

# Missing objects as Topic Drop

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## Abstract:

In this paper we argue that topic drop is responsible for the missing object in Russian adverbial gerunds, although they have been analyzed as Parasitic Gaps. Similarly, topic drop is solely responsible for the missing object in Hebrew structures which have been argued to involve VP-ellipsis or a moved null operator. We outline the properties of topic drop and show that these same properties pertain in the constructions in question. We argue against movement analyses of both constructions and propose that missing objects are to be analyzed as unvalued feature bundles that receive an interpretation from an available topic in the discourse. From the fact that topic drop is constrained differently in the two languages we discuss, as well as in other languages that have been studied, we conclude that topic drop is a PF-interface phenomenon.

Key words: topic drop, VP ellipsis, Parasitic Gaps, Russian, Hebrew, Differential Object Marking, strict and sloppy readings, subject-object asymmetry.

## 1. Missing arguments

The discussion of missing arguments has centered on the so-called *pro*-drop parameter, which determines whether or not arguments can be dropped. Initially (Chomsky, 1981) the *pro*-drop parameter was connected to morphologically rich agreement between the dropped argument and T (in the case of subjects) and V (in the case of objects) but at the same time it was clear that *pro*-drop was much freer in some (far-eastern) languages which did not have such agreement properties. Since Huang, 1984 such radical *pro*-drop has been associated with the topichood of the missing argument. Huang shows that null objects must be bound by the discourse topic ("someone or something that a given discourse is about" (541). Huang analyses null objects on a par with topicalized objects, the difference being that in the former case, the topicalized element is null as well (542):

- (1) [Top  $e_i$ ], [Zhangsan shuo [Lisi bu renshi  $e_i$ ]].  
Zhangsan say Lisi not know  
\*[Him]<sub>i</sub>, Zhangsan said that Lisi didn't know  $e_i$ .'

It follows, according to Huang, that null objects are variables since they are bound by A' topic-operators. What distinguishes languages that allow null objects of this kind from those that do not, according to Huang, is that the former allow zero topics to bind variables. Following Tsao, Huang restricts the licensing of zero topics to "discourse oriented languages." Xu, 1986, however, argues that null objects cannot be variables since, among other properties, they do not adhere to island constraints. Since the null objects we discuss also violate islands, we reach a similar conclusion for Russian and Hebrew.

Saito, 2007 also views missing arguments as topics and assumes covert LF copying of elements available in the discourse (including *pro*) into argument positions. He relates this option to the lack of required agreement in East Asian languages as opposed to *pro*-drop in languages such as Italian and Spanish which have rich agreement. The languages we examine here don't allow object topic drop<sup>1</sup> to the extent of the East-Asian languages. A more finely tuned way of distinguishing the properties of languages with respect to topic drop is therefore called for.

Other attempts have been made to give unified accounts of null arguments (both subject and object) taking into account the various cross-linguistic instantiations of the phenomenon. Rizzi, 1986 analyzes missing arguments as *pro* licensed by a governing head. Languages are parameterized for the values of the licensing heads. The reason English, for example, has no *pro* is because it has no licensing heads. In Italian both Infl and V count as licensing heads allowing for *pro* subjects and objects. Rizzi separates out the availability of *pro* according to this parameter and its interpretation. Here feature specification (among other properties) comes into play allowing for referential null subjects in Italian, but only arbitrary reference for objects. This "recovery" procedure is also parameterized. Languages which do not use  $\phi$ -features (i.e., do not have any overt agreement) such as Chinese, allow for free interpretation of *pro* where it is licensed. The idea that there can be different "recovery" principles is an interesting one. Here we examine instances of missing

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<sup>1</sup> We use "topic drop" as a descriptive term for missing topics. We do not intend this to imply an analysis in terms of deletion, here or elsewhere.

arguments which are interpreted according to their discursual status as topics.<sup>2</sup> It follows that we seek to understand the crosslinguistic patterns in the realm of Information Structure.

This is also the theoretical stance taken in Frascarelli, 2007. Frascarelli offers a detailed account of the discourse requirements on null subjects in Italian arguing that both distressed and null pronouns “must refer to the current Aboutness-shift Topic” (713). Her analysis is couched in a cartographic framework in which such Topics are necessarily base-generated in a dedicated left peripheral position licensing null subjects, basically a notational variant of Huang’s approach. Our aim is along similar lines in that we study the information-structural properties of missing objects and their interpretation, however we argue against any movement approach. Therefore the cartographic approach in which the null argument is bound by an element at the left periphery is not an option for either Russian or Hebrew.

We do, however, agree with both Saito and Frascarelli (among others) that discursively available topics provide the interpretation of missing arguments. These topics, in our view, are derived by the model of discourse in Erteschik-Shir, 1997, 2007 and not by LF-syntactic or cartographic means.

The approach argued for in Sigurðsson and Maling, 2008; Sigurðsson, 2011 is particularly relevant to the current discussion in that it takes Information Structure into account. Topic drop is viewed there as the non-overt expression of a feature bundle at PF. Interpretation is discursual, bound to an available topic in the context. According to this view, topics are moved to the left periphery licensing the non-expression of the feature-bundle. This option is not open to us here since, as we argue both with respect to Russian and with respect to Hebrew, an account of null topics cannot involve movement. We propose instead that the interpretation of the feature bundle is available in situ: It is interpretable if a suitable topic is discursively available. Generally, both in Russian and in Hebrew null objects and overt pronouns alternate freely. However, in cases of sloppy/strict ambiguity in Hebrew (as shown in section 3.1), an overt pronoun allows only the strict interpretation whereas the null argument is ambiguous. Under the analysis we develop the ambiguity is resolved in context: In each case a different topic, or topic set is discursively available.<sup>3</sup>

This paper concentrates on the topichood of missing objects in Russian and Hebrew. We show that other approaches to topic drop such as V-raising followed by VP ellipsis (e.g., Gribanova, (to appear) for Russian and Doron, 1999; Goldberg, 2005 for Hebrew) are not tenable. We argue against this approach in sections 2.3 and 3.2, respectively.

Our aim is to provide an initial investigation of topic drop, hoping that an examination of other languages from this perspective will lead to a better understanding of why it is so difficult to parameterize *pro*-drop phenomena in general. If we are on the right track then differences among languages with respect to this strategy may be aligned with other information-structural properties of the language including properties of

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<sup>2</sup> See Roberts, 2010 for a more recent unified view of null arguments and Cole, 2010 for an extensive review of the literature.

<sup>3</sup> Neeleman and Szendrői, 2005 (following Perlmutter, 1971 and Holmberg, 2004) argue that “null arguments are regular pronouns that fail to be spelled out at PF.” Since null arguments which receive a sloppy reading do not alternate with overt pronouns, we opt for the feature-bundle proposal in Sigurðsson and Maling, 2008; Sigurðsson, 2011 which we develop below to account for this distinction.

topicalization, word order and prosody as well as the availability of overt morphology of various kinds.

### 1.1 What is a topic?

Topics are what the sentence is 'about' and the truth value of a sentence is determined with respect to them (Reinhart, 1981; Strawson, 1964). Since sentences may have more than one topic, the 'main' topic (often the syntactically highest one, i.e., a subject or one that is topicalized) is the pivot for truth value assessment.<sup>4</sup> Depending on context, however, any one of the topics in a sentence can play this role. Topics are prototypically referential DPs with a discursial antecedent. Pronouns are therefore by definition topics and can be used to tell which constituent types may function as such. Personal pronouns, temporal and locative pronouns (*then, there*) show that DPs and spatio-temporal expressions (including PPs) may function as topics. Although topics are necessarily given or presupposed, not all presupposed elements are topics.

The following two kinds of topics are commonly distinguished: continued topics, which refer back to an already mentioned referent, and shifted topics, which are derived from a restrictive (d-linked) or contrastive set.<sup>5</sup>

The model of discourse defined in Erteschik-Shir, 1997 assumes that the context is organized as a file containing a set of cards. A set of discourse rules determine the changes in the file induced by an utterance (where each utterance is marked for topic and focus). Among these rules are the following two:

TOPIC instructs the hearer to locate on the top of his file an existing card (or an existing set of cards) with the relevant index.

FOCUS instructs the hearer to either

- (i) open a new card and put it on the top of the file. Assign it an index (in the case of an indefinite).
- (ii) Locate an existing card and put it on the top of the file (in the case of a definite).

In the case of continued topics, a card matching the current topic is to be found on top of the file.

- (2) a. John<sub>TOP</sub> [saw a movie]<sub>FOC</sub>
- b. He<sub>TOP</sub> [liked it<sub>TOP</sub>]<sub>FOC</sub>

In (2)a, following the topic rule, a card for *John* must be available on top of the file in order for the sentence to be interpreted. The focus rule applies to *a movie* by opening a new card for this referent and positioning it on top of the file. Since both the card for

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<sup>4</sup> Different topic assignments do not necessarily render a difference in truth value.

<sup>5</sup> Frascarelli and Hinterhölzl, 2007 distinguish Familiar Topics, Aboutness-shift Topics and Contrastive Topics. These are parallel to continued, shifted and contrastive topics respectively.

*John* and the card for *the movie* are now on top of the file, (2)b is licensed with both subject and object topics.<sup>6</sup>

The Focus rule is also triggered by deictic pointing. So if I point at a dog, a card for this dog is positioned on top of the file licensing (3).

(3) [this dog/it]<sub>TOP</sub> [is very cute]<sub>FOC</sub>

Shifted topics are topics whose discourse referent constitutes a set. The italicized subjects in (4) illustrate restrictive topics.<sup>7</sup>

- (4) Where did you put my things?  
a. *Your book* is on the table.  
b. *Some of them* are on the table.

The focused 'my things' in the question positions a card representing this set of things on top of the file making the set available as a topic in the following discourse. The italicized topics in the answers represent a subset (consisting of a single element or more) of this set, and not the set as a whole. According to the discourse rules, the cards for the subsets must be on top of the file in order for them to be licensed as topics and the only way they can get there is if they undergo the focus rule. And in fact, these subjects *are* foci as evidenced by the fact that they are stressed. The way this works, according to the discourse rules, is that a 'set' card is composed of a set of individual cards (very often vaguely defined; the set of things in this case) that can be manipulated by the focus rule. In this way the cards for the focused subjects in (4) can each be positioned on top of the file by the focus rule. In other words, Restrictive topics are focused members of a topic set. It follows that topics need not be definite as long as they are members of a discourse specified set.<sup>8</sup>

## 1.2 Topic Drop

Topic drop is one way of marking topics. Topics can also be marked morphologically, by topicalization, by a weak or a clitic pronoun, or by intonation (including destressing). Most languages use several of these options and vary depending on the array of options as well as other language specific properties.

It has been claimed that dropped topics are *continued* topics (Schulz, 2003). In the case of languages that employ both topicalization and topic drop to mark topics, there may be a division of labor such that the former applies to shifted topics, whereas the latter applies to continued topics. This is generally the case in both Russian and Hebrew (providing further evidence for not deriving null topics from topicalized structures). Note also that approaches that search for the antecedent of dropped topics at LF or in the linguistic context cannot account for deictic antecedents of topic drop (e.g., Saito, 2007; Sigurðsson, 2011, 284 respectively). In our view, deictic pointing triggers the focus rule allowing the null object to seek its referent on top of the file as a continued topic. As shown for Russian and Hebrew (in

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<sup>6</sup> Importantly several cards can accumulate on top of the file. Only those details of the framework necessary for our explication of topic drop are introduced. For more information see Erteschik-Shir, 1997.

<sup>7</sup> Contrastive topics are analyzed along similar lines.

<sup>8</sup> For alternate ways of deriving specific indefinite topics, see Erteschik-Shir, 1997, 39-44.

section 2 and 3, respectively), non-deictic, extralinguistic context may also trigger the manipulation of the file.

As mentioned in section 1, we adopt the view in Sigurðsson and Maling 2008 that “all pronominal arguments are syntactically computed feature bundles that may or may not be spelled out in PF, depending on PF parametric options and/or language-specific low-level PF spell-out rules and constraints.” (Sigurðsson and Maling, 2008, 14). Our implementation of this idea is however quite different. One difference is that for us the interpretation of the feature bundle is available in situ: It is interpretable if a suitable topic is available on top of the file (and does not involve feature matching with left peripheral elements). Another difference is that for us overt and null pronouns are computed somewhat differently: Whereas a fully specified feature bundle is computed syntactically in the case of overt pronouns, null topics are merged as a set of unvalued  $\phi$ -features.<sup>9</sup> This difference has consequences for the explanation of the strict/sloppy ambiguity.

