

# Null Complement Anaphora and null object in Hebrew

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# Abstract

Null Complement Anaphora (NCA) constructions involve a covert clausal complement whose interpretation derives from an in-context element. This kind of complement was classified by Hankmar & Sag (1976) as deep anaphora, which means that it has no internal structure and was not created as a consequence of deletion. This element, they claim, is null at all stages of the derivation.

My goal is three-fold. First, I will examine the behavior of NCA in Hebrew and compare it to that of its English counterpart. I will show that NCA in Hebrew is a case of deep anaphora, just like in English.

Second, I will show that Doron's (2012) claim that Hebrew, in contrast to other languages that have been discussed in the literature, has a nominal NCA is untenable. I will argue that Hebrew is not different in this respect. The nominal construction does not show the syntactic behavior of an NCA. The null nominal, unlike the NCA, is an object that has been deleted in the course of the derivation under identity with a topic in SpecCP. The findings of an experiment I conducted show that the object does not raise to topic position prior to deletion (as originally suggested by Huang 1984 for Chinese), but is deleted in situ (as proposed by Ertechik-Shir et al (2013)).

Last, I will examine the Hebrew NCA in order to shed light on the question whether the NCA is syntactically realized as a pro-form or is represented only at the semantics. Dapiente (2000) claims that the NCA has a syntactic representation involving no internal structure. She claims that it shows a behavior similar to that of pro-forms, and is in fact a sentential null pro-form. In contrast, Grimshaw (1979) argues in favor of a semantic approach, where the complement is constructed only in

the discourse phase. I will provide evidence from Hebrew that weakens Grimshaw's (1979) semantic approach.

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# 1 The Phenomenon of NCA

## 1.1 Introduction

In general, an anaphor is an element, overt or covert, with an interpretation that depends on elements appearing in the same context. Over the years, linguistic literature has discussed several types of anaphora. The simplest and most common ones involve NPs that depend referentially on other NPs in the same sentence, see (1).

1. John doesn't like carrots, in fact **he** doesn't like vegetables at all.

In this sentence, the anaphora *he* refers to the NP *John*, that appears earlier in the sentence.

Another more complex case of anaphora occurs when we replace (or delete) a constituent inside the IP, the whole IP, the VP, or one of the V complements. One of these well-studied structures is labeled *Do-So* anaphora and is illustrated in (2).

2. John ate Pizza and Jane **did so** too.

In this sentence, we replaced the VP with the phrase *did so* which refers to the VP of the first clause. Similarly, we can build a structure where the VP is covert:

3. John wouldn't eat a pizza, but Jane would ~~eat a pizza~~.

In (3), the VP does not appear in the second clause, however, it is clear that the complement of the head I of the second phrase (*would*), is identical to the VP in the first clause (*eat*). This is termed a null anaphora. It is an anaphoric phrase that does not appear overtly, rather inheriting its meaning from another element in the sentence, in this case the VP itself. This phenomenon is called *VP Ellipsis (Deletion)*, and involves the deletion of a nonfinite VP introduced either by an auxiliary verb, or by the infinitival marker *to*.

In this paper, I will focus on structures that involve a covert complement with an interpretation deriving from an in-context element. In other words, constructions that involve a null complement that behaves as an anaphor. This phenomenon is known as **Null Complement Anaphora (NCA)**. Unlike cases of VP-ellipsis, here the covert element does not have to be a VP. A variety of constituents can be a Null Complement Anaphora (NCA), but the literature mostly concentrates on cases of sentential complements of verbs. Sentence (4) is an example of a NCA.

4. They asked her to stay but she refused  $\emptyset$ .  $\emptyset =$  to stay.

The Theta grid of the verb *refused* contains an obligatory Theme role. According to the Theta criterion (Chomsky 1981), each argument bears one and only one  $\theta$ -role, and each  $\theta$ -role is assigned to one, and only one, argument. In (4), we do not see the Theme argument of the verb *refused*, and yet the sentence is grammatical. The Theme of *refused* is implicit and is interpreted as identical to that of the verb *asked* in the first clause (*to stay*). The covert complement is represented here by  $\emptyset$ .

The phenomenon of NCA is distinct from that of VP-ellipsis. In the next section I will discuss the distinctions between the two phenomena.

## 1.2 NCA vs. VP-Ellipsis

At first glance, (4) looks similar to the VP Ellipsis case in (3). Both are heads with a null complement that gets its interpretation from a previous constituent. There are however a number of distinctions that separate VP Ellipsis from NCA. One of these is the fact that VP Ellipsis is restricted to the complements of the head I. The following are other distinctions between the two.

### 1.2.1 Pragmatic control

While the elided VP must have its antecedent in the sentence, a NCA can appear both with a linguistic antecedent and with a non-linguistic one. Shopen (1972) shows that an NCA can be pragmatically controlled (see (5)). In this case, the null complement anaphor gets its meaning from the non-linguistics context.

[Context: Moshe is trying to score a basket from distance.]

David:

5. I don't believe you'll succeed  $\emptyset$                        $\emptyset$  = to score a basket

In (5), the verb *succeed* has a null complement anaphor, which we interpret based on the non-linguistic context.

In (6), we show a case of VP-ellipsis. The context is the same as in (5), and David says:

6. # I don't think you will be able to  $\emptyset$                        $\emptyset$  = score a basket

In this case, unlike in (5), the elided VP is not interpreted based on the non-linguistic context. In sum, unlike the example of NCA illustrated in (5), VP Ellipsis must get its interpretation from the linguistic context.

### 1.2.2 Containing an antecedent

As first observed by Grinder and Postal (1971) and Bresnan (1971), a pronoun cannot co-refer to an alleged antecedent within an NCA. It can however refer to an antecedent within an elided VP.

Hankmar & Sag (1976) discuss the following example (the pronoun and antecedent are in boldface):

7a. \*He said that one of us had to give up his seat, so Sue volunteered  $\emptyset$ , because **it** was too narrow for her anyway.

$\emptyset$  = to give up **her seat**



Compare it to the grammatical full version below:

7b. He said that one of us had to give up his seat, so Sue volunteered to give up **her seat**, because **it** was too narrow for her anyway.

In (7b), unlike in (7a), the antecedent of *it* appears in the sentence and the latter refers to it. Similarly, in cases of VP Ellipsis, an element inside the elided VP can serve as antecedent:

8. I didn't give up my seat, but Sue did  $\emptyset$ , because **it** was too narrow for her anyway.

$\emptyset$  = give up **her seat**

In (8), *it* refers to an antecedent contained within the elided VP.

### 1.2.3 Extraction

Dapiente (2000) observes another distinction. He observes different behavior with regard to syntactic extraction. Consider sentences (9) and (10) below, involving extraction from the elided VP and the NCA, respectively.

9. I know which book Mary read and Peter knows which book Sally did  $\emptyset$ .

10. \* I know which book Mary volunteered to read and Peter knows which article Sally volunteered  $\emptyset$ .

The WH-movement out of the null complement in NCA constructions is impossible in (10), but a parallel movement out of an elided VP in (9) is grammatical.

We may conclude then, that VP Ellipsis and NCA are different phenomena<sup>1</sup>.

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<sup>1</sup> Hankmar & Sag (1976) claim that there is yet another distinction. They claim that while an elided VP must be syntactically identical to its antecedent, NCA does not have to be syntactically identical. But Merchant (2007) and Merchant (2008) shows that VP Ellipsis, too, does not have to be syntactically identical to its antecedent.

This paper will shed new light on the phenomenon of NCA, concentrating specifically on Hebrew, a language that has not yet been examined in this context.

In the next section, I will present the analysis of Hankmar & Sag (1976) and show how it explains the difference between the phenomenon of NCA and VP Ellipsis. I will also show that an NCA is a definite null complement, and not a matter of object drop. In section 3, I will examine which verbs allow an NCA, what type of complement the NCA can refer to, and how these properties fit the Hankmar & Sag's (1976) analysis. In section 4 I will present two possible models that explain the creation of an NCA. Section 5 presents the phenomenon of NCA in Hebrew. In section 6 I will examine the claim that Hebrew, in contrast to other languages, allow nominal NCA . I will show that the null objects that were claimed to be NCA behave differently than clausal NCA and will support different analysis for it.

## 2 NCA as a Deep anaphora Case

### 2.1 Deep vs. surface anaphora

Hankmar & Sag's (1976) seminal article on anaphora argues that NCA and VP-ellipsis constitute two distinct types of anaphora: **deep and surface anaphora**, respectively. The claim is that anaphora can be divided into two classes, according to whether they are formed in the course of the derivation or not (deletion vs. non-deletion). The distinction they propose is as follows:

1. *Surface Anaphora*. The anaphoric phrase is merged as a phonetically realized constituent, but deleted during the derivation.
2. *Deep Anaphora*. The anaphoric phrase is an element with no internal structure, and was not created as a consequence of deletion.

In other words, surface anaphors start out as a full constituent and undergo deletion in the course of derivation.. Deep anaphors, in contrast, do not have an internal makeup at any stage of the derivation. This raises the question what is the nature of the element that constitutes deep anaphora. Two options come to mind:

- A. Deep anaphora are a syntactic null element.
- B. Deep anaphora are not syntactically realized, but rather directly inserted into the semantic representation.

Hankmar & Sag (1976) do not take a clear stand as to whether option A or B is the correct one. this question will be discussed in depth in chapter 6.

Let us return to NCA and VP-ellipsis. With Hankmar & Sag's idea in mind, we can explain their different behavior, presented in section 1.2. As we recall, NCA is

considered to be a deep anaphora, while VP Ellipsis considered to be a surface anaphora.

## 2.2 Accounting for the distinctions between VP-ellipsis vs. NCA

Since surface anaphora involves full syntactic internal structure at some stage of the derivation, it may participate in processes that require syntactic realization. In contrast, since the deep anaphora does not have internal structure at any stage of the derivation, it cannot participate in these processes, but only in the ones that refer to non-decomposable semantic units.

This understanding allows us to explain the patterns of behavior we saw in the previous section:

1. **Extraction.** Extraction of an element out of an NCA results in ungrammaticality, while extraction from the elided VP is possible ((10) vs. (9) above, respectively). If the elided VP is deleted at the level of PF, as suggested by Ross (1969) and Chomsky (1995) among others, nothing prevents movement of a constituent out of it during the syntactic derivation. An NCA, in contrast, does not have an internal syntactic structure. Therefore, no element can be extracted out of it.
2. **Containing an Antecedent.** An element inside an elided VP can be the antecedent of a pronoun, but there does not seem to be a parallel element inside an NCA, see (7) vs. (8) above, respectively. Since an NCA is a deep anaphora, which has no internal makeup, it obviously cannot include an antecedent for a pronoun. the elided VP, on the other hand, is a surface anaphora, which has an internal structure and can include a noun phrase serving as antecedent for co-reference.
3. **Pragmatic Control.** As we saw above, an NCA can refer to the non-linguistic context, while an elided VP cannot. Hankmar & Sag (1976) suggest that only when deletion is involved, the null element has to be controlled directly by the linguistic

context. This is the case with VP Ellipsis, which must have a linguistic antecedent associated with it. An NCA, in contrast, as a non-deleted entity, can have its interpretation from any entity that is present in the context, whether it is a linguistic entity or an entity present in the non-linguistics context.

Hankmar and Sag (1984) propose that the above distinction is anchored in the procedure of processing. They hypothesize that sentence processing involves two kind of representations:

I. Representation of the sentence being processed, which is called Prepositional Representation.

II. Representation of the discourse and world knowledge.

While an NCA can be interpreted based on content that appears in either of these representations, an elided VP must be interpreted based on the representation of the sentence.

