters’ and explore the possibility of a unified theory based on a comparative interface analysis. A key concept to achieve this goal is the [+aboutness] feature, first discussed by Reinhart (1981), then resumed by Frascarelli (2007) with the Topic Criterion Hypothesis. In particular, Frascarelli’s hypothesis states that the interpretation of third null pronouns depends on a matching relation with a specific type of topic: the *Aboutness-shift Topic*. Before going into the merits, let me introduce the [+aboutness] feature.

² Every sentence, to be such, must be interpreted as a connection between a predicate and a subject.

1.2 Aboutness

In the Seventies, several attempts have been made to analyse a notion as abstract as *aboutness* (cfr. Chafe 1976; Givón 1976; Reinhart 1981 among others); whereas, from the Nineties - increasing the number of different typological languages analysed - the notion has received a more specific and detailed characterization, based on empirical generalizations (cfr. Vainikka and Levy 1999; Huang 2000; Frascarelli & Hinterhölzl 2007; Puglielli & Frascarelli 2008; Holmberg, Nayuda & Sheehan 2009).

More generally, topic is what is being discussed in a given portion of conversation; its distinctive property has been identified by Reinhart (1981: 53) in terms of *aboutness*, that is, ‘what the sentence is about’. The author, however, does not intend it as a primitive notion; instead, she provides a criterion that can be summarized as follows:

(1) *Aboutness Criterion*

Topic is the argument of the speech, the entity being discussed, and, to be such, it must fulfil at least two conditions:

- (a) It must be part of the shared knowledge of participants of the conversation;
- (b) If (a) is met, the entity in question can qualify as topic of the discourse if it is uploaded in the ‘context set’³.

Actually, condition (b) is arbitrary because it requires the hearer to open or reopen a *file card*. Then, it follows an arbitrary negotiation. The notion of file card requires a step back. Reinhart (1981) adopts this metaphor to describe the way in which information are organized in relation to various entities (referents) introduced in the discourse. To put it differently, each participant in the conversation decodes information uttered by other participants; some of which will be identified as useful and then stored, others may be rejected for their true-conditional value or for being useless for the development of the conversation itself. However, if not rejected, referents are not solely uploaded in the context set; instead, they are organized in file cards where one arranges all the information (also subsequent) concerning a given referent.

Drawing on Reinhart’s work, Krifka (2007) suggests the following definition for topics:

- (2) The topic constituent identifies the entity or set of entities under which the information expressed in the comment constituent should be stored in the CG content.

³ ‘The context set of a given discourse at a given point is the set of propositions that we accept to be true at this point’ (Reinhart 1981: 78).

The above definition requires distinguishing between what the author calls Common Ground content (*CG content*) and *CG management*. The first is the set of propositions that speakers accept and, therefore, they constitute the content of the conversation at a given time. The second is the set of instructions provided by speakers that have an impact on the dynamics of the conversation (e.g., a question) and require the CG content to be updated. Also in Reinhart (1981), the CG is not merely a disordered set of entities, but a set of propositions that instruct the speaker on which ‘mental file’ to open (CG management) in order to store information (GC content). The ‘entity’ evoked by the author in (2) is the theme of the discourse, which is part of the shared knowledge as a result of one of the following processes: a) what is said about the entity in question is stored in the CG content, taking the status of given information. b) It may be the case, instead, that the entity in question is already part of the shared knowledge, accordingly the inherent file card is ‘recovered’ from the CG to be ‘updated’: the information in the comment will be added to the GC content. Therefore, the CG is like a ‘stack’ where all file cards are stored; during the conversation, other file cards may be put on the top. However, if the speaker asks to ‘re-open’ a mental file, the latter returns on the top of the pyramid as Topic. We have shown a definition for topic that does not recall the confusing association Topic / Givenness⁴.

The dichotomy between New and Given has been widely discussed in the literature. The analysis proposed in Chafe (1976) is a good attempt to distinguish the abovementioned concepts from the psychological point of view. Specifically, the author distinguishes between three possible cognitive statuses of elements in a discourse: activated, deactivated and semi-activated. A piece of information (or part of it) can be {+/- new}, if it has been {+/-activated} in the Short Term Memory (STM) of participants in a conversation. If a concept is already in the STM - because it has been previously *activated* - it will be indicated as Given. It could be that a previous activated element switches to the status of *deactivated* when it is not retrieved in the context anymore (during this passage its status will be *semi-activated*). To put it differently, an element can change its status of activation on the basis of the cognitive process that affects speakers during a conversation.

Lastly, Frascarelli (2007) examines the way in which this pragmatic feature [+aboutness] is combined with the speakers’ communicative goal in using specific structures of topicalization,

⁴ In the literature, for years the topic has been associated to given (cf. Gundel 1974; Chafe 1976). This is, per se, not erroneous, since the topic may encode given information (mentioned in the previous context) and, therefore, [+activated] in the CG of the current discourse. However, this association is naive, since it cannot include all other types of topic, [-activated] in the CG of the current conversation but with the [+aboutness] feature. In other words, the speaker can propose as topic either an entity previously activated, or an [-activated] element, *not* connected in any way to given. Also Büring (1995: 4) clarifies this point assuming that ‘Topic is not just an arbitrarily selected part of the given information. It is understood as “what the rest of the sentence is about”, or “the entity anchoring the sentence to the previous discourse’.

thereby giving rise to different kinds of topics. An example is the Aboutness-shift topic, which will be described in the following paragraphs.

1.2.1 Aboutness-shift Topic (L^*+H)

This topic has the function of introducing a new aboutness topic (or proposing a topic-shift) in the discourse. However, what is actually new is the topicalization of a given constituent at a given point in the conversation, rather than its content (Frascarelli and Puglielli 2008).

Syntactically, it is characterized as follows: it is base-generated in C-domain where it occupies the highest position; it is not iterable, this is to say, only one Aboutness-shift Topic per sentence is allowed (Frascarelli and Hinterhölzl 2007).

From the prosodic point of view, it is signaled by a rise in the intonational contour that is aligned with the tonic vowel in its full extension and reaches its peak on the post-tonic syllable. Consider the following example provided by Frascarelli (2007: 7)

- (3) Il materiale era tantissimo quindi all'inizio l'ho fatto tutto di corsa cercando di impiegarci il tempo che dicevate voi magari facendolo un po' superficialmente pur di prendere tutto- **l'ultima unit** la sto facendo l'avevo lasciata un po' da parte [...]
 'the material was quite a lot, so at the beginning I did it all in a rush, trying to do it in the time that you had fixed, perhaps a little superficially, so as to do everything- I'm doing the last unit now, I had put it aside before [...]'

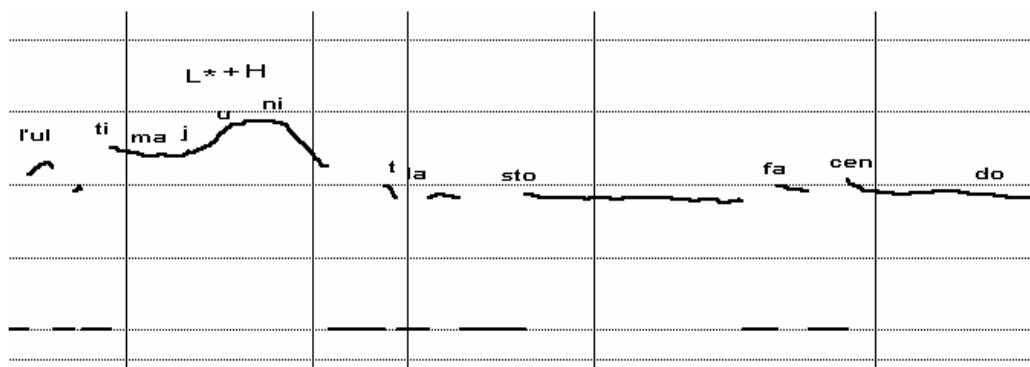


Figure 1

In (3) a student is speaking about the material of a language course she is attending to. At some point, she proposes a new topic, the DP *l'ultima unit*, and, as we can see in Figure 1, this DP 'is signaled by a sharp rise on the tonic syllable - the diphthong [ju] - and likewise by a sharp fall after it'. The comment *la sto facendo* 'I'm doing it' presents a low tone without particular peaks. Indeed, an intonational break after *l'ultima unit* signals the prosodic boundary between the Topic in question and the rest of the sentence.

To recapitulate, this topic is named **Aboutness-shift Topic** in Frascarelli & Hinterhölzl (2007) (from now onwards F&H 2007) as it combines its [+aboutness] feature with a topical *shift* in the discourse.

1.2.2 Contrastive Topic (H^*)

A topic is contrastive when it creates a contrast between its comment and what it is said about other topics. In the analysis proposed in F&H (2007: 92), this type of topic presents a specific pragmatic-prosodic characterization: ‘the H^* tone characterizes a contrast between two or (more) topics as far as some specific (new) information is concerned’. Also the Contrastive Topic is base-generated in the Left Periphery, in a lower position than the Aboutness-shift Topic and it is not recursive.

From the prosodic point of view, it has a rising tone that reaches its pick on the tonic vowel (H^*), in opposition to the topic previously described that reaches its peak on the post-tonic vowel. For an illustration, consider an example discussed in F&H 2007:

- (4) [...] Non ho un metodo particolare perché ho avuto una storia travagliata soprattutto col l’inglese [...] cioè, col francese vado benissimo: ho fatto tre anni di medie avevo raggiunto un buon livello secondo me riuscivo a vedere un film, in inglese ho avuto sempre dei problemi con i professori.
 ‘I don’t have any particular method [with languages] because I had a troubled story, especially with English [...] in French, I was perfect: I studied it for three years at school, I reached a good level I think I could also see movies in original version – while in English I always has problems with professors’

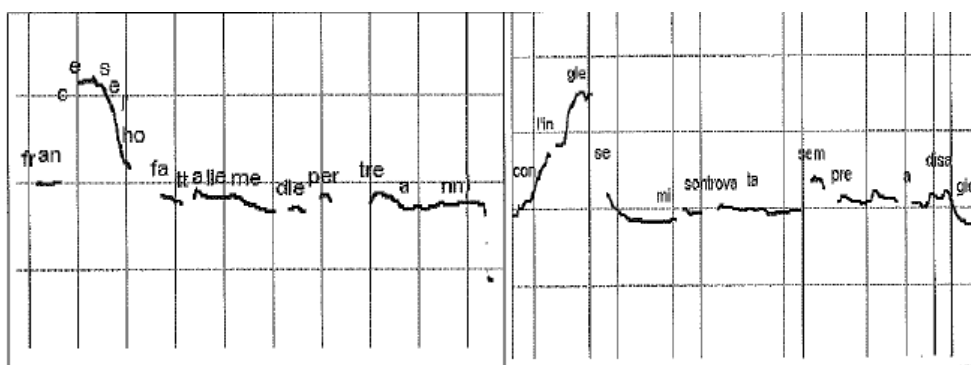


Figure 2

In (4) a student is talking about her linguistic ability. She proposes a contrast between the Topic *col francese* and the second topic *in inglese* (both underlined), to put it differently, what it is said about the first topic is in contrast with the comment of the second one. Figure 2 shows a rise in the intonational contour of both topics.

Lastly, authors such as Molnár (2002) and F&H (2007: 101) suggest reconsidering the [+contrastive] feature as an independent feature (ContrP) instead of a merely property of topics and foci in light of the following reason:

It is worth noting that contrastive topics and foci never co-occur in the same sentence [...] and that the tonal event characterizing contrastive topics is exactly the same as the one for (contrastive) foci Italian and other language, namely H*.

Also in Frascarelli and Puglielli (2008), it is observed that both the Contrastive Topic and the Contrastive Focus occupy the same syntactic position. Indeed, in the C-domain they follow the Aboutness-shift Topic and precede the Familiar topic. The fact that they seem to follow a hierarchy will be deepened in a dedicated section. Let us now introduce the last type of topic: the Familiar Topic.

1.2.3 Familiar Topic (L*)

This topic is used to reopen a previously created file card in order to re-activate it or for topic continuity. In Italian-like languages, the Familiar Topic can be left- or right-dislocated based on the pragmatic functions it performs. Specifically, in the case it is used to maintain *topic continuity*, it is left-dislocated in a lower position than the other types of topics. Conversely, when it is used for the *afterthought function*, it is usually right-dislocated (Frascarelli and Puglielli 2008). It is worth noticing that while the Familiar Topic can maintain topic continuity both when it is left- or right-dislocated, it is used for afterthought only when right-dislocated (Frascarelli 2007). Differently from the Aboutness-shift Topic (and the Contrastive Topic), more than one Familiar Topic can be realized in a sentence, in Italian-like languages.

Prosodically, it is associated with a Low tone (L*) without intonational picks. The following is an illustration from Frascarelli (2007: 9):

- (5) Era tutto molto nuovo nel senso che comunque la **lingua inglese** attraverso i programmi sul computer diciamo non **l'avevo mai-** [...] comunque **l'inglese** risultava anche facendolo da solo più interessante [...] io, inglese non- premetto non l'avevo mai fatto.
'Everything was totally new to me in the sense that I had never studied English through computer programs [...] and through self-learning English appeared more interesting to me [...] I must say that I had never studied English before.'

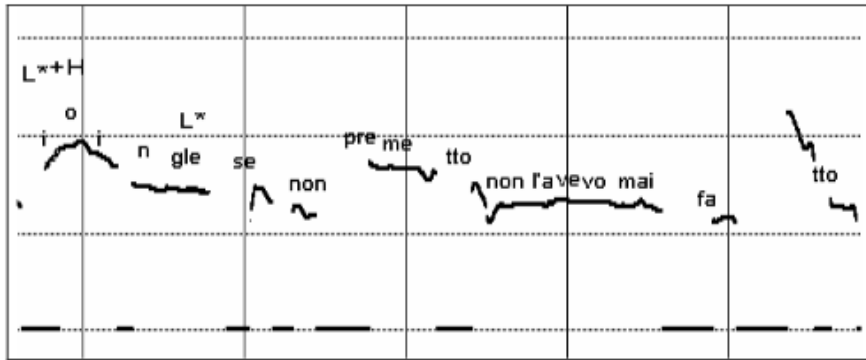


Figure 3

The speaker in (5) was interviewed on her experience in learning English. She repeats the topic *inglese* several times (in bold) in order to maintain it activated. The author focuses on the prosodic structure of the last sentence (underlined), because the topic in question is preceded by an overt subject pronoun: *io* ('I'); at this point, the speaker still wants to maintain the topic in question [+active], and at the same time, she wants to shift the conversation on herself to specify that *she* had never studied *English* before. To reach this communicative goal, she uses an Aboutness-shift topic to change the subject under discussion. Considering that she also needs the preceding activated topic to express her thought, she maintains the NP *Inglese* [+active] as Familiar Topic. As shown in Figure 3, these two topics ('I' and 'English') present a different prosodic structure: the first one has a rise in the intonational contour (L*+H) and qualifies as Aboutness-shift Topic; the second presents a low tone. Let us now consider an example of Right-dislocation (Frascarelli 2007: 8):

- (6) a: io dovevo studiare le regole qui e lì fare solo esercizio, invece mi aspettavo di trovare dei punti a cui far riferimento ogni volta per vedere la regola, questo mi è mancato praticamente: **la conferma** di ricordare tutto insomma
 b: comunque quelle domande ti davano **la conferma** che avevi capito
 a: ma... magari non me la- non riesco a darmela da sola **la conferma**.

a: 'I was supposed to study the rules here and do the exercises at home, while I expected to find some outlines I could refer to, at any point, to check the relevant rule, this is what I missed: the check that I could remember everything'

b: 'however those questions gave you a check for your understanding'

a: 'well, maybe I cannot do this check on my own.'

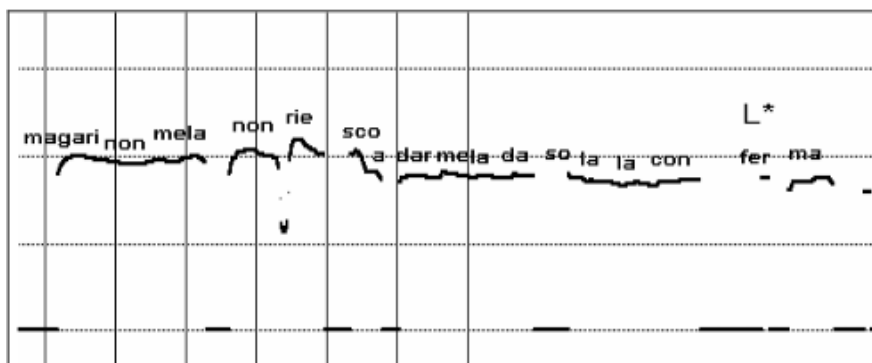


Figure 4

The DP *la conferma* ‘the check’ in (6) is mentioned in each conversational turn; however, in the last one, it is repeated at the end of the sentence and resumed by the topical resumptive pronoun (in italics) within IP. The prosodic analysis in Figure 4 shows that it presents a low tone and it is separated by the rest of the sentence by a pause. The fact that the DP in question is repeatedly mentioned might seem redundant and anti-economical (considering that it is spoken language). However, speaker (b) introduces another potential constituent to be discussed i.e. *quelle domande* ‘those questions’. Speaker (a) wants to say something more about the first topic, but, at this point, it is not necessary to fix it as topic: it is merely reintroduced at the end for afterthought (since another possible file card could have been opened by speaker (b)).

To conclude, the Familiar Topic can be used for two different pragmatic functions: a) topic continuity, b) afterthought. In Italian-like languages, it can be left- or right-dislocated and resumed by a pronoun within IP.

1.3 Topic Hierarchy

In this section, the different types of topics are taken into account all together versus a free-recursive analysis of topics. F&H (2007) propose a Topic Hierarchy based on a strict correlation between discourse functions of topics and their grammatical properties:

- (7) Topic Hierarchy:
 CP[A-Top (Topic Shift [+aboutness]) > C-Top (Contrastive Topic) > G-Top (Familiar Topic)]

This Hierarchy presupposes that when the [+aboutness] feature is associated with given information and a low tone, a Familiar Topic is introduced for topic continuity or for the function of afterthought. Whereas, when a Topic proposes a contrast between its comment and one or more other Topics, associated with a specific intonational contour, Contrastive Topics are realized. For

instance, consider the following:

- (8) (a) Sai stavo parlando con Marco_z e mi diceva che in questo periodo si vede sia con Maria che con Sara, ma proprio ieri Sara gli_z ha fatto capire che vorrebbe consolidare la loro relazione.
 (b) Beh **Sara**, lei uhm sì, ha preso sul serio Mario, mentre **a Maria, di lui_z**, non gliene importa niente.
 ‘well, Sara is really interested in Mario, while Maria doesn’t give a damn about him’

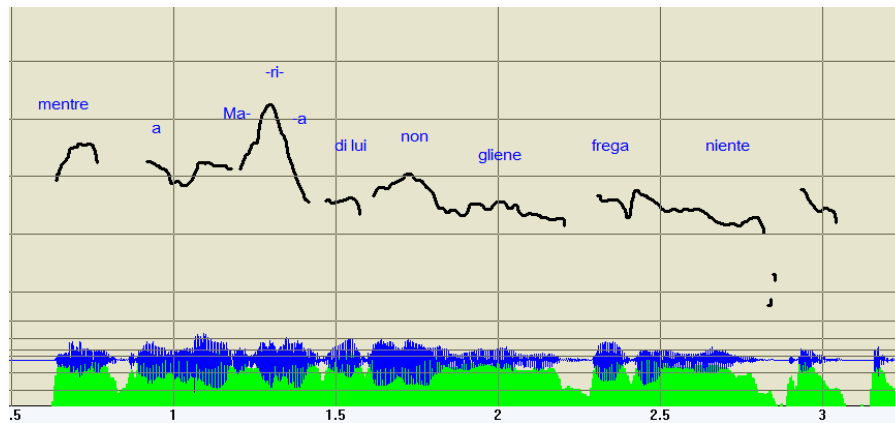


Figure 5

The constituents in bold are all Topics. In particular, the PP *di lui* has the pragmatic function of referring to a NP mentioned before which needs to be maintained as Topic; this is confirmed by a low tone as shown in Figure 5. As for the Topic *a Maria*, it denotes a contrast between its comment and what is said about the DP *Sara* (which is a Contrastive Topic as well). This analysis shows a) the necessity of a Hierarchy for Topics, considering multiple Topic constructions as in (8) b) A-Top and C-Top are not iterable: the Contrastive Topics, *Sara* and *a Maria*, occupy the C-Top position of different sentences (and they are not freely recursive (Frascarelli 2007)).

The contest is therefore crucial to identify a topic. Reinhart (1981: 53) herself points out that ‘what the topic of a given sentence is is determined both by its context of utterance and by its linguistic structure’. As an illustration, imagine a context where the DP *Maria* is being discussed. One of the interlocutors utters (9b) as a contribution to the discussion:

- (9) a: Achille_z è totalmente innamorato di Maria_y, diciamo pure innamorato cotto! ...da quando siamo stati in svizzera...
 b: Ti posso dire una cosa!? **a Maria_y, di lui_z, non gliene importa niente.**
- a: ‘Achille’s totally in love with Maria, let’s say loved up! ...since when we went to Switzerland...’
 b: ‘Can I tell you something!? Maria doesn’t give a damn about him’.

In (9), speaker (a) is talking about the referent *Achille*, thus, it is the current topic; speaker (b), instead, in order to provide her/his contribute to the conversation, requires to open another file card, or rather, to shift the topic of the discourse. In this case, *Maria* does not create any contrast with another topic: its function is to propose a different folder in which information about herself will be stored. If speaker (a) accepts or not such information is not relevant for identifying the PP *a Maria* ('to Mary') as the current topic until another shift is proposed. By contrast, the PP *di lui* (referring to *Achille* as indicated by the index *z*) has the same function like in (8), i.e., maintaining topic continuity.

1.3.1 Topic Criterion

The general claim made in Frascarelli (2007) is that the Aboutness-shift Topic is the constituent that can provide a referential value for a NS through AGREE. According to this perspective, this specific Topic, acting as *probe*, checks the feature of *pro* (*goal*) and, makes them interpretable. Therefore, the Aboutness-shift Topic identifies a referential *pro*, besides carrying out the pragmatic functions that was discussed in detail in the previous section (cf. §2.1). Consider now the following example from the author (Frascarelli 2007: 10):

- (10) **il mio capo**_i come diceva Carlo [...] **pro**_i è un ex reporter [...] **pro**_i è stato in giro per il mondo [...] **pro**_i mi ha preso in simpatia solo che siccome **pro**_i è mostruosamente lunatico, è capace che domani non gli_i sto più simpatica e **pro**_i mi sbatte fuori [...] comunque a parte questo **pro**_i mi diverte moltissimo – poi c'è M.F._k che è questo che appunto sta facendo tipo praticantato per poi andare a fare l'esame da giornalista/ fra un anno e mezzo quindi lui_k c'ha quanto meno la garanzia che **pro**_k può rimanere lì finché **pro**_k non farà l'esame cioè ehm lui_j poi gli deve fare/ scrivere le referenze.

[my boss]_i as Carlo used to say [...] *pro*_i is a former reporter [...] *pro*_i has been all over the world [...] *pro*_i likes me, however, as *pro*_i is extremely moody, maybe tomorrow *pro*_i does not like me any longer and *pro*_i fires me [...] anyway, apart from this, *pro*_i is really funny - then there is [M.F.]_k who is practicing for his exam as a journalist/ in one and a half years, so at least he_k has a guarantee that *pro*_k will stay there till *pro*_k has made the exam because he_j then must make/ write a report ...'

In (10), the speaker introduces the topic she wants to talk about: *il mio capo* 'my boss'; it presents a rising intonational contour (for details see Frascarelli 2007) and it qualifies as the Aboutness-shift Topic. This remains the current topic in the following sentences, in which only *pros* are used. In other words, it can provide a referential value for the NSs that follow. Then, another referent is introduced (i.e., M.F.) and it also qualifies as Aboutness-shift Topic. Specifically, the speaker shifts the conversation to his colleague M.F. but then a strong pronoun is used to establish it as topic. A slight different interpretation I would suggest is that this pronoun (with index *k*) is actually a

contrastive focus: the speaker wants to underline that M.F. (different from *her*) can work there until he finishes the internship; conversely, she has no clues. Indeed, at the beginning, she makes us understand that if his boss is in a bad mood, she may risk her job. In other words, the sentence can be paraphrased as follows: ‘he has a guarantee that (he) will stay there, I do not’. Observe also the use of the last pronoun index *j*: it refers to the first activated topic, *my boss*, but since his referent is in a semi-activated status (adopting Chafe’s terminology), it is not essential to reintroduce the full form in the discourse, its file card is still open. Therefore, this pronoun is used for topic continuity and it is resumed by a resumptive pronoun (*gli*) within IP.