Null arguments thus enter the computation as a bundle of unvalued  $\phi$ -features:

$$\begin{bmatrix} \alpha & \text{person} \\ \alpha & \text{number} \\ \alpha & \text{gender} \end{bmatrix}$$

The PF interface accesses the discourse file and valuation of the feature bundle occurs by matching with a (topic) card from the top of the file, thereby also providing a reference. The assumption that the features are unvalued, forces a process of valuation where the only source of such valuation is the discourse. It is therefore not necessary to mark missing arguments with a topic feature. Topichood follows from the need for valuation.

Overt pronouns are merged as a bundle of valued  $\phi$ -features:

$$\begin{bmatrix} \pm & \text{person} \\ \pm & \text{number} \\ \pm & \text{gender} \end{bmatrix}$$

In view of the fact that their features are valued, they can receive their reference from an argument with matching features in the sentence as well as from an available topic card. In fact, it is well known that unless the context forces it, pronouns necessarily find their antecedents within the sentence.

We are now ready to see how this system accounts for the strict/sloppy ambiguity in Hebrew:

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<sup>9</sup> Sigurðsson and Maling also distinguish pronouns from null arguments: The former are spelled out because they are composed of a more complex feature structure. Sigurðsson, 2008, 405 in fact argues that PRO infinitives are silent because they are ‘defective’ with respect to (subject) Person”, i.e. they are unvalued for this feature. They differ from cases of Germanic topic drop because they “cannot match and inherit values from infinitive external elements.” 446 See also Herbeck, 2012 for a similar view. Rooryck and vanden Wyngaerd, 2011 argue that an anaphor enters a derivation with unvalued, but interpretable, features that become valued by forming an Agree relation with an antecedent. The unvalued feature bundle we propose for null topics is only interpretable by an available topic. An investigation of the array of null and overt pronouns and anaphors with respect to their feature composition is clearly required.

- (5)    ha-banot        sidru        et        ha-xeder.  
          the-girls        tidied-up    ACC        the-room
- Dina sama et        ha-simla        šela    al        ha-kise  
          Dina put    ACC        the-dress        her        on        the-chair
- ve-Mixal talta    Ø        αφ        ba-aron  
          and-Mixal hung                    in-the-closet

- a. 'Dina<sub>i</sub> put her<sub>i</sub> dress on the chair and Mixal<sub>j</sub> hung her<sub>j</sub> dress in the closet.'  
 b. 'Dina<sub>i</sub> put her<sub>i</sub> dress on the chair and Mixal<sub>j</sub> hung her<sub>i</sub> dress in the closet.'

The null object in (5) can receive either the sloppy reading in a. or the strict reading in b. The initial sentence introduces a topic set: a card for the set of girls composed of individual cards for Dina and Mixal. Each conjunct positions one of them on top of the file (by the focus rule), making them both available as a topic. The unvalued feature bundle in the second conjunct is now in search of an available topic. Since there are two potential ones, both readings are derived. (We do not account for the ellipsis of the Ø DP here.)

Sloppy readings thus require an antecedent which is a member of a set. This is why they are limited to contexts which provide such sets.

(6) shows that an overt pronoun only gets the strict reading:

- (6)    ha-banot        sidru        et        ha-xeder.  
          the-girls        tidied-up        ACC        the-room
- Dina    sama    et        ha-simla        šela    al        ha-kise  
          Dina    put    ACC        the-dress        her        on        the-chair
- ve-Mixal        talta    ota        ba-aron  
          and -Mixal        hung    it        in-the-closet

- a. 'Dina<sub>i</sub> put [her<sub>i</sub> dress]<sub>k</sub> on the chair and Mixal<sub>j</sub> hung it<sub>k</sub> in the closet.'  
 b. \*'Dina<sub>i</sub> put [her<sub>i</sub> dress]<sub>k</sub> on the chair and Mixal<sub>j</sub> hung it<sub>m</sub> in the closet.'

Since the  $\phi$ -features of pronouns are valued, their antecedent can be sentence internal. Here *her* (*Dina's*) *dress*, which has matching features, is introduced in the first conjunct, undergoes the focus rule, and thus provides an antecedent for the pronoun in the second conjunct. No card for Mixal's dress is available in the sentence or in the discourse, hence the sloppy reading is ruled out.

Our analysis of null arguments as unvalued feature bundles, together with the topic and focus discourse rules, provides an explanation for their interpretation. The fact that pronouns are analyzed as valued feature bundles predicts their overtness and explains the differences in interpretation. We therefore reject accounts of null arguments that view them as deleted pronouns (e.g., Roberts, 2010, 81 and Neeleman and Szendrői, 2005) since such accounts cannot predict the difference in distribution of null arguments and overt pronouns.

In this paper we concentrate on the properties of missing objects in Russian (section 2) and in Hebrew (section 3).

Once we have outlined the properties of topic drop in each language we show that these same properties hold of the missing object in Russian adverbial gerunds, although they have been analyzed as parasitic gaps. We show that the same is true of missing objects in Hebrew in structures which have been argued to involve VP-ellipsis or a moved null operator. Both are argued to be solely instances of topic drop. We argue against alternative analyses proposed for these cases and show that the only trigger for deletion is the topichood of the missing object.

In the conclusion we examine the consequences of our analysis for the cross-linguistic study of topic drop.

## 2. Object topic drop in Russian

Russian has traditionally been referred to as a discourse oriented language where processes like movement and argument drop are affected by information structure (Yokoyama, 1986, King, 1995, Bailyn, 1995a). Russian allows null subjects as well as null objects provided discourse conditions are satisfied (Franks, 1995, McShane, 2002; 2005). There are three ways to mark objects as topics: they can be pronominalized, dislocated (topicalization, scrambling) or they can be dropped. As mentioned in section 1.2, objects can drop only if they are continued topics. This is illustrated in (7) in which *krusovuju* is focused in the first clause and therefore provides an available referent for the missing object.<sup>10</sup>

- (7) Ja ne sdala kursovuju, potomu čto ješčë ne  
 I NEG hand-in.PAST course-paper because that yet NEG  
 dopisala ø/ježë.  
 write.PERF. PAST it  
 'I haven't handed in the course paper, because I haven't finished writing it.'

The antecedent of the null continued topic does not have to appear in the same sentence. In the question-answer pair in (8), the occurrences of the object in the response refer back to the pronominal antecedent in the question.

- (8) Q: Maša uže na stancii. Kto-to pojexal za n'ej?  
 Masha already on station somebody drove for her  
 'Masha is already at the station. Has anyone gone to meet her?'  
 A: Ne volnujsja, uže vstretili ø/ježë, i vezut ø/ježë k nam .  
 NEG worry.2SG already met.3PL her and drive.3PL her to us  
 'Don't worry, they have already met her, and they are driving her to our place.'

(9) shows that only continued topics drop. The sentence is grammatical only in the context indicated, but not if it is pronounced out of the blue.

<sup>10</sup> Some verbs in Russian, e.g., *čitat'* 'read', can be used intransitively (often in generic contexts). To control for this situation, we use optionally transitive verbs and gerunds formed from these verbs in perfective form and only in episodic contexts in which the object is not optional.



- (9) [Otkuda u tebe je ova knjiga? Where is this book from?]

Petja vzjal (je) v biblioteko (i prines ova knjiga domoj).  
Peter took it in library and brought this book home  
'Peter took it in the library (and brought this book home).'

It follows from the fact that (9) is unacceptable out of context that a continued topic, either null or pronominal, cannot precede its antecedent, even if the latter appears in the same sentence.

The referent of the continued topic can also be *extralinguistic*. Extralinguistic means, like pointing at the object, ensure that the attention of the hearer is drawn to it, allowing a card for this referent to be placed on top of the file and to supply a reference to the dropped object:

- (10) [a woman enters home and shows a purchase to her family]

a. Vot, kupila o/eto po-deševke.  
here bought.1SG it prep. cheap  
'Here, I bought it cheaply.'

[listening to music]  
b. Vam o/eto nravitsja?  
you it like  
'Do you like it?'

In contrast to continued topics, which can pronominalize or drop, shifted topics in Russian can topicalize and must remain overt:

- (11) - Raskaži mne ob Ivanovyx  
Tell me about the Ivanovs

-(Sergeja) ja znaju uže davno, a \*(Mašu) vstretila tol'ko včera.  
Sergey I know already long-ago but Masha met only yesterday  
'I know Sergey since long ago, but I met Masha only yesterday.'

In the question in (11) a new card is opened for the set of 'Ivanovs' and is positioned on top of the file. In the response, the objects which are members of this set are topicalized in their respective clauses and must remain overt. Topicalization and topic drop apply to different kinds of topics (shifted and continued, respectively) and therefore these two topic marking strategies are not interchangeable. Importantly, the first cannot be a precondition of the second. This excludes a derivation where the null object is deleted only after it is topicalized.<sup>11</sup>

## 2.1 Null topics vs. overt pronouns

In (7)-(11) overt pronouns are interchangeable with null objects. This is not always the case. Russian lacks indefinite pronouns corresponding to English 'one' and 'some'. Topic drop is therefore the only available option to mark a continued topic with a nonspecific antecedent in Russian.

In (12) the null object of *buy* in the answer receives a partitive reading equivalent to 'some' and cannot be replaced by an overt pronoun.

<sup>11</sup> See Rögnvaldsson, 1990, for example, who proposes this type of derivation to account for null objects in Icelandic.

(12) Q: Ty kupila kofe/klubniku?  
 you bought coffee/ strawberries  
 'Did you buy coffee/strawberries?'

A: Da, kupila ø ješčě včera.  
 yes bought.1SG already yesterday  
 'Yes, I bought some already yesterday.'

Similarly, (13) has a nonspecific antecedent in the question and requires a null object.

(13) Q: Ty kupila kakoj-nibud' podarok?  
 you bought some present  
 'Did you buy any present?'

A: Da, kupila ø ješčě včera.  
 yes bought.1SG already yesterday  
 'Yes, I bought one already yesterday.'

In Russian, unlike in Hebrew (discussed in section 3.1) and in Brazilian Portuguese (Farrell, 1990; Schwenter and Silva, 2002), animate topic objects drop as freely as inanimate ones as shown in (14) and (15). Note, however, that the pronoun is grammatical only when the antecedent is specific.

(14) a. Iskala svojego advokata, no tak i ne našla ø/jego.  
 looked-for.1SG self attorney but part. and NEG found.1SG him  
 'I was looking for my attorney, but I didn't find him.'

b. Iskala (kakogo-to) advokata, no tak i ne našla ø/\*jego.  
 looked-for.1SG some attorney but part. and NEG found.1SG him  
 'I was looking for an /some attorney, but I didn't find any.'

(15) a. Xotela kupit' ètu knigu, no tak i ne kupila ø/jejë  
 wanted.1SG buy.INF this book but so and NEG bought.1SG it  
 'I wanted to buy this book, but I didn't buy it.'

b. Xotela kupit' (kakuju-nibud') knigu, no tak i ne kupila ø/\*jejë.  
 wanted.1SG buy.INF some book but so and NEG bought.1SG it  
 'I wanted to buy a/some book, but I didn't buy any.'

## 2.2 A restriction on Russian topic drop

Topic drop exhibits an interesting asymmetry in Russian: object-topics do not drop in the presence of an overt subject, unless the subject is focused. If both subject and object are continued topics, both must be dropped.

In the answer to the question in (16), for instance, an overt pronoun is required.

(16) Q: Kak Igor' otnositsja k Maše?  
 how Igor relate.REFL to Masha  
 'How does Igor feel towards Masha?'

A: (Ja dumaju), Igor'/on ljubit \*(jejë).  
 I think Igor/he loves her

The acceptability of topic drop improves dramatically if the clausemate subject is null. This is shown in (17) which is a possible answer to the question in (16).<sup>12</sup>

- (17) Ja dumaju, ø ljubiti ø.  
I think loves her

Only overt subjects which are continued topics block object drop. Topic drop of objects is allowed in the presence of focused subjects. This is illustrated in (18) and (19) from the National Corpus of the Russian Language (NCRL).