To sum up, Hankmar & Sag (1976) and Dapiente (2000) show that NCA cannot include an element able to participate in co-reference relationship, and does not allow extraction of any element out of it. In addition, it does not have to be associated with an entity in the sentence. These facts led them to the conclusion that NCA does not have an internal structure, and is not the result of a deletion process. In the next section, I will shed some light on the interpretation of NCA's.

## **2.3 Specific null complement**

We have seen that cases of NCA differ substantially from cases of VP-ellipsis. It is important to note here that cases of NCA cannot be considered instances of object drop of the type allowed by various verbs such, eat, *drink*, *read* among others.

Hankmar and Sag (1976) and Fillmore (1986) discuss an additional type of distinction among the set of covert complements: a definite null complement vs. an indefinite null complement. The former must be retrieved from something in the context, and is, therefore, definite, while the reference of the latter is unknown.

Consider (11) below from Hankmar & Sag (1976).

11. I play cards and shoot dice, and my wife doesn't approve.

In (11), the null complement of the verb *approve* is retrieved from the context, as the meaning is that the speaker's wife doesn't approve of playing cards and shooting dice. (11) is a case of NCA, and it falls under the definite complement case, since its meaning is retrieved from the context.

Compare it to (12), also from Hankmar & Sag (1976).

12. I bring him soup and potatoes, but he won't eat.

In (12), the complement of the verb *eat* is null and is not retrieved from the context, since the sentence means he won't eat anything, not just soup and potatoes. Its complement is not a specific one.

So, while *approve* in (11) allows an NCA, *eat* in (12) doesn't allow NCA. It turns out that certain verbs allow NCA while others do not. Section 3 will discuss the distribution of NCA constructions in more depth.

# 3 Distribution

## 3.1 Lexical Information

The set of verbs that enable NCA is discussed in length in the literature. Fillmore (1986) points out that definite null complements are restricted to particular lexical items, and even to a particular meaning of these items. Consider (15). Even if the hearer is concerned only in one particular door, (13) will still be ungrammatical:

13. \*Did you lock?

This is because *lock* is not a verb that allows definite null complements. In contrast, the verb *won* seems to allow it, but just for one of its meanings. *won* can mean won the competition / the race / the election, or won the second prize, the silver medal etc.

Fillmore claims that only when using *won* in the first sense, i.e. won a competition, (14) is possible. For any other use of *won* such as winning a prize, the use of (14) is unacceptable.

14. He won!

Thus, it seems that definite null complements are not only verb specific, but also verb-meaning specific.

The restricted group of verbs that can bear definite null complements cannot be distinguished by its concept. Two verbs with similar concepts can differ in their ability to enable a definite null complement. This conclusion can be reached based on the different grammatical status of the following sentences:

Q: Why did you marry her?

15. Because mother insisted.

16. \*Because mother demanded.

Fillmore gives a few more examples of pairs of verbs with the similar meanings where one enables null complement but the other doesn't. For example, *found out* and *discovered*, and *promised* and *vowed*, where the former allows null complement and the latter doesn't.

This division suggests that the ability to take a NCA is verb-meaning specific and is unrelated to the semantic content. For that reason, this ability cannot be generalized by a syntactic rule.

With this in mind, we can conclude that the option to take a null complement is encoded within each verb.

It has already been suggested that verbs impose various selectional restrictions on their internal arguments (see Chomsky 1965). We may now expand it to +/- nullability, which determines whether a specific argument in a specific meaning of verb can be null or not. Note that this idea by itself won't be enough, because a verb can allow a null complement and still disallow an NCA, as we saw in (12) in section 2.3. We still have to explain why the verb *approve* in (11) allows NCA, while *eat* in (12) doesn't, and both can have a null complement.

### 3.2 Complement Types

It is commonly claimed that an NCA cannot be a DP. Examples are the verb *know* in (17) and (18). The latter can take either a CP or a DP as complement, but its NCA can refer to a sentential complement only (Dapiente 2000).

17. The teacher told the children that it was time to leave even though they already knew  $\emptyset$

18 \*The children learned the song on Monday but on Friday they no longer knew  $\emptyset$



In (17),  $\emptyset$  is a sentential complement, while in (18) it is a nominal one. The different grammatical status of (17) and (18) results from the fact that in (17), the NCA refers to a proposition, while in (18) it refers to a noun phrase.

Even in sentences like (19), where the NCA might at first glance appear to be nominal, it is actually a sentential complement. According to Grimshaw (1979),  $\emptyset$  here is not "the time", but rather "what time it was", which is sentential.

19. Mary asked the time, so I inquired  $\emptyset$

This is so because *inquired*, the verb introducing the NCA in (19), cannot take the nominal *the time* as a complement, but only the sentential one *what the time was*, as shown in (20).

20 a. \*Mary inquired the time.

b. Mary inquired what the time was.

Haynie (2009) argues that unlike DP, PP can be an NCA, as illustrated in (21).

21. The board considered the new proposal but half of the members objected  $\emptyset$

$\emptyset$  = to the new proposal

In (21), the NCA is a PP. So, while it can be a CP as we saw earlier, or a PP, it seems it cannot be a DP.

In section 6, I will examine examples from Hebrew that shed more light on this DP restriction. In the next section, I will present two models that propose an answer to the question whether or not NCA is represented in the syntax, based on the attributes we have seen up to now.

## 4 Approaches to the NCA

As mentioned in section 2.1, Hankmar & Sag (1976) left the question whether NCA is represented in the syntax or not, unanswered. Few researchers have tried to answer this question. In general, there are two main approaches, which are divided on the question whether NCA has a syntactic realization or not. Dapiente (2000) advances a syntactic approach, which claims that NCA does have syntactic realization. This approach will be discussed in section 4.1. On the other hand, Grimshaw (1979) suggests a semantic approach, which claims that NCA does not have syntactic realization, as discussed in section 4.2.

### 4.1 The syntactic approach

Dapiente (2000) claims that NCA has a syntactic representation, which involves no internal structure. His claims are based on the fact that pro-forms exhibit the same behavior as NCAs.

He compares NCAs to the pro-forms *it* and *so*, illustrated in the examples below.

22. Mary believes that Anne is pregnant but I don't believe it.

23. Mary think that Susan is a liar but I don't think so.

First, Dapiente shows that a pronoun cannot have its antecedent within the pro-form as shown in (24), just like an NCA construction, see (7)m repeated as (25) below.

24. \*My uncle has never ridden a camel, but his brother finally managed it, although **it** was lame. [it=camel] (Bresnan 1971)

25. \*He said that one of us had to give up his seat, so Sue volunteered  $\emptyset$ , because **it** was too narrow for her anyway.

$\emptyset$  = to give up **her seat**

Second, extraction out of a pro-form is impossible, as show in (26b), the same way it is impossible in the case of NCA , see (10), repeated as (27).

26a. Mary believes that John read a book and I also believe it.

26b \* I remember which book Mary believes that John read t but Mary doesn't remember which book I believe it.

27. \* I know which book Mary volunteered to read and Peter knows which article Sally volunteered  $\emptyset$ .

In (27), we tried to extract an element from the null complement of *volunteered*, which resulted in an ungrammatical sentence. In the same way, we tried to extract an element from pro-form it in (26b), that was derived from (26a).

Indeed, pro-forms behave on a par with NCAs with regard to extraction and the ability to contain an antecedent. However, this does not help us decide whether NCA is realized syntactically or only at the semantic representation. These characteristics only show that both pro-forms and NCAs do not have any internal structure. The question that remains is whether this is so because they are syntactic categories with no internal makeup, or rather semantic elements with no syntactic realization (which obviously would not have internal makeup either).

Dapiente also mentions that pro-forms, just like NCAs, can have a pragmatic control.

Dapiente (2000) gives (28) as an example of pragmatic control of the pro-form *it*.

[Context: Mary sees John during commencement, finally getting his diploma]

Mary:

28. I don't believe it.

The sentential pro-form *it*, refers to a non-linguistic eventuality of John getting his diploma. (5) repeated as (29) illustrate the same for NCA

[Context: Moshe is trying to score a basket from distance.]

David:

29. I don't believe you'll succeed  $\emptyset$                        $\emptyset$  = to score a basket

Given Hankmar & Sag's proposal that only deleted phrases require linguistic control is on the right track, then the fact that pro-forms allow pragmatic control just like NCAs follows directly if the former (just like the latter) do not involve deletion. Yet, this does not help us decide whether or not NCA is syntactically realized.

## 4.2 The semantic approach

Grimshaw (1979) suggests that the NCA does not have a syntactic realization at all. She illustrates her analysis with (30).

30. Question: Has the mayor resigned?

Response: I don't know.

The response in (30) is interpreted first by lexical selection and rules of sentence grammar, yielding an empty complement position for *know*. Under this analysis, the verb *know* has no complement in the syntactic representation, not even a null one. It just has an empty slot, that requires a specific type of complement according to the verb properties. This complement is constructed only in the phase of Logical Form, which is a discourse phase.

Then, she claims, the distinction between verbs that allow an NCA and verbs that don't, can be explained in terms of subcategorical selection. Compare the verb *know* in (30), to the verb *discover* in (31), from Grimshaw (1979).

31. Question: Has the mayor resigned?

Responses: \*I haven't discovered yet.

I don't know.

While the verb *know* enables NCA, the verb *discover* doesn't. Grimshaw suggests, that this is so due to the fact that certain verbs, such as *know*, take an optional CP while others, e.g., *discover*, demands an obligatory CP, see (32):

32. know [\_ (CP)]

discover [\_CP]

Grimshaw, however, does not provide evidence in favour of her approach.

In section 7, I will claim against Grimshaw's analysis using examples from Hebrew. In the next section, I will discuss NCA constructions in Hebrew, and examine whether they behave like NCA constructions in the English examples from the previous sections.

## 5 NCA constructions in Hebrew

### 5.1 Examples of NCA in Hebrew

Doron (2012) introduced few cases of NCA in Hebrew. She gave examples of sentential complement of verb, see (33), sentential complement of P, see (34), and DP complements of verb, see (35).

33.  $\emptyset$  רציתי לפתוח את היין, אבל אימא לא מרשה  $\emptyset$  לפתוח את היין =  $\emptyset$

*ratziti li-ftoax et ha-yayin aval ima*  
want.PAST.1S to-open ACC the-wine, but mom

*lo marša*  
not allow.PRES.FS

‘I wanted to open the wine, but mom does not allow  $\emptyset$ ’  $\emptyset$  = to open the wine

34.  $\emptyset$  תמיד תחשוב לפני שאתה מדבר, לא תוך כדי  $\emptyset$  שאתה מדבר =  $\emptyset$

*tamid taxšov lifney še-ata medaber, lo tox kede*  
always think.FUT.2MS before that-you talk, not while

‘Always think before you talk, not while  $\emptyset$ ’  $\emptyset$  = you talk

35. הבאתי בקבוק יין. תודה, שים  $\emptyset$  על השולחן. את בקבוק היין =  $\emptyset$

*heveti bakkbuk yayin. toda, sim al ha-šulxan*  
bring.PAST.1S bottle.CNSTR wine. thanks, put.IMP.2MS on the-table

‘I brought a bottle of wine. thanks, put  $\emptyset$  on the table.’  $\emptyset$  = the wine bottle

While (33) and (34) are examples of NCA that refers to sentential complements, Doron (2012) gives (35) as an example of NCA that refers to a nominal complement. In section 3.1 we saw that it is widely claimed in the literature that NCA cannot refer to a DP in English, so this example of DP as NCA in Hebrew demands a deeper look.

First, we must make sure that (35) is indeed an NCA structure. The theta grid of the verb *sim* contains two obligatory complements - Theme and Location. The Location argument of *sim* is *al ha-šulxan*, but there is no overt Theme argument, and yet the sentence is grammatical. The Theme here is interpreted as identical to that of the verb *heveti* in the first clause, that is, *bakbuk yayin*. It is not a case of indefinite complement drop. The complement here is known and refers to element that appears in the text, meaning, it is definite.