The crucial ingredient of the Topic Criterion Hypothesis is the presence of an Aboutness-shift Topic in each predicative sentence. This does not mean that each C-domain has a phonologically realized Aboutness-shift Topic, rather, once established as the current topic of the discourse, it can remain [+active] but silent for a long stretch (such as *my boss* in (10)). These observations led the author to assume that the Aboutness-shift Topic position (ShiftP) should always be filled in order to interpret the [+aboutness] feature in CP and, consequently, in IP when the subject is dropped. The original formulation of the Topic Criterion is the following (2007: 26):

(11) TOPIC CRITERION

- a. [+aboutness] is connected with an EPP feature in the high Topic field that yields a specific discourse-related property, namely ‘Aboutness’.
- b. The [+aboutness] Topic matches with an argument in the main clause through Agree
- c. When continuous, the [+aboutness] Topic can be null (i.e. silent).

(a) proposes that the [+aboutness] feature is an extension of the EPP to the CP area: every sentence must have an [+aboutness] feature and it is licit to assume that the highest Spec,CP position is always occupied to identify this feature. Such a position indeed corresponds to the Aboutness-shift Topic position, (b) on which depends the realization of NS in a pro-drop language as Italian. Last but not least, (c) the topic in question can be silent if it remains the current topic in the following sentences; it would be redundant to repeat it, if continuous. Note, however, that the Familiar Topic does not create, by itself, a relation with an argument pro in Spec,IP, but only if its referential features are a *low copy*⁵ of the current Aboutness-shift Topic.

⁵ A low copy refers to the position occupied by this topic in the C-domain: it is the lowest topic (cf. Topic Hierarchy in §3).

1.3.2 Silent topics in Italian

As already mentioned in the foregoing section, the Aboutness-shift Topic identifies an argument *pro*, that is, provides a referential value for a third person null subject (through Agree). Indeed, *pros* have the same function as weak pronouns, it is to say, they serve as resumptive pronouns in base generated topic constructions in Italian:

- (12) [CP [{Topic di Aboutness-shift} . . . [IP [*pro*/weak pronoun . . .]]]]
|_____|
AGREE

Frascarelli (2007) argues that the aboutness topic can also be silent. In fact, it is realized only when speakers want to propose a topical shift. In other words, if the current Aboutness-shift Topic remains as ‘what a sentence is about’⁶ in the following sentences, then it presumably will be maintained as silent (cf. Frascarelli 2007: 32):

- (13) (a) **Leo_k**, onestamente, ha molto successo con gli studenti e [ogni studente]_j pensa che **pro_{k/*j}** è un genio!
 (b) **Leo_k**, onestamente, ha molto successo con gli studenti e CP[[A-Top Nullo <**Leo_k**>]
 ‘Leo_k is very successful with students and [every students]_J thinks he_{k/*j} is a genius’

In (13a), it is shown that *pro* cannot be interpreted as [ogni studente], even though it is the nearest constituent that may act as an antecedent. *Pro* is necessarily identified as coreferent with the current topic *Leo*. (13b) illustrates Frascarelli’s idea that ‘the DP *Leo* is established as the Aboutness-shift Topic in the matrix clause and kept silent in the second conjunct’. Lastly, when the Topic in question is silent, a familiar Topic (acting as a low copy of it) is needed for topic continuity in a language like German, but not obligatory in Italian.

1.4 The *pro*-drop property in Modern Hebrew

The distribution of NSs in Modern Hebrew seems to be fairly complex. Shlonsky (2009) identifies three variables that affect the realization of a NS in this language: *referentiality*, *tense* and *person*. As for the first variable, non-referential *pro* is licit in all contexts, with the sole exception of ‘*eny* sentences’. The latter are a particular type of negative sentences containing the negative particle *eny* that, as opposed to the regular negation *lo* ‘not’, can bear an agreement suffix. At this point, the incompatibility with the expletive *pro* is obvious. Referential *pro* is subject to several restrictions such as embedded domain and its realization also depends on tense and person.

⁶ Reinhart (1981).

As for *tense*, a subject in Hebrew can be dropped only in past and future tense sentences; subject omission is illicit with present tense. The reason is that Hebrew present tense has a reduced set of phi features, more specifically, it lacks the [person] feature. The author explains that it has the same form of a participle. It is intuitive, that if this feature is absent (or silent, as we will suggest in the next chapter), then dropping the subject could be problematic in order to identify (and license) the person involved in a communicative event.

The *person* variable highlights an actual discrepancy between first/second persons and third persons. In general, it can be said that while 1st and 2nd persons can be dropped in past and future clauses, 3rd ones cannot. The present tense is not considered for the reason just explained above. The following quote sums up Shlonsky's proposal for Hebrew first and second persons that, however, will not be discussed in this contribution, with the exclusion of §3.6, Chapter 3:

Hebrew lacks covert first and second person pronouns. Rather, it possesses overt subject clitics which may be doubled by full pronouns. When the clitic is not doubled, there is an illusion that there is a covert pronoun associated with first or second person inflection but in fact this inflection is an incorporated Sap⁷ head (Shlonsky 2009: 10).

A simplified version of his theory states that third person NSs are by default impersonal and not allowed in matrix clauses. In embedded context, when realized, they are 'referentially-dependent', this is to say, they must be controlled or bound by a matrix antecedent. Such linking makes *pro* capable of reference, modifying its phi-set.

The purpose of Shlonsky's analysis is to identify, one after the other, all possible embedded contexts where a 3rd person NS is licit. This becomes more compelling if one considers that the complexity of Hebrew *pro*-drop property is due to the wide variety of contexts in which a *pro* might or might not be allowed. Recently, the author observes other syntactical environments where a covert pronoun may appear, that is, 'environments from which subject extraction is blocked' (Shlonsky 2014: 38):

- (14) **The distribution of 3p null subjects in past tense (non-subjunctive) environments**
- | | |
|---|------|
| Complement clauses to non-factive verbs | ??/* |
| Comparative clauses | OK |
| Adverbial clauses | OK |
| Relative clauses | OK |
| Complement clauses to nouns | OK |
| Complement clauses to factive verbs | OK/? |

⁷ Speech Act Participant (Bianchi 2006).

In (14), all contexts in which ‘movement from the embedded subject position to the root is impossible’ are listed. To my understanding, the reason is that a NS must move to the local left periphery in order to be visible to its topic-antecedent. In this way, the NS can be probed by it and can receive the absent feature in its phi-set. Conversely, if subject extraction took place, this AGREE relation could not be established.

The distribution of NSs in Hebrew can be summarized as follows:

- (a) the expletive *pro* is always licit, with the sole exception of ‘*eny* sentences’;
- (b) first and second person NSs simply do not exist, because there are *clitic subjects* incorporated to the verb, that make the [Spec,IP] position appear empty;
- (c) third person NS cannot be interpreted referentially, as the verb in a present tense sentence lacks a [person] feature. This means, there is no difference between non-referential and referential covert subjects. However, the latter may appear but it ‘*must* be controlled’ by the matrix subject, that can make it capable of reference. This can occur only in the past and future tense, because ‘present tense verbs in Hebrew are participles, not only morphologically but syntactically. [...] The Hebrew participle lacks a specification for [person] not because a [person] slot happens to be lexically absent from its phi set, but because there is a conflict between its nominal nature and the possession of such a slot’ (Shlonsky 2009: 20).

This picture illustrates the complex (partial) pro-drop nature of Hebrew. In this contribution, I will focus on point (c) and seek to investigate its complexity.

1.4.1 Topic Hierarchy in Hebrew

Postulating different functional projections, each one specified for a single [topical] feature, is motivated by the need to codify the various semantic-pragmatic functions that topics perform (cf. §3). In this paragraph, I propose to look at some examples of Aboutness-shift Topic and Contrastive Topic in Hebrew in order to observe if the Topic Hierarchy can be extended to this Semitic language. In brief, multi-topics are licit but it is allowed only one realization of the Aboutness-shift Topic and the Contrastive Topic per sentence. Instead, Familiar Topics are iterable like in Italian-like languages.

- (15) hayom Noga hitxila im Shimon, u-le-daati maxar
 today Noga start.PST-3G with Shimon and-according-to my opinion tomorrow
pro tatxil im David.
 start.FUT-3SG with David
 ‘today Noga made a pass at Shimon, and, in my opinion, tomorrow, (she) will make a pass at David’

(Gutman 2004: 466)

It is plausible to assume that the initial adverb in (15) is a Contrastive Topic since it puts in contrast what happens *today* with what will happen *tomorrow*. Thus, both these adverbs are topics located in CP. It is also plausible that the DP that follows, *Noga*, it is not merely a subject, but (according to the Topic Criterion Hypothesis) a low copy of a previous activated Aboutness-shift Topic, repeated as Familiar Topic for topic continuity. This could be supported by the fact that the speaker realizes a NS in the following sentence, meaning that he/she effectively wants to maintain (and not to introduce) *Noga* as the current topic. Lastly, the Familiar Topic (acts as a low copy of a previous mentioned topic) can provide a referential value for the NS⁸. The following example is the Hebrew counterpart of the Italian sentence discussed above in (8):

- (16) (a) I was talking to Marco_z and he told me the he is dating both with Sara and Maria, but just yesterday Sara proposed him to marry her.
 (b) **LeSara** yesh kavanot retziniot legab-*av* aval
 to-Sara there is intention serious toward-m but
leMaria lo mamash ekhpat mi-meno
 to-Maria NEG really care.PRES-3F of-him
 ‘(as for) Sara there is really interested towards, while Maria doesn’t give a damn about him’

Also in (16), the constituents in bold are Contrastive Topics, to highlight the fact that what it is said about *Sara* creates a contrast with what it is uttered about *Maria*. An interesting difference with the Italian sentence lies in which way the referent *Mario*, introduced by speaker (a), has been maintained as [+active] by the speaker (b): in Italian, after *Mario* is introduced in the discourse, a PP (*di lui* ‘of him’) topicalized and left dislocated is used for topic continuity. In Hebrew, while a masculine suffix referring to *Mario* appears on the preposition ‘toward’ in the first clause (*legab-av*), in the comment of the Topic *Maria*, it is resumed by a PP at the end of the sentence (*mi-meno* ‘of-him’), and perhaps it is right dislocated. This implies that both in left- or right-dislocation, the Familiar Topic can perform the function of maintaining the topic continuity. Thus no significant difference emerges with respect to the Italian sentence (8). The following example illustrates a case of Aboutness-shift Topic:

⁸ We think (15) is a mere case of subject omission (despite the coordinative construction) due to the presence in the left periphery of the topicalized constituents.

- (17) Noga arza et ha-mizvada be-itivyut, ve- laxem axshav
 Noga packed ACC the-suitcase slowly and so now
 le- caara ha- rav pro tealec la-ruc
 to- her-sorrow the-great will-have.SG.F. INF-run
 le-taxanat ha-rakevet
 to-the-station the-train
 ‘Noga packed her suitcase slowly, and so, now, much to her chagrin, (she) will have to run to the train station’

In (17), the initial DP *Noga* may qualify as the current aboutness topic of the discourse, since it remains active in the following sentence: the speaker uses a NS for topic continuity that is probed by the initial Aboutness-shift Topic for identification. However, out of context, it could be misleading to assign a pragmatic function to a referential expression. We can affirm that in (17) if it is the first appearance in the discourse of the DP *Noga* or if it proposes a topical shift, then it qualifies as Aboutness-shift Topic. Lastly, a coordinative conjunction is employed also in this example. Nevertheless, one can agree it is not a case of subject ellipsis, such as it occurs in English (ex. *he went to the shop and run into Mary*).

Up to now, we have illustrated examples from the literature and seek to observe if the Topic Criterion can be applied to Hebrew. However, one important ingredient of this hypothesis is the prosodic structure, in particular the aboutness topic. On this account, Chapter 2 will prepare the empirical terrain for Chapter 3 in which the intonational contour of Hebrew spontaneous conversations will be also analysed. The end of this chapter is dedicated to a component I consider essential for Hebrew pro-drop, *the context*, and I will explain why I focus exclusively on spoken language.

1.5 The Importance of the Context

The work that inspired me to draft this paragraph was the book written by Alessandra Giorgi, ‘About the Speaker’ (2010: 1):

It is widely recognized that the meaning of a sentence requires a ‘context’ to be computed. This is a very general phenomenon and in particular it concerns the items called *indexicals*, i.e., ‘linguistic expressions whose meaning remains stable while their reference shifts from utterance to utterance’. Pronouns such as *I* and *you* are the prototypical indexical items. [...] these items can be assigned a reference only if we know who is talking, when, and where.

I believe this quotation can be extended to 1st, 2nd and 3rd covert pronouns, indeed a referential value cannot be assigned without a context. For now, let take this rough statement as valid: it will be refined in § 2.3.2. Moreover, I believe that the Hebrew pro-drop phenomenon is still a puzzle

because scholars carry on analysing data outside a context. For instance, the Hebrew sentence *siyem et hadoktorat* ('pro has finished his PhD program') is generally rejected by both linguists and native speakers. However, the same sentence has been accepted by 83% of our informants when it appears in a context such as the following:

- (18) akharei she **siyem et hadoktorat** Dani Kibel mi-Ben matana yafa
 'after (he) **had finished his doctorate** Dani received a nice present'.

Hebrew-type languages need to display more context than Italian-type languages because they need to display *pro* discourse-linking, i.e., the referent introduced in the discourse as topic, located in CP and that can provide it a referential value. Only local licensing (INFL) is not sufficient, as opposed to Italian. On this account, I will claim that 3rd person null subject in Hebrew must be C-linked to be realized. The same is valid for another partial pro-drop language, frequently associated with Hebrew Finnish:

- (19) **saatuaan** **väitöskirjansa** **3valmiiksi** Dani sai
 get-past.3sg thesis.acc.his ready Dani.NOM get-PST.3SG
 mukavan lahjan Beniltä
 nice.acc gift.acc Ben.ablative
 'after (he) had finished his doctorate Dani received a nice present'

The clause in bold in a context such as (19) is grammatical despite the fact that the NS occurs in a fronted adverbial clause. Out of context, it would be judged ungrammatical.

An attempt to include the notion of context in the theory of the identification of 3rd NSs has been the analysis proposed in Vainikka and Levy (1999: 649), where the authors distinguished between *immediate conversational context* and *broader discourse context*. I believe this subdivision can easily overlap, but most importantly, it cannot be applied to spoken language where context rapidly changes and a previous context can also be modified. In Chapter 2, we will adopt the division of context proposed in Ariel 1990, named the 'geographic view of context', useful for the purposes of our analysis.

1.6 Subject omission in written Hebrew and (by extension) in Finnish

Dealing with the pro-drop phenomenon in Hebrew, several times I read that in written Modern Hebrew, subject omission is largely allowed compared to spoken language. For instance, this has emerged from studies on corpora carried out by Ariel (1990) for Hebrew or Heinonen (1995) for Finnish. A question that may arise now is how we can explain this. First, let us say that this

strengthens the complex pro-drop nature of the languages in question, because these two languages are unrelated but share similar patterns in subject omissions: roughly speaking, they act like pro-drop languages with 1st and 2nd person, and semi pro-drop languages with 3rd person. In addition, both apparently allow pro-drop occurrences in written language but important restrictions emerge with subject omission in spoken language. This picture makes Hebrew and Finnish a puzzle more than actually they are. I seek to propose a way out of this quandary. Let us consider that licensing and identification of null subjects involves pragmatics⁹: in written text, once a Topic is introduced, if there is not any conversational shift, it remains the only activated topic of the discourse [+uniqueness] (in the spirit of Ariel's work, 'high accessible'). By contrast, it is extremely complicated to analyse an entire naturalistic conversation such as it occurs with texts because, to my knowledge, in the rare existing Hebrew spoken language corpora, dialogues are extrapolated from conversations. Moreover, it is unknown when and how they have started and speakers' personal details¹⁰. An illustration of subject omissions in written language is provided by Ariel (2001: 40):

- (20) i. In the complaint the woman_w claimed that on May 2 pro_w met Roter_k [...]
 ii. According to her_w, when pro_w refused, Roter started punching her_w

This is an extract from a Hebrew newspapers, clearly Ariel's aim is to show the relation between the antecedent ('woman') and the co-referent NS and; to this purpose, she preferred to translate the original sentence in English. It is worth noticing that after introducing the NP 'woman', only NSs are used. In (ii), the null topic chain is maintained with the employment of pro. It is worth noticing that pro-drop in (20) works exactly like in Italian, i.e., a pro-drop language. However, the point is to show that if we extrapolate sentences such as (i) and (ii) from a written text and ask for judgments, these subjectless sentences would be judged agrammatical, as opposed to Italian.

A further proof comes from professor Shlonsky who, as Hebrew native speaker, notes that written pro-drop occurrences would be unacceptable if extrapolated and analysed individually in the sentence they appear. This may explain why in many studies on corpora, subjectless sentences analysed individually receive agrammatical judgements. To conclude, the [topic] feature is understandably more accessible in written language where texts are written by one hand, and conversational turns are still managed by one-person regardless dialogues.

⁹ Due to the fact that the licensing of pros in Hebrew does not occur locally, in narrow syntax, but it requires a previous mentioned topic to be realized in CP.

¹⁰ It could seem naive but it is extremely important to know informants' mother tongue especially for Hebrew, since, for historical and political reasons, several languages have influenced Modern Hebrew and there is also the variant of Palestinian who speak Hebrew. Indeed, many native speakers are bilingual and this should be taken in consideration.

Chapter 2 - Theories: A review of previous accounts on subject omission

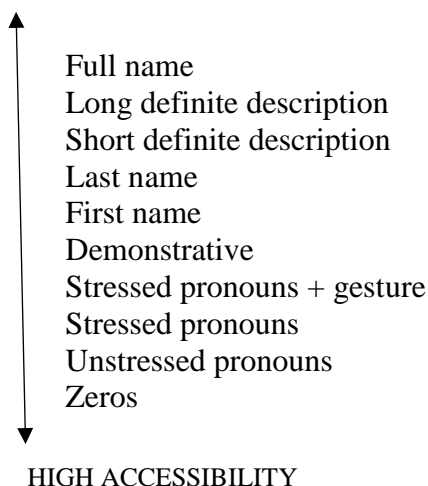
2.1 The Accessibility Theory (Ariel 1990, 1991, 1999, 2001)

Ariel's work is essentially a remarkable attempt to explain why discourse properties and pragmatic features should be treated as linguistic elements; this is to say, they should be granted equal consideration as syntactic properties. It is my belief that defining her work only as a cognitive analysis is an understatement. Given that, Accessibility theory focuses on the retrievability of NP antecedents in a conversation and:

offers a procedural analysis of referring expressions, as marking varying degrees of mental accessibility. The basic idea is that referring expressions instruct the addressee to retrieve a certain piece of Given information from his memory by indicating to him how accessible this piece of information is to him at the current stage of the discourse (Ariel 2001: 29).

In other words, the use of a referring expression depends on the accessibility of its inherent file card in the memory at a given point. In the above citation, referring expressions are designated as indicators of mental accessibility of the relevant material, in her terms, *accessibility markers*. The latter present different degrees of accessibility that can be Low, High or Intermediate. The author provides the following Hierarchy of Accessibility Markers (a simplified version is reported below):

(1) LOW ACCESSIBILITY (Ariel 1991):



The most important generalization is that: ‘all referring expressions in all languages are arranged on a scale of Accessibility’ (1990: 29). Accessibility is how much effort requires to retrieve a referent in the shared knowledge: a minimal effort means High accessibility and, for instance, in this case the use of a null subject is appropriate, since its referent is highly accessible; a maximum effort corresponds to Low accessibility, for example a proper name stored in our encyclopaedic knowledge time ago. The Intermediate category is developed in (1). Moreover, this hierarchy is based on three criteria: informativity, rigidity (the possibility to easily select a given referent due to its distinctiveness) and attenuation (full, shortened or null phonological forms) and it implies that ‘the more informative, rigid and unattenuated an expression is, the lower the degree of accessibility it codes, and vice versa’ (Ariel 2001: 32). This is not so naïve as might be supposed. For example, highly accessible shorted forms (pronouns, clitics, deitics ect.) provide to the interlocutor specific information about reference and instructions how to code it in order to reach the speaker’s communicative goal. In this sense, Ariel’s theory can account for the use and distribution of referring expressions. It is worth pointing out that accessibility is very close to the notion of cognitive activation in the memory à la Chafe (actived, semi-actived or disactived entities, see Chapter 1, §1.2). In effect, the author itself acknowledges the validity of this analysis and the necessity to elaborate the intermediate area, as (1) shows.

Ariel’s approach is much more refined. Indeed, the author suggests four factors that are involved in the Accessibility process to assign a referential value: Competition, Saliency, Unity and Distance. The first refers to how many antecedents have been previously introduced and now may play a role (as *competitors*) in the referential choice. The notion of *saliency* is given as discourse prominence as opposed to physical saliency: the latter is immutable in the course of a conversation, but the discourse prominence of a referent is not and, on this account, it affects the Accessibility degree. The ‘*unity* criterion’ differentiates mentions of a mental representation in a previous

discourse, conversation, utterance ect. from those within the same frame where a NS appears. The latter generates more degree of cohesion (*unity*); this notion will be deeply examined in the next section with illustrations in Modern Hebrew. The *distance* between the antecedent and its current mention ‘can be seen as one manifestation of cohesion because greater distance creates less cohesion’ (Gutman 2004: 473). The author further states that these factors are not, per se, indicators of accessibility, but they have been found to be involved in the process of reference identification. To my comprehension, the current status of an antecedent (in memory) can change on the basis of salience and propositional cohesion. Those are the crucial notions in her analysis and neither distance nor memory are at the basis of this approach.

Although the author proposes a theory in favour of mental accessibility of referents - regardless of their linguistic or non-linguistic source, the division of **the geographic context** into Encyclopaedic Knowledge, Physical Environment and Linguistic Context is valid when entities are unmarked, i.e., they have been introduced in a conversation for the first time (*initial retrievals*). Thus, for example, proper names and other [+definite] expressions are filed in our encyclopaedic knowledge; deictics and demonstrative pronouns remind of the physical environment of an utterance, and overt/covert pronouns build the linguistic context. Here is an Italian example where the physical context is crucial in order to identify a third person null subject:

- (2) [the professor said to take a short break; a student asking another student:]
a: pro a che ora ricomincia?
 what time does (he) start again?
b: tra un quarto d’ora
 in fifteen minutes

This is a spontaneous dialogue and the sentence where *pro* appears is an initial turn, meaning that the current topic, i.e., *the professor*, has not be previously introduced in the discourse, but the fact that it is the most prominent entity in the physical context (of *his* seminar) is sufficient to make it accessible as topic.

To conclude, following Ariel’s works, I pose the question whether Hebrew *pro*-drop responds to more pragmatic requirements than merely syntactic ones. In the next section, her account for the interpretation and use of zero subjects in Modern Hebrew will be presented.

2.1.1 Accessibility of Null Subject Antecedent in Modern Hebrew

Reference recoverability crucially depends on the degree of its Accessibility and, roughly speaking, zero subjects occur when antecedents are extremely highly accessible. To be more precise, several linguistic factors are involved in determining the degree of accessibility of an antecedent: a rich

INFL (morphological level), the presence of the pro referent in the matrix clause (sentential level) and even a previously introduced topic (discourse level). As for the morphological richness, we have already seen that Hebrew PRES is different from PST/FUT in that it does not overtly carry the [+person] feature (see Chapter 1, § 1.4). In addition, the author notes that future inflection is more opaque than past morphology. The former is composed of prefix (except for first person singular) and suffix (except for first person singular and plural, and second person singular) shorter than past verbal suffix are. In her terms, past INFL is a higher accessibility marker than future. It follows that present tense inflection – that is the poorest one – is an extremely Low Accessibility marker. At this point, I pose the following question: may this theory account for the dropping of a third person subject in Modern Hebrew? In Italian, for instance, it cannot. The fact the Italian null and weak pronouns are freely interchangeable (Frascarelli 2007) does not follow the spirit of Ariel’s theory, since, according to her, the degree of antecedent accessibility is higher for pros than weak pronouns. The latter, indeed, facilitates the retrieval of its referent carrying overtly features, for instance the pronoun *she* gives the instruction to look for a female and singular referent; the equivalent null pronoun does not, as its antecedent is extremely accessible. However, as we have seen in Chapter 1, Frascarelli (2007) provides strong evidence that null and weak pronouns have the same function to maintain topic continuity when a topic chain is activated. Thus, they both can refer to the local A-Topic that can identify them providing a referential value.