- (18) Stalo byt', kto-nibud' našel na polu? – Ili iz karmana poxitil!  
became be someone found on floor or out-of pocket stole  
'Can it be that someone found **it** on the floor? – Or stole **it** from the pocket!' (F. Dostoyevsky. 'The Idiot', 1869)

- (19) ... jejë iskali djadja Ljënja, ded, daže mama, ja  
her searched.3PL uncle Ljenja grandfather even mom I  
  
proboval triždy. Nikto ne našel ni razu.  
tried three-times. Nobody NEG found PART once  
'... uncle Ljenja, grandfather and even mom searched for her, I tried it three times. Nobody found **her** even once.'  
(Znamja, 2000)

Quantificational subjects such as *kto-nibud'* 'someone', *nikto* 'nobody' provide foci. (They do not qualify as topics since they are not specific). Therefore, just like contrastive subjects, they cannot drop yet they do not block topic drop of the objects.

(20) illustrates that the object can drop in the presence of a contrastively focused subject. The pronominal subject 'he' in the last clause is a shifted topic picked from the set 'we' consisting of the speaker and the referent for 'he'. For these reasons the subject 'he' must be overt. Nevertheless, the null object, which is a continued topic, is grammatical.

- (20) My byvali tam mnogo-mnogo raz, i ètot žyvoťnyj mir mnje,  
we were there many many times and this animal world to-me  
  
česno govorja, uže podnadojel, no on ljubiti ø.  
truly speaking already sick-of but he loves  
'We visited there for many times, and to tell the truth, I am already tired of this animal world, but he loves **it**.'  
(Gorin, G. 'Sunday walks', 1974-1984)

The only cases we have found where null objects are allowed in the presence of an overt non-focused subject involve verbs that select a location.<sup>13</sup>

<sup>12</sup> Anticipating the discussion of V-stranding VP-ellipsis in section 2.3, it is worth noting here that VP-ellipsis is not a possible derivation for (17). VP ellipsis requires the verbs in both the antecedent VP and elided VP to have identical selectional properties (Otani and Whitman, 1991). This requirement is not observed in (17).

<sup>13</sup> These are analyzed as subordinate (implicit) stage topics in Erteschik-Shir, 1997.

(21) -Igor' vse ešče iscet                      svoj telefon?  
 Igor still                      is-looking-for his cell-phone  
 'Is Igor still looking for his cell-phone?'

-(Ja dumaju,) on uze                      našel (jego)  
 I think he already found it  
 I think, he has already found it.'

(22) Èto vaša podkovočka? ... A ja smotru, ležyt v salfotočke ...  
 this your horseshoe and I look lie in napkin

Ja narošno pribrala                      ø  
 I intentionally cleaned-away  
 'Is it your horseshoe? I noticed, (that) it lies (wrapped) in a napkin ... I took it away on purpose ...'

(Bulgakov, M. "Master & Margarita" 1929-1940)

If the phenomenon is indeed limited to such verbs, we have a way of predicting it based on the lexical structure of verbs of this type. In order to proceed with this line of research we must first verify that no instances of this phenomenon with other verb types can be found.

Sigurðsson, 2011; Sigurðsson and Maling, 2008 propose the Empty Left Edge Condition to account for a partially similar constraint on V2 Germanic topic drop. According to the Empty Left Edge Condition, Sigurðsson, 2011:293 any category that moves into Spec,C blocks topic drop, regardless of its feature content: Sigurðsson illustrates this for Swedish in (23) for object drop. (24) from Sigurðsson and Maling, 2008:14 provides further examples.

(23) a. \_\_\_\_ Skulle'ja troligen vilja se \_\_\_\_ ofta, i så fall.  
           Would'I probably want see        often in such case  
           'That/It, I would probably want to see often, in that case.'

b. Jag skulle troligen vilja se \*(det) ofta, i så fall.  
    I would probably want see \*(it) often in such case

c. Troligen skulle jag vilja se \*(det) ofta, i så fall.  
    Probably would I want see it often, in such case

d. I så fall skulle jag troligen vilja se \*(det) ofta.  
    In such case would I probably want see it often

(24) a. \* Jetzt kenne'ich \_\_\_\_ nicht.        German  
           Now know-I (it) not

b. \* Nu känner'ja(g) \_\_\_\_ inte.        Swedish  
           Now know-I (it) not

c. \* Núna þekki'é(g) \_\_\_\_ ekki.        Icelandic  
           now recognize'I (that) not

Let us first compare (23)a and b: In (23)a the subject is cliticized onto the verb which is parallel to dropping it in other languages. In this case the object can drop. In (23)b, however, the subject is a full pronoun and the object cannot drop. According to Sigurðsson this is because the subject is in Spec,C, blocking successful C/edge

linking of the object. Sigurðsson notes in a footnote (36:291) that if the subject is an (overt) contrastive topic, the object can drop. This is very reminiscent of the Russian data.

The similarity does not carry over to the remaining examples, which illustrate cases in which the preverbal element is not a subject. We argue contra Sigurðsson that what blocks topic drop of the object in Germanic is the Information Structure of these sentences, not their syntactic structure. The examples in (23)d and (24) show this clearly. In the former a PP is topicalized and in the latter the fronted 'now' provides a stage topic. Both have in common with (23)b that the preverbal element is an overt topic. (23)c, a case of so-called 'stylistic' fronting, is slightly different: the fronted adverbial does not provide a topic. However, fronting the adverb is not purely stylistic: it does signal a (thetic) Information Structure with a stage topic as argued in Erteschik-Shir, 2007:114-115. One piece of evidence presented there is the fact that an initial adverb is possible in sentences in which all arguments are indefinite and therefore cannot be interpreted as topics.

- (25) Glücklicherweise hat ein Mädchen einem alten Mann geholfen.      German  
 Fortunately      has a girl      an old man helped  
 'Fortunately a girl helped an old man.'

Since having a topic is a requirement for interpretation, these sentences must be interpreted as having a stage topic. Fronting a non-topic thus signals a particular Information Structure, namely one in which none of the overt elements is a topic. The sentence is rather interpreted with an implicit stage topic. It follows that the constraint on topic drop in Germanic can be viewed as a constraint on Information Structure such that any element in preverbal position designates either itself or another element as a topic, blocking topic-marking by omission of other arguments.

Russian has in common with Germanic that an overt (non-focused) subject blocks object drop but differs in that other fronted elements do not. This is to be expected since Russian is not a V2 language and the preverbal position therefore does not play the same role with respect to Information Structure as it does in Germanic. (26) shows that an overt initial stage topic does not block object drop (as long as the subject is null).

- (26) Q:      Igor' prislal pis'mo?  
              Igor sent the-letter  
  
 A:      (Da,) včera      Ø prislal Ø  
              yes yesterday (he) sent (it)

Preverbal subjects, however, have a special status as unmarked topics as demonstrated in King, 1995:102. The generalization for Russian therefore is that when both subject and object are continued topics, they have to be marked in the same way, either both are pronouns or both are null. Overt topic subjects in Russian play the same role as overt preverbal topics in Germanic, both block topic drop of the object. Microparameters of this sort can therefore be seen to vary according to the particular syntax-Information structure alignment in each language.

### 2.3 Alternative accounts of the missing objects in Russian

In this section we consider two proposals regarding the nature of the missing objects. According to the first proposal the gapped object is a variable bound by a topic

operator. According to the second analysis the missing object results from ellipsis of the entire VP containing it. We reject both these analyses for Russian.

The Operator movement analysis, as it is known, was originally proposed to account for null objects in Chinese (Huang, 1984), and adopted, among other languages, for E(uropean) P(ortuguese) (Raposo, 1986). In Chinese and EP, similarly to Russian, gapped objects require a discourse antecedent (either linguistic or situational). The null objects in these languages obey island constraints. (27), Raposo's (18), shows that the gap within the sentential subject is ungrammatical even if the antecedent of the null object is available in the discourse:

- (27) \*Que a IBM venda e<sub>i</sub> a particulars surpreende-me.  
'that IBM sells e<sub>i</sub> to private individuals surprises me'

Topic drop in Russian, as we show shortly in this section, is not island sensitive. The evidence for operator movement that is present in the EP data is absent in Russian.

The second analysis, termed V-stranding VP-ellipsis (VSVE), posits that a null object results from ellipsis of the VP which contains the object. This analysis crucially relies on movement of a lexical verb out of the VP before the latter is targeted by ellipsis. VSVE has been proposed to account for null objects in Hebrew (Doron, 1990), Finnish (Holmberg, 2001), Chinese (Otani and Whitman, 1991)<sup>14</sup> and Irish (McCloskey, 1991). A version of this account is also argued for in Gribanova, 2011 for Russian.<sup>15</sup>

According to Gribanova, finite lexical verbs in Russian undergo short movement out of the vP to an aspectual projection (AspP) below IP.<sup>16,17</sup> The availability of short verb movement opens up the possibility that VSVE also exists in Russian. It has been notoriously difficult to distinguish between VSVE and a dropped object since both result in identical surface forms. Gribanova proposes a combination of two diagnostics to tease apart these constructions. The first diagnostic is based on the observation in Hankamer and Sag, 1976 that VP-ellipsis only applies if an antecedent VP is present in the preceding discourse. Missing objects, however, are licensed when the antecedent is situational. (28) and (29), her (40) and (37) respectively, are both good, but only (29), according to the first diagnostic, is a case of object drop.

- (28) Kažetsja, čto nikto ne podnjaj tu vazu.  
seem.3SG.REFL that no one.NOM NEG *under*-hold.SG.M that.ACC vase.ACC  
'It seems that no one picked up that vase.'

Tot fakt, čto nikto ne podnjaj, menja očen' ogorčajet.  
the fact that no-one NEG *under*-hold.3SG. me.ACC very upsets.3SG  
'The fact that no one picked it up very much upsets me.'

---

<sup>14</sup> But see Kim, 1999 for an alternative view.

<sup>15</sup> Bailyn, 2011 however argues that Russian V-stranding constructions discussed in Gribanova do not involve VSVE.

<sup>16</sup> For short verb movement of finite verbs in Russian see Bailyn, 1995b.

<sup>17</sup> It has been argued that AspP projects above the vP only when it is headed by a superlexical perfectivizing prefix. Lexical perfectivizing prefixes project within the VP (Svenonius, 2004, Romanova, 2004). It is therefore not obvious that movement to AspP necessarily drives the finite verb out of the vP.

(29) [something falls; no one wants to get it]

Ne vstavaj.      Sejčas pridēt      papa, poprosim      jegu  
 NEG get-up.2SG now    come.3SG.FUT dad    ask.1PL.FUT him.ACC  
 podnjat' \_\_\_\_  
 under-hold.INF  
 'Don't get up. Soon dad will come, we'll ask him to pick it up.'

The second diagnostic employs the different behavior of VSVE and missing objects in islands. Ellipsis can target a vP embedded in an island (ex. (28)). In the same environment object drop is only marginally possible.<sup>18</sup>

(30) [something falls; no one wants to get it]

# Tot fakt, čto nikto    ne    podnjal,      menja    očen' ogorčajet.  
 the fact that no-one NEG under-hold.3SG me.ACC very upsets.3SG  
*Intended:* 'The fact that no one picked it up very much upsets me.'

Because of the relative unacceptability of certain island internal null objects, Gribanova, following Huang, 1984, concludes that they result from movement of a null operator.

Regarding the first diagnostic, we agree with Gribanova. The second diagnostic is, however, invalid as shown in (31) from the NCRL.

(31) A    možet sygral [rol'] tot fakt [čto kogda vozila      ∅    na privivku  
 but maybe played role that fact that when drive.1SG.PAST    on vaccination

neskol'ko dnej nazad, ostavila      ∅    odnu v čužoj komnate],  
 a-few days back left.1SG.PAST    alone in strange room,

ona až zaplakala.  
 she even cry.3SG.PAST

'Maybe the fact that when I took **her** to be vaccinated a few days ago, I left **her** alone in a strange room played a role; she even started to cry.'

(31) appeared in a discussion in a forum of pet-lovers. A concerned dog-owner speculates about the cause of her pet's depression. The two gapped objects within the logical subject phrase refer back to the discourse topic (the dog). The rightmost gap is a direct object of 'leave', the leftmost dropped object is embedded in the adjunct clause. Neither of the gaps in (31) can result from VP-ellipsis for two reasons. First, there is no VP-antecedent in the preceding context (diagnostic 1). Second, it is known that VP-ellipsis deletes all VP-internal material. This is not what happens in (31). In the VP headed by 'drive' the prepositional phrase 'on vaccination' is overt and in the VP headed by 'leave' the locative PP argument and the semi-predicate 'alone' are overt. These facts eliminate the VP-ellipsis option for island-internal null objects.