It seems that (35) is indeed a case of an NCA that refers to a DP. I will examine this difference in behavior between English and Hebrew in my work.

In section 1, we discussed three attributes of NCA, resulting from its nature as elements with no internal structure that wasn't created by deletion:

1. NCA elements can be pragmatically controlled.
2. NCA elements can't contain antecedent.
3. We can't extract element from an NCA.

I will first examine the first attribute. We saw on section 1.2.1, that an NCA can get its meaning from element that exists in the non-linguistic context. (36) show that it is valid also in Hebrew.

[Context: Moshe stands with the ball in front of the basket and prepare to throw]

David says:

36. אתה לא תצליח ∅

*ata lo tacli'ax*  
you no succeed.FUT.2MS

'You will not succeed.'

The complement of the verb *tacli'ax*, which is null, is interpreted by the context - you won't succeed in scoring a basket. The null complement here is anaphoric to an envisioned event not mentioned in the sentence.

This example suggest that NCA can get its interpretation from a non-linguistic context also in Hebrew<sup>2</sup>.

In the section 5.3, I examine the other two characteristics of NCA constructions. Prior to that however, I will set apart NCA constructions and VP-Ellipsis cases in order to be able to compare their behavior regarding these characteristics.

## 5.2 Ellipsis in Hebrew

Based on the adverb placement<sup>3</sup> among other behaviors, Doron (1990) assumes that V raises to I in Hebrew and therefore VP-Ellipsis cases include phonetically realized verb.

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Hebrew VP-ellipsis is different than its English counterpart and cannot be tested with regard to <sup>2</sup> pragmatic control. That is relates to the ungrammaticality of VP-Ellipsis with auxiliary in Hebrew, as I will explain in note 4 in section 5.2. The absence of first clause in pragmatic control cases, will make it difficult to determine that it is indeed VP-Ellipsis case if the auxiliary do not exist.

<sup>3</sup> Hebrew allow adverbs to intervene between the verb and its complement, in contrast with English, where adverbs are to the left of the adverb. Sentences (2a-b) in English and the parallel sentences (3a-b) in Hebrew, show this different behavior between the languages. Assuming the adverb occupies the spec VP position, which is the most left border of the VP, this behavior is considered to be an evidence that the verb moved to I position in Hebrew, but not in English.

(2) A. He often comes to university parties.

B. \* He comes often to university parties.

(3) A. הוא מגיע לעיתים קרובות למסיבות אוניברסיטה.

hu magia le-itim krovot le-mesibot oniversita.

He comes often to parties-University



In VP-Ellipsis in Hebrew, the verb moves to I, and then the VP is deleted. See (37) from Doron's paper.

37. שלחת את הילדים לבית הספר? שלחתי.

<i>šalaxt</i>	<i>et</i>	<i>ha-yeladim</i>	<i>le-beyit ha-sefer?</i>	<i>šalaxti</i>
send.PAST.2FS	ACC	the-kids	to-the school?	send.PAST.1S

'Did you send the kids to school? I did'

In the 'answer' in (37), the verb moves to I and then all the VP is removed. The parallel question in English would be answered 'I did', just like we see in the translation. This is because the verb does not move to the I position, and is not removed.

Thus, in cases of VP-Ellipsis, in languages where the verb move to I like Hebrew, the verb introducing the ellipsis must be the same verb as the verb in the remnant<sup>4</sup>. If

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He Often comes to University parties.

B. .הוא לעיתים קרובות מגיע למסיבות אוניברסיטה.

He often comes to University parties.

As we can see by comparing (2A) to (2B), In English the verb is in the right of the adverb. On the other hand, in Hebrew, the verb is in the left of the adverb. This kind of evidence support the claim that in Hebrew there is a V-to-I movement, while in English there is no such movement.

<sup>4</sup> Otherwise we will not be able to prove that this is case of ellipsis. Auxiliaries won't help: in Hebrew, VP-ellipsis is ungrammatical with auxiliary. Sentence (1) is an example of such case.

1. יוסף היה הולך כל בוקר לבית קפה, וגם דוד היה.\*

yosef haya holex kol boker le-bet kafe, ve-gam david haya

Josef was-PAST.3S.M walk.PROGRESIVE.3S.M every morning to coffee, and also David was

'Josef was walking every morning to a coffee, and David was too'.

This limited auxiliary appearance makes the cases in which the verb move to I, the only plausible way to show ellipsis in Hebrew.

another verb is used as an answer, it is not a case of ellipsis, but rather of NCA, as I will show in the next section.

### 5.3 NCA vs. VP Ellipsis in Hebrew

With this in mind, we can compare VP Ellipsis to NCA in Hebrew with regard to attributes 2 and 3 that was mentioned above - the ability to contain an antecedent and the ability to extract an element from it.

#### 5.3.1 Containing an antecedent

As I mentioned in section 1.2.2, in English, a pronoun cannot co-refer to an alleged antecedent within an NCA ((7) above), while it can co-refer to an elided VP ((8) above).

(38) and (39) demonstrates such cases with NCA and VP Ellipsis, respectively, in Hebrew.

38. \*הוא אמר שאחד מאיתנו חייב לוותר על המושב שלו, אז סו התנדבה ס, כי הוא היה ממילא

צר מדי עבודה

<i>hu</i>	<i>amar</i>	<i>še-exad</i>	<i>me-itanu</i>	<i>xayav</i>	<i>le-vater</i>
he	say.PAST.3MS	that-one	of-us	must.PRESENT.3MS	to-give.up

<i>al</i>	<i>ha-mošav</i>	<i>šelo,</i>	<i>az</i>	<i>Sue</i>	<i>hitnadv,</i>	<i>ki</i>
on	the-seat	his,	so	Sue	volunteered.PAST.3FS	because

<i>hu</i>	<i>haya</i>	<i>mimele</i>	<i>tsar</i>	<i>miday</i>	<i>avura</i>
he/it	was	anyway	narrow too	for	her

'He said that someone had to give up his seat, so Sue volunteered, because it was too narrow for her anyway'.

39. לא ויתרתי על המושב שלי, אבל סו ויתרה, כי הוא היה צר עבורה בכל מקרה.

*lo vitarti al ha-mošav šeli, aval Sue*  
not give.up.PAST.1S on the-seat my, but Sue  
*vitra, ki hu haya car avura be-xol mikre*  
give.up.PAST.3FS, because it was narrow for-her anyway

'I didn't give up my seat, but Sue did, because it was too narrow for her anyway.'

In (38), the pronoun *hu* refers to an alleged antecedent within the NCA - the null complement of *hitnadva*. This sentence is grammatically controversial, and is parallel to (8) above, which claimed to be ungrammatical. However, Hankmar & Sag (1976) also note that "missing antecedent judgments are admittedly delicate", this seems to be valid in Hebrew too.

I propose that this parallelism effect is what makes the sentence controversial.

Callahan, Shapiro & Love (2010) suggested that in conjunction sentences, the first clause material, the subject, the verb and its' complements, are re-activated in the second clause. The conjunction word, usually "and", is the trigger for the re-activation. This stays activated until the processor finds a place to "put" this material.

It might be that in (38), what helps the reader identify *it* in the last clause as "her seat", is in fact the phrase "his seat" in the first clause, and not the possible existence of the complement of the verb volunteered in the second clause.

On the other hand, (39) is perfectly good. The pronoun *hu* co-refers to an antecedent within an elided VP, and the sentence is perfectly grammatical. Just like in the English case, the pronoun can refer to an antecedent within an elided VP, and the sentence is grammatical.

### 5.3.2 Extraction

As discussed in section 1.2.3, with regard to English, while a WH-movement out of an elided VP is possible (see (9) above), a parallel movement out of an NCA will result in an ungrammatical sentence ((10) above).

Indeed, extraction out of the NCA in (40) result in ungrammaticality, as shown in (41).

40. דינה התנדבה להכין פסטה בולונו וגם דוד הסכים

*dina hitnadva le-haxin pasta bolonez ve-gam*  
Dina volunteer.PAST.3FS to-prepare pasta Bolognese and-also

*david hiskim*

David agree.PAST.3MS

'Dina volunteered to prepare pasta Bolognese and David also agreed.'

41. \*אני יודע איזה פסטה דינה התנדבה להכין, ושני יודעת איזו פסטה דוד הסכים Ø

*ani yode'a eize pasta dina hitnadva lehaxin,*  
I know.PRES.1S which pasta Dina volunteer.PAST.3FS to-prepare,

*ve-šani yoda'at ezo pasta david hiskim*  
and-šani know.PRES.3FS which pasta David agree.PAST.3MS

'I know which pasta Dina volunteered to make, and Shani knows which Pasta David agreed'

In contrast, the elided VP? (which contains the same verb in the two clauses) allows a parallel extraction, see (42).

42. אני יודע איזו פסטה דינה הסכימה להכין, ושני יודעת איזו פסטה דוד הסכים

*ani yode'a eize pasta dina hiskima le-haxin,*  
I know.PRES.1S which pasta Dina agree.PAST.3FS to-prepare,

*ve-šani yoda'at ezo pasta david hiskim*  
and-šani know.PRES.3FS which pasta David agree.PAST.3MS

'I know which pasta Dina agreed to prepare, and Shani knows which Pasta David agreed'

In sum, the behavior of VP-Ellipsis and NCA in Hebrew is just like their behavior in English, as presented in section 1.2.2 and 1.2.3.

In the next section, I will examine Doron's(2012) claim that Hebrew, in contrast to other languages, allow nominal NCA. I will falsify her analysis and will claim that Hebrew do not allow nominal NCA. I will examine alternative analyses of these null objects and will support one of them.



44. מעולה, שים  $\emptyset$  על השולחן

*me'ule, sim  $\emptyset$  al ha-šulxan*  
great, put.IMP.2MS on the-table

‘Great, put (it) on the table.’

As (44) illustrates, a null nominal complement is possible since it can get its interpretation from the non-linguistic context, just like we found for NCA. In the next section, I will compare the behavior of null nominal objects to that of clausal NCA in Hebrew and show that they behave differently.

## 6.1 Null Nominal Object vs. Clausal NCA in Hebrew

In this section, I will compare the behavior of the Hebrew null nominal object with that of the clausal null complement.

### 6.1.1 Secondary predication

A secondary predicate is possible only with elements that are syntactically realized (see Rothstein 2016 for an overview of secondary predication and the secondary predication test). Sentences (45) - (47) demonstrate this claim.

45a. גיון אכל את הגזר

*John axal et ha-gezer*  
John eat.PAST.3MS ACC the-carrot

‘John ate the carrot.’

45b. גיון אכל את הגזר מבושל

*John axal et ha-gezer mevušal*

John eat.PAST.3MS ACC the-carrot cooked

‘John ate the carrot cooked.’

46. גיון; הבטיח [PRO<sub>i</sub> לנהוג פיכח]

*John hivti'ax [linhog pike'ax]*

John promise.PAST.3MS to.drive sober

‘John<sub>i</sub> promised [PRO<sub>i</sub> to drive sober].’

47. \*החדר נוקה יחף

*ha-xeder nuka yaxef*

the-room clean.PASS.3MS barefoot

‘The room was cleaned barefoot.’

Sentence (45b) shows that the secondary predicate *mevušal* can be realized because the object, *ha-gezer*, is phonetically realized. In (46), we see that it does not have to be phonetically realized, but it must be syntactically realized – the covert subject PRO is syntactically realized, and can serve as an antecedent to the secondary predicate *pike'ax*. In sentence (47), the secondary predicate *yaxef* refers to the demoted agent of a passive verb, resulting in ungrammaticality. This is due to the fact that the agent is not syntactically realized, and therefore it cannot serve as an argument to a secondary predicate.

Sentences (45) - (47) show that a secondary predicate is possible only with a syntactically realized argument. Now consider (48), which illustrates a secondary predicate of a null nominal object in Hebrew.