As for Modern Hebrew, Accessibility apparently seems to facilitate the linking between pro and its antecedent. Let us introduce some examples where High Accessibility referents allow the realization of NSs:

- (3) hayom Noga hitxila im Shimon , u- le- daat
today Noga made-a-pss with Shimon and according to-my-opinion
maxar pro tatxil im David
tomorrow will-make-a-pass with David
‘today Noga made a pass towards Shimon, and, in my opinion, tomorrow, (she) will make towards David’
- (4) Noga arza et ha-mizvada be-ityut, ve- laxem axshav
Noga packed ACC the-suitcase slowly and so now
le- caara ha- rav pro tealec la-ruc
to- her-sorrow the-great will-have.SG.F. INF-run
le-taxanat ha-rakevet
to-the-station the-train
‘Noga packed her suitcase slowly, and so, now, much to her chagrin, (she) will have to run to the train station’

- (5) Noga dibra im Shimon yafe, ve- laxen pro yaazor la
 Noga spoke with Shimon nicely and so will-help.SG.M her
 li- sxov et ha-mizvada
 to- carry ACC the-suitcase
 ‘Noga spoke with Shimon nicely, and so (he) will help her to carry the suitcase’
- (6) rak lifney xodesh hitxvatna Noga im Shimon, u- kvar
 only before month got-married.SG.F. Noga with Shimon and-already
 ba- shavua she- avar pro hitgarshu
 in-the- week that- passed got-divorced.PL
 ‘only a month ago Noga married Shimon, and last week (they) already got divorced’
 (Ariel 1990: 112)

Let us identify the linguistic and non-linguistic features that appear in (3), (4), (5) and (6), that is, where a *pro* is realized. Firstly, they are future or past tense clauses; secondly, *pro* referents are introduced in the immediately previous context; finally yet importantly, they are all *pro*-drop occurrences in subordinate clauses. So far, it seems we are dealing with *pro*-drop contexts well studied in the literature. However, similar contexts - with the same features listed above - crucially do not allow NSs:

- (7) *Noga dibra im Shimon yafe, ve- pro yaazor la
 Noga spoke with Shimon nicely and will-help.SG.M her
 li- sxov et ha-mizvada
 to- carry ACC the-suitcase
 ‘Noga spoke with Shimon nicely, and (he) will help her to carry the suitcase’
- (8) *Noga dibra im Shimon, ve- pro yisxavu et ha-mizvada
 Noga spoke with Shimon and will-carry.PL ACC the-suitcase
 be-yaxad
 together
 ‘Noga spoke with Shimon, and (they) will carry the suitcase together’

Ariel notes that (7) and (8) are agrammatical because they present less degree of cohesion, in her term, *unity criterion*. If we look at elements in (3), (4), (5) and (6) that lack here, it emerges a predominance of conjunctions such as *laxen* ‘so’, temporal adverbs *hayom* ‘today’, *maxar* ‘tomorrow’, left-dislocated temporal phrases *rak lifney xodesh* ‘only a month’, *bashavua sheavar* ‘last week’ and other connectors like *ledaat* ‘in my opinion’. In other words, they are cohesive links that increase the unity degree between sentences. Given that, I believe that once cohesion creates a ‘semantic building’ where put all linked sentences, speakers automatically acknowledge that they have to look for reference inside it. For example, in (6) who divorces is inevitably *Noga* and *Shimon* - that is the same people who got married: the possibility is ruled out that the speaker is referring to other people who get divorced too (therefore, outside the *semantics building*). The *temporal* connection between what happened ‘a month ago’ and ‘last week’ should also be noted; this may be

another cohesive tie that links sentences in (6). In other words, I believe *cohesion* is operative in determining the referent of 3rd person *pros* since it helps referents to be more accessible. This is a crucial point, one which will discuss further in the third chapter. Finally, note that split antecedent is realized in (6); by contrast, Vainikka and Levy (1999: 651) exclude the possibility that it can be accepted in Hebrew because the referent is not ‘readily available in the matrix clause’. Due to these conflicting views, we will examine this aspect as well.

It is understandable that the more accessible referents are the more likely *pro* occurrences will be accepted. However, I disagree with Ariel’s assumption that subject agents are the highest accessible antecedents. Also Gutman (2004: 479) demonstrates that agenthood is not relevant for the Accessibility theory:

- (9) lifney shvu’ayim Dafna nexkera al-yedey Dani ve-axarey
 before two-weeks Dafna investigated.F by Dani and-after
 xamesh dakot pro nimce’a ashema
 five minutes found.F guilty.F
 ‘Two weeks ago, Dafna was investigated by Dani, and after five minutes (she) was found guilty’

The author observes that, although *pro* antecedent in (9) is not an agent-subject, a third person NS is still possible. This observation requires two comments. Firstly, it is interesting to note that the degree of unity (*cohesion*) between clauses in (9) is high due to the temporal phrases (‘two weeks ago’ and ‘after five minutes’) that realize a link between what happens to time₁ and time₂. Indeed also here, the NS cannot refer to some other previously mentioned antecedents different from *Dafna*. Secondly, *Dafna* is not just a non-agent referent - that rejects Ariel’s analysis - but it is the activated (local) topic of the discourse. The speaker is clearly talking about *Dafna*, the A-topic. I believe that also in Hebrew, the local A-topic identifies a *pro*, under the condition that sentences containing the A-topic and those the NSs are cohesively linked, or metaphorically, they belong to the same *semantic building*. Hence, the example in question seems more in line with Frascarelli’s analysis (see Chapter 1, § 1.3) than opposed to Ariel’s one.

Ariel also notices that in Hebrew ‘all pronouns occurred sentence-initially, while no zero subject appeared sentence-initially’¹¹. This is an interesting fact and backed up with my empirical data too. However, a minor clarification should be made: I believe that *pro* in Hebrew *cannot* occur

¹¹ Ariel (1990: 121).

in an **initial conversational turn** rather than **sentence-initial**, since examples of the latter have been found. Here is illustration from Mila corpus¹²:

- (10) [extra-context: hair salon. The hairdresser asks for a piece of information about *Mira*]
 A1: eyfo Mira? a: where (is) Mira?
 B2: mi zot Mira? b: Who (is) that Mira?
 A2: habat šel Yafa 'axšav še nixnesa lepo a: Yafa's daughter just now has
 daughter of Yafa just that entered.3SF here walked in here
 B2: *pro* yats'a b: (she) left
 left.3SF

This is a spontaneous dialogue, judged by informants too. In the last line (B2), the speaker uses a third person NS to refer to *Mira*, that is, the topic of the discourse, previously mentioned (A1). As it can be noted, this *pro* is sentence-initial (*versus* Ariel 1990); the reason why it cannot appear in initial conversational turn is that there is not yet an activated topic. Note that also Ariel argues that the realization of a third person null subject is intrinsically linked to the (activated) topic. Furthermore, I believe (10) is a good example of what I refer to through the concept of *semantic building*. Specifically, speaker A is looking for *Mira*; his interlocutor – unaware of who that person is – asks for clarification (B1). Once the first speaker explains who *Mira* is and where she was a few moments before (A2), that is, once the topic is well set up (supported by the semantic building just created [A1+ B1+A2]), speaker B2 omits the subject in the last utterance, or rather, the current topic being discussed here.

In conclusion, it should be noted that this analysis in part is in line with Frascarelli's Topic Criterion in that both authors claim that: (a) the realization of a third person NS crucially depends on the activated topic; (b) null pronouns are used to maintains reference, whereas overt pronouns change it; (c) to reintroduce a topic in a conversation, pronouns can be employed, defined as full in Ariel (1990) and strong in Frascarelli (2007). I wish to adopt the notion of accessibility in the following terms: what must be *accessible* to allow a NS is the inherent file card previously opened and stored in the memory. The reason for the last claim is made by the syntax of the conversation: firstly, speakers negotiate for the topic of the discourse. Once it is established, it is assumed its file card will remain opened until a new topical shift is proposed. In this respect, accessibility regards previously opened file cards. Finally, I assume that the status of extremely high accessible markers is mainly gained by the fact to be established as the current topic of the discourse (that is, the Aboutness-shift topic, Frascarelli 2007).

¹² This is an online resource founded in 2003 by the Israel Ministry for Science and Technology. It contains several corpora included *Spoken Israeli Hebrew Corpus*, that is the one I used : http://www.mila.cs.technion.ac.il/resources_corpora_spoken.html

2.2 A Psycholinguistics Contribution to Italian Null Subject: Carminati (2005)

In the previous chapter, we talked about the activation status of previous mentioned referents and how their cognitive status can switch from activated to semi-activated or deactivated during a conversation (see Chapter 1, §1.2). On this account, it is worth taking into consideration a psycholinguistics analysis of Italian NSs proposed in Carminati (2005). This experimental study (it is proper to specify that her results are statistically safe) holds the view that phi-features have a ‘different degrees of psychological salience’ as predicted by the Greenberg’s (1963) Feature Hierarchy: Person > Number > Gender. Their cognitive salience, then, has implications on the recoverability of pro referents, because they are processed differently. Testing the reading times of native Italian speakers, the author shows that informants read faster a sentence where the embedded pro is the subject of the matrix clause rather than when it is in object position. The following is an illustration (Carminati 2005: 261):

- (11) Dopo che Giovanni₁ ha messo in imbarazzo Giorgio₂
 after that Giovanni embarrassed Giorgio
 di fronte a tutti pro₁ si è scusato ripetutamente
 in front of everyone REFL has apologized repeatedly
 ‘After Giovanni embarrassed Giorgio in front of everyone, (he) was tremendously offended’
- (12) Dopo che Giovanni₁ ha messo in imbarazzo Giorgio₂
 after that Giovanni embarrassed Giorgio
 di fronte a tutti pro₂ si è offeso tremendamente
 in front of everyone REFL was offended tremendously
 ‘After Giovanni embarrassed Giorgio in front of everyone, (he) was tremendously offended’

Adopting Ariel’s Accessibility Theory, the author explains the faster reading for (11): it is easier to retrieve a zero pronoun referent when this is salient, like the subject *Giovanni* in (11), as it generally corresponds to the topic; a less prominent antecedent, such as the object *Giorgio* in (12), requires more time to be accessible. However, I believe sentence (12) is marginal for two reasons, one empirical, the other conceptual. The empirical problem is that Italian native speakers I interviewed affirm they can infer from world knowledge and semantic information what happens in (12) but the sentence, per se, sounds weird: the interpretation where *Giovanni* is the person whose feelings are hurt is rejected and this information is provided by semantics. Then, the referent of pro is *Giorgio* by exclusion. The conceptual consideration is that, going back to Ariel’s theory, in (12) the last NP uttered is the referent of pro, in addition Italian shows a rich INFL making use of the three linguistics means suggested by Ariel for the retrieving of zero pronouns (see § 2.1.2). Still, the accessibility is difficult (*versus* Carminati’s assumption). Curiously, Ariel’s third linguistic device, absent here, is a previous mentioned topic: some Italian informants, answering to the question who

is offended in (12), immediately uttered *Giovanni*; then, they corrected themselves saying *Giorgio*. This demonstrates that the subject in (12) is more accessible and this fact is in line with Ariel (1990). However, I do not believe that its accessibility is due to the condition of being in subject position; rather it is the topic. Indeed, the speaker opens a ‘file card’ where storing what will be said about *Giovanni*. However, semantics and world knowledge suggest to her/him that the referent of the embedded *pro* cannot be the activated topic. Since this sentence is infelicitous (but it is still considered grammatical), he/she is forced to open another file card¹³ even though the specific linguistics devices to change the topic of the discourse have not been employed. To sum up, in (12) speakers do not accept (and understand) the pragmatic moves.

This experiment, however, consists of forcing the identification of *pro* referents - which are not in subject position - via phi-features disambiguation in order to test their cognitive salience individually. For example, the [gender] feature of the adjectival participle *contento* (‘happy’, masculine) in (13) forces the interpretation of *pro* to be the male referent *Mario* instead of the female antecedent in subject position, i.e., *Maria*:

- (13) Quando Maria ha chiamato Mario, pro era content-o
 when Maria has called Mario was.3SG happy-masc
 ‘When Maria called Mario, (he) was happy’
 (Carminati 2005: 262)

In (13), *pro* is disambiguated by gender. This is the *Feature Strength Hypothesis*: ‘there is a correlation between the cognitive significance of a feature and its disambiguating power, i.e., the more cognitively important the feature is, the better it should be at disambiguating the pronoun that carries it’ (Carminati 2005: 263). One of the results, for instance, is that ‘the penalty when the assignment goes against the bias’ for an antecedent in subject position is better managed by number disambiguation than the gender one. I believe, it is again the activated topic that identifies the NS in (13): a spontaneous conversation could not start with a fronting adverbial clause. If I utter (13), then we should answer to Reinhart (1981)’s definition of topic: ‘what the sentence is about’, and it could be the case that *Mario* has been previously mentioned, and repeated in (13) for *afterthought* function. My point could be made clearer by considering the following example from the author in question:

- (14) Quando Mario ha chiamato me, pro ero contento
 when Mario has called me was.1SG happy
 ‘When Mario called me, (I) was happy’
 (Carminati 2005: 262)

¹³ Meaning to shift the topic of the conversation.

The object pronoun *me* bears the 1st person feature compatible with the embedded person feature carried by verb inflection. Although an unmarked interpretation would select *Mario* as subject/topic and pro referent, in (14) the [person] feature forces to interpret *me* as the person who is happy. This is an example of person disambiguation, as proposed in Carminati's (2005) analysis. On closer inspection, I cannot postulate a context for this sentence where a [+contrastive] feature does not emerge (i.e., *but when he called Giuseppe, I was not*). Since *me* is the stressed form of the 1st person object pronoun it is, per se, much more salient than the subject because, as I believe, it realizes a [+contrastive] feature. An equivalent sentence with the unstressed form of the pronoun in question further highlights that, despite the matrix subject (that is a salient candidate), the element which identifies the NS is the local topic, silent in (14), i.e., *io* 'I':

- (15) Quando Mario **mi** ha chiamato pro ero contento
 when Mario has called was.1SG happy
 'When Mario called me, (I) was happy'

In (15), it is clear that the speaker is talking about himself/herself and this may be the Topic of the discourse (depending on the speaker's communicative goal).

Last but not least, in this experiment an important variant has not been considered: prosodic ambiguity. The fact that sentences with pro referent in object position require more processing time compared to those where it is the subject could be also explained by prosodic ambiguity. The speaker first reads a sentence assigning prosodic prominence to the first NP, then, he/she realizes that it is not what the sentence is about; at this point, he/she starts reading again the sentence, modifying the default prosodic structure and forcing the linking prosodically as well.

To conclude, in these first sections, we have explored two concepts that could deal with the identification of null pronouns in Hebrew: (a) cognitive salience of features; (b) mental accessibility of pro referents. These will be taken in account in the next chapter for the analysis of collected data. Furthermore, it should be noted that what facilitates phi-features disambiguation is the fact that inflection in Italian is local, that is, the checking configuration established between Spec,IP and its head takes place regardless of the presence of pro referents in CP or in the previous context. For this reason, informants do not completely reject sentences such as (12). In line with this analysis, a further work that investigated grammatical features separately but from the syntactic point of view is Sigurðsson (2004), which I discuss in the following section.

2.3 Speech Events

Recent theoretical and empirical literatures on discourse interpretative properties have explored several pragmatic features associated with participants, time and location of speeches, that is, *who speaks to whom, where and when* (cfr. Bianchi 2003, 2006; Sigurdsson 2004, 2011). A pioneer work is certainly *On finiteness as logophoric anchoring* by Bianchi (2003). In this study, the author proposes a criteria position in the left periphery to encode information related to speaker conversational role, the SpeechActParticipant (SAP). In other words, *the speaker* and *the hearer* have an overt [Person] feature - being speech participants, this [-/+person] feature is coded in SAP. On the other hand, Sigurdsson's work is a contribution to the *Rizzian Left Periphery proposing a further CP split*. In particular, assuming that 'any utterance is a CP, containing elements of the speech event in its left sphere', Sigurdsson (2014: 13) claims that the syntactic speech event is made of the Time and Location of speech and the inherent speech Participants. In the next section, these notions will be amply illustrated and reviewed in detail.

2.3.1 Minimal Feature Syntax Hypothesis (Sigurdsson 2004)

Universal Grammar has recently received a Minimalist renewal in the works of Sigurdsson (2004, 2011) through a new comprehensive approach of features, named Minimal Feature Syntax. 'The "speaker" category, in some sense, is inescapable, and so are the "now" and "here" of the speaker' (Sigurdsson 2014: 177)¹⁴. In this approach, *features* are analysed either as individual features or as a combination of them. The author, rethinking syntax, suggests considering *logophoricity* as a feature in the C-domain, in the same way we conceive phi-features in IP and theta-roles in VP. Thus, each interface has its features and through their interaction by Agree, the speech event is interpreted:

(16) [_{CP} speech features (Λ_A , Λ_P)... [_{IP} grammatical features (phi)... [_{VP} event features (theta-role)]]]

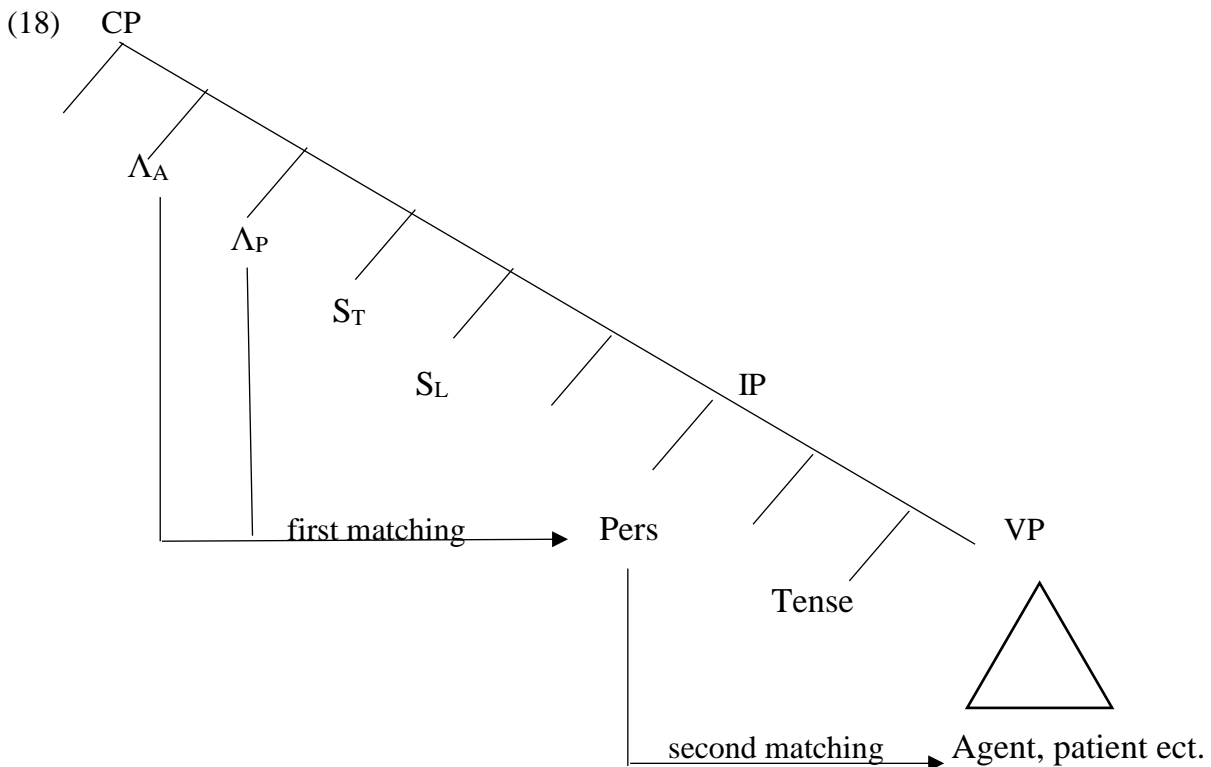
Literally, an argument NP possesses a bundle of individual features that should be interpreted by linking elements of the C-domain to those of the v-domain. 'For example, Λ_A does not get any interpretation at all by itself. What gets interpreted is an NP that positively or negatively matches Pn, yielding a relation NP_{+Pn} or NP_{-Pn}, NP_{+Pn} in turn matching Λ_A and Λ_P , yielding a secondary relation, e.g., NP_{+Pn} /+ Λ_A , - Λ_P ' (Sigurdsson 2013: 6). These features are interpreted in relation one to another (\leftrightarrow) in the different levels of analysis (VP, IP, CP) and this matching process takes place via Agree for Participants, Location and Time of the speech:

¹⁴ Using technical terms, the author refers to them as logophoric agent (Λ_A) and logophoric patient (Λ_P) for "speaker", the speech time ("now") and the location of speech ("here"). However, as noted by Bianchi (2010), these exactly correspond to Kaplanian context coordinates: possible world (w), time (t), position (p), agent/speaker (a) etc.

(17) **SPEECH EVENT:**

- $E_P \leftrightarrow G_P \leftrightarrow S_P$ speech Participants
 $E_L \leftrightarrow G_L \leftrightarrow S_L$ speech Location
 $E_T \leftrightarrow G_T \leftrightarrow S_T$ speech Time

Then, for example, Person identifies event participants (E_P) in VP in relation to speech features for participants (S_P) in CP, passing through person grammatical features (G_P) in IP:



The same operation is hypothesized for the interpretation of Location ($E_L \leftrightarrow G_L \leftrightarrow S_L$) and Time of speech ($E_T \leftrightarrow G_T \leftrightarrow S_T$)¹⁵. This is the *speech event binding*. Each argument (event) participant has a theta role that can be either [+Person] or [-Person]: ‘only [+Person] arguments are potential speech participants, that is, they are the only arguments that undergo Λ -matching’ (Sigurdsson 2004: 19). The following is a logophoric-matching (*A-matching*) relation sketch, slightly simplified with respect to the author’s original scheme:

¹⁵ It should be clarified here that Bianchi (2003: 3) has firstly explored this issue, indeed the author affirms that: ‘person agreement is interpreted with respect to the participants in the speech event, and tense is interpreted with respect to the time coordinates of the speech event’. In the same paper, the author explores the notion of ‘Logophoric centre’, arguing that it is encoded in Fin° of each clause.

- | | | | | |
|------|----|---------------------------|--|--------------------------|
| (19) | a. | argument participant: | +Person; + Λ_A ; - Λ_P | = 1 st person |
| | b. | argument participant: | +Person; - Λ_A ; + Λ_P | = 2 nd person |
| | c. | argument participant: | +Person; - Λ_A ; - Λ_P | = 3 rd person |
| | d. | non-argument participant: | -Person; 0 Λ_A ; 0 Λ_P | = inactive matcher |

In line with Rizzi's (1997) cartographic approach of the Left Periphery, the author suggests redefining the Split CP, adding the speech event features:

(20) [_{CP} Force ... Λ_A , Λ_P ... Top ... S_T ... S_L [_{IP} ... Pers ... T ... Num ... [_{VP} ... θ ... E_T]]]

The main facts in (20) are that Person is presented as an independent head separated from Number and Gender. Plus, the time (S_T) and the location of event (S_L) correspond to Rizzi's Fin(iteness) projection, thus a further split is proposed. As can be noted, Person, Location and Time features (related to the speech event) appear in CP, IP and VP (that is, agent, patient, locative etc. and event time (E_T)) and their matching allows to interpret a given speech event. It remains unclear, however, why Location does not overtly involve an element in IP-domain in (20). I believe his approach is simple and complex at the same time. The simple part concerns the fact that few elements are assumed: individual features, Agree operations and combinations of single features through Agree; the tricky part is the mere fact that lexical items are *per se* complex (i.e., bundles of distinctive features), thereby a number of opaque Agree operations should be postulated, one for each feature to value.

In conclusion, Sigurðsson (2004)'s contribution is an original work based on few strong assumptions such as there are only interpretable features in syntax versus Chomsky (2000) who argues for uninterpretable features deleted under Agree. In addition, all speech features are silent but syntactical active, acting as probe and entering in relation with other features in IP and VP. The author names them *Edge-linkers* in the sense that they do not add a lexical meaning rather, to my comprehension, they work as a bridge between the context and the sentence core. The relations they establish (i.e., *C-Edge linking*) are crucial for the full interpretation of a speech event. In the next paragraph, we will take a look at this hypothesis applied to the NS Parameter.

2.3.2 An alternative analysis to the Null Subject Parameter: Context-linking (Sigurðsson 2011)

Sigurðsson (2011) proposes an alternative analysis to the NS Parameter adopting a few and general 'factors' universally responsible for the realization of null arguments. The major claim is that argument drop is a context-linking phenomenon and it differs from the operation of *reference* assignment in that the latter requires a process of 'context-scanning', the former was intended to be

interpreted as a *mere* syntactic operation. The first and most important generalization is the following:

- (21) Each argument (covert or overt) *matches* at least one *Edge linker* in the local C-domain; this linking, if successful, is the crucial factor that makes argument drop possible.