Finally, wh-movement out of either of the gap positions in (31) is ungrammatical. This is shown in the examples in (32) which are simplified versions of (31).

<sup>18</sup> According to the survey reported in Gribanova, (30) was rated lowest (2.9 on a 1 to 7 scale), other island-internal null objects were judged more acceptable. Note also that there is a difference in grammaticality between (30) and the parallel (27) from EP.

- (32) a. \*Kakuju sobaku sygral rol' tot fakt čto kogda vozila na privivku,  
 which dog played role that fact that when drove on vaccination  
 opozdala?  
 was-late  
 \*'Which dog did the fact that when I drove her to be vaccinated I was  
 late play the role?'
- b. \*Kakuju sobaku sygral rol' tot fakt čto ostavila odnu v čužoj  
 which dog played role that fact that left alone in strange  
 komnate?  
 room  
 \*'Which dog did the fact that I left her alone in a strange room play the  
 role?'

If either of the gaps in (31) were the trace of a null operator, (31) would be as bad as (32), contrary to fact. We conclude therefore that a null object is not a trace of a null operator.

It is still necessary to explain why (30) is marginal. With the absence of a linguistic antecedent, the context must force a topic reading of the dropped object. A grammatical result is obtained when such a situation is provided. Five Russian speakers judged (33) good.

- (33) [pointing on a banknote which is lying on the floor]  
 - Smotri-ka, von tam, na polu. Pojdi podnimi. – Tot fakt, čto do six  
 look PART there on floor go pick-up that fact that till this  
 por ne podnjali, - uže podozritelen. Naverno fal'syvyje.  
 time NEG picked-up.3PL already suspicious probably fake  
 ' - Look, there, on the floor. Go and pick it up. – The fact that until now they  
 didn't pick it up is already suspicious. Probably it is fake.'

The contrast in acceptability between (30) and (33) and the variation in judgments depend on the extent to which the background context allows the hearer to interpret the situational antecedent as salient. If the context is not explicit enough, the hearer will assign topic status to the whole subject NP (the subject 'fact'-phrase in (30)) rather than the object. In such cases topic drop will fail as our analysis correctly predicts.

Summing up, the grammaticality of the island-internal object gap examples presented in this section indicates that object drop in Russian cannot be analyzed either as VSVE or as a trace of a topic operator.<sup>19</sup>

Before concluding this section, it is essential to point out that our concept of topic drop differs from that of discourse NP-ellipsis. The two are similar in that they both follow the basic intuition that arguments in Russian drop under certain discourse conditions. However, only the former, but not the latter, attempts to specify the discourse conditions involved and to use these conditions to formalize a mechanism that allows the implementation of this intuitive idea.

<sup>19</sup> The situation is not unique for Russian; In sec. 3.2.4 we show that it holds in Hebrew as well. See also Farrell, 1990 who argues against a topic operator analysis of missing objects in Brazilian Portuguese on the basis of facts that are similar to those observed in Russian.



## 2.4 Null objects in gerundive adjuncts

In the preceding sections we have shown that continued topic objects can drop in Russian. In what follows we show that topic drop is also responsible for the missing objects in gerundive adjuncts.

Russian has constructions exemplified in (34) which are parallel to English parasitic gaps in (35).

- (34) a. Kakije pis'ma Petja sžeg  $\emptyset$  [ne pročitav  $\emptyset$ ?ix]?  
which letters Peter burned NEG read.PERF.PRTC them  
'Which letters did Peter burn without reading?'
- b. Čto Petja podpisal  $\emptyset$  [ne čitaja  $\emptyset$ ?jego/\*èto]?  
what Peter signed NEG read.IMPRF.PRTC it this  
'What exactly did Peter sign without reading?'

- (35) Which document<sub>i</sub> did John file e<sub>i</sub> [without reading pg<sub>i</sub>]? Engdahl, 1983

The bracketed constituent in (34), henceforth a 'without adverbial' or simply a 'gerund', includes a negation particle, a verb in the form of *Perf./Imprf. Participle* and a gap.<sup>20</sup> Gerundive phrases function as adverbial modifiers of the matrix verbal phrase; structurally they are VP-adjuncts.<sup>21</sup>

The sentences in (34) satisfy the licensing condition on parasitic gaps, which, by general consensus, requires that the antecedent phrase be dislocated by overt A'-movement. In English a violation of this condition rules out the gap in the adverbial, as the examples in (36) from Engdahl, 1983 show.

- (36) a. John filed a bunch of articles [without reading \*t/them].  
b. John filed which articles without reading \*t/them?

A striking property of Russian gerundive gaps, as noted in Ivlieva, 2006, is that they do not depend on overt A'-movement of the licensing phrase.

- (37) a. Petja sžeg (èti) pis'ma, [ne čitaja  $\emptyset$ ?ix].  
Peter burned these letters NEG read.IMPRF.PRTC them  
'Peter burned these letters without reading them.'
- b. Petja sžeg kakije pis'ma, [ne čitaja  $\emptyset$ ?ix]?  
Peter burned which letters NEG read.IMPRF.PRTC them  
'Peter burned which letters without reading them?'

The examples in (37) differ in acceptability. (37)a is widely used in both colloquial and formal registers and is judged to be perfect. (37)b is less natural and is only good as an echo question about the object that was previously mentioned in the discourse.

<sup>20</sup> Babby and Franks, 1998 refer to these phrases as 'adverbial participles', the gloss given in the examples, pointing out that the terms 'gerund' and 'verbal adverb' are also applicable to them.

<sup>21</sup> Ickovič, 1982 notes that the spectrum of usage of the gerundive phrases in Russian is much broader; they can also modify infinitives, participles and nouns. The present analysis is restricted to gerundive adjuncts that modify finite verb phrases.

An in situ antecedent can also license a gap in finite adjuncts:

- (38) a. Olja sožgla pis'mo, posle togo kak pročitala.  
Olya burned the-letter after that how read.3SG.F.PAST  
'Olya burned the letter after she had read it.'
- b. Oleg vnimatel'no pročital stat'ju pered tem kak otoslal  
Oleg attentively read article before that how send.3SG.M.PAST  
v redakciju.  
in publishers  
'Oleg had attentively read the article before he sent it to the publishers.'

The gerundive gaps display a number of properties which can be successfully accommodated within the topic drop analysis, but fail to be described in terms of operator movement or VP-ellipsis. Topic drop also explains examples such as (34), in which overt wh-movement of the antecedent has taken place. A Topic drop analysis thus provides a unified explanation for all types of gerundive gaps.

## 2.5 The position of the antecedent

The first step in the argumentation is to show that the matrix object in (37) is indeed in situ. This step is needed in order to exclude the possibility of A'-movement of the licensing phrase out of the VP. Then we will compare the properties of the gap in the gerund with the properties of Russian topic drop discussed in sections 2-2.1 and show that they are identical.

In Russian, a finite verb generally follows a manner adverb; we take this as evidence that the verb remains low in the structure, probably in the VP (although see below in this section). Moreover, an object can scramble out of the VP, in which case it necessarily precedes the finite verb and can appear either to the left or to the right of a low adverb. The scrambled word order is shown in (39) with the possible positions of the object in parenthesis.

- (39) Petja (èti pis'ma) bystro (èti pis'ma) šžeg.  
Peter these letters quickly these letters burned  
'Peter quickly burned these letters.'

If the matrix object in (37)a were scrambled out of the VP, it would necessarily precede, but not follow the finite verb. The same analysis holds of the wh-phrase in (37)b. It has been repeatedly argued in the literature that Russian is a wh-in situ language of the Japanese/Chinese type (Bošković, 1997; Stepanov, 1998; Strahov, 2000, *inter alia*). Wh-phrases remain in situ, unless they are dislocated by Focus movement to the CP domain of the clause. We conclude, therefore, that the matrix object in both sentences in (37) is inside the VP. It follows that null objects within adverbials are licensed independently of the overt movement of their antecedent. Licensing by covert movement is discussed in section 2.7.2.

## 2.6 The properties of the gap

We now consider properties of the 'without' adverbial gaps. We will show that these properties are identical to those of the non-adverbial topic drop discussed in sections 2-2.1.

The null object in the gerund generally has an overt antecedent in the matrix clause. Such antecedent can be a full DP (37)a or a wh-phrase (37)b and (34). The antecedent can also be a pronoun:

- (40) Q: Gde mojě pis'mo?  
          where my letter
- A: Maša vybrosila *jego* ne pročitav         $\emptyset$ /\*jego.  
     Masha threw-out it NEG read.PERF.PRTC it  
     'Masha threw it out without having read it.'

The null object in the gerund, just like the null continued topic in non-adverbial context, is also licensed by an *extralinguistic* antecedent. Compare (41) with (10).

- (41) [showing the unpaid phone bill]  
      Posmotri, postojal'cy ujexali ne oplativ.  
      look.2SG tenants left NEG pay.PERF.PRTC.  
      'Look, the tenants left without paying it.'

Another property assimilates a gerundive gap with dropped topics: it cannot precede its antecedent. The gerundive adjunct can be positioned not only sentence finally but also before the matrix VP, as in (42), but only in a context where the object has an antecedent in the preceding discourse. (42) should be compared with (9).

- (42) Q1: Čto slučilos'? What happened?  
      Q2: A gde kniga, kotoruju my podarili Olegu (na denj roždenija)?  
          Where is the book that we presented Oleg (on his birthday)?
- Oleg, [ne pročitav       (jejě) (ni razu)], otnjes       (ětu) knigu k bukinistu.  
Oleg neg. read.PERF.PRTC it PART once took-away this book to bookseller.  
'Oleg took this book to the bookseller without having read it (even once).'

The answer in (42), with either the gap or the pronoun, is infelicitous when uttered out of the blue (in response to question 1). However, it is acceptable as an answer to question 2, which provides an antecedent for the object topic.

An anonymous reviewer points out that (42) can be a case of genuine backward ellipsis. However, a non-linguistic antecedent may also license a pre-verbal adjunct gap. This is demonstrated in (43), where the null object of 'install' in the answer has a situational antecedent, namely *washing machine*. Crucially, there is no VP/NP-antecedent that can license backward ellipsis.

- (43) [a man arrives home and finds out that a washing machine that was bought a few days ago is still standing in the middle of the kitchen; pointing at the machine, the man addresses his wife]  
      Q: Teknik prixodil?  
          technician came  
          'Did the technician arrive?'

- A: Prixodil, no [ne ustanoviv ] opjat' kuda-to ušel.  
 arrived but NEG install.PERF.PRTC again somewhere went  
 '(He) arrived, but without having installed (it) he went somewhere again.'

Before concluding this section, it is essential to point out that we do not discriminate between the sentences in (37) and those in (34) (i.e. those lacking wh-movement of the antecedent and those that contain such movement) regarding the nature of the gerundive gap. As pointed out in section 2.4, the distinguishing property of the sentences in (34) and (37)b is that they are only acceptable as echo questions about an object that has been mentioned previously in the discourse. It follows that the null object in the gerund is necessarily a continued topic and therefore can drop. Consequently, there is no reason to propose different accounts for the gerundive gaps in (34) and those in (37).

## 2.7 Alternative analyses of gerundive gaps

In this section we discuss in more detail Ivlieva's 2006 analysis of adjunct null objects in Russian. On this analysis the null object is a true parasitic gap and is a variable. It is licensed in the presence of wh-movement of the antecedent; the latter can move either overtly or covertly. We show that this proposal suffers from both theoretical and empirical shortcomings and cannot ultimately account for the nature of null objects.

### 2.7.1 Null objects within gerund-internal islands

The analysis of null objects as variables predicts that if the adverbial gap is embedded in an additional island, the result will inevitably be bad. In English the PG is ungrammatical if it appears in an island within the adjunct that contains it. This is shown in (44) from Emonds, 2001(e=PG).

- (44) a. \*Which guest did John criticize t while recalling [<sub>DP</sub> the fact that Sue supported e]?  
 b. \*Which one did Bill encourage t without saying [<sub>CP</sub> where he would publicly support e]?

The topic drop analysis does not make such a prediction. In fact, this analysis predicts that topic drop in an island is possible provided all conditions on topic drop are satisfied. This prediction is born out. In (45) topic drop occurs in a finite interrogative clause which is a complement of the gerund.