48. ש : הבאת דג מהסופר כמו שביקשתי ממך ?

Q: *heveta dag me-ha-super kmo še-bikašti mimxa?*

bring.PAST.2MS fish from-the-supermarket like that-asked.1S from.you?



‘Q: Did you bring a fish from the supermarket like I asked you to?’

ת: כן, אבל קניתי  $\emptyset$  קפוא כי נגמרו להם הדגים הטריים

A: *ken, aval kaniti  $\emptyset$  kafu ki nigmeru*  
 yes, but buy.PAST.1S frozen because finish.PASS.3PL  
*lahem ha-dagim ha-triyim*  
 to-them the-fish.PL fresh.PL

‘A: Yes, but I bought frozen because they ran out of fresh fish.’

The secondary predicate *kafu* is possible with the null nominal complement of the verb *kaniti*. It indicates that this complement is syntactically realized.

Sentence (49) is an example of a secondary predicate with a null clausal complement.

49. לוסי ביקשה ממקס לקנות דג, אבל מקס סירב \* (לקנות דג) קפוא  
*Lucy bikša mi-Max liknot dag, aval Max serev*  
 Lucy ask.PAST.3FS from-Max to-buy fish, but Max refuse.PAST.3MS  
*(liknot dag) kafu*  
 (to-buy fish) frozen

‘Lucy asked Max to buy fish, but he refused (to buy fish) frozen.’

As we can see in (49), omitting the clausal complement of the verb *serev* makes the sentence ungrammatical, indicating that a secondary predicate is impossible with a null clausal complement. This is reasonable if we are taking into consideration the fact that a clausal NCA in Hebrew has no internal structure, as I showed in section 5.3. Thus, when the secondary predicate refers to an element that is within the clause, ungrammaticality is expected.

Comparing (48) with (49) leads us to the conclusion that the clausal NCA and the null nominal object behave differently regarding secondary predication - while the null nominal object allows secondary predicates, the clausal NCA does not.

Nevertheless, while (48) indicates that the null nominal object in Hebrew has a syntactic realization, (49) does not necessarily mean that the clausal NCA does not have a syntactic realization as null pro-form. It simply indicates that the clausal NCA does not have internal structure. The question of whether the clausal NCA has a syntactic realization as an empty clausal category will be dealt with in Chapter 7, but for the null nominal object, it seems clear that it is syntactically realized.

In the next two sections, I will show that not only does the null nominal object in Hebrew have a syntactic realization, but in addition, its realization has an internal structure, in contrast to the Hebrew clausal NCA. This difference is a significant one and will lead us to analyze these two phenomena differently.

### 6.1.2 Containing an antecedent

In section 5.3.1 we saw that sentences with a pronoun that co-refer to an alleged antecedent within an NCA are grammatically controversial. Sentence (38), repeated as (50) below, demonstrates this claim.

50. ??הוא אמר שאחד מאיתנו חייב לוותר על המושב שלו, אז סו התנדבה ס, כי הוא היה ממילא.

צר מדי עבודה

<i>hu</i>	<i>amar</i>	<i>še-exad</i>	<i>me-itanu</i>	<i>xayav</i>	<i>le-vater</i>
he	say.PAST.3MS	that-one	of-us	must.PRESENT.3MS	to-give.up

<i>al</i>	<i>ha-mošav</i>	<i>šelo,</i>	<i>az</i>	<i>Sue</i>	<i>hitnadv,</i>	<i>ki</i>
on	the-seat	his,	so	Sue	volunteered.PAST.3FS	because

<i>hu</i>	<i>haya</i>	<i>mimele</i>	<i>tsar</i>	<i>miday</i>	<i>avura</i>
he/it	was	anyway	narrow too	for	her

‘He said that someone had to give up his seat, so Sue volunteered, because it was too narrow for her anyway.’

In (50), the pronoun *hu* refers to an alleged antecedent within the NCA - the null complement of *hitnadva* - thus yielding controversial judgments. I explained these controversial judgments via the parallelism effect and compared it to VP-Ellipsis sentences where such co-reference is perfectly grammatical (see section 5.3.1). Null nominal objects with parallel co-reference are also perfectly grammatical, as (51) shows.

המורה לעיצוב ביקש מהתלמידים להביא למחר פריט לבוש של המעצבת האהובה עליהם. אז. א  
מקס הזמין ∅ מהאתר הרשמי כי מכרה פריטים רק שם

*ha-more le-itsuv bikeš me-ha-talmidim le-havi*  
the-teacher for-design ask.PAST.3MS from-the-students to-bring

*le-maxar parit levuš šel ha-me'atsevet ha-ahuva alehem.*  
for-tomorrow item attire of the-designer the-loved on-them.

*az Max hizmin me-ha-atar ha-rišmi ki hi*  
so Max order.PAST.3MS from-the-site the-official because she

*maxra pritim rak šam*  
sell.PAST.3FS items only there

‘The design teacher asked the students to bring an item of clothing from their favorite designer for tomorrow. So Max ordered ∅ (it) from the official site because she sold items only there.’

In (51), the pronoun *hi* refers to an antecedent, *parit levuš šel ha-me'atsevet ha-ahuva alav* (‘an item of clothing from his favorite designer’), within the null object of *mazmin* (‘order’). The grammaticality of sentence (51) indicates that in Hebrew a null nominal

object has an internal syntactic structure. This stands in contrast to the controversial judgments we saw for clausal NCA in Hebrew.

The fact that a pronoun can refer to an antecedent within a null nominal object shows that not only does the null nominal object in Hebrew have a syntactic realization - its realization has an internal structure. For the clausal NCA, while its syntactic realization is still in question, it has been shown that it has no internal structure (see section 5.3 above and Dapiente's (2000) proposal elaborated in section 4.1). This different attribute of the null nominal object and the clausal NCA leads us to conclude that these are two different phenomena.

So what is the correct analysis of the null nominal object in Hebrew? Huang (1984) discusses the null object in Chinese and analyzes it as a zero topic. In the next section, I will present his analysis and show that what was considered by Doron (2012) to be a nominal NCA in Hebrew behaves more like a zero topic.

## 6.2 Huang's proposal - Zero Topic

Huang (1984) proposes an analysis of empty pronouns in Chinese. His analysis relies on the differences between languages as to how freely they enable dropping arguments. Chinese, for example, is a radical pro-drop language, which is at the most liberal end of the scale, because it allows dropping arguments quite freely. On the other hand, English is a 'no pro-drop' language, which is at the most conservative end of the scale, because in general it does not allow dropping arguments. Hebrew is considered a partial pro-drop language since it allows dropping arguments in certain configurations but not in others.

Huang gives the following examples of argument drop in Chinese:

52. Speaker A: *Zhangsan kanjian Lisi le ma?*  
Zhangsan see Lisi le Q

'Did Zhangsan see Lisi?'

- a. *ta kanjian ta le*  
he see he le

'He saw him'

- b. *e kanjian ta le*

'[He] saw him'

- c. *ta kanjian e le*

'He saw [him]'

- d. *e kanjian e le*

'[He] saw [him]'

- e. *wo cai [e kanjian e lej]*  
I guess see le

'I guess [he] saw him'

- f. *Zhangsan shou [e kanjian e lej]*  
Zhangsan say see le

'Zhangsan said that [he] saw [him]'

As is clear from (52), the subject can be omitted in the matrix clause (52b) as well as in the embedded one (52e). In (52c) the object is omitted, and in (52d-e) both the subject and the object are dropped. These omissions are possible only when the omitted element (or elements) constitutes a topic in the discourse. Huang defines topic simply as 'someone or something that a given discourse is about'. Below I explain Huang's analysis of the zero object, which is relevant to this work.

Huang shows that there is a certain restriction on the distribution of zero object anaphora. Compare (53a) to (53b):

53a. *Zhangsan shuo [Lisi bu renshi e]*  
 Zhangsan say Lisi not know

'Zhangsan said that Lisi did not know [him]'

53b. *Zhangsan shuo [Lisi bu renshi ta]*  
 Zhangsan say Lisi not know him

'Zhangsan said that Lisi did not know him'

Both (53a) and (53b) are grammatical - but while *him* in (53b) can refer to the matrix subject *Zhangsan*, the empty object in (53a) must refer to someone other than *Zhangsan* who is a topic in the discourse. This distinction has led Huang to the conclusion that a zero object cannot be bound by an argument in an A-position. Just like in structures of topicalization, a null object is bound by an element in A'-position. An example of topicalization is shown in (54).

54. *neig ren<sub>i</sub>, Zhagsan shou [Lisi bu renshi e<sub>i</sub>]*  
 that man, Zhangsan said Lisi not know

'That man<sub>i</sub>, Zhangsan said Lisi didn't know e<sub>i</sub>'

In (54), an object underwent topicalization, and the null object refers to the element *that man* in the topic position. Chinese enables omitting the topic after it has undergone topicalization. (55) demonstrates the result of such removal:

55. [<sub>Top</sub> e<sub>i</sub>] [*Zhangsan shou [Lisi bu renshi e<sub>i</sub>]*]  
 Zhangsan say Lisi not know

'\*[Him], Zhangsan said that Lisi didn't know'

Note that (54) and (55) are similar in that in both sentences, the empty object refers to the topic of the sentence - not to the matrix subject. In (54) this topic is overt, while in (55) this topic is covert. Since Chinese is a radical pro-drop language, it enables the topic to be omitted if it exists in the context. As we will see in the next section, Hebrew, which is a partially pro-drop language, also allows zero topics.

So what type of empty category is this element? Since this omitted object cannot be bound by an element in an A-position and is bound by an element in A'-position, it is a variable.

In the next section, I will try to analyze the null nominal object in Hebrew, relying on the analysis that Huang suggests for Chinese.

### 6.2.1 Zero topic in Hebrew

Let me now return to a null nominal object in Hebrew and examine whether it behaves like a zero topic. Consider (44), repeated as (56) below.

[Context: Max stands outside the door with a bottle of wine. Lucy opens the door and says:]

56. מעולה, שים  $\emptyset$  על השולחן  
*me'ule, sim  $\emptyset$  al ha-šulxan*  
 great, put.IMP.2MS on the-table

‘Great, put (it) on the table.’

(57) depicts its structure under Huang's (1984) analysis.

57. *me'ule, [e;] sim e<sub>i</sub> al ha-šulxan*

If it is a zero topic as in Chinese, then the direct object of the verb *sim* must have undergone topicalization and was then deleted in the topic position.

In section 6.1.1, I showed that null objects enable secondary predication. Under Huang's analysis, it is easy to explain this attribute. The null object enables secondary predication since it is syntactically realized.

Furthermore, just like in Chinese (see example (52a)), the null object in Hebrew cannot be bound by an argument in A-position. Consider (58):

58a. מקס אמר שלוסי לא מכירה  $\emptyset$

<i>max</i>	<i>amar</i>	<i>še-Lucy</i>	<i>lo</i>	<i>makira</i>	$\emptyset$
Max	say.PAST.3MS	that-Lucy	not	know.PAST.3FS	

'Max said that Lucy doesn't know  $\emptyset$ '

58b. מקס אמר שלוסי לא מכירה אותו

<i>max</i>	<i>amar</i>	<i>še-Lucy</i>	<i>lo</i>	<i>makira</i>	<i>oto</i>
Max	say.PAST.3MS	that-Lucy	not	know.PAST.3FS	him

'Max said that Lisa doesn't know him'

In (58a), the object of *makira* is covert and the only possible referent of its null object is someone (or something) that is a topic in the discourse, but not the matrix subject *Max*. In (58b), unlike in (58a), the object of *makira*, *oto*, is overt, and can refer to both the matrix subject *Max* and to someone other than Max that is a topic in the discourse. This behavior is parallel to that of the zero topic in Chinese illustrated in (53b). That is, the null object behaves on par with topicalized objects as illustrated in (59).