In other words, Sigurðsson assumes that in C-domain, there is an antecedent (*linker*) for each argument, null or overt; such antecedent is called *C/Edge linker*. Another crucial ingredient of his analysis is that *C/Edge linking* is not a licensing strategy but an interpretation strategy. In his theory, Null Arguments (NA) differ from overt ones in that they do not have a visible *C/Edge linking* in PF. In some languages, such as German, NAs can be interpreted iff no lexical elements appear in CP, otherwise, the C-linking would be blocked and the NA not interpreted. Conversely, *C/Edge linking* is always successful with overt arguments since their phi-features are visible and potential lexical elements in C-domain do not block it.

Before providing a more accurate insight of the C-linking hypothesis, it should be forthwith underlined that the author adopts Frascarelli's (2007) analysis of referential NSs: 3rd person zero subjects are always coreferent with a local A-Topic base-generated in C-domain that can provide a referential value to *pro*. Given that, the author assumes that [+Top], [Λ_A] and [Λ_P] are the *C/Edge* linkers that acting as probes interpret each null or overt argument in IP. The LP can be represented as the following:

- (22) [CP [ForceP [TopP [Λ_A [Λ_P [IP]]]]]]

A simplified version of his theory states that (a) in pro-drop languages, NAs always receive their interpretation since *C/Edge linking* is always successful; (b) in topic-drop languages, a NA can have access to C-domain if the latter is empty and the reason is that the presence of any other lexical elements blocks the *C/Edge linking*. To put it differently, the AGREE relation established between an [A-Topic] (Frascarelli 2007, F&H 2007) or [Λ_A]/[Λ_P] and a *pro* is always possible iff other elements does not intervene in C-domain. However, the aim of this analysis is to identify few essential factors that can account for the large parametric variation across languages of zero subjects, replacing the NS Parameter. The first factor for Romance languages has been anticipated above but it can be resumed as follows:

(23) First Universal Factor:

The *C/edge linking* is successful even if other lexical elements intervene in CP, since NSs – such as weak pronouns – can establish an AGREE relation with the *C/edge linker* in any case.

A second factor for V2 languages is recapitulated in (24):

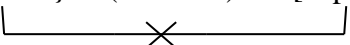
(24) Empty Left Edge Condition:

The C-domain must be empty so that a NA can have access to it through AGREE relation between the *C/edge linker* in CP and the *C/edge linked* in IP. The presence of a non-C-linker element - in CP area – ‘blocks’ this linking and leads to ungrammaticality.


As can be noted, this analysis is based on the assumption that the identification of a NA always depends on the activation of the *C/edge linking*. For an illustration, let us consider the following example discussed in Sigurðsson (2011: 23):

- (25) a. \emptyset tala stundum íslensku (Icelandic)
 talk.PRES.1SG sometimes Icelandic
- b. *stundum tala \emptyset íslensku
 sometimes talk.PRES.1SG Icelandic
 ‘pro sometimes talks Icelandic’

It can be noted that when the C-domain is empty (a), a zero subject can be interpreted because the *C/Edge linking* is successful. On the other hand, the presence of a lexical element (such as the adverb ‘stundum’) renders the sentence agrammatical since it blocks the *C/Edge linking* between *pro* in IP and its silent *C/Edge linker* in CP:

- (26) [CP . . . {linker_i} . . . (stundum) . . . [IP pro_i . . .]]
- 

However, it could be the case that a NA moves to CP in order to bypass a *C-linking* obstacle. For example, a NS in German is identified after it moves to CP when it is dropped as topic, thereby the verb is not anymore an obstacle to the *C/Edge linking*. The following is a sketch of the idea that ‘empty arguments are generally blocked by C-intervention but also commonly able to circumvent the intervention by raising into the C-domain, across a lexical C’ (Sigurdsson 2011: 294):

- (27) [CP LD. . . {Linker}. . . (*X) . . . pro_Z – V_{Fin} . . . [IP t_Z . . . t_v . . .]]
- 

The last (and third) factor is identified in languages such as Finnish, Brazilian Portuguese, Modern Hebrew and so on. Here the complementizer lexicalizes Fin which becomes a barrier to the *C/Edge Linking*. This leads *pro* to move to CP in order to be identified: ‘the null subject, by **context scanning**, picks up the reference of the structurally and semantically most prominent antecedent in its immediate linguistic context, raising into the C-domain for this purpose (Sigurdsson 2011: 297)’. In order to clarify it, let us see an example analysed by the author:

- (28) Pekka väittää [että *pro* puhuu englantia hyvin]
 Pekka affermare.PRES.SG che *pro* parlare.PRES.SG inglese bene
 ‘Pekka afferma che parla bene inglese’ (Finnish)

The author argues that, in (28), (a) the NS circumvents the lexical complementizer *että* in order to establish the linking with a C/Edge linker; (b) it resorts to context scanning to obtain a referential value:

- (29) NP . . . [CP . . . {Linker} . . . *pro*_Z – *että* . . . [IP t_Z . . .]]
 context

Recapitulating the possible strategies across languages for subjectless structures discussed in Sigurdsson (2011), this is the final scenario:

- (30) [CP . . . {Linker} . . . [IP *pro* . . .]] (Romance languages)
 (31) [CP . . . {Linker} . . . *pro*_Z – V_{Fin} . . . [IP t_Z . . . t_v . . .]] (German V2 languages)
 (32) NP . . . [CP . . . {Linker} . . . *pro*_Z – COMP . . . [IP t_Z . . .]] (partial *pro*-drop languages)
 Context

(30) includes also Italian. Actually, the author assumes that this language does not have real null subjects, rather pronouns incorporated into the verb that act as weak pronouns and proposes the following example:

- (33) Gianni dice che *pro* parlo islandese
 Gianni says that speak.1SG Icelandic
 ‘Gianni says that (I) speak Icelandic’

According to Sigurdsson, in (33) *pro* positively matches its C/Edge linker in CP (i.e., Λ_A speaker feature), and the matrix subject does not represent a barrier because it has different phi- and C-features. He analyses it as a Familiar Topic:

(33') [CP... {Λ_A} ... Gianni_Z... [IP pro_Z... [CP... [IP pro . . .]]]]

Actually, if 'Gianni' is introduced or reintroduced in the discourse, it means that the speaker wants to open or reopen the inherent file card where to store information about *Gianni*. I disagree with his analysis because *Gianni* is clearly an Aboutness-shift Topic. As for the analysis of Italian NS incorporated into T, I believe the following example can reject it:

- (34) a. pro parlo insladese
 b. io parlo islandese
 (I) speak Icelandic

As it can be noted, the verb shows the same form both in a subjectless sentence (a) and when the subject is overtly realized (b). If the subject pronoun were incorporated into T (a), the verbal form should differ from when it is not (b). However, for Italian, I adopt the analysis proposed in Frascarelli (2007) and F&H (2007). Therefore, it may be more meaningful to observe if this original analysis can shed lights on the identification of NSs in Modern Hebrew, which is the object of this dissertation.

2.3.3 Does the C-linking hypothesis work in Modern Hebrew?

The hypothesis introduced in the previous paragraph describes two separate operations for the interpretation of NSs in partial pro-drop languages: a) *context scanning* of salient previously mentioned referents and the *pro* linking to the most prominent one¹⁶, b) the intra-sentential identification of *pro* (*context linking*). Now I propose to apply this hypothesis to Modern Hebrew, starting with an example:

- (35) Assaf amar še bno ma'amin še **pro**
 Assaf said.3SG that his son not.believe.3SG that
 yakhlif bayit
 will-change.3SG house
 'Assaf said that his son doesn't believe that (he) will change house'

According to our informants, this sentence can receive two different interpretations, sketched below following Sigurðsson's proposal:

First interpretation:

- (36) [CP₁ [Assaf... [CP₂ še bno. . . [CP₃ pro... še [IP. . .]]]]]

¹⁶ However, it is not explained what makes an argument more prominent than another.

Second interpretation:

(37) [CP₁ [Assaf... [CP₂ *še* bno... [CP₃ *pro*... *še* [IP...]]]]]

It could be that *pro* moves to CP in order to bypass *še*; as the author himself affirms, it is complicated to provide proof when one deals with null elements. Thereby, I suggest analysing the same sentence with a full pronoun instead of a null one:

(38) Assaf amar še bno ma'amin še **hu**
 Assaf said.3SG that his son not.believe.3SG that he
 yakhlif bayit
 will-change.3SG house
 'Assaf said that his son doesn't believe that he will change house'

Note that the interpretation judgments do not change: the overt pronoun (in bold) can refer to both *Assaf* and *his son* exactly like (37). However, if *Assaf* is interpreted as the person that will move, the pronoun in question could be strong and proposes a topical shift. In other words, the speaker first introduces the referent *Assaf*, then another referent is introduced, i.e., *bno* ('his son'); the latter may qualify as an Aboutness-shift Topic (i.e., a file card which the speaker may give instruction to open/reopen): if what follows is interpreted to refer to the first referent, a topical shift is needed and the pronoun in question carries out this function:

(39) [CP [Assaf... [IP... [CP *še*... his son... [IP... [CP *še*... hu... [IP *pro*...]]]]]

As can be noted, the complementizer *še* is not an obstacle to the linking between *pro* and its linker in CP ([+Top]), if it were, *hu* would occupy a higher position than *še* in order to avoid intervention by the lexicalized complementizer. The sentential order shows that *hu* does not precede it. Let us take a look at a further example where only a *pro* referent is available in the discourse:

(40) */?Shamata et **Berlusconi** **hu** amar še- **pro** olech
 heard.2sg ACC Berlusconi he said.3sg that- intended.3sg
 le'hitmoded ba-bchiroth ha-ba'ot
 INF-run in-the-next the-election
 'Did you hear Berlusconi?!...he announced that *pro* intended to run in the next election!!!'

(40) is an example of embedded *pro* in a past simple clause (that is, a Hebrew *pro*-drop occurrence generally accepted in the literature, see Shlonsky 2009). Applying Sigurðsson's hypothesis, there are all the elements required for *context linking* to be successful (i.e., a C/Edge linker in C-domain and the climbing of *pro* to bypass *še*); also *context scanning* produces an immediate result: the NP *Berlusconi*, a previous mentioned referent and prominent. Despite these facts, the vast majority of our informants have rejected it.

To resume, Sigurðsson's (2011: 38) analysis is based on the assumption that 'null arguments [...] are universally available in syntax' but their use can be blocked by syntactic factors such as lexical complementizers like in Finnish or no empty C-domain like in Icelandic (see § 2.2.1). To put it differently, it is an attempt to distinguish languages according to NA restrictions that languages themselves show. However, much evidence, provided in Frascarelli's works (2007, 2014), clearly demonstrate that in Italian 3rd person null subjects carry out the function of maintaining topic continuity when an A-Topic chain is activated. Therefore, the question that arises is whether Hebrew *pro* is employed with a specific function as Italian or if it is the result of language particular restrictions as argued by the author. In an attempt to answer to this question, consider the following example:

- (41) a. *(Hän) puhuu englantia
He/she speaks English
b. Pekka_j väittää että *pro*_{j/*k} puhuu englantia hyvin
Pekka claims that speaks English well
c. Pekka_j väittää että hän_{j/k} puhuu englantia hyvin
Pekka claims that speaks English well (Finnish)

Here the author states that, in the absence of an antecedent, the subjectless sentence is agrammatical (a); in contrast, an embedded *pro* can receive a referential value from the antecedent that c-commands it (b); and an overt pronoun presents an ambiguous interpretation (c) - I add, in absence of a prosodic context. This is the picture for the majority of the partial *pro*-drop languages such as Brazilian Portuguese, Russian and Hebrew (as noted by Sigurðsson himself). They differ from *pro*-drop languages as Italian in that the latter allows a *pro* in (a). In my opinion, this scenario is misleading because without a context, the *NS full interpretation* cannot be accomplished. This assumption is demonstrated by collected data. For illustration, consider the following naturalistic conversation from Mila corpus¹⁷, where a *NS* is realized in the last utterance:

- (42) [Speech event known coordinates: hair salon. The hairdresser is asking for a piece of information about Mira]

A1: eyfo Mira?	A1: where is Mira?
B1: mi zot Mira?	B1: Who is that Mira?
A2: habat šel Yafa 'axšav še nixnesa lepo	A2: Yafa's daughter just now has
daughter of Yafa just that entered3SF here	walked in here
B2: <i>pro</i> yats'a	B2: (she) left
leave-PST-3SF	

¹⁷ See note 3.

of Agree, to be more precise, when T probes the subject to value its features²⁰. Finally, adopting Frascarelli’s hypothesis, an A-Topic should intervene to value the uD-feature of T. By contrast, T presents [-D] feature in partial pro-drop languages, and the result is that a pronoun can only be interpreted as impersonal, that is, as an indefinite subject pronoun (D-less). However, a NS can still be realized if a local antecedent can c-command it. Lastly, non-pro-drop languages do not have *pros* by default and, as a consequence, any ‘deficient’ pronouns. Consider the following example, analysed in Holmberg (2010), where a partial pro-drop language is compared to a consistent pro-drop one:

- (45) Finnish:
 a. Gianni₁ ile sanonut mitään, mutta Paolo₂ sanoo että *pro**_{1/2} haluaa ostaa uuden auton.
- Italian:
 b. Gianni₁ non ha detto niente, ma Paolo₂ ha detto che *pro*_{1/2} vuole comprare una macchina nuova.
 ‘Gianni didn’t said anything, but Paolo said that (he) wants to buy a new car’.

Holmberg states that in (45a) the DP *Gianni* cannot locally c-command *pro* in the embedded clause, thus the only possible interpretation is that the referent *Paolo* is the person who wants to buy a new car. By contrast, c-command is not required in Italian, and the NP (*Gianni* or *Paolo*) that is the Topic of the discourse would also be the antecedent that identifies the NS. I would disagree with this interpretation because in (45b) both *Gianni* and *Paolo* are topics (precisely, Contrastive Topics in Frascarelli and Hinterhölzl (2007)’s term) and Italian native speakers may identify *pro* both with *Gianni* or *Paolo*: depending on the previous context (and the prosodic structure), that is, on whether *Gianni* has been previously established as A-Topic or whether *Paolo* was being discussed. As for the Finnish sentence above, Frascarelli (forth) proves that the interpretation that identifies *Paolo* as the person who wants a car is not the only possible one, in other words, it seems that the c-command condition is no actually involved in NS identification even in Finnish. The following is an illustration:

- (46) Jari₁ puhe teki selväksi, ettei *pro* ole syyllinen
 ‘Jari’s talk made it clear that (he) is not guilty’.

(Frascarelli 2014: 21)

In (46), there is no c-commanding antecedent for *pro* and the sentence has been judged grammatical by 48 per cent of Frascarelli’s informants.

²⁰ ‘In this case the null subject is a deleted copy in a chain headed by T’ (Holmberg 2010: 89).

To conclude, the difference between pro-drop and non-pro-drop languages, as presupposed in Holmberg (2010) depends on the presence or absence of the [D] feature in T²¹. This feature, however, is *discourse related* in the sense that the participants in a conversation can or cannot presuppose the existence of a unique individual denoted by it (cf. Heim 1999). To put it differently, I believe that the presence of [D] can only affect the felicitousness of a sentence and does not deal with the reference and, as a consequence, the identification of *pros*. Indeed, it is a universal feature (-/+ overtly realized, but still universally) and all languages should encode it. Furthermore, the fact that a *pro* is ‘deficient’ - in the sense that it is D-less - seems arbitrary: as pointed out in Frascarelli (2007), *pros* and weak pronouns have the same function of topic continuity, I will show even in Hebrew. In fact, it could be the case that when a *pro* is used in Italian, a weak pronoun may appear in Hebrew (meaning that they have the same features) and there is no lack of definiteness.

2.5 The Hypothesis of N-feature Base-generated in AGR (non pro-drop) versus Located in Spec,IP (pro-drop)

Vainikka and Levy (1999) develop a theory to account for two partial pro-drop languages previously compared in the literature, Hebrew and Finnish. This theory, however, is based on the assumption that a third person *pro* is allowed only in embedded contexts and, as argued by Shlonsky (see Chapter 1, § 1.4), in Hebrew is limited to PST/FUT clauses. The following principle summarizes Vainikka and Levy’s (1999: 649) proposal:

- (47) Principle of Obligatory Occupant Licensing (POOL):
 In order to be licensed, both the head and the specifier of a syntactic position must be filled by syntactic material at some level of representation

In other words, the authors assume that nominal feature is not base-generated in subject position rather in Spec,V and raises to the surface subject position in language like Italian. In addition, ‘since the subject position contains the agreement features for all three persons, an overt subject is never required (Vainikka and Levy 1999: 628, henceforward V&L 1999). On this account, Italian-type languages allows NSs. By contrast, in English-type languages, all [person] features are base-generated in AGR, and in consequence, the Spec,IP position would remain empty if an overt subject were dropped. Finally, this analysis preserves the pro-drop mixed nature of languages such as Hebrew and Finnish, arguing that 1st and 2nd person are Italian-type and 3rd person is English-type. Following their theory, it emerges that the comparison between the partial pro-drop languages

²¹ In other words, it appears that the difference lies in the lexicon, because it is assumed that non-pro drop languages do not have *pro* in their grammar and it may seem arbitrary.

above mentioned is more theoretical than practical. Also Gutman (2004: 471) notes that Hebrew third person pros are possible in contexts excluded in Finnish:

- (48) *Juha ja Mikko antoivat Marjolle hienon lahjan
 John and Michael give.PST.3RD.PL Mary-to fine present
 kun pro oli valmistunut tohtoriksi.
 when was finished doctorate
 'John and Michael gave Mary a fine present after (she) had finished her doctorate.'
- (49) Dafna ve- Rina natnu le-Dani matana yafa axarei pro
 Dafna and- Rina give.PST.PL to-Dani present pretty.F after
 she-siyem et ha-doktorat.
 that-finished ACC the-doctorate
 'Dafna and Rina gave Dani a fine present after (he) had finished his doctorate.'

Object antecedents are good candidates for pro identification in Modern Hebrew (49), but they are not in the equivalent Finnish sentence (48). Referents in subject position are accepted in both languages:

- (50) Marjoi sai Juhalta ja Mikolta hienon lahjan
 Mary received John-from and Michael-from fine present
 kun pro oli valmistunut tohtoriksi.
 when was finished doctorate
 'Mary received a fine present from John and Michael after (she) had finished her doctorate.'
 (Finnish)
- (51) Danii kibel mi-Dafna ve-Rina matana yafa axarei
 Dani received from-Dafna and-Rina present pretty.F after
 pro she-siyem et ha-doktorat.
 that-finished ACC the-doctorate
 'Dani received a fine present from Dafna and Rina after (he) had finished his doctorate.'
 (Hebrew)

As it can be noted, (49), (50) and (51) are third person pro-drop occurrences, that is, cases excluded by the authors when they affirm that Hebrew and Finnish pro-drop work as English-type languages for third persons. However, they point out that third person NSs are possible in *certain* embedded contexts. In order to identify which one, they propose the following examples:

- (52) Hivtaxti lo she- pro yedaber kama she- pro
 promised.1SG him that- speak.FUT.3SG.M as much that-
 yrce
 want.FUT.SG.M
 'I promised him that (he) will speak as much as (he) wants'

- (53) *Siparti la she- pro **diber** kama she- pro
 tell.PST.1SG her that speak.PST.3SG.M as much that-
 raca
 want.PST.3SGM
 ‘I told her that (he) spoke as much as (he) wanted’

According to the authors, the first sentence is grammatical because there is an available antecedent for *pro* in the matrix clause, i.e., the object pronoun in bold. By contrast, in (53), no such antecedent is available since the object pronoun *la* ‘her’ does not match with the [gender] feature carried by the verb (in bold).

In other words, they assume that (third) person features are base-generated in Spec,IP in embedded clauses like (52) where there is an available referent that can identify the NS, unlike (53). Actually, in the equivalent Italian sentence in (53), it would be impossible to interpret the person that spoke as someone different from the referent of object pronoun (following V&L’s account of licensing of *pro*). I am not affirming that it would be agrammatical, but in (53) – as well as in the Italian translation²² – there are no *syntactic means* to identify *pro* reference both if the NS [gender] is overtly realized on verb (Hebrew), or not (Italian). To sum up, V&L’s (1999) analysis may predict well the licensing of a NS although its applicability appears more theoretical than real, as stated by Gutman (2004) too.

²² It. ‘le ho detto che *pro* parlava quanto *pro* voleva’.

Chapter 3 - From Theory to Data: Exploring pro-drop in Modern Hebrew

3.1 Licensing, Identification and Interpretation of Pros

In this chapter, I will aim to verify the validity of several hypotheses for the omission of third person singular subjects in Hebrew (Ariel 1990), in Italian (Frascarelli 2007) and across other languages (Frascarelli forth). Such enterprise will be carried through a meticulous analysis of collected data. Firstly, let us clarify some notions that will be crucial for this analysis, that is, licensing, identification and interpretation of pros. Let us start with the following Italian sentence:

- (1) tu vai a casa
 ‘you go home’

Despite the presence of the overt subject *tu* ‘you’, it is not possible to say who is actually going home without a given context. In other words, the subject in (1) is LINCENSED as 2nd person singular, IDENTIFIED as *a* ‘hearer’, but the referential value of *tu* ‘you’ is unknown (not INTERPRETED). The same goes for partial pro-drop languages and the respective Italian subjectless clause. By contrast, the scenario is meaningfully different with a zero subject in semi pro-drop languages like Hebrew:

- (2) *gamar le ’exol
 finished.3SG.M to eat
 ‘pro finished to eat’

Apparently, this sentence is agrammatical due to the absence of a linguistic antecedent that, according to most scholars, c-commands or identifies pro. Actually, the NS in (2) is not even licensed by grammar leading to agrammaticality. If you look at the same sentence in a potential context of utterance, then it switches its status to grammatical:

- (3) Dani yoca mi ha bayt axarey lifney k še gamar le 'exol
 Dani went out from the house after before when that finished to eat
 'Dani left the house after pro finished to eat'

The difference between (2) and (3) is that the latter appears in an embedded environment. This is why this condition has become, in the literature, a necessary requirement for Hebrew pro-drop. Therefore, (2), as a matrix clause, is rejected; but clearly, it is part of a discourse. Generally, sentences like (2) - extrapolated from a conversation - are said to be grammatical in pro-drop languages and the opposite in partial pro-drop ones. However, the fact that the overt pronominal subject in (1) is licensed does not mean it can also be interpreted. This is to say that the omission of a 3rd person subject as in (2) is to a large extent a pragmatic phenomenon (in the sense that it is context-dependent à la Sigurðsson, see Chapter 2). However, what makes (2) agrammatical is not naïvely the absence of a context, rather the entire communicative situation, indeed it is unknown even its communicative goal. In order to interpret the whole speech event, Sigurdsson proposes to represent in CP the following information (I added the parts in bold):

- (4) Who speaks to whom, where, when and **about what**

I roughly claim that licensing is merely a syntactic fact and the realization of pros requires pragmatics to interpret the context-properties in CP associated to participants. In this chapter, I will refer to the interpretation analysis each time we deal with NSs.

3.1.1 Corpora: Naturalistic data (Mila corpus) and elicited data (online test)

The present analysis is based on naturalistic and elicited data. As for spontaneous conversations, I examined a corpus named Mila²³ with the collaboration of a native Modern Hebrew teacher from the University of Bologna. In particular, we focused on *Spoken Israeli Hebrew Corpus*, which contains naturalistic conversations from everyday speech. Every third person singular pro-drop occurrence has been transliterated. Then, it was asked to native speakers and a professor of linguistics to judge the grammaticality of collected dialogues. Only those judged grammatical have been taken in account. As for the elicited data, an online survey was created. It containing 35 sentences with overt or covert third person subjects in different structural contexts. For the first step, subjectless sentences were submitted to grammatical judgments - which could be expressed as 'yes', 'more yes than no', 'more no than yes', and 'no'. When informants answered 'yes' or 'more yes than no', a sub-question for interpretational judgment appeared. It should be specified that

²³ See note 2, Chapter 2.

Hebrew alphabet was adopted in the test. The transliteration was done at a second stage for the benefits of this analysis.