- (45) On razobral pribor na časti, ne pointeresovavšys'  
 he took-to-pieces device on parts NEG inquire.PERF.PRTC  
 kto soberët (jego) obratno.  
 who assemble.3SG.FUT it back  
 'He broke the device to pieces, without inquiring who would put it together.'

Wh-movement out of the position of the gap yields an ungrammatical result. Compare (45) with (46) where the wh-object is extracted overtly.

- (46) \*Kakoj pribor on ne pointeresovalsja kto soberet obratno?  
 which device he NEG inquire who assemble.3SG.FUT back

\*'Which device did he inquire who would put together?'

(47) shows that the null object can occur in an adjunct-internal complex NP, but wh-movement out of the complex NP is disallowed.

- (47) a. On razobral pribor na časti, ne prinjav  
 he took-to-pieces device on parts NEG take.IMPRF.PRTC.  
  
 vo vnanije tot fakt što ne smogut potom  
 into attention that fact that NEG will-be-able then  
  
 sobrat' (jega).  
 put-together.INF it  
 'He broke the device into pieces, without taking into account the fact  
 that he would not be able to put it together.'
- b. \*Kakoj pribor on ne prinjal vo vnanije tot fakt  
 which device he NEG took into attention that fact  
  
 što ne smogut potom sobrat' (jega).  
 that NEG will-be-able then assemble.INF it  
 \*'Which device didn't he take into account that he would not be able to  
 put it together?'

Note that grammaticality of (45) and (47)a eliminates the possibility suggested by an anonymous reviewer that the topic object moves to the left periphery of the gerundive phrase prior to deletion, since such movement out of an island would result in ungrammaticality, contrary to fact.

The Russian sentences in (45) and (47)a differ from English (44): in the former, the subject of the most embedded clause is null. Ivlieva correctly points out that the null object is licit in subjectless adjuncts (both finite and non-finite) but is ungrammatical in finite adjuncts with an overt subject. The latter type of adjunct is shown in (48), her (6a and 7a).

- (48) a. Petja<sub>i</sub> vybrosil [etu knigu]<sub>i</sub>, posle togo kak on<sub>j</sub>/Kolja pročital \*(jeje)<sub>i</sub>.  
 Petja threw.away this.ACC book.ACC after he/Kolja read it  
 'Petja threw away this book after he/Kolja had read it.'
- b. [Kakuju knigu]<sub>i</sub> Petja<sub>i</sub> vybrosil t<sub>i</sub> posle togo kak on<sub>j</sub>/Kolja pročital \*(jeje)<sub>i</sub>?  
 which book Petja throw-away after he/Kolja read it  
 Which book did Petja throw away after he/Kolja had read it?

Ivlieva cites Culicover, 2001 who observes that in English the intervention of an overt uncontrolled subject in tensed subordinate clauses can reduce the acceptability of parasitic gaps, and crucially assumes that this is a distinguishing property of parasitic gaps.

Recall however (from section 2.1) that null object is also blocked in the presence of an overt subject in non-adverbial contexts. This, therefore, is a general property of object topics and is not a distinguishing property of parasitic gaps. Notably, the null objects in both sentences in (49) are judged considerably better. These sentences minimally differ from those in (48) in that in the former the embedded subjects are focused.

- (49) a. Petja vybrosil [ètu knigu]<sub>i</sub>, posle togo kak KOLJA  
 Petja threw.away this.ACC book.ACC after Kolya  
 pročitai (jejë)<sub>i</sub>.  
 read it  
 'Petya threw this book after Kolya had read it.'
- b. [Kakuju knigy]<sub>i</sub> Petja<sub>j</sub> vybrosil t<sub>i</sub> posle togo kak KOLJA  
 which book Petja throw-away after Kolya  
 pročitai (jejë)<sub>j</sub>?  
 read it  
 'Which book did Petya throw away after Kolya had read it?'

## 2.7.2 Covert movement licensing

There have been proposals in the literature that parasitic gaps can be licensed by covert A'-movement of the antecedent (Nissenbaum, 2000; Wahba, 1995). Ivlieva, 2006, argues along these lines that the gerundive null objects in non-A'-movement cases such as (37) are true parasitic gaps, just like the gaps in (35), and are licensed by covert topic movement of the antecedent. We agree with the basic intuition that for the object to be null, it must be discourse 'given'. However, the implementation of this idea which employs covert movement of the linguistic antecedent is not without flaws. To begin with, it is still a matter of controversy whether covert movement can license a parasitic gap.

Languages like Chinese and Japanese provide us with clear evidence that covert wh-movement cannot license PGs. In these languages true interrogative sentences are formed by covert movement of the wh-phrase which obligatorily remains in situ. As (50) from Lin, 2005 shows, covert wh-movement fails to license PG in Chinese.

- (50) \*Laowang [zai huijian pg<sub>i</sub> zhiqian] jiu kaichu-le shei?  
 Laowang at meet before already fire.PERF who  
 'Who did Laowang fire before meeting?'

In contrast with (50), the PG in (51) where the wh-phrase is topicalized is grammatical.

- (51) Shei<sub>i</sub> Laowang [zai huijian pg<sub>i</sub> zhiqian] jiu kaichu-le e<sub>i</sub>?  
 who Laowang at meet before already fire.PERF  
 'Which person is it who Laowang fired before meeting?'

Similarly to Chinese, Japanese also disallows covert movement licensing of PGs. The pair of examples in (52) from Takahashi, 2006 shows that the gap in the subject phrase is ungrammatical in the true interrogative sentence (52)a. The gap is acceptable when the matrix object is dislocated by focus movement (52)b.

- (52) a. ?\*[Hazimete e au hito]-ga dare-o kenasimasu ka?  
 for-the-first-time see person-Nom who-Acc criticize Q  
 'Who do people who see for the first time criticize?'
- b. [Hazimete e au hito]-ga t kenasu no-wa dare-o desu ka?  
 for-the-first-time see person-Nom criticize that-Top who-Acc is Q  
 'Who is it that people who see e for the first time criticize?'

The data in this section, drawn from languages with noncontroversial wh-in-situ, support the conclusion that true PGs can be licensed only in the presence of overt A'-movement of the antecedent. Ivlieva's proposal that defends covert movement licensing can therefore not be maintained because, on the one hand, it postulates unjustified covert movement of the PG licenser, and on the other hand, it cannot explain why in languages that have covert wh-movement, such movement cannot license PGs.

More generally, the PG analysis of the null adjunct objects requires that the antecedent be present in the matrix clause. This analysis faces a problem in accounting for (53) from the NCRL.

- (53) Tak čto, ne podpisav, požaluj vovse ne vyjdeš.  
 so that NEG sign PERF.PRTC probably at-all NEG leave.2SG.FUT  
 'You will probably not leave at all without signing it.'  
 (Daniljuk, S. 'Rubljevaja zona'. 2004)

The sentence appeared in a context where a police official fails to convince a prisoner to sign a document. The obligatorily transitive verb *podpisat'* 'sign' is followed by a gap. Note that this gap does not have an antecedent in the matrix clause. The identity of the object however is easily recovered; it is the salient discourse topic hence available on the top of the file.

Summing up, we have shown that null objects in Russian gerunds are a result of topic drop. The analysis in terms of topic drop explains why a null adverbial object does not rely on movement and can appear in an island. It also provides an explanation for variations in speakers' judgments regarding the acceptability of null objects in different contexts.

### 3. Object topic drop in Hebrew

Hebrew object drop is typically found in clausal conjunction (example (54)) and conjoined VPs (example (55)), a configuration referred to as COD (Conjunct Object Drop) in Sigurðsson and Maling, 2008. It is also common in answers to questions, as in (56).

- (54) Dani katav et ha-šir ve-Miriam tirgema ø / oto  
 Dani wrote ACC the-song and-Miriam translated it  
 'Dani wrote the song and Miriam translated it.'
- (55) Dani kisa et ha-salat ve-hixnis ø / oto la-mekarer  
 Dani covered ACC the salad and-put it to-the-fridge  
 'Dani covered the salad and put it in the fridge.'
- (56) Q: macata et ha-maftexot?  
 found.2SG ACC the-keys  
 'Did you find the keys?'  
 A: ken, macati ø / otam  
 yes found.1SG them  
 'Yes, I found them.'

As in Russian, an extralinguistic antecedent can also license a null object. In such cases a situational antecedent is made obvious in the discourse through non-linguistic means, like pointing or even just looking at an object. In example (57), the speaker presents a new bag, drawing the interlocutor's attention to it.

- (57) yafe? kaniti        ø / et        ze        be-mivca  
       nice    bought.1SG    ACC    this    in-sale  
       'Is this nice? I bought it on sale.'

Moreover, the object can drop even when its antecedent is not visually present yet is relevant in the context, as in the following scenario. A woman walks into a car rental agency holding a set of keys. The clerk welcomes her with the question in (58). The antecedent is a rented car which is not visually present:

- (58) maxzira    ø?  
       return.2SG  
       'Are you returning it?'

In the above examples, the null object is a continued topic whose antecedent has been placed on top of the file. This is done linguistically, by mentioning the antecedent either in the first conjunct, as in examples (54) and (55), or in the question as in (56). It can also be done deictically, by pointing, as in (57). A non-linguistic context, just as a linguistic context, triggers the manipulation of the file cards. In (58), the hearer accommodates the non-linguistic context, allowing for the interpretation of the missing object as a car since cars are members of the set of elements introduced by the contextual rental agency.

We would like to stress that Hebrew object drop is of an informal nature. While it is not prevalent in written or formal speech, it is often used in informal conversations. Additionally, it should be noted that not all topic objects may drop (some of the restrictions are addressed below), and that the judgment on null objects is not always uniform across speakers<sup>22</sup>.

In our view, these dropped objects merge as unvalued feature bundles, whose content is retrieved by searching for an available topic in the linguistic or non-linguistic context for an available topic. Note that our proposal does not involve leftward movement of the topic prior to deletion. As in Russian, Hebrew topicalization is common with shifted topics, i.e. elements that derive from a topic set, whereas topic drop is impossible with shifted topics and is reserved for continued topics, i.e. those that refer to a single card at the top of the file. Consider the sentence below, with a topicalized object:

- (59) et        ha-xalav        hu        sam        ba-mekarar  
       ACC    the-milk        he        put        in-the-fridge  
       'He put the milk in the fridge.'

This sentence is ruled out in the context of (60), yet it is acceptable following the context in (61).

- (60) Dani    hevi        xalav    me-ha-super.  
       Dani    brought    milk    from-the-supermarket  
       'Dani brought milk from the supermarket.'

<sup>22</sup> For the data presented here at least five native Hebrew speakers were consulted.



- (61) Dani hevi xalav ve-tapuxim me-ha-super.  
 Dani brought milk and-apples from-the-supermarket  
 'Dani brought milk and apples from the supermarket.'

These two contexts are minimally different, yet the contrast is sharp. The reason is that in context (60), 'the milk' is a continued topic, hence its topicalization fails. However, context (61) makes available a topic set: {milk, apples}, thus, when following (61), 'the milk' in (59) is interpreted as a shifted (restrictive) topic: an item selected from the topic set. Its topicalization is therefore successful. Importantly, although context (60) does not allow the object to be topicalized, it does allow it to be null, as demonstrated below:

- (62) Dani hevi xalav me-ha-super ve-sam ba-mekarer  
 Dani brought milk from-the-supermarket and-put in-the-fridge  
 'Dani brought milk from the supermarket and put it in the fridge.'

The Hebrew data thus supports the conclusion made for Russian (section 2) that Topic Drop and topicalization are two separate processes that apply to different types of topics.

Previous studies of Hebrew null objects (Doron, 1990, 1999, Goldberg, 2005) explain the phenomena with two different mechanisms. Both authors believe that two separate derivations occur in Hebrew which result in the surface appearance of a null object: V-stranding VP-ellipsis and A'-movement of a null operator. We argue in section 2.3 above against similar approaches to Russian null objects; in section 3.2 below we point to the problems they pose for the Hebrew data.

In general, these proposals have neglected to explore the Information Structure involved in the account of missing objects. In this paper we attempt to fill in this gap. Furthermore, we offer a unified solution that encompasses all instances of object drop, rather than accounting for the phenomenon with two distinct derivations. In our proposal, an unvalued feature bundle is merged in syntax in object position, and goes unpronounced in the phonological component. Its topichood allows the recovery of its content by searching for the antecedent on top of a file, either in the linguistic or non-linguistic context.