59. את האיש הזה, מקס אמר שלוסי לא מכירה  $\emptyset$



<i>et</i>	<i>ha-iš</i>	<i>ha-ze,</i>	<i>max</i>	<i>amar</i>	<i>še-Lucy</i>
ACC	the-man	the-that,	Max	say.PAST.3MS	that-Lucy

<i>lo</i>	<i>makira</i>	$\emptyset$
not	know.PAST.3FS	

'That man, Max said that Lisa doesn't know  $\emptyset$ '

In (59), the object of *amar* was topicalized. In both (58a) and (59), the empty object refers to the topic of the sentence and not to the matrix subject. But while in (59) the topic is overt, in (58a) the topic is covert. The idea would be that just as in Chinese, also in Hebrew both sentences were derived in the same way - by topicalization. But while in (59) the topic remains in topic position, in (58a) it was removed, which is possible due to its existence in the context.

In this section, I showed that what was claimed by Doron (2012) to be a nominal NCA in Hebrew, behaves more like a null object in Chinese. In section 6.1.2, I showed that the null nominal object has internal syntactic structure. One option is indeed that, along the lines of Huang's analysis, the Hebrew null object is the trace (copy) of the topic that has moved to topic position and has been removed there. But another possibility could be that the null object is deleted in situ (again, its internal structure is available in the syntax). In the next section, I will present the analysis of Erteschik-Shir, Ibnbari & Taube (2013) that advances this second option.

### 6.3 Erteschik-Shir et al. proposal

Erteschik-Shir et al. (2013) suggest an analysis of the null object in Hebrew which they label Topic Drop. They start by dividing discourse topics into two groups: shifted topics and continued topics. The latter refers back to an already mentioned referent, while the former is derived from a discursively available set.

(60a) and (60b) illustrate a shifted topic, since the topic derives from a discursively available set. The discourse set here contains ‘*xalav*’ and ‘*tapuxim*’, and (60a) and (60b) select ‘*xalav*’ to be the sentence topic.

(61a) and (61b) illustrate a continued topic. In these examples, ‘*xalav*’, which is the topic, is an already mentioned referent, and the only available topic in the discourse.

60. דני הביא חלב ותפוחים מהסופר

*Danny hevi xalav ve-tapuxim me-ha-super*  
 Danny bring.PAST.3MS milk and-apples from-the-supermarket

‘Danny brought milk and apples from the supermarket’

a. (את החלב) הוא שם במקרר\*

*et ha-xalav hu sam ba-mekarer*  
 (ACC the-milk) he put.PAST.3MS in.the-fridge

‘The milk he put in the fridge’

b. הוא שם אותו במקרר\*

*hu sam oto ba-mekarer*  
 he put.PAST.3MS it/∅ on.the-fridge

‘He put it/∅ on the fridge’

61. דני הביא חלב מהסופר

*Danny hevi xalav me-ha-super*

Danny bring.PAST.3MS milk from-the-supermarket

‘Danny brought milk from the supermarket’

a. את החלב הוא שם במקרר\*

<i>et</i>	<i>ha-xalav</i>	<i>hu</i>	<i>sam</i>	<i>ba-mekarer</i>
ACC	(the milk)	he	put.PAST.3MS	in.the-fridge

‘The milk he put in the fridge’

b. הוא שם אותו במקרר

<i>hu</i>	<i>sam</i>	<i>oto</i>	<i>ba-mekarer</i>
he	put.PAST.3MS	it/ø	in.the-fridge

‘He put it/ø in the fridge’

Languages have several ways of marking topics: topicalization, intonation and weak pronouns are some examples. Dropping the topic is another way. The division of labor between these ways is as follows: while topicalization applies to shifted topics, weak pronouns and dropping apply to continued topics. As we can see in (60), *'xalav'*, which is a shifted topic, can be subject to topicalization but can neither be dropped nor serve as an antecedent to a weak pronoun. In (61), *'xalav'* is a continued topic. Therefore it cannot be a subject of topicalization (61a), but it can be dropped and can serve as an antecedent of a weak pronoun (61b).

The trigger for the deletion of the object in (61b) is the "topic-hood" of the missing object. This analysis is similar to one advanced by Huang (1984) in that both argue that the object refers to the topic of the discourse, and it can be removed due to that. But while Huang (1984) claims that the object moves to topic position and is deleted there,

Erteschik-Shir et al. (2013) claim that it is dropped in its original position as a complement. They suggest that an unvalued feature bundle is merged in the object position and goes unpronounced in the phonological component. Its topic-hood allows the recovery of its content by searching for an antecedent which is a continued topic.

To reinforce their assumption that no movement is involved here, Erteschik-Shir et-al. (2013) show that these null objects can be found inside islands without resulting in ungrammaticality. If this is indeed so, then the Hebrew null object cannot have undergone movement to the topic position prior to its removal since movement cannot cross an island (Ross 1967). Erteschik-Shir et al. (2013) rely on four examples; the first is brought below in (62) and demonstrates an omitted object inside a CNPC island.

62. הראיתי את התמונה לדינה, ומישהו הפיץ שמועה שהראיתי  $\emptyset$  אותה גם ליוסי

*hereti et ha-tmuna le-Dina, ve-mišu hefits šmu'a*  
 show.PAST.1S ACC the-picture to-Dina and-someone spread rumor

*še-hereti  $\emptyset$  / ota gam le-Yossi*  
 that-show.PAST.1S  $\emptyset$  / it also to-Yossi

‘I showed the picture to Dina and someone spread the rumor that I also showed it to Yossi’

Their examples were judged by five native speakers. However, judgments on these examples are not so clear.

In contrast to their examples, consider (63) for instance which sounds to me and to the speakers I have consulted ungrammatical.

63. \*קערת הסלט שהבאתי הייתה מעט מלוכלכת, אז אחר כך ניקיתי את השולחן ששמת  $\emptyset$  עליו

*ke'arat ha-salat še-heveti hayta me'at meluxlexet, az*

bowl.CNST	the-salad	that-bring.PAST.1S	was	little	dirty,	so
<i>axar-kax</i>	<i>nikiti</i>	<i>et</i>	<i>ha-šulxan</i>	<i>še-samti</i>	<i>alav</i>	
later	clean.PAST.1S ACC	the-table	that-put.PAST.1S	on.it		

‘The salad bowl I brought was a little dirty so I cleaned the table I put it on’

Examples like (63) raise doubts regarding Erteschik-Shir et-al.’s (2013) intuition that null objects in Hebrew do not show an island effect, and this gives a strong motivation to check it further with a larger group of native speakers.

In the next section, I will present an experiment I made to examine Erteschik-Shir et al.’s (2013) intuition that zero topics in Hebrew do not show island effects. The results will help us decide whether the object was deleted in situ or in topic position.

## 6.4 Nominal NCA - Sensitivity to Islands Experiment

The goal of the experiment was to test whether a null objects shows an island effect. It was tested by checking if sentences with island structure that contain a null object are grammatical. The island test will indicate whether the null object moved to topic position, since such movement cannot cross an island. For this purpose, I compared native speakers judgments on sentences that contained a null object within islands, with two kinds of sentences: sentences with a null object in a neutral environment (i.e. without island structure) and sentences with a realized object - both within an island structure and in a neutral environment. Note that for the realized object in a neutral environment, the sentences are not expected to show an island effect although the objects are within an island structure. This is due to the fact that the object is realized, and no movement is expected out of the island structure.

If there is an island effect in null-within-island sentences, we would expect to see that the difference between the scores obtained by the null-within-island sentences and those obtained by the null-no-island sentences will be significantly bigger than the difference between the scores obtained by the realized-within-island sentences and those obtained by the realized-no-island sentences.

The conclusion was clear - null-within-island sentences do not show any island effect. They were judged significantly less grammatical than null-no-island sentences, but with the exact same difference of scores as between realized-within-island sentences and realized-no-island sentences.

#### **6.4.1 Participants**

Two hundred and seventy-five native Hebrew speakers completed an online acceptability judgment survey built using Google Forms (205 female, 70 male, mean age = 31.1, range 17-65). Participants were recruited via social networks and voluntarily agreed to take the survey. One hundred and thirty-eight participants filled the first version of the survey, and one hundred and thirty-seven participants filled the second version of the survey.

#### **6.4.2 Materials and design**

The experimental design involved two factors, each one with two levels: *island* (yes/no) and *null object* (yes/no). Therefore, the materials were designed to compare between sentences with a null object vs. sentences with a realized object - both within an island structure and in a neutral environment (i.e., not in an island structure). To

test these factors' effect, I created 16 sentence sets for each of the two types: null object sentence sets and realized object sentence sets. Each set contained two sentences: a base sentence and an island sentence. Hence, realized object sentences were also tested within an island structure, despite the fact that the object is realized and no real island effect could be found. These sentences were added to check the general effect of the island structure, in order to verify that any reduction in grammaticality in the null object island case is due to the omission of the object, rather than the existence of the island structure.

(64) is an example from the null object set. While (64a) is an example of a null object in a neutral environment, (64b) is an example of a null object within an island - in this case the Complex NP island. Importantly, the two sentences use the same verb and arguments. (65) is an example from the realized object set.

64a. אני יודע מה משה עשה עם המכונית שלו, הוא מכר לרוני

<i>ani</i>	<i>yode'a</i>	<i>ma</i>	<i>Moše asa</i>	<i>im</i>	<i>ha-mexonit</i>
I	know.PRES.MS	what	Moshe did.PAST.3MS	with	the-car
<i>šelo,</i>	<i>hu</i>	<i>maxar</i>	<i>le-roni</i>		
his	he	sell.PAST.3MS	to-Roni		

'I know what Moshe did with his car, he sold (it) to Roni'

64b. אני לא יודע מה משה עשה עם המכונית שלו. מקס שלל את הרעיון שהוא מכר לרוני

<i>ani</i>	<i>lo</i>	<i>yode'a</i>	<i>ma</i>	<i>Moše asa</i>	<i>im</i>	<i>ha-mexon</i>
I	no	know.PRES.MS	what	Moshe do.PAST.3MS	with	the-car

*šelo. Max šalal et ha-ra'ayon še-hu maxar le-Roni*  
 his. Max deny.PAST.3MS ACC the-idea that-he sold to-Roni

‘I don't know what Moshe did with his car. Max denied the idea that he sold to Roni.’

65a. העט היוקרתי הזה לא סתם הגיע למקס. הוא גנב אותו ממיקי אתמול בכיתה

*ha'et ha-yokrati ha-ze lo stam higia le-Max.*  
 the-pen the-fancy the-this no just arrive.PAST.3MS to-Max.

*hu ganav oto mi-Miki etmol ba-kita*  
 he steal.PAST.3S.M it from-Miki yesterday in.the-class

‘This fancy pen didn't just come to Max. He stole it from Miki yesterday in class.’

b. אני לא יודע איך הכדור הזה הגיע לאורי, אבל הצחיקה אותי הטענה שהוא גנב אותו ממקס.

*ani lo yode'a ex ha-kadur ha-ze higia*  
 I not know.PRES.MS how the-ball the-this arrive.PAST.3MS

*le-Uri, aval hitsxika oti ha-te'ana še-hu ganav*  
 to-Uri, but laugh.PAST.3FS me the-claim that-he steal.PAST.3MS

*mi-Max*

from-Max

‘I don't know how this ball got to Uri, but the claim that he stole it from Max made me laugh.’



The island sentences were constructed based on three kinds of islands: 25% of the island sentences were of the Complex NP island involving a sentential complement, 25% were Complex NP involving a Relative Clause island and 50% were Subject island sentences.

Alongside the null and realized object sets, 8 ungrammatical island sentences were included as filler sentences. These sentences were clearly ungrammatical due to an island violation, and served to compare to the null object island sentences, as well as to provide participants with clearly ungrammatical sentences in the experiment.