3.2 Pronouns in Hebrew: Weak or Shortened?

It is largely accepted that while strong pronouns entail a conversational shift, the weak ones maintain the same reference in the discourse. However, Ariel (1990) raised an interesting issue concerning Hebrew unstressed pronouns. Concisely, she suggests to (re)elaborate the class of Hebrew unstressed pronouns because it could be more complex than it appears. In other words, when the topic of the discourse is activated, speakers may tend to use phonological reduced pronouns (in spoken conversations) although ‘all third-person pronouns in Hebrew are only one-syllable long’ (Ariel 1990: 61). At this point, the author proposes several examples of *shortened* pronouns in spontaneous conversations, noticing that they are not isolated cases in Hebrew:

- (5) activated topic: [The Press]
- a. **h** mociim et ze kaxa ...
 They publish ACC this like-this
- b. aval **hem** madgishim [...] **h** notnim kama...
 but they emphasize they give a-few
- (6) a. [Cameron_j]... **HE_j** talked to [Nubar_m]... Nubar said ... Nubar was still
- b. **h_j** pashut diber ito... **hu_m** xashav kše **hu**
 he simply talked with-him he thought when-that he
 xai adayin... **hu_j** xashav...
 lived still he thought

At the beginning, in (5a), a shortened form of the third person plural pronoun (*hem*) appears, after the topic of the discourse (*the press*) was mentioned multiple times in the previous context. This shortened form, depicted as *h*, continues the activated A-topic chain (à la Frascarelli). Then, the full pronominal form is used (b). Here, the author notes that it follows a ‘but’, in other words, it could be used here to remark the function of the adversative conjunction; after that, a reduced pronoun is reused. The example in (6) is extremely interesting since there are two referents in the discourse and apparently, the shortened pronoun might refer to both. Specifically, the speaker first introduces the topic *Cameron* and refers to him by a full pronoun reported in capital letters (perhaps it is strong in order to clearly establish the topic of the discourse²⁴); then, another referent is introduced, *Neubar*, and mentioned several times in order to distinguish it from the current topic. The most interesting

²⁴ The author uses ellipsis after the referent *Cameron* (and further on), hence we cannot say if the pronoun in capital letters bears a contrastive feature or it is an Aboutness-shift topic. However, in this section, we would focus on the shortened pronominal forms.

fact is that a shortened third person pronoun is used in (6b) which, in theory, could refer to both of the two referents previously introduced. However, it refers to the activated topic (as shown by index) introduced in (a) and clearly established by the first pronoun in capital letter. To recapitulate, the author assumes that ‘in order to maintain the distinction between the two referents, the speaker implements the full vs. contracted forms to distinguish between topic, referred to by *h*, as opposed to the non-topic, referred to by the full pronominal forms (*hu* ‘he’)’ (Ariel 1990: 62). Based on Ariel’s assumption, therefore, the following working hypothesis could be formulated:

(7) Hypothesis 1:

The Hebrew referential system differs from the Italian one from a prosodic point of view: pronouns that are employed to guarantee the topic continuity are not necessary null, but rather shortened (phonologically reduced).

To put it differently, where a *pro* is used in Italian, a shortened pronoun can appear in Hebrew, presenting the same function as an Italian null and weak pronouns, that is, maintaining topic continuity. This could explain its partial *pro*-drop nature. As a matter of fact, all the sentences from the online test - containing two referents that could qualify as topic - were judged ambiguous by the majority of respondents. For an illustration, consider the following example:

- (8) Marco sameakh še- Uri khoshev še-hu ye-natseakh batakharut
 Marco happy that Uri believe.PRES.SG.M that-he win-FUT.3SG.M the race
 ‘Marco is happy that Uri believes that he will win the race’

79% of informants assumed that the pronoun *hu* ‘he’ in (8) can refer to both *Marco* and *Uri*. I posed the following questions: how is the pronoun in (8) disambiguated in the conversation? How is the A-topic continuity guaranteed when more than one referent is introduced? Repeating the R-expression would be uneconomical, whereas NSs seem not to be the preferential choice. The adoption of shortened pronouns for topical constituents (as described in Ariel (1990)) could be a strategy that characterizes Hebrew *pro*-drop²⁵. In order to verify it, I manipulated some sentences from the test, replacing NS occurrences with overt pronouns and comparing their duration and intensity in PRAAT²⁶. The starting idea is the following: if I insert a pronoun in clauses that were

²⁵ Bearing in mind that each predicational sentence has an A-topic (Frascarelli forth), thus in (8) only one referent can be topicalized and if no conversational shift is proposed, the discursive function of the employed pronoun is to maintain the topic continuity: this is one interpretation to disambiguate the sentence under discussion.

²⁶ As for this analysis, I was inspired by a study carried out by Bertone and Cardinaletti (2011) on the syntax of pronominal pointing signs in Italian Sign language. The authors distinguish three classes of LIS personal pronouns, i.e., strong, weak and clitic. These visibly differ in the *Duration Parameter*, i.e., the time a sign is maintained that has consequences on prosodic aspects:

LIS strong pronouns show long duration time - the authors have estimated it to be over 300 milliseconds; they can be reduplicated by the non-dominant hand and a pause is often realized after them;

originally subjectless, then that pronoun is undoubtedly weak (to maintain the same reference like NS does). In other words, it will be examined if - in case where two referents are introduced - the replacing pronoun is not simply weak (like it would be in Italian), but shortened - in order to maintain the topic continuity (as suggested by Ariel). The following is the first recorded sentence:

- (9) shama-ta ma še-[Daniel] amar? **hu-** chozer ve-
 hear-PST.2S what that Daniel say-PST.3MS he repeat-PRES.S and-
 omer še- **hu-** rotse lalechet ha-bayta
 say-PRES.3MS that he want-PRES.3MS INF-come back to-home
 ‘Did you hear what Daniel said? He keeps saying that he wants to go home’.

In (9), the speaker wants to talk about the referent *Daniel*, whose first appearance is found in the presupposition of the question. In Italian, at this point, only NSs would be used. In Hebrew, by contrast, the first employed pronoun is not optional even though the person who wants to go home is the same who expresses this wish; it is a weak pronoun (no conversational shift is proposed) and this is in line with Frascarelli’s (2007) analysis of null and weak pronouns: both work as resumptive pronouns. The second pronoun in bold replaces the original NS:

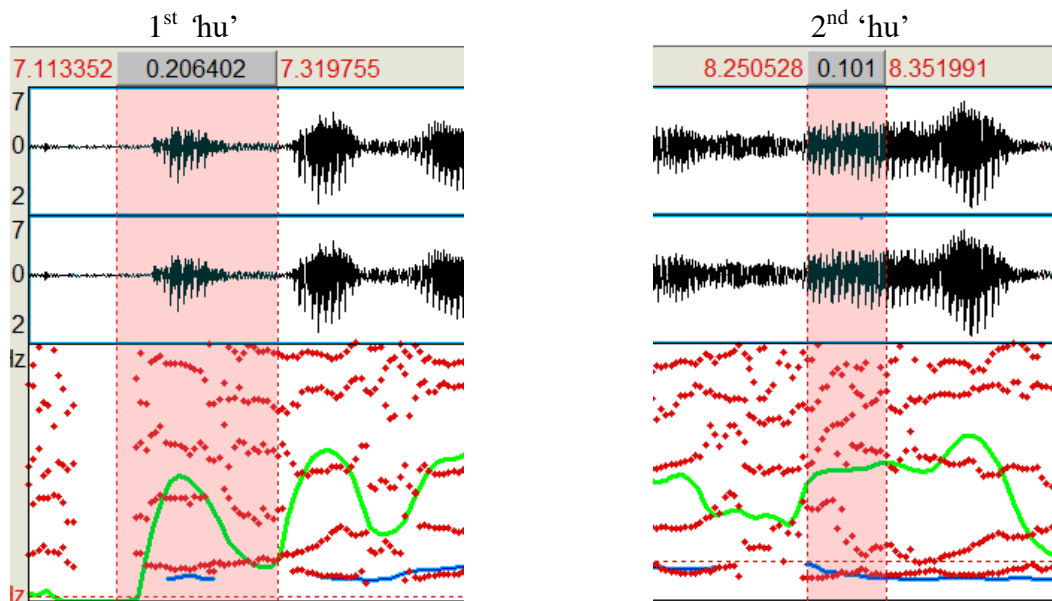


Figure 1: prosodic representations of the two pronouns in bold in (9)

LIS weak pronouns are generally realized between 200 and 300 milliseconds, they cannot be reduplicated or followed by a pause;

LIS clitic pronouns present a remarkable short time of duration, around 120 milliseconds; they are adjacent to the verb.

From the pragmatic point of view, however, a sign language speaker can reintroduce a previously mentioned referent in the discourse by using a) double pointing (dominant and non-dominant hand) or b) a pointing that presents a “significant” time of holding. This emphasizes the importance to assume the existence of different pronouns with different pragmatic functions.

The prediction that both pronouns are weak is corroborated by the prosodic analysis captured by Figure 1. The pink stripes highlight the portion of audio where the two pronouns are uttered, the green line shows intensity and the blue one pitch. Several interesting elements may bear out the existence of shortened pronouns: the duration time is significantly different, i.e., 0.206 and 0.101 milliseconds respectively. Note that Hebrew subject pronouns are attached to what follows. Given that, it is visible how the first pronoun has its own intensity and tone separated from the following word. On the contrary, the other is one phonetic unit with what precedes, the complementizer *še* ‘that’, and what follows, the verb *rotse* ‘wants’. Let us observe a further example where considerable differences emerge from the prosodic analysis:

(10) [contest: two girls, Alice and Sara, they are sitting at a café and after chatting for a while, Alice says to Sara:]

Rait	et	ha	bahur	im	ha-hultza	ha-adum-a?	hu
see.PAST.2SM	ACC	the	guy	with	the-shirt	the-red-F.	he
omer	shalom	le-kol	ha-banot	she-	ovrot		lamrot
say.PST.3MS	hello	to-all	the-girls	that	pass-through-3PLF		even thought
she-	hu	lo	makir		otan		
that	he	NEG	know.PRES.3MS		them		

‘Did you see the guy with the red t-shirt? He says hello to all the girls that go by, even though *pro* doesn’t know them’

In (10), the speaker initially introduces the DP *habuhur* ‘the guy’, which is new information (but not the current Topic); then, a pronoun may be used to set up *the guy* as topic of the discourse, since what follows is about him. If it were, it would show a rise in the intonational contour (L*+H) and qualify as Aboutness-shift Topic (Frascarelli and Hinterhölzl 2007):

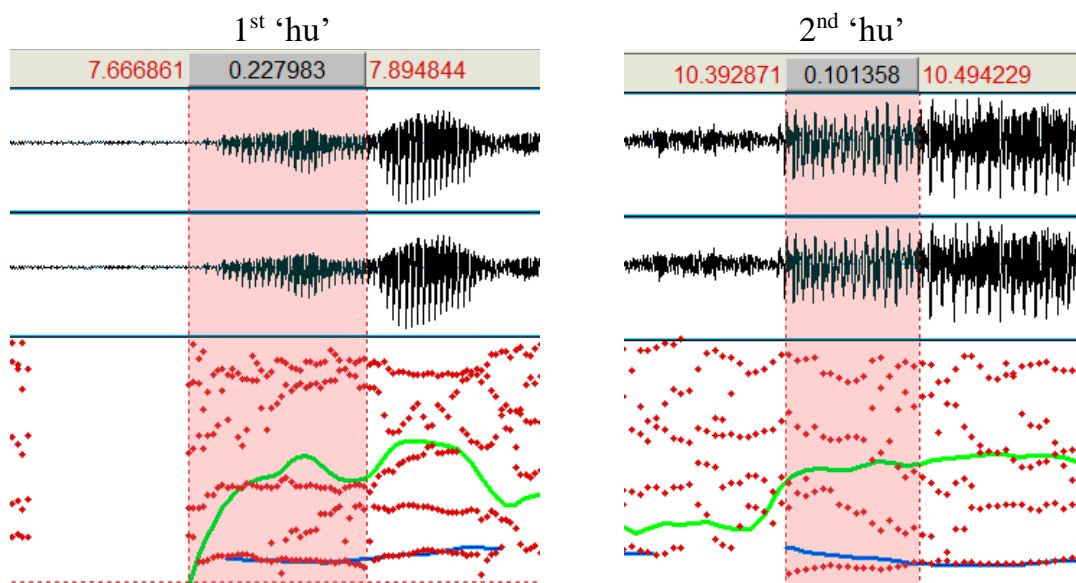


Figure 2: prosodic representations of the two pronouns in bold in (10)

As Figure 2 shows, the first pronoun is not associated with L*+H tone: no pitch emerges (see blue line). The same goes for the second pronoun: they are both weak. Once again, this is in line with Frascarelli's (2007) analysis, because also in the respective Italian translation only resumptive pronouns would be used²⁷. However, the duration time of the pronouns in question is meaningfully different: the first is uttered in 0.227 milliseconds, whereas the second in 0.101. Note that the latter is the one that has replaced the original null pronoun: it is remarkably short and it is one prosodic unit with the VP; on the contrary, the first pronoun is fully realized, both prosodically and phonologically. One can assume that the second pronoun may be a mere case of shortened pronoun à la Ariel. Let us analyse also the following example:

- (11) Assaf amar še haben shelo lo ma'amin še **hu**
 Assaf say.PST.3SG.M that son of-him NEG believe.PRES.SG.M that he
 yakhlif bayit
 change.FUT.3SG.M house
 'Assaf said that his son doesn't believe that he will change house'

After recording the above sentence, I asked whom the pronoun *hu* refers to, i.e., *Assaf* or *haben shelo* 'his son'. The latter has been interpreted as the person who will change house. At this point, I asked to re-record it to make sure that once the informant made clear what the sentence is about, he would adopt the appropriate prosodic structure:

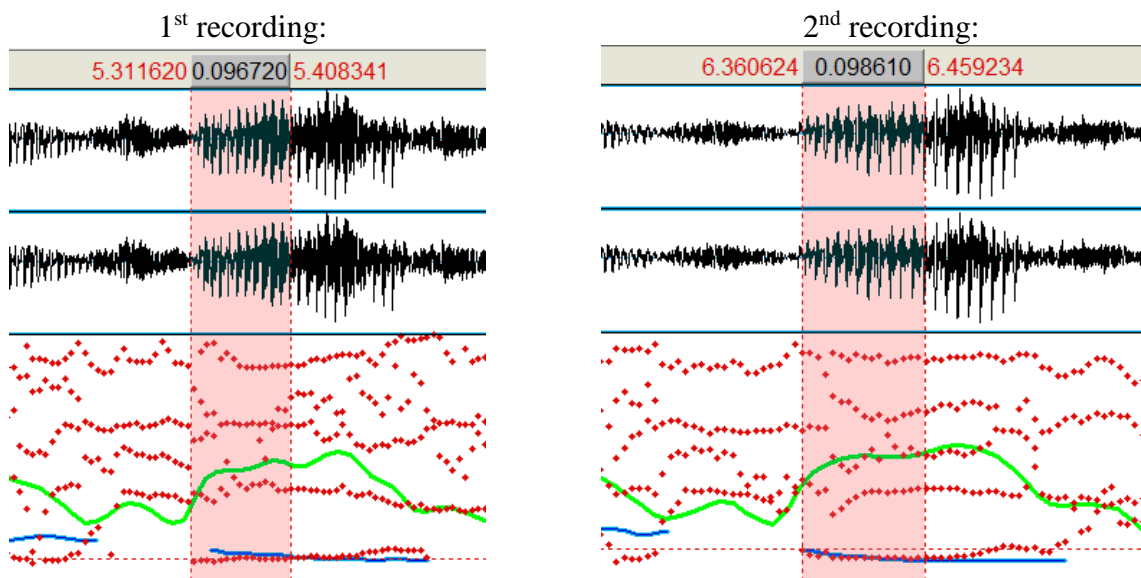


Figure 3: prosodic representation of the pronoun in bold in (11)

²⁷ The only difference is that in Italian, they would be null but since null and weak pronouns have the same function to maintain the topic continuity (Frascarelli 2007), they are all resumptive pronouns.

Both the first and second recording in Figure 3 show that *hu* has a flat contour (see blue line) and a duration time < 0.100 milliseconds. Importantly, this prosodic analysis is in line with the informant’s interpretation: if the topic is *his son*, then the following pronoun is used for topic continuity; otherwise, a conversational shift would emerge. Conversely, in the following example, the discursive function of the pronoun is made clear by the context:

- (12) A: Daniel was very confused last time and honestly, I feel responsible...
 B: al tid’ag! Daniel diber im Gavriel etmol...
 don’t worry Daniel speak-PST.3SG.M with Gavriel yesterday
 akhshav **hu** mavin ma qara
 now he know-PRES.SG.M what happened
 ‘Don’t worry! [Daniel]₁ spoke with [Gavriel]₂ yesterday. Now **he**₁ knows what happened’

Speaker A introduces the referent *Daniel* and speaker B accepts it as the current topic. In particular, B first reintroduces the topicalized referent as a full NP, and then he/she uses a pronoun to keep referring to it. The prediction is that this pronoun is weak to maintain the topic continuity²⁸:

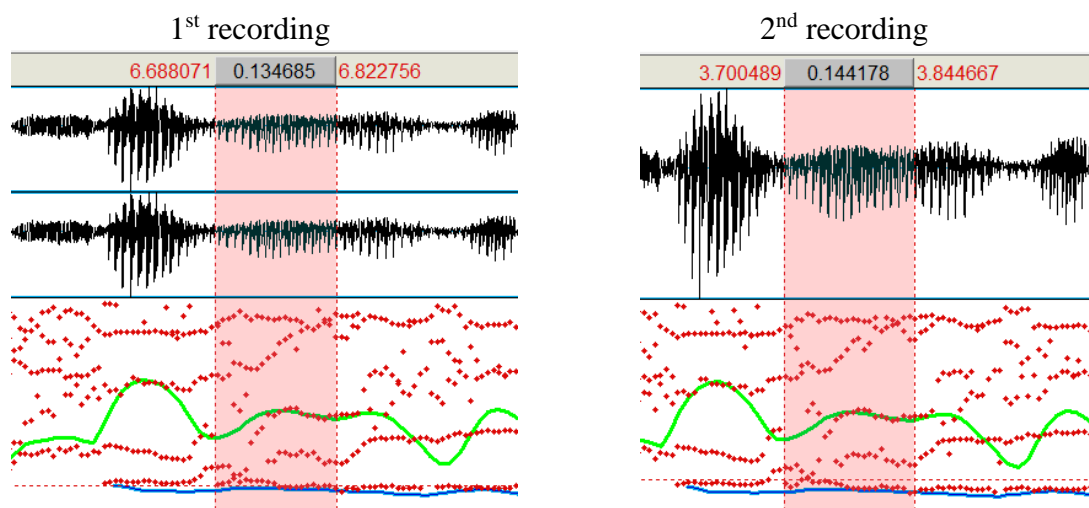


Figure 4: prosodic representation of the pronoun in bold in (12)

Recalling that the pink stripe in Figure 4 highlights the prosodic representation of the pronoun *hu* in bold, it is interesting to note that in both recording the duration time is > 0.100 milliseconds, the pronoun in question is marked by a low tone without intonational pitches and it is not prosodically separated by the rest of the sentence. It is undoubtedly a mere case of weak pronoun. Note that informants have rejected the original subjectless sentence because – as it is argued in the literature – Hebrew present tense lacks an overt [person] feature. In the next section, I will present an alternative analysis related to the absence of this feature in Hebrew present tense.

²⁸ The doubling recording ensured that random funding was excluded.

Here I suggest that the existence of shortened pronouns may explain the complex partial pro-drop nature of Modern Hebrew, that is, they may be used in contexts where in Italian a weak or null pronoun appears (Hypothesis 1, above). In particular, a significant difference between non-embedded weak pronouns and embedded ones emerges: the former show a duration time > 0.100 milliseconds, the latter < 0.100. It remains to be tested whether this is an actual difference between weak and shortened pronouns or the result of Hebrew morphology (in embedded clauses, Complementizer, subject and verb are morphologically combined). Lastly, Hebrew shortened pronouns may correspond to *deficient pronouns* discussed in Cardinaletti and Starke (1999: 154), because they both can refer to ‘an entity already prominent in the discourse’ (although prosodically and morphologically reduced). However, the author affirms that deficient pronouns ‘may bear both word-stress and phrasal stress’, ‘they do not need to be referential and can be semantic dummies’. This is certainly not the case of Hebrew shortened pronouns. I believe, they may represent a transitional phase from partial pro-drop parametric value to non-pro-drop parameter.

3.2.1 Are there Strong Pronouns in Hebrew?

In the analysis proposed by Frascarelli and Hinterhölzl (2007), it is pointed out that pronouns associated with L+H*²⁹ tone carry out the pragmatic function of proposing a topical shift in the discourse. Now it is essential to verify if, also in Hebrew, there are Italian-like strong pronouns. Consider the following:

- (13) [Uri]₁ mitsta'er še [haben šelo]₂ khoshev še- **hu**_{1/2}
 Uri sorry that son of-him think.PRES.SG.M that he
 ya-àse bushot
 make-FUT.3SG.M poor-showing
 ‘Uri is sorry that his son thinks that he will make a poor showing’

In (13), the pronoun in bold can refer to either *Uri* or *haben shelo* (‘his son’). For this reason, after recording, I asked for our informant’s interpretation, according to whom, *Uri* is the person that is supposed to make a poor showing. With this in mind, now observe Figure 5 below taking in account that the pronoun in (13) refers to *Uri* (the first referent):

²⁹ L+H* is a rise in the intonational contour in correspondence with the tonic vowel that reaches its peak on the post-tonic syllable.

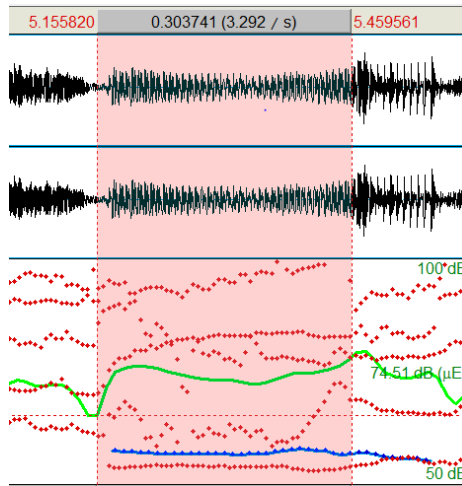


Figure 5: prosodic representation of the pronoun in bold in (13)

The duration time of the pronoun in analysis is noteworthy: 0.303. In spite of that, no intonational pitch is found (line blue): the distinguished feature of this pronoun is the *prosodic length*. As counterproof, observe a sentence where there is only one referent of *pro* in the given context and our informant confirms that the pronoun refers to it:

- (14) bezman še- **hi**₁ holechet le-beit ha-sefer [Samantha]₁
 while that she go.PRES.SG.F PREP-house the-book Samantha
 ochelet tapuach
 eat.PRES.SG.F apple
 ‘when she is going to school Samantha eats an apple’

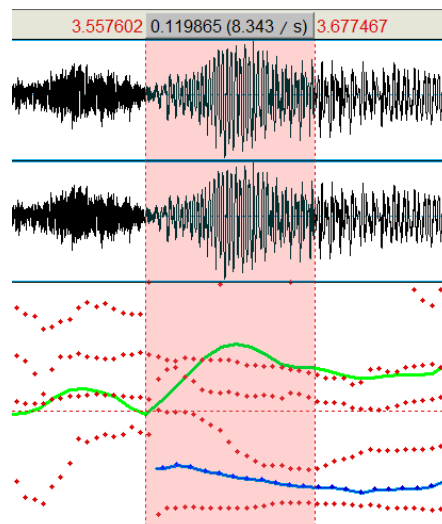


Figure 6

In this case, the pronoun *hi* is short, showing decreasing tone. Now let us observe a further illustration where the pronoun *hu* first appears in a context where it refers to the current topic (15) and then in another where it proposes a conversational shift (16):

(15) [previous context: Uri’s flight has been very long...]

Uri rotse lada’at im hu ma’avir kan et ha- layla
 Uri wants to know if he spend here ACC the night
 ‘Uri wants to know if he can spend the night here’

(16) [Uri has a son, Ben, who is used to staying with his grandmother when Uri works. After working, Uri is going to his mother’s house to take back his son and his sister opens him the door:]

URI: you know... I believe I have met my soul mate today. I have in mind a date, but you know I can’t leave **Ben** alone at home...

HIS SISTER: Ok, I see...Mom?! **Uri rotse lada’at im hu ma’avir kan et ha- layla**
 “Mom!? Uri wants to know if he can spend the night here”

Although the sentence considered is purposely the same (in bold), it is preceded by different contexts that change the overt pronoun (underlined) reference. Specifically, in (15) the only possible referent for *pro* is *Uri* and the previous context makes clear that it is the current topic. In this case, the pronoun that follows should behave as a resumptive pronoun with a low tone. Figure 7 confirms it:

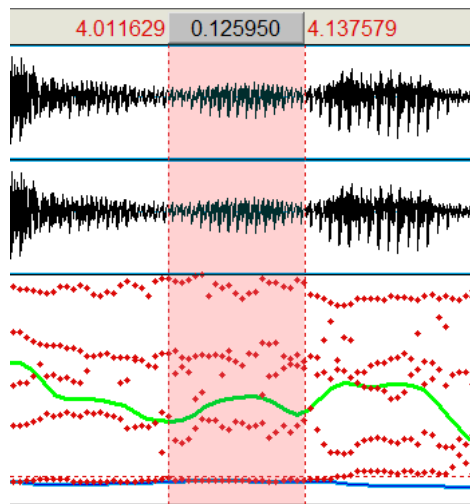


Figure 7: prosodic representation of the pronoun (15)

Figure 7 also shows that the duration time of the analysed pronoun is short (0.125 milliseconds) just like (14) above where the pronoun maintains topic continuity. As for (16), instead, two potential masculine referents for *hu* are available in the previous context: *Uri* and *Ben*. Specifically, the first speaker reintroduces *Ben*³⁰ in the discourse in an attempt to explain to his sister that he needs someone who can look after him during his date. At this point, his sister, understanding the Uri’s indirect request to leave Ben there for the night, turns to their mother uttering the sentence in analysis:

³⁰ Who is around them, i.e., this referent is in the physical context.