### 3.1 The properties of Hebrew object topic drop

Before we explore the previous proposals in more depth, let us observe some of the characteristics of Hebrew null objects. First note that in each of the examples (54)-(57), the object gap can alternate with an overt pronoun (providing further indication of its topichood). This is not always the case, however. When the null object refers back to a non-specific referent, an overt pronoun is not always available. Unlike in Russian (section 2.1), Hebrew speakers do make use of nonspecific pronouns corresponding to English 'one' and 'some' (*exad* and *kama*, respectively). However, unlike 'some', *kama* only has the meaning 'a few' and cannot be used for mass nouns, leaving the gap as the only option with a mass noun antecedent. Note the contrast below where *kama* is used for the count noun *sfarim* 'books' but is impossible with the mass noun *kafa* 'coffee', leaving the gap as the only available option (compare to the Russian example (12)):

- (63) Q: kanita sfarim?  
 bought.2SG books  
 'Did you buy books?'

A: ken, kaniti            ø /    exad / kama  
       yes    bought.1SG        one    some  
       'Yes, I bought one/some.'

(64) Q: kanita            kafe?  
           bought.2SG    coffee  
           'Did you buy coffee?'

A: ken, kaniti ø /    \*kama  
       yes    bought.1SG    some  
       'Yes, I bought some.'

The examples in the rest of the paper are restricted to specific antecedents.

Another instance where a null object does not alternate with an overt pronoun deserves a closer look. Some object gaps induce an ambiguity between sloppy and strict readings, as noted in Doron, 1990, 1999. In the example below, taken from an actual dialogue, speaker B employs a null object and speaker A is unsure to which antecedent the null object refers.

(65) A: šaxaxti            et        ha-kod            ha-sodi            šeli.  
           forgot.1SG        ACC    the-code        the-secret        my  
           'I forgot my secret code.'

B: ani        zoxeret.  
       I        remember  
       'I remember (the secret code)'

A: et        šeli?  
       ACC    my?  
       'Mine?'

B: lo,        et        šeli.  
       no        ACC    my  
       'No, mine.'

Speaker B intended the sloppy reading, under which the object of 'remember' is NOT the previously mentioned secret code of speaker A, but rather her own secret code. This interpretation would have been unavailable had she used the pronoun 'it' in object position, since a pronoun only allows a strict interpretation, i.e. the antecedent would necessarily be the secret code of speaker A. In other words, an alternation between a pronoun and a gap is possible with a strict reading but not with a sloppy one. As outlined in the introduction, under the current proposal the context introduces a set card with the members {speaker A, speaker B}. Each of these members is a potential antecedent, leading to the observed ambiguity.

To sum up, Hebrew object gaps alternate with overt object pronouns unless they have a mass noun partitive reading or a sloppy reading.

A robust tendency in Hebrew, as observed in Goldberg, 2005, is that an object drops more freely when it is inanimate. This is demonstrated below with the minimal pairs in (66) and (67), in which an animate dropped object is less acceptable than an inanimate one.

- (66) a.    raxacti        et        ha-ke'ara ve-axar-kax        nigavti    ø / ota  
              washed.1SG ACC        the-bowl and-after-that        dried.1SG        it  
              ve-samti        ø / ota ba-arón  
              and-put.1SG    it        in-the-cupboard  
              'I washed the bowl and then dried it and put it in the cupboard.'
- b.    raxacti        et        ha-tinok        ve-axar-kax    nigavti \*ø /    oto  
              washed.1SG    ACC        the-baby        and-after-then dried        him  
              ve-hiškvati        \*ø /    oto        ba-mita  
              and-laid        him        in-the-bed  
              'I washed the baby and then I towel-dried him and laid him in the bed.'
- (67) a.    ni'arti        et        ha-štixim        ve-hoceti ø / otam    la-xacer  
              shook.1SG    ACC        the-rugs        and-took-out them    to-the-yard  
              'I shook the rugs and took them out to the yard.'
- b.    he'arti        et        ha-yeladim    ve-hoceti \*ø / otam la-xacer  
              woke-up.1.SG ACC        the-children    and-took-out    them to-the-yard  
              'I woke up the kids and took them out to the yard.'

The preference that dropped objects be inanimate, which doesn't pertain to Russian, is not unique to Hebrew. Brazilian Portuguese also treats animate objects differently from inanimate ones with respect to object drop. Farrell, 1990 and Schwenter and Silva, 2002 show that Brazilian Portuguese has a strong preference for an inanimate interpretation of an empty object position. We follow Schwenter, 2006 in viewing this distinction in terms of differential object marking (DOM) and extend this insight to topic drop. DOM is employed by languages to mark atypical objects. Both definiteness and animacy are atypical properties for objects. Hebrew is known to mark definite objects with an accusative marker (*et*)<sup>23</sup>. This is in contrast to indefinite objects, which receive no overt case marking. We believe that additionally, Hebrew DOM manifests itself in not allowing animate objects, which constitute atypical objects, to be null, but rather requires that they are marked by being overt. The consequence is that Hebrew animate objects do not generally drop.

This account is further supported by the fact that the animacy restriction does not apply to subjects nor to indirect objects, which are obviously not subject to DOM. Both subject topics and indirect object topics that are animate can drop, as (68)<sup>24</sup> and (69) show.

- (68) Q:    ma    Dina    osa?  
              what    Dina    does  
              'What is Dina doing?'
- A:    ø /    hi        rokedet.  
                              she    dance.3SG.F  
              'She is dancing.'

<sup>23</sup> See, for example, Aissen, 2003

<sup>24</sup> A Reviewer is concerned that (68) may actually be an instance of a fragment answer. Indeed in this case a fragment answer is impossible to distinguish from a null subject.

(69) Q:    hexzarta        le-Dinaet        ha-sefer?  
              returned.2SG   to-DinaACC   the-book  
              'Did you return the book to Dina?'

A:        ken,    hexzarti        ø / la        ø/oto.  
              yes    returned.1SG   to-her        it  
              'Yes, I did.'

DOM does not apply in Russian, which is fully case marked. The fact that animacy does not play a role in Russian object topic drop is therefore predicted.

It is well known that the sequence subject-VP naturally aligns with Topic-Focus and that it is highly marked for an object to function as a topic.<sup>25</sup> Schwenter, 2006; Schwenter and Silva, 2002 argue that since topics are specific by definition and since animates, particularly humans, are the most frequent topics, it is not surprising that animacy and specificity rank highest as properties of objects requiring DOM. Dalrymple and Nikolaeva, 2011 argue that topichood is THE trigger for DOM. They depart from the accepted view that objects are marked topics and argue that in fact, objects are unmarked secondary or subordinate topics (just as subjects are unmarked main topics). Lemmolo, 2010 also adheres to the view that DOM is motivated by the need to signal the markedness of direct objects that are topics. He argues contra Dalrymple and Nikolaeva that the objects in question are main topics and not secondary ones.

Having examined some of the properties of Hebrew null objects, we will now consider the previous analyses proposed for it.

### 3.2 Previous accounts of Hebrew null objects

It has been proposed in Doron, 1990, 1999 and Goldberg, 2005 that what underlies a subset of Hebrew utterances with missing objects is Verb Phrase Ellipsis. According to this analysis, VP-Ellipsis does not affect the verb because the verb is positioned in I (either by base generation as in Doron, 1990) or by raising). When deletion of the VP occurs, it takes along with it the direct object and all other VP-internal material; but the verb itself is stranded in a higher position, external to the VP, and thus remains overt. This analysis, known as V-Stranding VP-ellipsis (VSVE), leans on the existence of V to I movement in Hebrew, and indeed such movement has been independently motivated for the language (Doron, 1983, Shlonsky, 1987).

An additional syntactic analysis of Hebrew object drop is the Null Object analysis, according to which the direct object is null but the rest of the VP is intact. Doron, 1999 follows Huang, 1984 in assuming that in a Null Object construction, the null object is a variable bound by a null operator. Both Doron and Goldberg assume that Null Object as well as VSVE occur in Hebrew. If indeed those two accounts are possible, then the same surface string can potentially have two derivations that underlie it. Both Doron and Goldberg attempt to draw the distinction between the two underlying structures, and suggest diagnostics that, they claim, can determine whether a particular utterance is a case of VP-ellipsis or Null Object. Note that some of the diagnostics are different than the ones proposed for Russian (see section 2.3)

However, when examined carefully, each of these diagnostics is problematic with respect to Hebrew data, as we show below. Our conclusion is that neither the VP-

<sup>25</sup> See Erteschik-Shir, 1997 Erteschik-Shir, 1997, 2007 and the references cited therein for this view.

ellipsis nor the Null Object accounts can fully explain the phenomenon. We will now survey some of the proposed diagnostics and point to their problems.

### 3.2.1 Diagnostic 1: Two missing arguments

This diagnostic exploits ditransitive verbs, which are revealing since the VP contains additional material to the direct object. Doron and Goldberg both maintain that when other VP-internal elements besides the direct object are null, we have a clear case of VP-ellipsis. We argue, however, that a second internal argument such as an indirect object (for instance, a PP Goal) can drop alongside the direct object, without necessitating deletion of the entire VP. This occurs when both the direct object and indirect object are continued topics.

The data below show that when a verb takes two internal arguments, each argument can drop independently, leaving behind the other argument and obviously, the entire VP. In (70), the question places both the DO and the IO on top of a file, thus each can be interpreted as a continued topic in the answer. In A1 the direct object (DO) is interpreted as a topic and drops, and in A2 the indirect object (IO) does the same. Note that the gap may alternate with an overt pronoun in A1 and with a locative expression ('to there'), in A2, a further indication that they are each a continued topic.

- (70) Q:      lakaxta            et            ha-sdinim            la-maxbesa?  
              took.2SG            ACC            the-sheets            to-the-cleaners  
              'Did you take the sheets to the cleaners?'
- A1:      lo,            ba-sof            lakaxti     $\emptyset$  / otam            le-ima            šeli.  
              no            in-the-end            took.1SG            them            to-mother            my  
              'No, in the end I took them to my mother's.'
- A2:      lo,            lakaxti  $\emptyset$  /            le-šam            rak et            ha-magavot .  
              no            took.1SG            to-there            only ACC            the-towels  
              'No, I only took the towels there.'

A reviewer is concerned that example A2 does not demonstrate IO topic drop, since dative arguments in general tend to be optional in Hebrew, unlike PP arguments of 'put'-type verbs, which are not optional. However, when interpreted as a continued topic, a PP locative of 'put' may also be null:

- (71) Q:      samta            rak            et            ha-sfarim            al            ha-šulxan?  
              put.2SG            only            ACC            the-books            on            the-table  
              'Did you put only the books on the table?'
- A:      lo,            samti            gam et            ha-maxbarot  $\emptyset$   
              no            put.2SG            also            ACC            the-notebooks  
              'No, I also put the notebooks there.'

The data above establish that both the DO and the IO can be independently silent when they are topics. We therefore expect both to be able to drop together, when both are interpreted as topics. In such a case, the VP remains intact. This possibility is demonstrated in (72), an utterance which under Doron and Goldberg is necessarily a case of VP-ellipsis because all VP-internal material is missing (the verb being in I). Note that since both the DO and IO in the answer are continued topics, the answerer may choose to realize each of them, independently, as either a gap or an overt pronoun.

(72) Q:     natatem            et        ha-sefer            le-Dorit?  
              gave.2PL            ACC     the-book            to-Dorit  
              'Did you give the book to Dorit?'

A:        ken,     natanu     $\emptyset$  / la         $\emptyset$  / oto  
              yes,     gave.1PL   to-her        it  
              'Yes, we did.'

We have argued, contrary to Doron and Goldberg, that ditransitive verbs with two missing internal arguments are not necessarily to be analyzed as VP-ellipsis. The inverse claim can, however, be maintained: a ditransitive verb followed by one null and one overt internal argument cannot be analyzed as VP-ellipsis: the overt VP-internal material indicates that the VP is in place, as observed in both Doron and Goldberg. Example (73) illustrates such an utterance.

(73) Q:     bikaštem            et        ha-išur            me-ha-menahet?  
              requested.2PL ACC     the-approval   from-the-manager  
              'Did you request the approval from the manager?'

A:        lo,                    bikašnu     $\emptyset$  /     oto     me-ha-mazkira    šela  
              no                    asked.1PL   it        from-the-secretary hers  
              'No, we requested it from her secretary.'