Overall, 72 sentences were created: 16 sets of null object sentences (simple and within islands, 32 sentences overall); 16 sets of realized object sentences (simple and within islands, 32 sentences overall); and 8 clearly ungrammatical island sentences.

They were divided into two lists in the following way: in each set, one sentence was added to the first list and the other sentence to the second list. Each list thus contained 8 null objects in simple sentences, 8 null objects within island sentences, 8 realized objects in simple sentences, 8 realized objects within island sentences, and 4 clearly ungrammatical filler sentences. Each list contained 36 sentences overall.

### **6.4.3 Procedure**

The survey was carried out over the web, using the Google Forms platform. Participants were randomly assigned to one of the two lists following a question of whether or not they were born in an even month. Participants were instructed to rate the acceptability of each sentence on a 7-point scale where 1 stands for completely unnatural and 7 stands for completely natural. The instructions included an

explanation about the scale. Each sentence was presented followed by the acceptability scale. Participants completed the survey at their own pace.

#### 6.4.4. Results

The overall average rating of the experimental sentences was 4.88. The ungrammatical filler sentences got an average rating of 1.46.

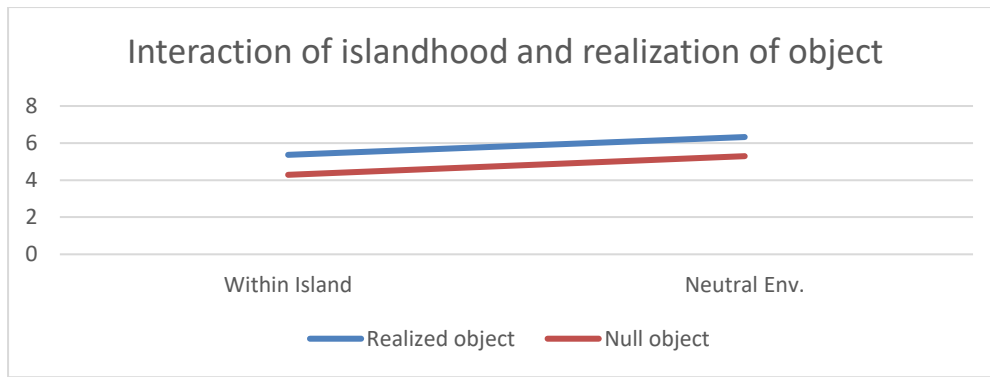
The average rating in the different experimental conditions is provided in Table 1 and Figure 1 below.

**Table 1**

Object	Environment	Mean	SD
<b>Realized object</b>	Neutral sentence	6.32	0.36
	Within Island structure	5.36	0.81
<b>Omitted object</b>	Neutral sentence	5.29	0.69
	Within Island structure	4.28	0.82

A by-items ANOVA revealed a main effect of the factor Island ( $F(1,60) = 31.439, p < .001$ ), such that sentences with no island structures received higher ratings than those with an island structure. There was also a main effect of the factor Null object ( $F(1,60) = 36.207, p < .001$ ), such that sentences with null objects were in general less acceptable than those with a realized object. Crucially, however, the interaction between the two factors was not significant ( $F < 1$ ).

**Figure 1**



### 6.4.5 Discussion

The results show an effect of null object, suggesting that object omissions reduce grammaticality. The results also show an effect of island structure. Note that in the sentences with a realized object within an island structure, no island effect is expected, but they were still significantly less grammatical than the 'neutral' sentences with a realized object. This is due to the fact that these sentences were longer and more complex than the neutral ones, which probably rendered them less acceptable.

Crucially, however, the interaction between the null object factor and the island factor was not significant. In other words, null objects within islands were rated as less grammatical than their counterparts in a neutral environment, but a similar reduction in grammaticality was observed with realized objects.

The results show that there is no island effect in null object sentences. This finding leads us to the conclusion that the null object in Hebrew was not created by movement, which is in line with Erteschik-Shir et al.'s (2013) approach.

According to Erteschik-Shir et al.'s analysis, the object is deleted in situ due to identity with a continued topic in the context. Let me now return to the attributes of

the null object in Hebrew, which were presented earlier, and try to explain them under their analysis.

First, I showed in section 6.1.1 that null objects in Hebrew have a syntactic realization. This conclusion was drawn based on the ability of null objects to be subjects of a secondary predicate, as sentence (48), repeated here as (66), demonstrates.

66. ש : הבאת דג מהסופר כמו שביקשתי ממך?

Q: *heveta dag me-ha-super kmo še-bikašti*  
bring.PAST.2MS fish from-the-supermarket like that-ask.PAST.1S

*mimxa?*  
from-you?

Q: 'Did you bring a fish from the supermarket like I asked you to?'

ת : כן, אבל קניתי ∅ קפוא כי נגמרו להם הדגים הטריים

A: *ken, aval kaniti ∅ kafu ki nigmeru lahem*  
yes, but buy.PAST.1S frozen because finish.PASS.3P to-them

*ha-dagim ha-triyim*  
the-fish fresh

A: 'Yes, but I bought it frozen because they had run out of fresh fish.'

The grammaticality of (66) indicates that the null object referring to *dag* (fish) can serve as an argument of the secondary predicate *kafu*. This argument-predicate

relation is possible only when the argument is syntactically realized, which means that the null object has a syntactic realization.

But not only do null objects in Hebrew have a syntactic realization, they also have an internal syntactic structure. To demonstrate this, I showed in section 6.1.2 that null objects in Hebrew can contain an antecedent for a pronoun (see sentence (51), repeated as (67) below).

67. המורה לעיצוב ביקש מהתלמידים להביא למחר פריט לבוש של המעצבת האהובה עליהם. אז מקס הזמין  $\emptyset$  מהאתר הרשמי כי היא מכרה פריטים רק שם

*ha-more le-itsuv bikeš me-ha-talmidim le-havi*  
 the-teacher for-design ask.PAST.3MS from-the-students to-bring

*le-maxar parit levuš šel ha-me'atsevet ha-ahuva alehem.*  
 for-tomorrow item attire of the-designer the-loved on-them.

*az Max hizmin me-ha-atar ha-rišmi ki hi*  
 so Max order.PAST.3MS from-the-site the-official because she

*maxra pritim rak šam*  
 sell.PAST.3FS items only there

‘The design teacher asked the students to bring an item of clothing from their favorite designer for tomorrow. So Max ordered  $\emptyset$  (it) from the official site because she sold items only there.’

The grammaticality of (67), that is the ability of a secondary predicate to refer to an antecedent within the null object shows that the latter has an internal syntactic structure.

The above properties can be easily explained under Erteschik-Shir et al.’s (2013) analysis. In their analysis, the object was removed under identity with the continued

topic. That is, it existed in the first stage of the derivation and was deleted later. Elements that exist in the first stage of the derivation are syntactically realized and have an internal structure. The deletion happens due to discursive reasons, later on in the derivation. Thus, there is syntactic structure which can be modified and referred to.

Another behavior that requires an explanation is the fact that the null object cannot refer to the matrix subject of the sentence. Consider sentence (58a), repeated as (68) below.

68. מקס אמר שלוסי לא מכירה  $\emptyset$

*max amar še-Lucy lo makira  $\emptyset$*

Max say.PAST.3MS that-Lucy not know.PAST.3FS

'Max said that Lucy doesn't know  $\emptyset$ '

In (68), the null object of the verb *makira* ('know') cannot refer to Max, which is the matrix subject of the sentences. Just like in Chinese (see (52)), also in Hebrew the null object cannot refer to the matrix subject of the sentence.

Raposo (1984) discusses null objects in Portuguese and shows that when the spec CP position is occupied by a WH element, a null object is impossible. (69) demonstrates this.

69a. OP a Joana viu *e* na televisao ontem a noite

'Joana saw (him) on TV last night'

69b. \*Quando OP *e* que Joao vai oferecer *e* a Maria *t*?

'When is Joao going to offer (it) to Maria?'

(69a) shows that when a null object exists in the sentence, a WH element cannot occupy the spec CP position. Raposo (1984) suggests that the null object is bound by a null operator in the spec CP position. Therefore, a null object is not possible when the position of its binder is occupied by another element.

Consider (70) below, which demonstrates a similar behavior of the null object in Hebrew.

[Context: There are 3 brothers in the Cohen family - Itay, Tzvika and Ofri. Their father went to the warehouse, where the ball is usually stored, but the ball is not there. The father asks Tzvika where the ball is.]

[Tzvika to his father:]

70a. איתי לקח אותו למגרש

*Itay lakax oto la-migraš*

Itay take.PAST.3MS it to.the-court

'Itay took it to the court'

70b. איתי לקח איתו למגרש

*Arik amar še-Itay lakax ito*

Arik say.PAST.3MS that-Itay take.PAST.3MS with-him

*la-migraš*

to.the-court

'Arik said that Itay took (it) with him to the court'

[Tzvika, calling to Ofri:]

70c. עפרי, אבא שואל על הכדור. לאן איתי לקח אותו?

*Ofri, aba šoel al ha-kadur. le'an Itay lakax oto?*

Ofri, dad ask.PRES.3MS about the-ball. where Itay take.PAST.3MS it?

'Ofri, dad is asking about the ball. Where did Itay take it?'

70d. \*עפרי, אבא שואל על הכדור. לאן איתי לקח איתו?\*

*Ofri, aba šoel al ha-kadur. le'an Itay lakax*

Ofri, dad ask.PRES.3MS about the-ball. where Itay take.PAST.3MS

*ito?*

(it) with-him?

'Ofri, dad is asking about the ball. Where did Itay take (it) with him?'

We can see that in the answer to the father's question, both a pronoun (70a) or a null object (70b) can refer to the ball. But when another element moves to the spec CP position, the ball can be referred to by a pronoun (70c) but not by the null object (70d). This behavior can be straightforwardly explained assuming that in Hebrew too the null object is bound by a null operator in Spec CP. In the case that Spec CP is occupied by a WH element, as in (70d), the result is ungrammaticality.

If this is indeed so, then the null object in Hebrew is a variable. Since a variable cannot be bound by an argument in an A-position, the null object in (68) cannot refer to the matrix subject of the sentence.

In this section I have shown that the null object in Hebrew behaves differently from the NCA and is in fact a case of topic drop. Null objects are omitted in situ under identity with a topic, and they are bound by a null operator in Spec CP. In the next section, I will return to the NCA and show that the behavior of the NCA in Hebrew weakens Grimshaw's (1979) semantic approach to the NCA (as presented in section 4.2 above).



# 7 Evidence from Hebrew against the semantic approach to the NCA

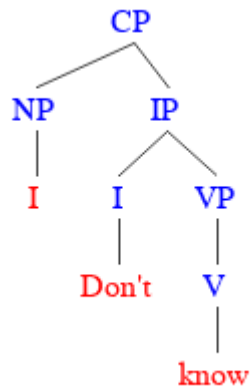
Chapter 4 presents two approaches to the NCA: the syntactic approach and the semantic approach. The main conflict between the two is regarding the question of whether the null element has syntactic realization or not. In this chapter, I will provide evidence from Hebrew that casts doubt on the semantic approach advanced by Grimshaw (1979).

Grimshaw (1979) suggests that NCA has no syntactic realization at all. It only involves an empty semantic slot that is being reconstructed – attributed content– in the discourse phase (see section 4.2 for further details). Consider the question in (71) and the answers (a) and (b), which both involve an NCA. While (a) constitutes an impossible answer, (b) is a possible one. The structure of the answer in (b) is represented in (72).

71. Question: Has the mayor resigned?

Responses: a. \*I haven't discovered yet.  
b. I don't know.

72.