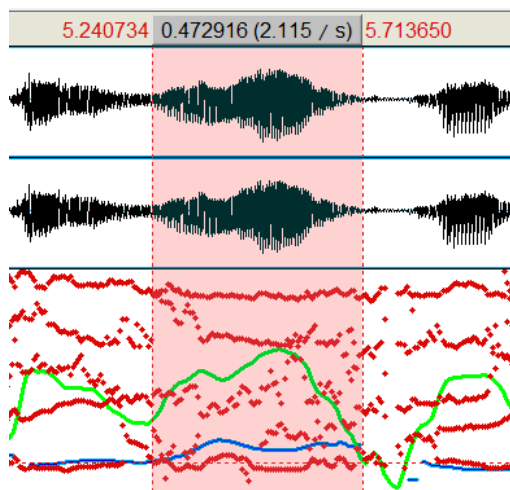


Figure 8

This time the pronoun in question shows a remarkably long time of duration (0.472 milliseconds) and an intonational pick (see line blue): it corresponds to what in Italian are defined as strong pronouns.

It seems that Hebrew pronouns with the function of proposing a conversational shift (13, 16) have a long time of duration. The Italian strong pronouns may be equivalent to Hebrew *long* pronouns, that is, strong pronouns for prosodic length. To conclude this section, we can also notice that the duration time of Hebrew pronouns conforms to Bertone and Cardinaletti's (2009) typology (see note 4).

3.3 An Alternative Analysis to the Absence of the [person] Feature in the Hebrew Present Tense

In the international literature, it is assumed that Hebrew pro-drop occurrences are not allowed in present tense clauses, as the verb does not bear the [person] feature (cfr. among others, Shlonsky 1997, Vainikka and Levy 1999). I believe it is more likely that the [person] feature in Hebrew present tense is rather *silent* than *absent*. Quoting Sigurðsson & Maling (2012: 370):

In general, the IP domain of grammatical features mediates between the context domain of the CP and the content domain of the vP (cf. Platzack 2000). Thus, features of the grammatical IP domain, including, Pn, Nr, and T, are not contentless Agr elements in the sense of Chomsky (1995 et seq.). Rather, they enter syntax as interpretable but unvalued features, to be assigned some value in the course of the derivation. What is uninterpretable is the overt morphological agreement reflection of these categories (in languages that have such agreement), not the Person, Number and Tense categories themselves.

In other words, the values of the phi-features are not fixed but instead derived from interaction between grammatical features of the IP domain and 'context-linking features' of the CP domain. From the formal point of view, Person (Pn) enters a matching Agree relation with a NP in CP that could be Λ_A , Λ_P , A-Top (for details see Chapter 2, §2.3.1). These linkers can be silent but active probes for IP grammatical features. Following Sigurðsson's assumptions, I propose that the Hebrew

present tense shows overt [number] and [gender] features but silent [person] feature that can be valued during the derivation. Moreover, this may explain examples where a pro appears in a present tense sentence as the following:

- (17) a: eyfo hi tihiye ba-xag?
 where she be-FUT-3SF to-party
 where will she be to the party?
- b: etsel ha-mišpaxa šel Xen, **hi** gam sovelet ne-hem harbe
 in the-family of Xen she also suffer-PRES-3SF from-them much
 aval **hi** osa kam-ox, **hi** shoteket, **pro** lo
 but she make-PRES-SGF like-you she fall silent-PRES-3SF NEG
 osa inyanim tam
 make-PRES-3SF matters with-them
 ‘From Xen’s family, she also suffers a lot from them, but she is like you/ she keeps silent /
 (**she**) doesn’t want to create problems for them (she pretends nothing is happened)’.

- (18) a: bodek et laxats sukar ve-laxats dam
 check-PRES. ACC pression sugar and-pression blood
 ‘pro check glycemia and blood pression’
- b: yeš lo hetkef lev
 there is to-him attack heart
 ‘he has an heart attack’

Note that in (17) zero copula precedes the three overt pronouns: *hi*. The interesting fact is that *osa* (‘make’) shows an unvalued person feature outside a context because it could correspond to the first, second or third singular person. For this reason, I believe we may assume that the feature in question is silent but interpretable if there is a referent in CP that can provide a referential value, in this case, an A-Topic. As for (18), we actually do not know who is the person that is doing this check, but we may infer it from the context - perhaps in an ambulance; however, the referring utterance context is not provided, thus, it could be the speaker or his/her interlocutor. In each case, it is a spontaneous dialogue where a NS is used in a present tense sentence³¹. Lastly, we have already analysed the following examples in the previous section, but in this case, a NS is used in a present tense sentence. Importantly, it has been judged grammatical by our native speaker informants, despite present tense does not overtly bear the [person] feature:

³¹ It should be said that (18) is not an expected sequence and it could be supposed a deictic in the informational context, as in (19) - in the next page.

(19) [contest: two girls, Alice and Sara, they are sitting at a café and after chatting for a while, Alice says to Sara:]

Rait	et	ha	bahur	im	ha-hultzta	ha-adum-a?	hu	omer
see.PAST.2SM	ACC	the	guy	with	the-shirt	the-red-F.	he	
omer	shalom	le-kol	ha-banot	she-	ovrot		lamrot	
say.PST.3MS	hello	to-all	the-girls	that	pass-through-3PLF		even	thought
she-	pro	lo	makir		otan			
that	NEG		know.PRES.3MS		them			

‘Did you see the guy with the red t-shirt? He says hello to all the girls that go by, even though *pro* doesn’t know them’

I believe that in (19), *pro* is accepted despite the present tense because its referent cannot be any other person than the person with the red t-shirt. A Hebrew native speaker cannot get confused because the context clearly indicates him who is the NS referent. As a last remark, let us observe some examples presented in Ariel (1990: 114) that corroborate the idea of silent [person] feature in Hebrew present tense:

(20) ba- zman ha- axaron any mitoreret be-sheva any menasa
 in-the time the recent I wake-up at-seven I try.SG.F
 li-shon bederex-klal **pro** mityaeshet
 to-sleep usually gives-up.SG.F
 ‘Recently I wake up at seven, I try to sleep. Usually, (I) give up’

(21) az zu kotev sham ... e ... **pro** mevi kol miney anashim
 so he writes there eh brings.SG.M all sort of people

Both the verb *mityaeshet* ‘gives up’ in (20) and *mevi* ‘brings’ in (21) follow a NS. Also Ariel shows that the omission of subject is possible in Hebrew present tense both with first person (20) or a third one (21).

3.4 Macroparameter and Mesoparameter

An interface-based approach to the interpretation of the NS across languages has been initially proposed by Frascarelli (2007) through the Topic Criterion Hypothesis and carried forward in Frascarelli (forth) with the refinement of a Macroparameter for pro-drop in general, and a Mesoparameter specifically for partial pro-drop languages. The distribution of referential NSs is understood as a continuum for locating languages on the basis of the NS property they show:

(22) MACROPARAMETER:



The MESOPARAMETER is meant to identify the collocation of partial pro-drop languages along this continuum. In this section, we will verify to what extent the mesoparameter can account for NSs in Hebrew, and we will explore the ‘degree of partiality’ (Frascarelli forth) of Modern Hebrew as well as the position it ideally may occupy in the continuum.

Primarily, it is worth recapitulating the most relevant assumptions formulated in the Topic Criterion (introduced in Chapter 1):

- I. The interpretation of a referential *pro* depends on a matching relation (Agree) with the local Aboutness-shift Topic (Frascarelli and Hinterhölzl 2007), which is ‘endowed with the [+aboutness] feature, an extended EPP feature’ (Frascarelli 2007);
- II. every predicational sentence has an Aboutness-shift topic (A-topic) that, when continuous, can be null;

Once an A-topic is proposed and established in the discourse, it gives rise to a topic chain with the following conditions:

A-topic chain conditions:

- III. an A-topic chain can only start in root sentences;
- IV. once it is established, it remains activated until a conversational shift is proposed; this chain can be ‘fed’ by Familiar topics for topic continuity or weak/null pronoun for the resumptive function;
- V. an A-topic chain can be interrupted by the intervention of another A-topic that ‘breaks the current A-topic chain starting a new one’;
- VI. Familiar topics do not break a chain rather they continue it.

As for (I), it is reasonable to assume that the highest Spec,TopP must be always filled in order to identify the [+aboutness] feature³². On this account, in a (predicational) topicless sentence, it is also plausible to postulate that the A-topic is silent rather than absent. Indeed, in a language such as Italian, an A-topic can be null from its first occurrence in the discourse and still it can activate a chain: this is mainly what collocates this language at the beginning of the continuum in (22). This is a crucial point because - as the author notes - one might object that in sentences like the following, the referent of *pro* is the Focus *Jari* (and not a previous activated topic):

³² In other words, every predicational sentence is about something, i.e., bears the [+aboutness] feature described in Reinhart (1981). This feature, in Frascarelli and Hinterhölzl 2007, is claimed to be realized by the Aboutness-shift Topic in the C-domain.

- (23) Alla fine è venuto anche JARI alla festa ma **pro** era
 at-the end be.3SG come.PRT.PST also Jari to-the party but be.PST.3SG
 troppo stanco e **pro** non si è divertito.
 too tired and not REFL be.3SG amused
 ‘In the end also JARI came to the party, but (he) was too tired and (he) could not enjoy it.’
 (Frascarelli forth: 23)

The fact that *Jari* in (23) is focused does not mean that the focus can provide a referential value for the NS. It is more plausible that there is a previous started A-topic chain and the silent A-topic interprets it. Here is a counterproof. If we postulate a different A-topic chain in (23), activated in the previous context, this easily changes the reference of *pro*:

- (24) Ermes è incredibile, cioè **alla fine è venuto anche Jari alla festa** – come sperava - ma era troppo stanco e non si è divertito
 ‘[Ermes]₁ is unbelievable, I mean, **in the end also [JARI]₂ came to the party** –like (he)₁ hoped - but (he)₁ was too tired and (he)₁ could not enjoy it.’

In this case, *Ermes*, activating an A-topic chain, is interpreted as coreferent with *pro*; if the focus JARI were the constituent that actually identifies *pro* in (23), it would have performed it in (24) too. By contrast, (24) is interpreted as sketched in (25) and (23) in (26):

- (25) [CP A-Topic ‘Ermes’... [CP (Ermes Null A-Topic)...Jari_{FocP} [IP **pro**... [CP... (Ermes Null A-Topic) [IP **pro**...]]]]
 — — |
 A-topic chain

- (26) [CP (Jari Null A-Topic)...Jari_{FocP} [IP **pro**... [CP... (Jari Null A-Topic) [IP **pro**...]]]]
 A-topic chain

Therefore, the possibility that the A-topic starting a topic chain may be null - along with (III) above – is explained by the *Topic Chain Condition* proposed in Frascarelli (forth: 13) for Italian-like languages. In the next subsection, the discussion will move on to Hebrew and explore Frascarelli’s hypothesis of partial pro-drop languages.

3.4.1 Mesoparameter

In the previous chapter, several well known hypotheses were explored for pro-drop in Hebrew (Ariel 1990, Shlonsky 1997, Vainikka and Levy 1999 and Sigurðsson 2011). As it emerged, such analyses cannot account for *all* Hebrew subjectless clauses discussed up until now. Consider, now,

the Topic Criterion hypothesis (Frascarelli 2007) as an alternative.. Let us start from examples (52) and (53) (Chapter 2), repeated here for convenience as (27) and (28) respectively:

- (27) Hivtaxti lo she- pro yedaber kama she- pro
 promised.1SG him that- speak.FUT.3SG.M as much that-
 yrce
 want.FUT.SG.M
 ‘I promised him that (he) will speak as much as (he) wants’
- (28) *Siparti la she- pro diber kama she- pro
 tell.PST.1SG her that speak.PST.3SG.M as much that-
 raca
 want.PST.3SGM
 ‘I told her that (he) spoke as much as (he) wanted’

These examples are taken from Vainikka and Levy (1999: 618). As we saw in Chapter 2, the authors claim that if there is an available antecedent for *pro*, the sentence is accepted (like the object pronoun *lo* ‘him’ in (27)); if not, agrammaticality occurs (the pronoun *la* ‘her’ in (28) does not match with the [gender] feature carried by the verb *diber* ‘speak’). The first crucial assumption by Frascarelli is that every predicational sentence has an overt or covert A-topic. Thus, in the above examples the Spec,TopP is occupied by a masculine referent in (27) and a feminine one in (28). The A-topic chain in (27) is recovered by the resumptive pronoun *lo*, which provides the information that an A-topic has been activated in the previous context and it shares its phi-features. By contrast, in (28) the chain is maintained only by silent topics: this could have lead informants to reject it. One may object that (28) could receive the same analysis like (27), that is, *la* ‘her’ is a resumptive pronoun of the current A-topic chain; if it did, a topic shift is required to switch reference (the embedded verbs signal a masculine referent). Consequently, the use of only NSs would be incorrect (as they maintain the same feminine reference). The following example was mentioned in the section regarding Sigurðsson’s C-Edge Linking hypothesis (§2.3.3, Chapter 2). Let us now apply the Topic Criterion:

- (29) Assaf amar še haben shelo lo ma'amin še **pro**
 Assaf say.PST.3SG.M that son of-him NEG believe.PRES.SG.M that
 yakhlif bayit
 change.FUT.3SG.M house
 ‘Assaf said that his son doesn’t believe that (he) will change house’

This sentence was judged as grammatical by 80% of respondents who were also asked for interpretative judgements, reported in Table 1:

	Assaf	haben shelo ('his son')	both(ambiguous)	other ³³
Hebrew	2%	21%	57%	20%

Table 1: interpretative judgments

As can be seen, it emerges that the majority of our informants (almost 60%) consider it ambiguous. In other words, two different interpretations are possible, depending on the (current) activated A-topic chain. In case the speaker is talking about the topic *Assaf*:

First interpretation:

- (30) [CP [Assaf<A-topic>... [CP še haben shelo... [CP (Assaf <Null A-topic>) [IP **pro**...]]]]]
- |-----|
A-topic chain

If 'his son' is being discussed:

Second interpretation:

- (31) [CP haben shelo<A-topic>... [CP [Assaf... [CP še haben shelo<Fam topic>... [CP (haben shelo Null Fam-topic) [IP **pro**...]]]]]
- |-----|
A-topic chain

Finally, let observe the following example from the Mila Corpus:

- (32) [extra-context: hair salon. The hairdresser asks for a piece of information about *Mira*]
- | | |
|---|---------------------------------|
| A1: eyfo Mira? | a: where (is) Mira? |
| B2: mi zot Mira? | b: Who (is) that Mira? |
| A2: habat shel Yafa 'axšav še nixnesa lepo | a: Yafa's daughter just now has |
| daughter of Yafa just that entered.3SF here | walked in here |
| B2: <i>pro</i> yats'a | b: (she) left |
| left.3SF | |

In (32), there is not a c-commanding or local antecedent for *pro* and, more importantly, we are *not* dealing with an embedded NS: this is a new fact, mentioned only in Ariel (1990)³⁴. Specifically, this short dialogue takes place in a hair salon where more speakers participate. At some point, the hairdresser asks for a piece of information about *Mira*, and her/his colleague - who evidently does not know who she is – answers with another question. Once speaker A2 provided specific information about the current topic, speaker B2 claims that actually *Mira* has just left, omitting the subject. Therefore, the previously activated A-topic provides a referential value for *pro* in B2. We

³³ 'Other' refers to respondents that rejected this sentence; consequently, the relevant sub-question (asking for interpretative judgments) has not be displayed in their test.

³⁴ The only difference is that Ariel's examples are from literary Hebrew; by contrast (32) is naturalistic spoken conversation. The following is an example from the author:

(i) ba- shenit pro lo ciyet le- xukey ha- higayon...
for.the- second NEG obey-PST.SG.M. to rules the logic
'For the second time, (he) did not obey the rules of logic...'

(Ariel 1990: 113)

have provided a picture of the applicability of the Topic Criterion (in Hebrew) in outline. Now we see what differentiates it from Italian-like languages, in essence explained by the MESOPARAMETER.

In general, the MESOPARAMETER predicts that also in semi pro-drop languages the omission of a third person NS responds to *interpretative requirement*. In other words, it is not the c-commanding antecedent or a local argument in the higher clause that identifies pros, rather the A-topic activating a topic chain under which pro is realized.

Specifically, the MESOPARAMETER predicts that ‘the A-topic chain must have at least *one overt link*’ that could be an A-topic or a low copy of it, a Familiar topic. That link should be visible at the Phonological Form is the ‘PF Visibility Condition’ (Frascarelli forth: 26). To reformulate it, an A-topic chain can be legitimized in partial pro-drop languages, if at least one linker (of this chain) is phonologically overt. A piece of evidence is (27) and (28) above. In (28) there is not any overt linker of the A-topic chain, and the sentence is agrammatical (an initial A-topic chain cannot be silent like Italian); in (27), the only overt linker is the resumptive pronoun: it is not an A-topic nor a Familiar topic, but still it is part of an A-topic chain and indeed the sentence is accepted.

3.5 From Theory to Data

In Bianchi and Frascarelli (2010), it is argued that an ‘A-topic pertains to the dimension of the CG management i.e., ‘it implements a *conversational move* and, as such, it is restricted to root clauses’ (Frascarelli 2007: 7). In other words, the A-topic is a ‘*speech act*’³⁵ and only sentences endowing illocutionary force can host it because they allow Topics to perform a conversational move in the CG management (for the explanation of Krifka’s (2007) notions of *CG management* and *CG content* see Chapter 1). On the other hand, non-root sentences cannot host it (see condition III above) because they only add information to the CG-content, instead the A-topic DOES imply a modification of the CG management.

In the online survey (introduced in § 3.1.2), the interpretation of NSs was tested in adverbial clauses, complements of bridge verbs and factive verb. In addition, we tested Hebrew NSs in non c-commanding contexts, across a 3rd person local antecedent and in present tense clauses. As will be seen, judgements are never clear-cut; for this reason I wonder whether the NS parameter in Modern Hebrew is increasing or decreasing. The discontinuity of judgments might be a key word³⁶. 155 native speakers have completed the survey, age standard deviation is 11.98 and average 34.4; 74%

³⁵ Krifka (2001).

³⁶ For instance, many Hebrew informants argued that some NS occurrences were more natural in written Hebrew or in everyday language spoken by their grandmothers or grandfathers. Although, I believe this may be meaningful and, at the same time, interesting, I could not pursue this matter as administration of the survey was already in progress.

of them currently live in Israel. As additional evidence, examples from Mila Spoken Hebrew Corpus will be taken in account as well.

3.5.1 Embedded NS Under a Factive Verb

The A-Topic Chain Condition III claims that A-topics are allowed only in root or root-like sentences. In the following examples, Hebrew embedded NSs appear under a factive verb, that is, in non-root domain: they only express a presupposed fact (which belongs to the CG content) and cannot start an A-topic chain. Let us see if they have been accepted:

- (33) Marco sameakh še- Uri khoshev še-_{pro} ye-natseakh batakharut
 Marco happy that Uri believe.PRES.SG.M that win-FUT.3SG.M the race
 ‘Marco is happy that Uri believes that (he) will win the race’

42% have answered ‘yes’, 27% ‘more yes than no’ and few respondents rejected it (11%). It is worthwhile to observe also the interpretative judgments, compared with Italian:

	Marco	Uri	Both (ambiguous)	Other
Hebrew	9%	11%	49%	31%
Italian	21%	29%	50%	0%

Table 2: interpretative judgments

The important finding in (33) is that, both in Italian³⁷ and Hebrew, the majority of informants consider this sentence ambiguous³⁸. As a partial language, the expected result in Hebrew should have been in favour of the c-commanding (or local) antecedent, in this case *Uri*. By contrast, no preference for this referent emerges; furthermore, these results are very similar to those of a ‘consistent’³⁹ pro-drop language such as Italian. In particular, the two possible interpretations are sketched below in the light of the Topic Criterion:

- (34) Aboutness-shift Topic: *Marco* (9% of informants):

[**Marco**_j A-top IP[*pro*_j sameakh] [še [(Marco)_j]_{silent-top} [Uri khoshev [še [(Marco)_j]_{silent-top} [pro...]]]]

starting A-topic chain

- (35) Aboutness-shift Topic: *Uri* (11% of informants):

(**Uri**_p silent A-top) CP[Marco sameakh] [še [Uri]_p fam-top [*pro*_p khoshev [še [(Uri)_p]_{silent-top} [pro...]]]]

starting A-topic chain

³⁷ The Italian results are from the analysis carried out by Frascarelli (to appear).

³⁸ How to explain this remarkable ambiguity even in Italian? The Topic Criterion predicts that since an A-topic chain cannot start in adverbial clauses, informants cannot deduce which A-topic chain has been previously started: it could be both Marco and Uri.

³⁹ Terminology used in Holmberg, Nayudu and Sheehan (2009).

The element in bold is the A-topic starting an A-topic chain. Observe the counterpart with the overt pronoun:

- (36) Marco sameakh še- Uri khoshev še-**hu** ye-natseakh batakharut
 Marco happy that Uri believe.PRES.SG.M that-he win-FUT.3SG.M the race
 ‘Marco is happy that Uri believes that he will win the race’

	Marco	Uri	Both (ambiguous)
Hebrew	12%	9%	79%

Table 3: interpretative judgments

Apparently, the pronoun in bold can freely refer to ‘Uri’ or ‘Marco’: the ambiguous percentage here is even higher than that in (33). However, I believe the prosodic analysis may shed some light on informants’ interpretations:

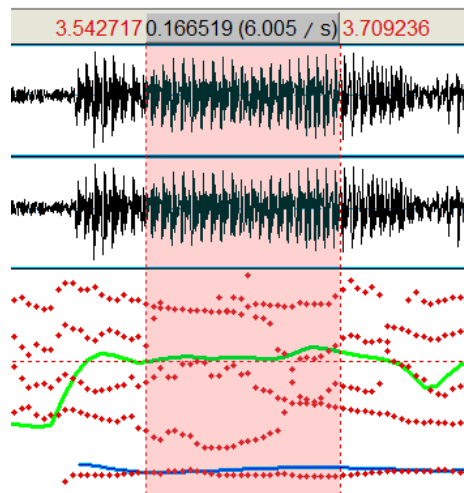


Figure 9

The fact that the pronoun is short (or, if one prefers, weak) corroborates Bianchi and Frascarelli’s (2010) assumption that non-root sentences cannot host an A-topic: according to the current A-topic chain, we can interpret who is supposed to win the race. Our informant, for example, interprets *Marco* as the referent of the overt pronoun and since another referent is introduced, *Uri*, it could qualify as shift-topic. This is not the case because factive clauses do not allow a conversational move (A-Topic) and indeed the pronoun in Figure 9 is a resumptive pronoun that continues the activated A-topic chain.

By contrast, the fact that [person] feature is silent/covert in Hebrew present tense largely influences the grammatical judgments:

Supposing that the verb tense in (38) is what obstructs pro-drop, I asked an informant to change it in the past:

- (40) bezman še pro halkha lebeit hasefer Ester akhla tapuach
 while that go-PST.3SF book the-house Ester eat-PST.3SF apple
 ‘while (she) went to school, Ester ate an apple’

(40) has been accepted. Once again, it emerges that the opaqueness of the present tense features compromises the grammaticality of subjectless sentences like the following:

- (41) k- še pro amar še rotse makhashev khadash betakh
 when- that say-PST.3SM that want-PST.3SM TV new surely
 pro tsakhak
 joke-PST.3SM
 ‘when (he) said that (he) wanted a new TV, definitely (he) was joking’

yes	more yes than no	more no than yes	no
7%	22% ⁴¹	20%	51%

Table 6: grammatical judgements

We can note that results never receive a clear-cut answer and it may be significant the percentage of ‘hesitant’ informants (i.e., *more yes than no* and *more no than yes*: 44% in (41) and 45% in (38)). The following, instead, is a suspicious data:

- (42) k- še hu amar še rotse makhashev khadash hu
 when- that he say-PST.3SM that want-PST.3SM TV new he
 betakh tsakhak
 surely joke-PST.3SM
 ‘when he said that (he) wanted a new TV, he definitely was joking’

yes	more yes than no	more no than yes	no
0.65%	0%	8.44%	90.91%

Table 7: grammatical judgements

Only in this case a neat clear-cut result has emerged (there is not a similar percentage in the all test). 90% can be explained by the fact that *hu* precedes a sentential adverb (*betakh*) that signs the IP boundary (Cinque 1999), meaning that it is realized in CP as strong pronoun. In other words, it has the function of proposing a conversational shift, but the native speaker still cannot identify the reference of the first pronoun out of the context and the interpretation crashes. In addition, in (42)

⁴¹ It is curious that (41), where only NSs appear, has obtained more positive judgments than the following sentence (where at least an overt pronoun is realized):

- (i) ‘k-she hu amar she rotse makhashev khadash, betakh tsakhak’
 when he said that **pro** wanted a new TV, maybe **pro** was joking

there are two overt pronouns besides the null subject; in (41) only null pronouns are used and it has obtained more positive judgments. On this account, I have defined it a suspicious data⁴².