Goldberg acknowledges an alternative account, suggested to her by Jonathan Bobaljik, in which VP-ellipsis *is* a possible analysis for such utterances. The proposal is that in addition to the verb, the remaining argument itself raises out of the VP prior to VP-ellipsis, an analysis analogous to that of English pseudo-gapping. Goldberg rejects this possibility, however, because the Hebrew construction in question (overt verb- null DO-overt IO) has different characteristics than English pseudo-gapping. Particularly, two restrictions apply to English pseudo-gapping which do not hold in the Hebrew construction. The first restriction is that pseudo-gapping cannot occur in question-answer pairs, in obvious contrast to Hebrew null objects, and the second restriction requires that the remaining elements be contrastively focused. While many Hebrew utterances with missing direct objects do involve contrast between the remaining elements, this is by no means a condition on their formation, as is evident in examples (55), (62), and (67), among others, which lack such contrast. We thus reject the possibility that the IO raises out of the VP and conclude that an overt IO indeed eliminates the VP-ellipsis analysis. We therefore treat a ditransitive verb followed by a null DO and an overt IO as not involving VP-ellipsis.

### 3.2.2 Diagnostic 2: Animacy

As discussed in section 3.1, Hebrew animate objects do not drop as easily as inanimate objects. Goldberg argues that animate objects cannot drop independently, in Null Object constructions, but only as part of VP Ellipsis. This claim is based on ungrammatical occurrences of null animate objects in non-VP-ellipsis utterances, i.e. a sentence containing overt VP-internal material following the null object. Goldberg generalizes that such utterances are always ungrammatical, and concludes that animate objects cannot drop while other VP-internal material remains overt. However, although rare, such examples do exist:

(74) Q:     šalaxta            et        ha-yladim le-boston?  
              sent.2SG            ACC     the-kids   to-Boston?  
              'Did you send the kids to Boston?'

A: lo, šalaxti ø / otam le-nyu-york  
 no sent.1SG them to New York  
 'No, I sent them to New York'

The overt PP Goal *le-boston* 'to Boston' excludes a VP-ellipsis analysis, as argued above, yet the null direct object is animate. Such cases are indeed hard to come by, and are disfavored by some speakers, due to the animacy restriction, but they are not impossible. This particular example was deemed acceptable by several speakers. Thus the generalization that animate objects cannot drop independently of other VP-internal material does not hold.

The fact that the object above can drop despite its animacy should be explained. Within animate objects we find an internal hierarchy within which humans are ranked higher than other animates and among humans, children are 'less animate' than adults. To some extent children can be treated, linguistically, like inanimates. Such treatment is further highlighted in (74) by the use of the verb *šalax* 'send', normally reserved for inanimate objects.<sup>26</sup>

### 3.2.3 Diagnostic 3: Sloppy readings

VP-ellipsis is known to allow a sloppy reading (Doron, 1999) alongside a strict reading. According to Doron and to Otani and Whitman, 1991, this trait distinguishes VP-ellipsis from the Null Object construction, which allows only a strict identity reading. For Japanese and Korean, this claim has been challenged by several authors, among them Hoji, 1998, Oku, 1998, Farrell, 1990, and Kim, 1999. These authors, as summarized in Goldberg, 2005, have shown that a null DP alone may induce a sloppy reading. For Hebrew, Doron's claim is examined here—as before—with a construction that cannot be VP-ellipsis: a sentence with two internal arguments of which one is null and one overt. The null argument can potentially co-refer to either the subject of the antecedent clause (strict reading) or the subject of the target clause (sloppy reading).

- (75) Dani<sub>i</sub> her'a et ha-xatima šelo<sub>i</sub> le-Rina ve-Šlomo<sub>k</sub> her'a  
 Dani showed ACC the-signature his to-Rina and-Šlomo showed  
 ø<sub>i/k</sub> le-Mixal  
 to-Michal  
 'Dani showed his signature to Dina and Shlomo showed his signature to Mixal'

- (76) Dina<sub>i</sub> talta et ha-simla šela<sub>i</sub> ba-arón  
 Dina hung ACC the-dress her in-the-closet  
 ve-Dorit<sub>k</sub> hixnisa ø<sub>i/k</sub> la-mgera  
 and-Dorit inserted to-the drawer  
 'Dina hung her dress in the closet and Dorit put her dress in the drawer.'

<sup>26</sup> There are additional contexts where animate object drop is tolerated, such as in answers to yes/no questions. For example:

- (i) Q: xipasta et Dina?  
 Searched.2SG ACC Dina  
 'Did you look for Dina?'

A: ken, xipasti ø /ota kol ha-boker ve-lo macati ø /ota  
 Yes searched.1SG her all the-morning and-no found.1SG her  
 'Yes, I looked for her all morning and didn't find her.'

- (77) Dani<sub>i</sub> her'a et ha-šririm šelo<sub>i</sub> le-Dina  
 Dani showed ACC the-muscles his to-Dina  
 ve-Mošē<sub>k</sub> her'a Ø<sub>i/k</sub> le-Mixal  
 and-Moshe showed to-Michal  
 'Dani showed his muscles to Dina and Moshe showed his muscles to Michal.'

Hebrew speakers give the above sentences sloppy identity readings, weakening Doron's assumption. It should be pointed out that the situations described in these examples encourage sloppy readings for pragmatic reasons: it is more plausible for someone to show their own muscles rather than someone else's. In a context where a strict reading is pragmatically more plausible, speakers react accordingly and give the utterance a strict interpretation. This is demonstrated in (78):

- (78) ha-yeled<sub>i</sub> nitek et ha-maxšev šelo<sub>i</sub> me-ha-xašmal  
 the-boy disconnected ACC the-computer his from-the-electricity  
 ve-ha-aba<sub>k</sub> xiber Ø<sub>i/k</sub> baxazara  
 and-the-father connected back  
 'The boy unplugged his computer and the father re-plugged his computer.'

Here a strict reading, in which the computer in both clauses is the boy's, is more salient for pragmatic reasons. The conclusion is that sloppy reading is not blocked in non-VP-ellipsis constructions. The availability of a sloppy reading therefore does not indicate that the utterance in question contains VP-ellipsis. The current proposal handles both interpretations, as detailed above (see the introduction as well as section 3.1).

#### 3.2.4 Diagnostic 4: Locality Constraints

Another test that has been proposed is sensitivity to islands. VP-ellipsis is known to be free of island effects. Doron, 1999 assumes that Null Object constructions, in contrast to VP-ellipsis, are subject to such effects as they involve movement of a null operator, as in Huang, 1984. However, the data below will show that Null Object *can* occur inside an island.

As before, this will be established with the use of ditransitive verbs with one null and one overt argument, which as we have shown cannot contain VP-ellipsis. Such Null Object examples are tested below in island environments. (79)-(83) were judged grammatical by five native speakers.

CP coordination:

- (79) [<sub>CP</sub> Dina he'evira et ha-meser le-Yosi]  
 Dina passed ACC the-message to-Yosi  
 [<sub>CP</sub> ve-Dani he'evir Ø / oto le-Mixal]  
 and-Dani passed it to-Michal  
 'Dina passed the message to Yosi and Dani did to Michal'

VP coordination:

- (80) Mixal [<sub>VP</sub> kibla et ha-mafte'ax mi-Dani]  
 Michal received ACC the-key from-Dani  
 [<sub>VP</sub> ve-natna Ø / oto le-Sarit]  
 and-gave it to-Sarit  
 'Michal received the key from Dani and gave it to Sarit.'



Complex NP Constraint:

- (81) Her'eti et ha-tmuna le-Dina, ve-mišehu  
 showed.1SG ACC the-picture to-Dina and-someone  
 hefic šmu'a [še-her'eti ø / ota gam le-Yosi]  
 spread rumor that-showed.1SG it also to-Yosi  
 'I showed the picture to Dina and someone spread the rumor that I also  
 showed it to Yosi.'

Adjunct Island:

- (82) fiksasnu et ha-mismaxim le-London  
 faxed.1PL ACC the-documents to-London  
 [Adjunct lamrot še-kvar šalaxnu ø / otam le-Berlin]  
 despite that-already sent.1PL them to-Berlin  
 'We faxed the documents to London even though we had already sent them  
 to Berlin.'

Subject Island:

- (83) ani yodea še-her'et et ha-tmuna le-Dani,  
 I know that-showed.2SG ACC the-picture to-Dani  
 Aval [ze še-her'et ø / ota le-Yosi] ze mamaš lo beseder  
 but this that-showed.2SG it to-Yosi it really no all-right  
 'I know that you showed the picture to Dani, but showing it to Yosi was really  
 wrong.'

Like in Russian (see examples (31), (33)), the null object in Hebrew is not island-bound. This result clearly shows that it does not involve movement of a null operator.

We have shown that neither the Null Object nor the V-stranding VP-ellipsis analyses can ultimately account for the behavior of object drop. However, an account in terms of topic drop as proposed here addresses the full array of issues. More than one internal argument is allowed to drop as long as it is interpreted as a continued topic. Since no movement is involved, island configurations do not affect the acceptability of null objects. Furthermore, an account of null arguments in terms of unvalued feature bundles allows the flexibility in interpretation found in sloppy/strict ambiguities. And finally, this proposal unifies all instances of referential object drop in Hebrew without resorting to two separate mechanisms - a considerable simplification of the theory.

#### 4. Conclusion

The influence of Information Structure on ellipsis in general is well-known (e.g., Konietzko and Winkler, 2010 and the references cited therein). Here we have shown that certain elliptical phenomena are best analyzed as topic drop, a way of marking the topichood of an argument in languages that allow it. Topic drop is, however, far from a uniform phenomenon. One of the things that puzzle us in particular is cross-linguistic differences. Our initial examination of Hebrew topic drop in adverbial adjuncts indicated that Hebrew does not allow it. (84), parallel to the Russian (37)a, shows that Hebrew does not allow topic drop where Russian does.

- (84) Yosi saraf et ha-mixtavim ha-ele bli likro otam / \*ø  
 Yosi burned ACC the-letters the-these without read.INF them  
 'Yosi burned these letters without reading them.'

A closer inspection of the data in Hebrew, however, shows that the same contexts that ameliorate topic drop in other Hebrew constructions also help here. In (85) the

dropped object appears in a conjunction and is followed by additional material, environments that tolerate topic drop more easily.

- (85) Yosi zarak et ha-kufsa bli liftoax ø / ota ve-lirot  
 Yosi threw ACC the-box without open.INF it and-see.INF  
 ma yesh ba  
 what exists in-it  
 'Yosi threw away the box without opening it and seeing what's in it.'

The differences between these two languages in this respect may therefore not be as extreme as we initially thought.

There are however two microparameters in which they differ. In section 2.2 we pointed out that Russian object topics do not drop in the presence of overt preverbal subject topics. We explained this phenomenon as a consequence of the status of Russian subjects as unmarked topics. We further argued that the unmarked information structure of Germanic V2 languages differs in that an overt preverbal element determines the information structure in these languages blocking topic drop of the object. We argue that the same forces are at play in these languages and that the differences are due to differences in the unmarked information structure. Interestingly enough, no such constraint is to be found in Hebrew: preverbal elements in Hebrew are generally interpreted as topics and postverbal elements as foci, this is true of both subjects and objects. (86) illustrates the order SVO, (87) the order OVS and (88) the order OSV. In none of these orders can an indefinite argument which doesn't qualify as a topic occur preverbally, be it subject or object.

- (86) a. ha-yeled pagaš yalda  
 the-boy met girl  
 'the boy met a girl.'
- b. \*yeled pagaš et ha-yalda  
 boy met ACC the-girl  
 'a boy met the girl.'
- (87) a. et ha-yalda pagaš yeled.  
 ACC the-girl met boy  
 'a boy met the girl.'
- b. \*yalda pagaš ha-yeled  
 girl met the-boy  
 'the boy met a girl.'
- (88) a. \*et ha-yalda yeled pagaš.  
 ACC the-girl boy met  
 'a boy met the girl.'
- b. \*yalda ha-yeled pagaš  
 girl the-boy met  
 'the boy met a girl.'

Hebrew thus differs from Germanic in not having a dedicated topic position and also differs from Russian in that the subject doesn't have a particular status as an unmarked topic. This is why the constraint that topics do not drop in the presence of another overt topic, does not apply in Hebrew.