The difference then, according to Grimshaw (1979), between verbs that allow NCA and verbs that do not allow it lies in their subcategorization frame. While verbs that allow NCA, like *know*, have an optional CP in their frame, verbs that disallow NCA have an obligatory CP in their frame. Furthermore, Grimshaw also claims that if a predicate subcategorizes for an obligatory CP, it must take an overt CP complement. If it subcategorizes for an optional CP, it can take a null complement as well; that is, it does not have to realize its complement.

An unrealized complement is interpreted as an indefinite, unspecific complement, when no context is provided. This is illustrated in (73), where the complement of *eat* is indefinite, as John wants to eat **something, we don't know what**. That is, the object here is interpreted as a variable existentially bound at the semantic representation.

73. John wants to eat.

The NCA, in contrast, is necessarily a definite complement, as was explained in section 2.3. Its meaning has to be specific. The complement of *know* in (71b) for example, which is an NCA, is specific: I don't know **whether the mayor resigned**.

Grimshaw's proposal then entails the following correlation: Verbs whose CP can be implicit and interpreted as nonspecific allow NCA, and verbs whose CP is obligatory disallow NCA. If her generalization is correct, this correlation should hold. With that in mind, consider (74) below.

74a. הצעתי לשותף שלי להתחלק במטלות הבית, אבל הוא לא הסכים

*hitsati la-šutaf šeli lehitxalek be-matlot ha-bayit,*  
suggest.PAST.1S to.the-roommate my to-share in-tasks the-house,  
*aval hu lo hiskim*  
but he not agree.PAST.3MS

‘I suggested to my roommate to share the housework, but he wouldn’t agree.’

b. \*הצעתי לשותף שלי להתחלק במטלות הבית, אבל הוא לא אחד כזה שמסכים

*hitsati la-šutaf šeli leitxalek be-matlot ha-bayit,*  
suggest.PAST.1S to.the-roommate my to-share in-tasks the-house,  
*aval hu lo exad kaze še-maskim*  
but he not one such that-agree.PRES.3MS

‘I suggested to my roommate to share the housework, but he is not the type of guy that agrees.’

In (74a) the verb *hisxim* (‘agree’) takes an NCA. Example (74b) shows that the same verb cannot take an indefinite complement - it results in ungrammaticality. The difference in grammaticality between (74a) and (74b) casts doubt on Grimshaw’s proposal. The verb *hisxim*, which can take an NCA, disallows an indefinite, nonspecific one, contra the correlation expected by Grimshaw. In other words, this difference is not predicted by the subcategorization account.

(75) illustrates the opposite situation: It shows that there are verbs that do not allow indefinite, nonspecific complement, but do allow an NCA.

75a. אבא שלי ייעץ לי ללמוד לתואר שני

*aba šeli yi'ets li li-lmod le-toar šeni*  
 father my advise.PAST.3MS to.me to-study for-degree second

'My father advised me to study for a Master's degree.'

75b. \*החלטתי לא ללכת לתואר שני למרות שאבא שלי ייעץ לי

*hexlateti lo la-lexet le-toar šeni lamrot še-aba*  
 decide.PAST.1S not to-go for-degree second though that-father

*šeli yi'ets li*  
 my advise.PAST.3MS to.me

'I decided not to go for a Master's degree even though my father advised me to.'

75c. [Context: CEO of a company presents its new assistant to the company's employees]

אני מציג בפניכם את פליקס, שיהיה העוזר האישי שלי. אני בטוח שפליקס יתרום לחברה ולי  
 באופן אישי. הוא ייעץ לי ויתרום מניסיונו.

*ani metsig bifne-xem et Felix, še-yihiye*  
 I introduce.PRES.MS before-you.PL ACC Felix, that-be.FUT.3MS

*ha-ozar ha-iši šeli. ani batu'ax še-Felix*  
 the-assistant the-personal my. I sure that-Felix

*yitrom harbe la-xevra ve-li be-ofen iši.*  
 contribute.FUT.3MS much to.the-company and-to.me in-matter personal.

*hu yeya'ets li ve-yitrom mi-nisyon-o.*  
 he advise.FUT.3MS to-me and- contribute.FUT.3MS from-experience-his

‘I introduce you to Felix, who will be my personal assistant. I am sure that Felix will contribute much to the company and to me personally. He will advise me and contribute from his experience.’

(75a) shows that *yi’ets* (‘advised’) takes a CP complement, which is the only complement type in its subcategorization frame. (75b) shows that it does not allow an NCA. One cannot understand (75b) in the sense that *yi’ets* has a complement that gets its meaning from the complement of *hexlit* (‘decided’). But *yi’ets* does allow an indefinite, nonspecific complement, as we can see in (75c). Just like in (74), the contrast here cannot be explained in terms of subcategorization, since in both cases the CP is not realized. Nonetheless, while *yi’ets* allows a nonspecific sentential complement, it disallows an NCA.

In sum, under Grimshaw’s semantic approach, which treats nonspecific null complements on par with NCAs, thus deriving the availability of both from the verb’s subcategorization frame, the above differences are completely unexpected..

Within a syntactic approach, NCA has a syntactic representation involving no internal structure. The availability of NCA does not follow from the optionality of the CP. Rather, it is an idiosyncratic attribute of specific verbs. Therefore, no correlation between optional CPs and null complements is expected. Specifically, under the syntactic analysis *hiskim* subcategorizes for an obligatory CP, which can be realized as an NCA, as in (74a) for example, while *yi’ets* subcategorizes for an optional CP, which is phonetically realized in (75a) and implicit in (75c), but it disallows NCA, as shown in (75b).

# Appendix A: Experiment Materials

## Instructions in Hebrew

משימתכם היא לדרג את מידת הטבעיות של כל משפט על סקאלה של 1-7, כאשר הציון 1 יוענק למשפט לא טבעי בכלל ו-7 למשפט טבעי לחלוטין. המונח "טבעי" מתייחס הן למשפטים שמקובל להשתמש בהם בשפה מדוברת, והן למשפטים שמקובל להשתמש בהם בשפה גבוהה יותר. ניתן בהחלט לתת ציוני ביניים, אם הם משקפים את תחושתכם כלפי טבעיותו של המשפט.

השאלון אמנם אינו מוגבל בזמן, אך חשוב שתחליטו לגבי כל משפט במהירות, כי האינטואיציה הראשונית שלכם היא זו שחשובה בשאלון זה. מרגע שנתתם ציון למשפט - אל תשנו את בחירתכם - המשיכו קדימה למשפט הבא, ואל תחזרו לבדוק את דירוגיכם לגבי משפטים קודמים.

החלטתכם לא צריכה להיות מבוססת על חוקי דקדוק שלמדתם בבית ספר או במסגרות אחרות, אלא על תחושתכם ביחס להאם המשפט טבעי\אפשרי בעברית.

ראשית, אנא מלאו את פרטיכם האישיים. לאחר מכן יתחיל הניסוי.

## Translation:

Your mission is to rate how natural each sentence is in a scale of 1-7, when 1 will be given to a sentence that is unnatural at all and 7 to a completely natural sentence. The term natural relates to both sentences that are acceptable in spoken language and sentences that are acceptable in higher language. It is possible to give in between grades if they reflect your feeling about how natural the sentence is.

The sentence is not limited in time, but it is important that you will judge each sentence quickly, because your first intuition is the important one in this survey. From the moment you gave a grade to a sentence - don't change it. Go on to the next sentence and don't go back to check your grades for previous sentences.

Your judgment does not have to be based on the grammar rules you studied in schools or in any other place but on your feeling about how natural the sentence is.

First, please fill your personal properties. Then the experiment will start.

# Experiment Sentences

## Realized Object (32 sentences)

### In a neutral environment (16 sentences)

1. מקס השאיל את הדיסק של שרית חדד לאחותו ג'וליה.  
'Max borrowed Sarit Hadad disc to his sister Julia'
2. קיבלתי איגרת ברכה לראש השנה מדודה שושנה.  
'I got a Rosh-Hashana greeting card from aunt Shoshana'
3. המנה שהזמנו הייתה ממש לא טעימה. החזרנו אותה למלצר.  
'The dish we ordered was not tasty. We returned it to the waiter'
4. אתמול בעבודה חילקו לנו שוברי הנחה לארוחה במסעדת שף.  
'Yesterday at work they gave us discount vouchers for a meal in a chef restaurant'
5. מקס השליך כיסא על מוריס באמצע השיעור אתמול.  
'Max threw a chair at Morris in the middle of the class yesterday'
6. הילדה הפילה את המזלג באמצע הארוחה, ואבא שלה הרים אותו מהרצפה.  
'The girl drop down the fork during the meal, and her father lifted it from the floor'
7. הבאתי מתנה למסיבת יום ההולדת של מקס. הנחתי אותה על השולחן מיד כשהגעתי.  
'I brought a gift to Max birthday party. I put it on the table when I arrived'
8. כתבתי הוראות מפורטות מה לעשות עם הכלבה כשאהיה בחו"ל. שלחתי אותן לאבא שלי במייל.  
'I wrote detailed instructions of what to do with the dog while I am abroad. I sent them to my father them by e-mail.'
9. השוקולד שאכלנו אתמול היה ממש טעים. מקס הביא אותו מצרפת.  
'The chocolate that we ate yesterday was very tasty. Max brought it from France'
10. בבוקר שמתי את האבטיח במקרר, ובערב הגשתי אותו לאורחות.

'In the morning I put the watermelon in the fridge and in the evening I served it to the guests'

11. לפני חודשיים קנינו ספה חדשה. הזמנו אותה מחברה אינטרנטית.

'Two months ago we bought a new sofa. We ordered it from a company in the web'

12. התינוק לא אהב את המוצץ החדש, אז הוא זרק אותו לרצפה.

'The baby didn't like the new pacifier so he threw it to the floor'

13. לפני שבועיים מקס זכה בלוטו. אתמול הוא אסף את הפרס.

'Two weeks ago Max won the lottery. Yesterday he picked up the prize'

14. העט היוקרתי הזה לא סתם הגיע למקס. הוא גנב אותו ממיקי אתמול בכיתה.

'This luxurious pen didn't just get to Max. He stole it from Miki in the class yesterday'

15. הכלב הפיל את האגרטל מהשולחן במרפסת.

'The dog dropped the vase from the table in the on the porch'

16. קנינו אתמול בובה יפה מחרסינה. שמנו אותה על המזנון.

'Yesterday we bought a nice porcelain doll. We put it on the sideboard'

### **Inside an island structure - Subject Island (8 sentences)**

1. האבטיח היה כל היום במקרר, ולהגיש אותו לאורחות בערב היה רעיון מצוין.

'The watermelon was all day in the fridge and to serve it to the guests in the evening was a great idea'

2. אני שמח שקנינו ספה חדשה, אבל זה שהזמנו אותה מחברה אינטרנטית הדאיג אותי קצת.

'I'm happy that we bought a new sofa but that we ordered it from the internet worries me a bit'

3. חיכיתי שבועיים עד שלקחתי את הפרס הכספי שזכיתי בו. לאסוף אותו מיד הרגיש לי מוזר.

'I waited two weeks until I took the cash reward I won. To take it immediately felt strange'

4. אני יודע שאת השוקולד הזה אי אפשר למצוא בארץ, ולהביא אותו מצרפת היה מסובך מדי

בשבילי.



'I know that this chocolate cannot be found in our country and to bring it from France was too complicated for me'

5. הם תמיד מצ'פרים אותנו בעבודה, אבל זה שחילקו לנו שוברי הנחה לארוחה במסעדת שף היה ממש יפה מצידם.

'They are always giving us gifts at work, but that they gave us discount for a meal in a chef restaurant was really nice of them'

6. באמצע הארוחה הילדה הפילה את המזלג, ולהרים לה אותו מהרצפה עצבן אותי.  
'In the middle of the meal, the child dropped the fork and to lift it from the floor annoyed me'

7. הבאתי מתנה למסיבת יום ההולדת של מקס. להניח אותה על השולחן היה הדבר הראשון שעשיתי כשהגעתי.