Lastly, conditional clauses have been tested too and the discrepancy between subjectless sentence with past/future tense and with present tense is reconfirmed. However, it is interesting to note that when the pronoun is uttered, strong ambiguity arises:

- (43) Uri rotse lada'at im hu ma'avir kan et ha-layla o
 Uri want-PRES.SM to know if he spend-PRES.SM here ACC the-night or
 lo
 not
 'Uri wants to know if he can spend the night here or not'

	Uri	Someone else in the context	Both (ambiguous)
Hebrew	26%	6%	69%

Table 8: interpretative judgments

The fact that almost 70% believes that the overt pronoun can refer both to *Uri* or someone else in the context means that they accept the existence of a previous activated topic in the left periphery that, in this case, is null/silent. To put it differently, they 'rely on' a null Topic chain.

3.5.3 Embedded NS Under a Bridge Verb

I have observed different degrees of acceptability in sentences containing the so-called bridge verbs:

- (44) shama-ta ma še-[Daniel] amar? Hu chozer ve-
 Hear-PST-2S what that Daniel say-PST-3MS he repeat-PRES-3S and-
 omer še *pro* rotse lalechet ha-bayta
 say-PRES-3MS that want-PRES-3MS INF-come back to-home
 'Did you hear what Daniel said? he keeps saying that (he) wants to go home'.
- (45) Etmol pagash-ti et [Gianni] hu siper li še
 yesterday meet-PST-1MS ACC Gianni he tell-PST-3MS me that
pro nasa lilmod be-anglia le-shana
 go-PST-3MS to learn in-England for-year
 'yesterday I met Gianni... he told me that (he) went to UK to study for one year'

⁴² Furthermore, I asked a native speaker to record the sentence in question and, actually, he did not pronounce the pronoun in question in the recording: the position of *hu* was so unnatural that he unconsciously omitted it.

- (46) a. Ma im Gavriel?
 ‘What’s about Gavriel?’
 b. Ah [Gavriel] hu amar še *pro* nehene meod az
 ah Gravriel he say-PST-3MS that enjoy-PST-3MS a lot so
pro hekhlit lehishaer sham
 decide-PST-3MS INF-stay there
 ‘Ah Gavriel! He said that (he) enjoyed a lot, so (he) decided to stay there’

Sentences:	OK	NO	??
(44)	42%	29%	29%
(45)	57%	14%	29%
(46)	53%	34%	13%

Table 9: grammatical judgments

In (44), (45) and (46), the speaker reports what *Daniel*, *Gianni* and *Gavriel* have told him/her, making it explicit by using *verba dicendi* (respectively, *omer* ‘says’, *siper* ‘told’ and *amar* ‘said’)⁴³. We tentatively suggested a way out of this quandary mainly because sentences such as (45) and (46) have been amply analysed in the literature as instances of pro-drop in complement clauses, anteceded by a matrix NP. I speculated that the lexical properties of the bridge verbs somehow could deal with the remarkable discrepancy of these grammatical judgements. According to Landau’s Generalization, *amra* (“told”) belongs to the class of verbs that require subjunctive, indeed their interpretation is “directive in some sense, involving requests, orders, proposals” (Landau 2004: 818) as in (47):

- (47) Talila amra le Itamar še *pro* yavo (*pro* = Itamar)
 Talila tell-PST-3FS to Itamar that come-FUT-3MS
 ‘Talila told Itamar that *pro* will come’

- (48) *Talila amra le Itamar še *pro* hicliax / hicliaxa
 Talila tell-PST-3FS to Itamar that succeed-PST-3MS succeed-PST-3FS
 ‘Talila told Itamar that *pro* succeeded’

Borer (1989: 93)

Both for Shlonsky and Landau (2004), (48) is degraded compared with (47). Shlonsky affirms that replacing the NSs with an overt pronoun (*hu* “he”, *hi* “she”), the status of (48), as opposite to (47), largely improves:

- (49) Talila amra le Itamar_i še *hu*?_{i/j} yavo (*hu* = *Itamar)
 Talila tell-PST-3FS to Itamar that come-FUT-3MS
 ‘Talila told Itamar that he will come’

Shlonsky (2014: 30)

⁴³ It is worth pointing out that in (44), a 3rd person singular subject is omitted in a present tense.

Interesting, the overt pronoun in (49) cannot anymore refer to *Itamar*. It changes reference and it is worth pointing out that an analogous situation is observed in Italian:

- (50) Anna ha detto a Mario che venga (*pro* = Mario or someone previous mentioned)
 (51) Anna ha detto a Mario che lui viene (*lui* = *Mario)

Shlonsky affirms that we are dealing with two different pros, following Landau's Generalization, a PRO is assumed both in (47) and presumably, in (50), indeed they can be paraphrased as: *Anna said to Mario to come*. By contrast, a *pro* is given in (48) and according to the author, the sentence is agrammatical. However, (45) and (46) are not ambiguous between an act of request/order and a verb of communication. Instead, they have "root-like" proprieties, meaning that they can host an A-Topic in their left periphery (Bianchi and Frascarelli 2010). The crucial point is that it seems that in Hebrew an A-Topic tends to be phonetically realized in root sentences - in order to activate an A-Topic chain or maintaining a previous one. I suggest extending this analysis to "root-like" sentences: in (45) and (46) *pro* is used in an embedded clause with "root-like" proprieties and these clues are misleading for the native speaker. Dealing with null elements, it is hard to affirm if a NP is dropped as subject in IP or topic in CP, however we can verify if the overt pronouns in (44), (45) and (46) actually are in Spec,IP or TopP position by observing the position of sentential adverbs (Cinque 1999) and following the assumption that when weak they function as null pronouns, that is, resumptive pronouns:

- (52) shama-ta ma še-[Daniel] amar? **Lemarbe haza'ar** hu chozer ve-omer še *pro* rotse lalechet habayta
 'Did you hear what Daniel said? **Unfortunately** he keeps saying that (he) wants to go home'
- (53) Etmol pagash-ti et [Gianni]... **lefeta** hu siper li še *pro* nasa lilmod be-anglia le-shana
 'yesterday I met Gianni... **suddenly** he told me that (he) went to UK to study for one year'
- (54) a. Ma im Gavriel?
 'What's about Gavriel?'
 b. Ah [Gavriel] **Lemarbe Hamazal** hu amar še *pro* nehene meod az **pro** hekhlit lehishaer sham
 'Ah Gavriel! **Fortunately** he said that (he) enjoyed a lot, so (he) decided to stay there'

As can be seen, the sentential adverbs (in bold) have scope on the overt pronouns; recalling Cinque's (1999) claim that these adverbs signal the sentential boundaries, than the pronouns in question are in IP, presumably weak and acting as null pronouns.

As a last remark, it may be interesting to mention Ariel's explanation of bridge verbs specifically for Hebrew: 'complements of *amar* 'say' [...] do not form a highly cohesive unit with the matrix [...] a status which grants them greater independence and separateness from the matrix'

(Ariel 1990: 111). Cohesion will be concerned in the last part. A final, very speculative suggestion comes to mind at this point: in Frascarelli’s theory, root-like sentences (i.e., those containing bridge verbs) can host an A-topic⁴⁴, this implies that a simple sentence like (i) *Mario told that pro goes to the beach* may mean a) ‘Mario: “(I) go to the beach”’; b) ‘Mario told that Giorgio goes to the beach’⁴⁵. When ambiguity arises (i.e., more interpretations are possible), native speakers are more unwilling to omit the subject. This can explain why it seems a matter of degree (Table 9). Lastly, Ariel disagrees with Borer’s analysis assuming that ‘such disputes are probably characteristics of many “intuition-based” vs “natural discourse based” analyses’.

3.5.4 Is the C-command a Necessary Requirement to Identify a NS in Hebrew?

In the literature, it is predicted that 3rd person null subjects in Hebrew are possible in embedded domain inasmuch as there is an antecedent in the matrix clause that c-commands them (see Borer 1989, Shlonsky 1997 and Vainikka and Levy 1999 among others):

- (55) *’ima šel Dani ’azva axarey še **pro** gamar et ha-pica
 mother of Dani leave-PST.3FS after that finish-PST.3MS ACC the-pizza
 ‘Dani’s mother left after (he) finished the pizza’

Shlonsky affirms that in (55), the matrix antecedent (*Dani* in *Dani’s mother*) does not c-command the NS (*Dani*) and the sentence is ungrammatical. This is a piece of evidence in favour of the c-command requirement for NS in Hebrew. However, the interpretation where *Dani* is the person that has finished the pizza is impossible even in Italian: the topic of the discourse is the MOTHER (of *Dani*) and the phi-features of the embedded verb (i.e., third person, masculine, singular) are clearly insufficient to propose a conversational shift. I believe this sentence is out for feature mismatching problems. And, on one hand, this also shows that phi-features (including person) have a minor role in the interpretation of a covert pronoun. To investigate if c-command actually works, I built a context where both *Dani* and *his mother* are being discussed:

- (56) Dani baxa aval le-ima še-lo lo haya ixpat ki pro
 Dani cry-PST.3SM but mother-of-him NEG didn’t care because
 lo ratsa leexol
 NEG want-PST.3SM to-eat
 ‘Dani was crying, but his mother didn’t care because (he) refused to eat’

⁴⁴ Contrary to those containing factive and adverbial verbs.

⁴⁵ Interpretation (b) suggests the presence of the null A-topic *Giorgio* in the embedded CP in (i).

Informants accept (56) and it seems a good example because semantically the person who refused to eat can only be *Dani*, although the closet nominal element that c-commands *pro* is *his mother*. The c-command requirement has been tested in a variety of cases:

- (57) Ne'umo shel Uri hevhiru še pro ye-ssa mokdam
 speech of Uri make-clear-PST.3MS that leave-FUT.3MS soon
 'Uri's speech made clear that (he) will leave soon'

Yes	more yes than no	more no than yes	no
66%	19%	7%	8%

Table 10: grammatical judgements

Here, a NS appears where no c-commanding antecedent is available (i.e., there is no syntactical control by the antecedent *Uri* since it is embedded in the complex DP 'Uri's talk'). No c-commanding also emerges in (58)⁴⁶, where a fronted subjectless clause is realized:

- (58) akharei še pro siyem et hadoktorat Dani kibel
 after that finish-PST.3MS ACC the-doctorate Dani receive- PST.3MS
 mi-Ben matana yafa
 from-Ben gift nice
 'after (he) finished his Ph.D, Dani has received a nice present by Ben'

Yes	more yes than no	more no than yes	no
83%	13%	3%	1%

Table 11: grammatical judgements

It is interesting to note the low percentage of (what I refer to) 'hesitation' (the one who answers *more yes than no* or *more no than yes*): 16%. In (59), for 44% of informants, *pro* refers to an antecedent that does not c-command it (i.e. 'Mikhael') since it is in the previous context:

- (59) [context: Uri is waiting for this day to come: it's so long that he doesn't see Mikhael!]
 Uri hetchil le'hitragesh meod berega še **pro**
 Uri become-PST.3MS exciting a lot as soon as that
 higi'a la-pgisha
 arrive-PST.3MS to-meeting
 'Uri got very excited as soon as (he) has arrived to the appointment'.

Uri	Mikhael	both ansers are possible
30%	44%	26%

Table 12: interpretational judgements

We have also found cases where a Hebrew NS is realized in a matrix clause:

⁴⁶ The Hebrew sentence *siyem et hadoktorat* ('pro has finished his PhD program') is generally rejected both by linguists and native speakers. However, the same sentence has been accepted by 83% of our informants when it appears in such a context.

- (60) a: **ma ha'inyanim, eyfo Ronit, pro lo ba'a? ah lo hevet**
 what matter where Ronit NEG come-PST.3SF NEG bring-PST.2SF
 'ota
 her
 'How are (you)? where is Ronit, *pro* didn't come? (you) didn't bring her?'
 b: hi lo bikša betax yeš la kanir'e eix le-hagi'a
 she NEG ask-PST.3SF definitely there.is to-her how to-come
 'she didn't ask, definitely she knows how to come'
- (61) a: **hišlamt im Dayla?** A1: have you fixed things with Dayla?
 make peace-PST.2PM with Dayla
 b: **ah zehu ken** b1: ah enough, yes!
 a: **al-ma ravtem?** A2: what did you fight for?
 about-what argue-PST.2P
 b: **šehi ma'aliva** b2: she hurts my feelings
 that-she insult-PRES.SF
 a: **aval ma pro 'asta?** A3: but what *pro* did?
 but what do-PST.3SF
 b: **al ma še-hi omeret** b3: about what she says.
 on what that-she say-PRES.SF

In (60), the speaker is asking for a piece of information about *Ronit*; immediately after that, he/she omits the subject in a matrix context, suggesting that she could not come. Also in (61), a third null subject appears in an initial turn, under a question (A3). In the Mila Corpus, I have found another conversation where a NS is in a turn-initially position:

- (62) a1:kmo ha-yevanim o ha-šxenim šeli, ha-ba'aley bayt šeli hem
 same-as the-Greek or the-neighbours mine the-landlords house mine they
 Bulgarim, az hem gam kol yom šabat baboker ze Burekasim
 Bulgarian so they too each day saturday morning it Burekasim
 'as the Greeks or my neighbors, the owners of my house are Bulgarians so every Saturday morning
 also for them is Burekasim'
 b1: **hi lo mazmina 'otax Burekasim?**
 she NEG invite-PRES-3S to-you
 'does she invite you for the Burekasim?'
 a2: **lif'amim hi hizmina ba-hatxala**
 sometimes she invite-PST-3SF to.the-beginning
 'sometimes she has invited (me)...the first times'
 b2: **aval hi 'osa et ze levad, et habatsek hkol me'ule**
 but she make.PRES-3S ACC this by herself ACC dough all excellent
 'she makes (it) by herself, the dough, everything excellent'
 a3: **dira gdola pro hiskira? dira gdola?**
 flat big rent-PST-3SF flat big
 'the big flat, did (she) rent out it? The big one?'

In (62), Aa1 introduces the topic 'the owners of my house' and b1 restricts it to a female person (*hi* 'she'), activating an A-topic chain. a2 and b2 use overt linkers ('hi') to refer to the current topic; instead, a3 continues the chain and uses a *pro*, again under a question. Furthermore, it is important

to underline that in the left periphery of the last sentence, another element appears; that is, ‘dira gdola’ *the big flat*. Since it is implausible that the same predication refers to two different aboutness-topics and since it seems that *the big flat* creates a contrast with another apartment which is small/medium or not big, it is presumably a Contrastive topic. This implies that the Hebrew CP can host two topics, in this case a null A-topic and a Contrastive one. Before concluding this paragraph, I would like to reconsider ex. 32, §3.4.1, repeated in (63), as it is a new fact in the literature:

- (63) [extra-context: hair salon. The hairdresser asks for a piece of information about *Mira*]
 a: eyfo Mira? a: where is Mira?
 b: mi zot Mira? b: Who is that Mira?
 a: habat šel Yafa 'axšav še nixnesa lepo a: Yafa's daughter just now has
 daughter of Yafa just that enter-PST-3SF here walked in here
 b: *pro* yats'a b: (she) left
 leave-PST-3SF

In (63), there is not an available c-commanding antecedent for *pro* and we are not dealing with an embedded NS, nevertheless this sentence is possible in Hebrew. Lastly, observe the following sentence where *pro* should be c-commanded by the closet NP *Sara* and other options should be excluded if c-command is a requirement for Hebrew *pro*-drop:

- (64) Sara khoshevet še *pro* ta'avor et ha-mivkhan
 Sara think-PRES.SF that pass-FUT.SF ACC the-exam
 ‘Sara thinks that (she) will pass the exam’

Sara	Someone else in the cx	both ansers are possible
22%	6%	54%

Table 13: interpretational judgements

Almost 60% select the third option, despite the *linguistic* antecedent that c-commands the embedded NS is *Sara*. In the absence of context, ambiguity arises proving that Hebrew *pro*-drop does not rely on c-command.

3.5.4.1 No C-commanded NSs: Comment to *pro*

As we have seen for Italian (§3.3), the referent of *pro* might appear in the comment (focus or presupposition) of the preceding sentence and this seems to identify it. Let us observe what happens in Hebrew:

- (65) Ben halakh im izhak, any yode'a she *pro* ratza lir'ot American Sniper
 Ben went with Isacco I know that wanted to watch
 ‘Ben went to the cinema with Isacco, I know (he) wanted to watch American Sniper’

Part of our informants interpret *Isacco* the one who wanted to watch A.S., that is, a non-argument antecedent in the comment of the matrix clause. Actually, it is more plausible to assume a silent A-topic in the CP of the subjectless sentence (following Frascarelli’s claim that every predicational sentence has an aboutness-topic):

(66) [CP [Ben went to the cinema with Isacco]... [CP Isacco<Null Topic> [IP I know *pro* .]]]]
└──────────────────┘
covert A-topic linking

The link between the current null A-topic and the NS is covert but this does not block *pro* to receive the referential interpretation by an Agree relation with the null A-topic. Consider now the case where the antecedent is presented as new information:

(67) ani roce le-hacig bi fney Marco: pro mamash shina li
 I want to introduce to face Marco really change-PST.3MS me
 et hakhayim
 ACC the-life
 ‘I want to introduce you Marco: (he) has really changed my life’

We asked informants if they accept (67) taking in account that *Marco* is the person that *shina li et hakhayim* ‘changed my life’:

yes	more yes than no	more no than yes	no
36%	28%	21%	15%

Table 14: grammatical judgements

In Table 14, the degree of grammatical judgements is noticeable; however, 64% of informants answered *yes* and *more yes than no*. Also in this case, we assume *pro* to be identified by the covert linking with the silent A-topic in the local C.

The realization of a NS in a present tense clause leads to a drop of acceptability, although the linguistic antecedent is supposed to be in the physical context as well as the linguistic one:

(68) bo takšiv le- Marco: šar ba miklaxat
 come to listen to Marco sing-PRES.3M in-the shower
 ‘come to listen Marco: (he) is singing in the shower’

yes	more yes than no	more no than yes	no
10%	31%	30%	29%

Table 15: grammatical judgements

- (69) ani roce le-hacig bi fney Marco: oved iti
 I want to introduce to face Marco work-PRES.3M
 ‘I want to introduce you Marco: (he) works with me’

yes	more yes than no	more no than yes	no
11%	23%	27%	39%

Table 16: grammatical judgements

A degree of acceptability is visible but it has a bias towards negative answers. Hebrew present tense will be discussed in the next section.

3.5.4.2 No C-commanded NSs: Hebrew NS across a local antecedent

A further evidence in favour of the claim that c-command does not play any relevant role in the identification of pros in Hebrew is provided by NS occurrences across a 3rd person (singular) local antecedent:

- (70) Assaf amar še bno lo ma'amin še pro
 Assaf say-PST.3MS that his-son NEG believe-PRES.MS that
 yakhlif bayit
 chanfe-FUT.3SM house
 ‘Assaf told that his son don’t believe that (he) will change house’

	Assaf	His son	Both (ambiguous)	Other
Hebrew	2%	21%	57%	31%

Table 17: interpretative judgements

Although only 2% of informants picks up *Assaf* as the referent of *pro*, almost 60% judges it ambiguous, meaning that they interpret both *Assaf* and *his son* as possible antecedents. Note that for those who assume the first referent to the topic, c-command is ruled out since between *Assaf* and the NS another potential referent intervenes. If we replace the null pronoun with a full one, results are clearer:

- (71) Assaf amar še bno lo ma'amin še hu
 Assaf say-PST.3MS that his-son NEG believe-PRES.MS that he
 yakhlif bayit
 chanfe-FUT.3SM house
 ‘Assaf told that his son don’t believe that (he will change house)’

	Assaf	His son	Both (ambiguous)
Hebrew	5%	22%	73%

Table 18: interpretative judgments

It is a fact that this sentence is ambiguous without a previous contest and/or the prosodic structure and these elements are the basis of the theory we have adopted.

Sentence (65) is repeated in (72) as an illustration of control across 1st person local antecedent, instead, (73) provides an instance of control across 2nd person antecedent:

(72) Ben halakh im izhak, any yode'a še **pro** ratza lir'ot American Sniper
 'Ben went to the cinema with Isacco, I know (he) wanted to see American Sniper'

(73) Assaf amar she ata lo ma'amin še **pro** yakhlif bayit
 'Assaf told that you do not believe that (he) will change house'

Both sentences work like Italian: 1st and 2nd person arguments do not intervene in a 3rd person A-topic chain. The same is true for 1st (or 2nd) topic chain:

(74) ze haya davar shel ma bexax bishvil yalda o isha leheanes
 it was nothing of important for girl or woman to get raped
any acmi neenasti k-še **pro** hayiti bat shtem-esre **ima**
 I was raped when-that was old twenty-years mama
 afpaam lo yadaa u- meolam lo **pro** siparti le-ish
 never NEG knew and never NEG tell-1S.PST to-person
 'It was nothing for a girl or a woman to get raped. I was raped when *pro* was 12. My mom never knew and *pro* never told anybody'

This example is from Ariel (1991: 49). Here, the third person referent *my mom* does not interfere in the topic chain started by the 1st person pronoun *any*, exactly as it works in Italian.

To conclude, c-command does not seem to play a role in Hebrew pro-drop. The interaction between syntax (Agree relation) and discourse properties (A-topic chain), instead, can account for it.

3.5.5 Hebrew NS in Present Tense Clauses

In §3.3, we argue that the [person] feature in Hebrew present tense is *silent* rather than *absent* and it can be valued by a matching Agree relation with the logophoric agent for the 1st person, logophoric patient for the 2nd person or the A-topic for the 3rd person (Sigurðsson 2011). However, we have also analysed several present tense sentences that have not been accepted by native speakers. On the other hand, spontaneous conversations - where a 3rd person pronoun has been omitted in a present tense sentence - have been collected. As an illustration, consider the following examples:

(75) [contest: two girls, Alice and Sara, they are sitting at a café and after chatting for a while, Alice says to Sara:]

Rait et ha bahur im ha-hultza ha-adum-a? hu omer
 see-PAST.2SM ACC the guy with the-shirt the-red-F. he say-PST.3MS
 shalom le-kol ha-banot she- ovrot lamrot
 hello to-all the-girls that pass-through-3PLF even thought
she- pro lo makir otan
 that NEG know.PRES.3MS them

‘Did you see the guy with the red t-shirt? He says hello to all the girls that go by, even though (he) doesn’t know them’

(76) a: tišme'i, mi 'ose davar kaze?
 listen-IMP-2S who make-PRES.S thing like-that
 ‘Listen, who does things like that?’

b: lo be'emet yatsanu haxi yafe še-ba-'olam
 NEG really go.out-PST.PL the-most wonderful that-in.the-world
 ‘no, really, (we) went out, we made a good impression’

a: right.

b: lo aval hi kol hazman. Hili kol hazman Taminka Taminka
 NEG but she all time Hili all time Tami
 Taminka ve-ze hu omer li Taminka 'eyze 'ugyot hevet
 Tami and-this he say-PST.3SM to-me Tami which biscuit bring- PST.2S
 lanu [xaval 'al hazman] **pro** lo yaxol le-hafsik le'exol
 us shame on time NEG can.PRES.S INF-to stop INF-to eat
 ‘but she all the time, Hili all the time Tami Tami Tami and this, he told me: ‘Tami which biscuits did you bring us? Why do I even bother... (he) can’t stop eating’

a: še-lo yagid yoter miday Taminka
 that-NEG say-FUT-3S more times Tami
 ‘that (he) wouldn’t say Tami so many times’

(77) a: eyfo hi tihiye ba-xag?
 where she be-FUT.3SF to-party
 where will she be to the party?

b: etsel ha-mišpaxa šel Xen, **hi** gam sovelet ne-hem harbe
 in the-family of Xen she also suffer-PRES.SF from-them much
 aval **hi** osa kam-ox, **hi** shoteket, **pro** lo
 but she make-PRES.SF like-you she fall silent-PRES.SF NEG
 osa inyanim tam
 make-PRES.SF matters with-them

‘From Xen’s family, she also suffers a lot from them, but she is like you / she keeps silent / (she) doesn’t want to create problems for them (she pretends nothing happened)’.