We also demonstrated in section 3.1 that animate object topics do not drop in Hebrew because of DOM. We suspect that languages such as Hebrew which have minimal overt marking to distinguish subjects and objects (only definite objects are marked) may be subject to DOM, but a language with pervasive case marking such as Russian will not.

As argued in Erteschik-Shir, 2005, 2006, all information-structure triggered processes are accounted for at the PF interface. These include other ways of marking topics, such as dislocation (topicalization, scrambling) and prosodic marking as well as access to the file system allowing for the retrieval and valuation of the merged feature bundle. The fact that topic drop is constrained differently in the two languages we discuss, as well as in other languages that have been studied follows naturally on this view since the idiosyncratic morpho-phonological properties of each language, as well as information structure properties come into play at PF.

We agree with Culicover, this volume, that processing is a factor in the computation of pronominal dependencies. Just as pronouns in weak crossover constructions require an 'identifiable' antecedent in order to be processed with ease, so does the processing of a null argument. This requirement is met, we claim, by the topic-hood of the null argument. We argued that this requirement follows from the availability of unvalued feature bundles in the syntactic enumeration which, when merged, can only be valued through access to a (topic) card from the top of the file, thereby also providing a reference. The assumption that the features are unvalued, therefore, forces a process of valuation where the only source of such valuation is the discourse.

## References:

- Aissen, J., 2003. Differential object marking: Iconicity vs. Economy. *Natural Language & Linguistic Theory* 21, 435-483.
- Babby, L.H., Franks, S., 1998. The Syntax of Adverbial Participles in Russian Revisited. *Slavic and East European Journal* 42, 3, 483-516.
- Bailyn, J.F., 1995a. Configuring the "Free ord Order" in Russian. Ph.D. dissertation. Cornell University.
- Bailyn, J.F., 1995b. Underlying phrase structure and 'short' verb movement in Russian. *Journal of Slavic Linguistics* 3, 13-58.
- Bailyn, J.F., 2011. '—Kak tebe lingvistika?' '—Nenavižu!': How (not) to analyze Russian verb-stranding constructions, *Formal Approaches to Slavic Linguistics (FASL)* 20, MIT.
- Bošković, Ž., 1997. The syntax of nonfinite complementation: an economy approach. The MIT Press.
- Chomsky, N., 1981. *Lectures on Government and Binding: The Pisa Lectures*, 3 ed. Foris, Dordrecht.
- Cole, M., 2010. Thematic null subjects and accessibility\*. *Studia Linguistica* 64, 271-320.
- Culicover, P.W., 2001. Parasitic Gaps: A History, in: Culicover, P.W., Postal, P.M. (Eds.), *Parasitic Gaps*. The MIT Press, Cambridge, Ma., pp. 3-68.
- Culicover, P.W., this volume. The role of linear order in the computation of referential dependencies *Lingua*.
- Dalrymple, M., Nikolaeva, I., 2011. *Objects and Information Structure*. Cambridge University Press, Cambridge.
- Doron, E., 1983. *Verbless Predicates in Hebrew*. University of Texas at Austin.
- Doron, E., 1990. V-Movement and VP-Ellipsis. The Hebrew University of Jerusalem.
- Doron, E., 1999. V-movement and VP-ellipsis, in: Lappin, S., Benmamoun, E. (Eds.), *Fragments: Studies in Ellipsis and Gapping*. Oxford University Press, Oxford, pp. 124-140.
- Emonds, J., 2001. The Lower Operator Position with Parasitic Gaps, in: Herschensohn, J., Mallén, E., Zagana, K. (Eds.), *Features and Interfaces*. John Benjamins, Amsterdam, pp. 85-106.
- Engdahl, E., 1983. Parasitic Gaps. *Linguistics and Philosophy* 6, 5-34.
- Erteschik-Shir, N., 1997. *The Dynamics of Focus Structure*. Cambridge University Press, Cambridge.
- Erteschik-Shir, N., 2005. What is Syntax? *Theoretical Linguistics* 31, 263-274.
- Erteschik-Shir, N., 2006. On the architecture of topic and focus, in: Molnár, V., Winkler, S. (Eds.), *The architecture of focus*. Mouton de Gruyter, Berlin, pp. 33-57.
- Erteschik-Shir, N., 2007. *Information Structure: The Syntax-Discourse Interface*. Oxford University Press, Oxford.
- Farrell, P., 1990. Null objects in Brazilian Portuguese. *Natural Language and Linguistic Theory* 8, 325-346.
- Franks, S., 1995. *Parameters of Slavic Morphosyntax*. Oxford University Press, Oxford.
- Frascarelli, M., 2007. Subjects, topics and the interpretation of referential pro. *Natural Language & Linguistic Theory* 25, 691.
- Frascarelli, M., Hinterhölzl, R., 2007. Types of topics in German and Italian, in: Winkler, S., Schwabe, K. (Eds.), *On Information Structure, Meaning and Form*. John Benjamins, Amsterdam.
- Goldberg, L.M., 2005. *Verb-stranding VP-ellipsis: A cross-linguistic study*. McGill University.

- Gribanova, V., 2011. Verb-Stranding Verb Phrase Ellipsis and the Structure of the Russian Verbal Complex. to appear in *Natural Language and Linguistic Theory*.
- Gribanova, V., 2012 (to appear). Verb-Stranding Verb Phrase Ellipsis and the Structure of the Russian Verbal Complex. *Natural Language and Linguistic Theory*.
- Hankamer, J., Sag, I., 1976. Deep and Surface Anaphora. *Linguistic Inquiry* 7, 3, 391-428.
- Herbeck, P., 2012. How much pro-drop is control? Evidence from Spanish, Catalan, and Italian, The 22nd Colloquium on Generative Grammar, Facultat de Filosofia i Lletres, Universitat Autònoma de Barcelona.
- Hoji, H., 1998. Null Object and Sloppy Identity in Japanese. *Linguistic Inquiry* 29, 127-152.
- Holmberg, A., 2001. The Syntax of Yes and No in Finnish. *Studia Linguistica* 55 (2), 140-174.
- Holmberg, A., 2004. Null subjects and uninterpretable features: evidence from Finnish. Ms., University of Durham.
- Huang, C.-T.J., 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15, 531-574.
- Ickovič, V.A., 1982. *Očerki sintaksičeskoj normy*. Moskva: Nauka.
- Iemmolo, G., 2010. Topicality and differential object marking: Evidence from Romance and beyond. *Studies in Language* 34, 239-272.
- Ivlieva, N., 2006. *Parasitic Gaps in Russian*. , Formal Approaches to Slavic Linguistics, Toronto.
- Kim, S., 1999. Sloppy/Strict Identity, Empty Objects, and NP Ellipsis. *Journal of East Asian Linguistics* 8, 255-284.
- King, T.H., 1995. *Configuring Topic and Focus in Russian*. CSLI, Stanford.
- Konietzko, A., Winkler, S., 2010. Contrastive ellipsis: Mapping between syntax and information structure. *Lingua* 120, 1436-1457.
- Lin, J., 2005. Does Wh-in-situ License Parasitic Gaps? *Linguistic Inquiry* 36, 298-302.
- McCloskey, J., 1991. Clause structure, ellipsis and proper government in Irish. *Lingua* 85, 259-302.
- McShane, M.J., 2002. Unexpressed Objects in Russian. *Journal of Slavic Linguistics* 10, 291-328.
- McShane, M.J., 2005. *A Theory of Ellipsis* Oxford University Press, Oxford.
- Neeleman, A., Szendrői, K., 2005. Pro Drop and Pronouns, in: al., J.A.e. (Ed.), *Proceedings of the 24th West Coast Conference on Formal Linguistics Cascadilla Proceedings Project*, Somerville, MA, pp. 299-307.
- Nissenbaum, J., 2000. Covert movement and parasitic gaps, in: Masako Hirotani, A.C., Nancy Hall, Ji-yung Kim (Ed.), *Proceedings of the 30th annual meeting of the North East Linguistics Society*. GLSA Publications, Amherst, MA.
- Oku, S., 1998. LF Copy Analysis of Japanese Null Arguments, in: M. Catherine Gruber, D.H., Kenneth S. Olson, and Tamra Wysocki (Ed.), *CLS 34: Part1, The Main Session*. Chicago Linguistic Society, Chicago, pp. 299-314.
- Otani, K., Whitman, J., 1991. V-Raising and VP-Ellipsis *Linguistic Inquiry* 22.2: 345-358. *Linguistic Inquiry* 22, 345-358.
- Perlmutter, D.M., 1971. *Deep and surface constraints in generative grammar*. Holt, Rinehart and Winston, New York.
- Raposo, E., 1986. *On the Null Object in European Portuguese*. Foris, Dordrecht.
- Reinhart, T., 1981. *Pragmatics and linguistics: an analysis of sentence topics*. *Philosophica* 27, 53-94.
- Rizzi, L., 1986. Null objects in Italian and the theory of *pro*. *Linguistic Inquiry* 17, 501-557.

- Roberts, I., 2010. A deletion analysis of null subjects, in: Biberauer, T., Holmberg, A., Roberts, I., Sheehan, M. (Eds.), *Parametric Variation: Null Subjects in Minimalist Theory*. Cambridge University Press, Cambridge, pp. 58-87.
- Rögnvaldsson, E., 1990. Null objects in Icelandic, in: Maling, J., Zaenen, A. (Eds.), *Modern Icelandic Syntax*. Academic Press, San Diego, pp. 367-379.
- Romanova, E., 2004. Superlexical vs. lexical prefixes Nordlyd 32 (special issue on Slavic prefixes, ed. Peter Svenonius), 255-278.
- Rooryck, J., vanden Wyngaerd, G.J., 2011. *Dissolving binding Theory*. Oxford University Press, Oxford.
- Saito, M., 2007. Notes on East Asian Argument Ellipsis. *Language Research* 43, 203-227.
- Schulz, B., 2003. Crossing the borders of functional and formal linguistics: an optimality theoretic account of German topic drop, in: Ikeda, K., Robideau, J. (Eds.), *Selected papers from the seventh college-wide conference for students in languages, linguistics and literature*, University of Hawaii, Manoa, pp. 188-201.
- Schwenter, S.A., 2006. Null objects across South America, in: Face, T.L., Klee, C.A. (Eds.), *Selected Proceedings of the 8th Hispanic Linguistics Symposium*. Cascadilla Proceedings Project, Somerville, MA, pp. 23-36.
- Schwenter, S.A., Silva, G., 2002. Overt vs. Null Direct Objects in Spoken Brazilian Portuguese: A Semantic/Pragmatic Account. *Hispania* 85, 577-586.
- Shlonsky, U., 1987. *Null and Displaced Subjects*. MIT.
- Sigurðsson, H., 2008. The case of PRO. *Natural Language & Linguistic Theory* 26, 403-450.
- Sigurðsson, H.Á., 2011. Conditions on Argument Drop. *Linguistic Inquiry* 42, 267-304.
- Sigurðsson, H.Á., Maling, J., 2008. Argument drop and the Empty Left Edge Condition (ELEC). *Working Papers in Scandinavian Syntax* 81, 1-27.
- Stepanov, A., 1998. On wh-fronting in Russian, in: Tamanji, P.N., Kusumoto, K. (Eds.), *NELS 28. GLSA*, University of Massachusetts, Amherst, pp. 453-467.
- Strahov, N., 2000. A Scrambling Analysis of Wh-questions in Russian, in: King, T.H., Franks, S., Yadroff, M. (Eds.), *Formal Approaches to Slavic Linguistics: The Bloomington Meeting*. Michigan Slavic Productions, Ann Arbor, pp. 293-310.
- Strawson, P.F., 1964. Identifying reference and truth-values. *Theoria* 30, 86-99.
- Svenonius, P., 2004. Slavic prefixes inside and outside VP. *Nordlyd* 32, 205-253.
- Takahashi, D., 2006. Apparent Parasitic Gaps and Null Arguments in Japanese. *Journal of East Asian Linguistics* 15, 1-35.
- Wahba, W.A.-F.B., 1995. Parasitic Gaps in Arabic, in: Eid, M. (Ed.), *Perspectives on Arabic Linguistics V: Fifth Annual Symposium on Arabic Linguistics*. John Benjamins, Amsterdam, pp. 59-68.
- Xu, L., 1986. Free Empty Category. *Linguistic Inquiry* 17, 75-93.
- Yokoyama, O., 1986. *Discourse and Word Order*. Philadelphia: John Benjamins.