'I brought a gift to Max's birthday party. To put it on the table was the first thing I did when I arrived'

8. כתבתי הוראות מפורטות מה לעשות עם הכלבה כשאהיה בחו"ל. זה ששלחתי אותן לאבא שלי מראה שאני סומך עליו.

'I wrote detailed instructions about what to do with the dog while I'm abroad. That I sent it to my father shows I rely on him'

### **Inside an island structure - CNPC (4 sentences)**

1. ידעתי שהתינוק לא יאהב את המוצץ שקניתי לו, ועצבנה אותי המחשבה שהוא יזרוק אותו לרצפה.

'I knew that the baby won't like the pacifier that I bought to him and the thought that he would throw it to the floor annoyed me'

2. קנינו אתמול בובה יפה מחרסניה, ואהבתי את הרעיון שנשים אותה על המזנון.  
'Yesterday we bought a nice porcelain doll and I liked the idea that we will put it on the sideboard'

3. אני יודע שמקס אוהב את הדיסק של שרית חדד, וג'וליה דחתה את הטענה שהוא השאיל אותו לאחותו.

'I know that Max like the disc of Sarit Hadad and Julia rejected the claim that he borrowed it to his sister'

4. אני יודע שמקס לא מחבב את מוריס, אבל לא האמנתי לשמועה שהוא השליך עליו כיסא.  
'I know that Max does not like Morris but I didn't believe to the rumor that he threw a chair at him'

### Inside an island structure - Relative Clause (4 sentences)

1. לא רציתי לשים את האגרטל בחוץ. נזהרתי מהכלב שכבר הפיל אותו פעם מהשולחן.  
'I didn't want to put the vase outside. I was careful of the dog that already dropped it from the table'
2. זה היה נראה לי מוזר שלמקס יש עט כזה יוקרתי בקלמר, אבל לא האמנתי לבחורה שטענה שהוא גנב אותו ממנה.  
'It looks strange to me that Max has such a luxurious pen in the case but I couldn't believe the girl that claimed that he stole it from her'
3. שמחתי לראות את איגרת ראש השנה שחיכתה לי בדואר, ואהבתי את הדוד שקיבלתי אותה ממנו.  
'I was happy to see a Rosh-Hashana greeting card that waited for me in the mail and I liked that uncle that I got it from him'
4. המנה שהזמנו הייתה ממש לא טעימה, וחיבבתי את המלצרית שהחזירה אותה לשף בלי להתווכח.  
'The meal that we ordered was not tasty and I liked the waiters that returned it to the chef without arguing'

### Null Object (32 sentences)

#### In neutral environment (16 sentences)

1. אני יודע מה משה עשה עם המכונית שלו, הוא מכר לרונן.  
'I know what Moshe did with his car, he sold (it) to Roni'
2. השמפניה ששתינו אתמול היא שמפניה יוקרתית. מקס הביא מצרפת.  
'The champagne we drank yesterday is a luxurious champagne. Max brought (it) from France'

3. זהו, סיימתי את העבודה האחרונה לתואר. אתמול הגשתי למזכירות.  
'That's it, I finished my last work to get my BA. Yesterday, I submitted (it) to secretariat'
4. יש לי הזמנה למפגש מעריצים עם אירוסמית, השגתי מחברה של אחותי.  
I have a reservation for a fan meeting with Aerosmith. I got (it) from a friend of my sister'
5. כבר אין לי את החתולה הלבנה בבית, מסרתי לצער בעלי חיים אתמול.  
'I no longer have the white cat in my house, I gave (it) to SPCA yesterday'
6. שמעתי שלמקס יש סיכום של השיעור בתחביר. ג'ולי שלחה לו.  
'I've heard that Max has a summary of the syntax class. Julie sent (it) to him'
7. למקס כבר לא היה שימוש בספר חשבון של השנה שעברה, אז הוא נתן לג'ולי.  
'Max no longer use the Mathematics book from last year, so he gave (it) to Julie'
8. הייתי צריך מחברת משבצות בדחיפות, ונזכרתי שיש לי בתיק. לקחתי מהעבודה.  
I needed checkered notebook immediately and I remembered I had in the bag. I took (it) from work.
9. ראיתי בחנות חולצה שמצאה חן בעיניי, אבל היא הייתה יקרה. למחרת אימא קנתה לי.  
'I saw in the store a shirt I liked but she was too expensive. In the day after my mother bought (it) to me'
10. לרון יש סוף סוף את הספר החדש של הארי פוטר. ג'ולי השאילה לו.  
Ron finally has Harry Potter new book. Julie lent him.
11. הילד הפיל את המזלג בארוחת הערב. לא הייתה לי ברירה, הרמתי מהרצפה.  
The kid dropped the fork at dinner. I had no choice, I lift (it) from the floor.
12. רציתי מאוד את הדגם החדש של האייפון, ואמא שלי דאגה שיהיה לי. היא הזמינה מחנות בקניון.  
'I really wanted the new iPhone model and my mother made sure I'll have it. She ordered from a store at the mall'

13. אימא הכינה לי עוגת יומולדת ופרסה אותה. כשהחברים הגיעו, חילקתי להם.  
'My mother made me birthday cake and sliced it. When my friends arrived, I served (it) to them'

14. העגבניות היו ממש רקובות, אז מקס השליך לזבל.  
'The tomatoes were really rotten so Max drop (them) to the garbage'

15. אני יודע איך הכדור הזה הגיע לאורי. הוא גנב ממקס.  
'I know how this ball got to Uri. He stole from Max'

16. קערת הסלט שהבאתי הייתה מלוכלכת אז ניקיתי אותה קצת. רק אחר כך הנחתי על השולחן.  
'The salad ball that I brought was dirty so I cleaned it a bit. Only after I put (it) on the table'

### **Inside an island structure - Subject Island (8 sentences)**

1. ראיתי בחנות חולצה שמצאה חן בעיניי, אבל היא הייתה יקרה. לקנות לאימא ליומולדת נשמע לי מוגזם.

'I saw in the shop a shirt I liked but it was expensive. To buy (it) to my mother for birthday sounds exaggerated to me'

2. אימא הכינה לי עוגת יומולדת ופרסה אותה. לחלק לחברים היה התפקיד שלי.  
'My mother made me a birthday cake and sliced it. To serve (it) to the friends was my job'

3. מקס חשב שהעגבניות היו ממש רקובות, ולהשליך לזבל הייתה האופציה היחידה מבחינתו.  
'Max thought that the tomatoes were really rotten and throwing (them) to the garbage was the only option for him'

4. השמפניה ששתינו אתמול היא שמפניה יוקרתית. זה שמקס הביא מצרפת זה ממש יפה מצידו.  
'The champagne we drank yesterday was a luxurious champagne. That Max brought (it) from France was really nice of him'

5. זהו, סיימתי את העבודה האחרונה לתואר. להגיש למזכירות היה ממש משחרר.  
'That's it, I finished the last work for the BA degree. To serve (it) to the secretariat was really liberating'

6. יש לי הזמנה למפגש מעריצים עם אירוסמית. זה שהשגתי מחברה של אחותי ממש שימח אותי.  
'I have an invitation to a fan meeting with Aerosmith. That I got (it) from a friend of my sister really made me happy'

7. כבר אין לי את החתולה הלבנה בבית. זה שמסרתי לצער בעלי חיים אתמול ביאס אותי מאוד.  
'I no longer have the white cat at home. That I gave (it) to SPCA yesterday made me sad'

8. הייתי צריך מחברת משבצות בדחיפות, ונזכרתי שיש לי בתיק. זה שלקחתי מהעבודה די הציל אותי.  
'I needed a checkered notebook immediately and I remembered I have one in my bag. That I took (it) from work saved me'

### **Inside an island - Relative Clause (4 sentences)**

1. לרון יש סוף סוף את הספר החדש של הארי פוטר. הוא מאוד מעריך את הבחורה שהשאילה לו.  
'Ron finally has the new Harry Potter book. He very appreciate the girl that lent (it) him'

2. רציתי מאוד את הדגם החדש של האייפון, ואמא שלי דאגה שיהיה לי. שמעתי על החנות שהיא הזמינה ממנה.  
'I really wanted the new iPhone model and my mother made sure I will have it. I've heard about the store that she ordered (it) from'

3. קערת הסלט שהבאתי הייתה מעט מלוכלכת, אז אחר כך ניקיתי את השולחן שהנחתי עליו.  
'The salad bowl that I brought was a bit dirty, so I cleaned the table I put (it) on'

4. שמעתי שלמקס יש סיכום של השיעור בתחביר. אני מכיר את הבחורה ששלחה לו.  
'I've heard that Max has a summary of the syntax class. I know the girl that sent (it) to him'

### **Inside an island - CNPC (4 sentences)**

1. לא ידעתי מי שם את המזלג ליד הצלחת של הילד, ועצבנה אותי האפשרות שהרימו מהרצפה.  
'I didn't know who put the fork next to the kid's plate and I was annoyed by the possibility that (it) was lifted from the floor'

2. אני לא יודע איך הכדור הזה הגיע לאורי, אבל הצחיקה אותי הטענה שהוא גנב ממקס.  
'I don't know how this ball got to Uri, but the claim that he stole (it) from Max made me laugh'

3. אני לא יודע מה משה עשה עם המכונית שלו. מקס שלל את הרעיון שהוא מכר לרוני.  
'I don't know what Moshe did with his car. Max denied the idea that he sold (it) to Roni'

4. למקס כבר לא היה שימוש בספר חשבון של השנה שעברה, והוא קיבל את ההצעה לתת לג'ולי.  
'Max no longer used the mathematics book from last year and he agreed to the offer to give (it) to Julie'

### Completely ungrammatical sentences (8 sentences)

1. פסטה זה שאכלנו מהסיר הפתיע את מקס.  
'Pasta that we ate from the pot surprised Max'

2. פאזל מקס בנה את השולחן שהילדה הרכיבה עליו.  
'Puzzle Max built the table that the girl completed on it'

3. את מה זה שקראתי לא אומר שארצה לראות גם את הסרט?  
'What that I've read saying that I won't want to see also the movie?'

4. מקס לوسی התנגדה לאפשרות שיראה את הסדרה בלעדיה.  
'Max Lucy rejected the possibility that he will see the TV show without her'

5. למי לקנות מתנה נשמע לסטודנטית מוגזם?  
'To whom to buy a gift sounds to the student exaggerated?'

6. את הטבעת מקס הכיר את הבחור שהחזיר לג'ולי.  
'The ring Max knew the guy that returned to Julie'

7. את מה זה שמסרת למקס היה טעות?  
'What that you gave to Max was a mistake?'

8. מי לوسی אהבה את הרעיון שיאכל איתה גלידה בשבת?  
'Who Lucy liked the idea that will eat with her ice-cream on Saturday?'

# Appendix B: Hebrew verbs that take NCA

התנגד (objected), הסכים (agreed), סרב (refused), ביקש (asked), שכח  
(forgot), התנדב (volunteered), התעקש (insisted), אישר (approved),  
ניחש (guessed), ניסה (tried), המשיך (continued), הצליח  
(succeeded), העדיף (preferred), חייב (have to), יודע (know), מאמין  
(believe), חשב (thought), קיווה (hoped), הסביר (explained), צריך  
(need), תהה (wondered), הבין (understood), הכחיש (denied)

## **Appendix C: Hebrew verbs that do not take NCA**

אמר (said), דרש (demanded), טען (claimed), איים (threatened),  
תכנן (planned), בחר (chose), ענה (answered), השיב (answered), ייעץ  
(advised), הציע (proposed), סבור (think, believe), הבהיר (clarified),  
הפציר (pleaded), הורה (instruct), הוכיח (proved), חשף (revealed)



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