(78) a: hu tove'a **pro** lo yaxol la'avod
 he demand-PRES.SM NEG can-PRES-3SM to work
 ‘he reports, *pro* cannot work’

b: ah 'ovdan košer 'avoda ya'anu
 loss skill job like
 ‘ah, like loss of working skills’

a: legamrey az anaxnu yod'im še-hu 'oved eh... begviya
 totally so we know-PRES.PL that-he work-PRES.SM collection
 ‘totally, so we know that works as eh...(debt) collection’

- (79) a: **pro** lo dofeket xešbon le'af exad bli xaziya bli
 NEG hit-PRES.SF calculus to-no one without bra without
 klum holexet 'im xultsa tsmuda škufa
 nothing go-PRES.SF with t-shirt snug transparent
 '(she) doesn't give a damn, without bra, without nothing, she goes around with a snug
 and transparent t-shirt'
- b: Ah ken
 ah yes, (you don't say)'
- a: **pro** mexapeset xatan
 look for-PRES.SF husband
 '(she) is looking for a husband'

It may be objected that working with spoken language means to deal with lots unchecked variables, such as speaker educational level, strong slang and so on. For this reason, I asked a Hebrew native speaker as well as a professor of linguistics to judge the grammaticality of the sentences above. Specifically, (78) has been judged marginal and the others grammatical. A small remark for (79): informant specifies that it can be accepted if there is a previous context where the topic of the discourse has been set up. This is meaningful because it proves the importance to identify the current topic before a *pro*.

It should be said that the opacity of [person] feature in Hebrew present tense can represent an obstacle to the interpretation of NSs. However, the above sentences cannot all be exceptions, but they show the omission of a 3rd person subject in present tense clause is possible if the referent of *pro* is well established in the context such as the unique topic of the discourse.

3.5.6 To Recapitulate

The analysis of data leads us to claim that:

- the realization of *pros* in Hebrew seems more feasible with factive verbs and marginal with bridge verbs (§3.5.1, 3.5.3);
- Hebrew null subjects can be co-indexed with linguistic antecedents which do not C-command them (§3.5.4, 3.5.4.1 and 3.5.4.2);
- NSs in Hebrew can also be realized in matrix clauses and not only in embedded domain (§3.5.4);
- an initial conversation turn in Italian can start with a referential *pro*, by contrast in partial pro-drop language, an overt link is required, meaning that a topic chain cannot start with a null A-topic;
- although Hebrew *pro* cannot occur in initial conversational turn (§2.12, chapter 2), it can occur in sentence-initially (§3.5.4, chapter 3);

- the opaqueness of [person] feature in Hebrew present tense is an obstacle to the realization of *pro*, in spite of the fact that Hebrew NSs in present tense clauses have been found in spontaneous conversations (§3.5.5);
- in the absence of a context, ambiguity arises both with overt and covert pronouns;
- the discontinuity of judgments (due to high percentage of ‘hesitant’ informants) may imply that the NS Parameter in Hebrew is undergoing a linguistic change.

3.6 Hebrew 1st and 2nd Person Null Pronouns

The analysis carried out in this contribution is centred on the third person null subject, although, a mention to first and second person NSs may be proper. The realization of 1st and 2nd NSs is generally allowed without particular restrictions. However, it seems that the opaqueness of the [person] feature in the present tense acts as an obstacle also with 1st and 2nd person:

(80) Az lama (ata) omer et ze? [+PST]

So why did you say that?

(81) Betax! ve ma *(ata) xashavta? [+PRES]

Sure! and what do you think?

It should be clarified that we are discussing elicited data. In fact, if we look at naturalistic conversations, 1st person NS occurrences can be found in not extrapolated sentences:

- (82) a: bodek et laxats sukar ve-laxats dam
 check-PRES. ACC pression sugar and-pression blood
 ‘check glycemia and blood pression’
 b: yeš lo hetkef lev
 there is to-him attack heart
 ‘(he) has an heart attack’

This dialogue is interesting because we actually do not know who is the person that is doing this check, we can infer it from the context - perhaps in an ambulance, however it can be the speaker or his interlocutor. This is from a spoken language corpus where spontaneous conversations have been transcribed but no extra-linguistic context is provided. As a last remark, we propose again sentence (20) from Ariel (1990) where a 1st person null pronoun appears in a present tense clause:

- (83) ba- zman ha- axaron **ani** mitoreret be- sheva **any** menasa
 in-the time the- recent I wake-up.PRES-SF at seven I try.PRES-SF
 lishon bederex-klal **pro** mityaeshet
 to-sleep usually give-up. PRES-SF
 ‘Recently, I wake up at seven. I try to sleep. Usually, (I) give up’

3.7 Pragmatics and Pro Drop

The general claim supported in this work is that syntax cannot play ‘a crucial role in resolving the problem of referentiality’ as argued by Vainikka and Levy (1999) among others; rather, both syntactical and pragmatic components are operative in determining the referent of a 3rd person null pronoun - to some extent. In this last section, I would like to focus on pragmatic components and introduce a very speculative suggestion for pro-drop in Hebrew, which, I believe, may shed light on it.

3.7.1 Can Cohesion Account for NS Occurrences in Hebrew?

A pragmatic component to consider is **cohesion**, understood in the spirit of Ariel (2001: 33): the degree of unity between the antecedent and an overt or covert pronoun ‘can be tight, in which case the degree of accessibility of the relevant mental representation is higher, or it can be loose, in which case degree of accessibility is low’(see §2.1, Chapter 2 for details on Accessibility Theory). In other words, inasmuch as we postulate grammatical relations that link different components of a sentence (sentential level), likewise, pragmatical relations that link a sequence of sentences (discourse level) can be postulated, whose components depend upon each other. One of these relationships is cohesion. Thus, the latter is essential for the interpretation of sentences, *included subjectless sentences*. For example, it seems that cohesion can explain why split antecedents allow pro-drop in Hebrew:

- (84) rak lifney xodesh hitxatna noga im shimon, u- xvar ba-shavua
only before month got-married.SF Noga with Shimon and-already in-the-week
še-avar pro hitgarshu
that-passed got-divorced.PL
‘Only a month ago Noga married Shimon, and last week (they) already got divorced’
(Ariel 1990: 112)

In the embedded clause in (84), there is a 3rd person *plural* NS that refers to both the agent (*Noga*) and patient (*Shimon*) of the main clause. Ariel affirms that split antecedent is allowed with pro-drop because sentences are semantically closed/ cohesively linked. Also Gutman⁴⁷ (2004) made a good point here, assuming that the semantics of verb deals with the realization of a NS and the reason will be explained below. By contrast, Vainikka and Levy (1999: 651) argue that split antecedent is

⁴⁷ In line with Mira Ariel, she assumes that ‘cohesion raises antecedent accessibility because the more connected a pair of utterances is, the more available the first utterance will still be by the time the second is processed’ (Gutman 2004: 473).

not possible because the referent is not ‘readily available in the matrix clause’. As illustration, they provide the following example:

- (85) ?*Dan shal et isto im yecu lo-xofesh
 Dan ask-3sm-PST ACC his.wife if go-3pl-FUT to-vacation
 ha-shana.
 this-year
 ‘Dan asked his wife if (they) will go for a vacation this year’

In (85), the plural NS in the subordinate, in theory, should find its antecedents in the matrix clause, note that it is also a future subjectless clause and, as we have seen, it allows pro-drop. Instead, the authors affirm that it is agrammatical. A question that arises here is: why does split antecedent work in (84) but not in (85)? I claim that in (84) who divorces is inevitably *Noga* and *Shimon* - that is the same people who got married and it is semantically excluded that it can be someone else. In particular, we are dealing with the fourth type of cohesive ties analysed by Halliday and Hasan (1976): lexical cohesion. Moreover, a further cohesive tie emerges, i.e., the two temporal phrases ‘only a month ago’ and ‘last week’ make a contrast between time₁ and time₂ (the two clauses in (84) are ‘temporally connected’: the marriage event without the divorce cannot reach its communicative goal). By contrast, in (85), it is not so obvious that who might go for a vacation is *Dan* and *his wife*: if I am right, it can also be - for instance - his parents-in-law. Therefore, I build a previous context where it is made clear who may leave this year and the sentence in question has not been ruled out:

- (86) [context: her parents-in-law don’t go on vacation since they have adopted a dog:]
Dan shal et isto im yecu lo-xofesh ha-shana.
 ‘Dan asked his wife if (they) will go for a vacation this year’

The difference between (85) and (86) is that in the latter it is semantically clear who may go in holiday. In the former, it could be both *Dan* and *his wife* or someone else. A further significant example is provided in Ariel (1991):

- (87) *Noga dibra im Shimon yafe, ve pro yaazor la
 Noga speak-PST.3SF with Shimon nicely and help-FUT.3MS her
 li-sxov et ha mizvada
 INF-carry ACC the suitcase
 Noga spoke with Shimon nicely, and (he) will help her to carry the suitcase
- (88) Noga dibra im Shimon yafe, ve laxen pro yaazor
 Noga speak-PST.3SF with Shimon nicely and so help-FUT.3MS
 la li-sxov et ha mizvada
 her INF-carry ACC the suitcase
 Noga spoke with Shimon nicely, and **therefore** (he) will help her to carry the suitcase

These sentences differ only with respect to the occurrence (88) or non-occurrence (87) of the semantic connective ‘laxem’ (*therefore*) that has the function of creating a cohesive link between the clauses in question. Consequently, the hearer receives the indication that the referent of *pro* is in these linked clauses. A further question that may arise now is why to refer to cohesion for *pro*-drop in Hebrew. This challenge can be met by assuming that INFL in this language is not local and identifying a third [person] feature requires anchoring to context-participant features, reasonably located in the CP. In other words, I assume that 3rd person null pronouns are context-linked in the sense that they involve the feature [+Topic] in CP, that is, the existence of an activated topical element. This requirement must be visibly C-linked in Hebrew to allow *pro*-drop (in line with Frascarelli’s analysis).

Another context where, for no apparent reason, it is generally allowed to drop the subject is in restrictive relative clauses:

- (89) hi xasha mugbelet... yeynot levanim še et shmotehem pro
 she fell-PST.3G constrained wines white that ACC their-names
 bitaa becev
 pronounce- PST.3G sadly
 ‘she felt constrained... white wines whose names (she) sadly pronounced’ (Ariel 1999: 121)

The function of restrictive relative clauses is to provide enough information for a referent to be uniquely identifiable (and this referent is necessary in the matrix clause!): this creates a more cohesive link between the matrix clause and the rest of the sentence. The idea is that cohesion facilitates *pro*-drop in Hebrew, mutually connecting sentences where speakers should look for the referent of *pro*.

3.7.2 Cohesive Unit

An argument in favour of **cohesive unit** for *pro*-drop in Hebrew is provided in Ariel (1990) when the author notes that after the realization of two pronouns, a NS is amply accepted. (20), repeated here as (90), is an illustration:

- (90) ba- zman ha- axaron any mitoreret be-sheva any menasa
 in-the time the recent I wake-up at-seven I try.SG.F
 li-shon bederex-klal **pro** mityaeshet
 to-sleep usually gives-up.SG.F
 ‘Recently I wake up at seven, I try to sleep. Usually, (I) give up’

After the two realizations of *any* (‘I’), a NS appears even in a present tense clause. The sentence in (90) represents a cohesive unit, that is, clauses mutually connected in a sequence where *pro* can be

visibly c-linked to its referent. In other words, the hearer cannot get confused about who is the person that does not wake up early anymore. By contrast, if cohesion does not intervene, agrammaticality can arise:

- (91) *Marco lo ahev latset im Uri, biglar še haya me'ašen
'A Marco non piace uscire con Uri, perché fumava troppo'

Beyond any prediction, (91) is agrammatical: considering that it is an embedded NS in a past tense clause, apparently there are no reasons to reject it. Actually, the speaker cannot understand if *Marco* does not like to go out with *Uri* because *Uri* smoked a lot or because when he used to go out with him, he ended up smoking a lot. To reformulate, it is not simply ambiguous between two possible referents for *pro* (*Marco* or *Uri*) - like sentences from the online test we have seen previously – but the ambiguity is given by fact there are two potential reasons to explain Marco's refusal. Also the example we have analysed in (86) is relevant: our informant claims that the sentence can be accepted if nothing is between the context and the subjectless sentence, to put it differently, if it is one unit such as the following:

- (92) a: Dani medaber Yiddish?
Does Dani speak Yiddish?
b: Ken, pro medaber.
yes, (he) speaks
- (93) a: Marie roqedet?
Does Marie dance?
b: Ken, pro roqedet
yes, (she) dances.

This could be analysed like ellipsis; however, in no pro-drop languages such as English or French, dropping the subject in context similar to (92) and (93) is not possible.

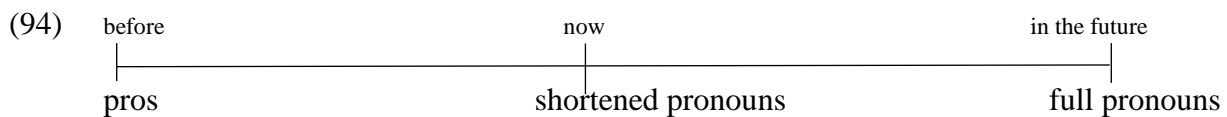
3.8 Conclusion

Approaching the conclusion of this chapter, I suggest that *pro* in Hebrew may be always optional (i.e., the non-preferential choice) since it has turned out any context where the NS was the only possible option, the spontaneous choice. This is valid for third person null subjects. Although *pro* in Hebrew is an optional choice, whether it is realized or not, it must be visibly C-linked in PF in order to be identified (allowed). This is in line with Frascarelli's analysis and the Mesoparameter as it predicts that - in partial pro-drop languages - at least one link must be overt in an A-topic chain.

A further evidence to Hebrew pros being optional is provided by the prosodic analysis. If the hypothesis of *shortened pronouns* suggested in Ariel (1990) is valid, than we assume that overt

pronouns in Hebrew occurring in the same context where in Italian a *pro* would appear are phonologically weak and destressed items, or more precisely, they show a short duration time.

A process of diachronic change may have occurred in Hebrew regarding its partial pro-drop property. Specifically, last generations have manifested more hesitation in accepting pro-drop occurrences than informants over 65, even with naturalistic NS examples. It is plausible to assume a diachronic change, in my mind, represented as a continuum since it is not a transition from covert pronouns to overt pronouns; I believe pronominal form, imperceptible to ear, are employed where we believe a NS is realized:



This idea, in addition, may explain the discontinuity results from the online test: mother tongue speakers show a consistent percentage of *hesitation* to judge sentences and, indeed, the majority of them answer ‘more yes than no’ or ‘more no than yes’. Rarely, grammatical judgments receive a clear-cut result.

To conclude, Hebrew-type languages need to display more context than Italian-type languages because they need to display the context-linking of *pro*; licensing (local INFL) is not sufficient, as opposed to Italian. Cohesion is operative in determining the referent of 3rd person NSs: the pro-drop phenomenon cannot be considered context-independent and it requires the use of syntactical and pragmatic components such as *cohesion* to link sentences containing the referent of *pro* to the subjectless clause.

Chapter 4 - General and Final Remarks

4.1. General Remarks

The purpose of this chapter is to provide an overview of the results and to explore directions for future research. I have focused on examining pro-drop in Modern Hebrew as this Semitic language is said to be a particular example of partial pro-drop language. Chomsky (1982: 241) himself, dealing with the Null Subject Parameter, affirms: ‘Hebrew is another case’. Indeed, the distribution of NSs in Hebrew remains, in part, a mystery. Specifically, my original aim was to examine the Hebrew partial pro-drop property fully; after the analysis of data in the previous chapter, my purpose became to verify if Hebrew actually is a semi pro-drop language or if the existence of shortened pronouns, imperceptible to ear, erroneously makes it seem a partial pro-drop language.

In the generative literature, it is amply demonstrated that this language allows the omission of the subject in some restricted contexts, listed below:

- i. NSs under c-command (Borer 1989, Shlonsky 1997, Vainikka and Levy 1999);
- ii. NSs only in past and future tense (Shlonsky 1997);
- iii. NSs in embedded contexts (Vainikka and Levy 1999 among others).

The corpus collected for this contribution contains Hebrew subjectless sentences that reject conditions (i), (ii) and (iii). I will (re)provide an example for each case:

i. **NS under no c-command:**

- (1) *’ima šel Dani ’azva axarey še **pro** gamar et ha-pica
 mother of Dani leave-PST.3FS after that finish-PST.3MS ACC the-pizza
 ‘Dani’s mother left after (he) finished the pizza’

In (1), pro clearly cannot be c-commanded by its referent *Dani* that is embedded into the complex DP *Dani’s mother*. Let us specify that semantically the person who ate pizza is *Dani* since the embedded verb bears a masculine feature (in bold). If the verb gender had been feminine, the

referent of *pro* would have been ‘the mother’. The fact that (1) could receive two interpretations on the basis of the [gender] feature reinforces the assumption that *c-command* does not actually play a role in the identification of NSs. On the other hand, the fact that *pro* is disambiguated by gender does not mean that this feature deals with the identification of *pros* in the language under investigation. I do not intend to return to the *Feature Strength Hypothesis* reconsidered in Carminati (2005) and discussed in Chapter 2 (§2.2). Effectively, if both the referential expression in (1) were either feminine (ex. Laura’s mother) or masculine (ex. Dani’s father), gender could not help. The question arises of how to identify the referent of *pro* in (1). I argue that the identification process depends on the previous situational context, i.e., who is being discussed in the discourse, which can change based on the context. Here is an illustration. Let us say that Dani is depressed and he does not really want to eat: in this situation, his mother did not leave before making sure **Dani ate** something (pizza, in the present case). It could be that Dani’s son refuses to eat if his mother leaves: in this case, Dani’s mother left after his grandson finished to eat. In the first example, *Dani* was the topic being discussed, in the second, *Dani’s son*. The gender can only restricts the range of various interpretations but *c-command* is entirely uninvolved. The fact that the identification of a NS is related to different interface levels of analysis was our initial premise.

ii. NS in present tense:

It is said that in Hebrew a NS cannot be realized in present tense clauses since Hebrew present tense apparently has a reduced set of phi-features, i.e., it does not have the [person] feature. It is rather intuitive that if this feature is absent, the omission of a subject can be extremely difficult since only the latter can remedy the absence of this grammatical feature. However, we have already provided in Chapter 3 an alternative analysis, assuming that the [person] feature in Hebrew present tense is *silent* rather than *absent* and this can explain sentence such as (2) where a NS is realized in a present tense clause without jeopardizing the grammaticality of the entire sentence:

- (2) [contest: two girls, Alice and Sara, they are sitting at a café and after chatting for a while, Alice says to Sara:]

Rait	et	ha	bahur	im	ha-hultzat	ha-adum-a?	hu	omer
see.PAST.2SM	ACC	the	guy	with	the-shirt	the-red-F.	he	
omer	shalom	le-kol	ha-banot	she-	ovrot		lamrot	
say.PST.3MS	hello	to-all	the-girls	that	pass-through-3PLF		even	thought
she-	pro	lo	makir		otan			
that	NEG		know.PRES.3MS		them			

‘Did you see the guy with the red t-shirt? He says hello to all the girls that go by, even though (he) doesn’t know them’

As opposed to (1), (2) does not allow several interpretations because the situational and linguistic context immediately makes clear that the topic of the discourse is *the person with the red t-shirt*. In this case, we know the topic from its first appearance, that is, from the time it is proposed as the new topic of the discourse. In addition, the hearer cannot fail about whom Alice is referring to. This status is given by the fact to be the only topicalized element that can provide a referential value for *pro*, despite the present tense. What renders this referent unique, identifiable and recognizable as the current topic is firstly the context. Lastly, I do not have the original prosodic structure of (2), thus it cannot be excluded that we are swapping a case of shortened pronoun with a null pronoun. This issue is left open for future research.

iii. NS and embedded context:

- (3) a: ma ha'inyanim, eyfo Ronit, *pro* lo ba'a? ah lo hevet
 what matter where Ronit NEG come.PST-3SF NEG bring.PST-2SF
 'ota
 her
 'How are (you)? where is Ronit, (she) didn't come? (you) didn't bring her?'
 b: **hi** lo bikša betax yeš la kanir'e eix le-hagi'a
 she NEG ask.PST-3SF definitely there.is to-her how to-come
 'she didn't ask, definitely she knows how to come'

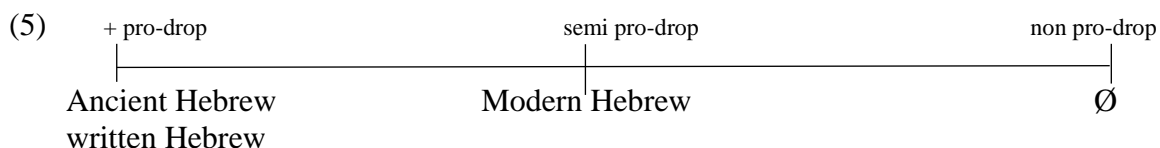
(3) is a further interesting example that runs counter to the assumption in (iii): *pro*-drop in Hebrew is restricted to embedded domains. As can be noted, after speaker A introduces the referent *Ronit*, a NS appears in a non-embedded clause, precisely in a question sentence. Also in this case, the referent of *pro* is unique and recognizable as the current topic of the discourse: the NS cannot be a person other than *Ronit* in the given context. The fact that speaker B uses a full pronoun (in bold) to keep referring to the activated topic goes against the theory of the *topic continuity chain* (see Chapter 3), this is to say, if the topic is activated and no conversational shift is proposed, than a silent topic chain should be expected. In other words, there are no other third person referents for *pro*, thus there is no risk of ambiguity. Indeed, in a *pro*-drop language, this full pronoun in initial position would bear an emphatic feature to give rise to the implicature that speaker B is not involved in the event that *Ronit* may not come. By contrast, I believe that in (3), *hi* is employed as resumptive pronoun in line with the semi *pro*-drop nature of Hebrew. An evident difference between *hi* and *pro* in (3) is that the covert pronoun is realized in a question sentence preceded by other two questions, the full one in an affirmative clause, in an initial conversational turn.

In this dissertation, I have devoted particular attention to the importance of the context when one is dealing with NSs in Hebrew; the analysis of data can confirm that the absence of a previous context makes (i), (ii) and (iii) above plausible. To reformulate, I believe that *pro*-drop is context-

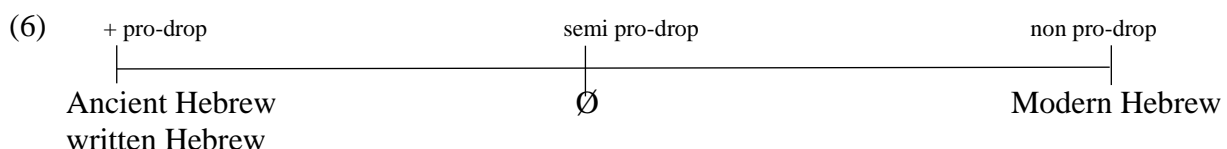
linking in Modern Hebrew, without this condition it might seem that only sentences where a referent for *pro* is available (for instance, a c-commanding referent (i), an embedded *pro* (iii)), a NS can be realized. As for the present tense (ii), it is actually more difficult because if the [person] feature in Hebrew is silent and if it is the case that the current topic is silent too, the difficulty is exacerbated, however it does not mean it is impossible (2).

4.2 Final Remarks

An issue barely debated in the literature is the difference between Hebrew old generations and new generations concerning the realization of the *pro*-drop property in Hebrew. From the analysis of data in Chapter 3, it has emerged that informants over 65 have manifested much less hesitation in accepting *pro*-drop occurrences than younger informants. This would suggest a diachronic change, a plausible hypothesis considering that Modern Hebrew is actually a young language that is (re)born in the past century. It presents the peculiarity of having ceased to be spoken for twenty centuries. In the nineteenth century, the founders of the modern version of Hebrew energetically supported its revitalization. On this account, it might be plausible that the first years of usage, it went through a process of stabilization. In addition, it is widely known that languages continuously change over time. These two facts, combined with native speakers' hesitation in providing grammatical judgments (see Chapter 3), could lead one to think that the *pro*-drop property in Hebrew is switching (or identifying) its parametric value; this is to say, it may be in a transition phase. To my knowledge, Ancient Hebrew and written Hebrew may be said to be *pro*-drop languages. This leads to a picture as represented above:



However, if the hypothesis of Hebrew shortened pronouns - used in context where in Italian a weak or null pronoun appears (Hypothesis 1, Chapter 3) - were correct, the more appropriate representation would be the following:



As I explained in note 14 (Chapter 3), I cannot pursue this matter since the administration of the survey was already in progress when I noticed differences between new and old generations, Ancient, written and Modern Hebrew. It remains an issue for future research.

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