Nested Interrogatives and the Locus of wh

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ABSTRACT

This paper discusses the behavior of certain wh-island-violating (but felicitous) constructions in Hebrew. These constructions exhibit two important characteristics: superiority effects, and a sensitivity to short vs. long wh-movement.

An analysis is proposed, based on the assumption that in Hebrew, the relevant wh-feature resides on a head lower than C^0, but CP is still equipped with a single specifier position that can be utilized for successive-cyclic wh-movement. The proposal is shown to account for of the behavior of these constructions with respect to the aforementioned characteristics, and is supported by the existence of independent cases of A-bar movement to a position below the overt complementizer in Hebrew.

1. INTRODUCTION

In this paper, I discuss the properties of a particular construction in Hebrew, in which several interrogative clauses are nested within one another. This gives rise to multiple wh-movement – but unlike familiar cases (e.g., Bulgarian; Rudin 1988), no single clausal periphery ends up overtly hosting more than one wh-element.

These constructions are shown to exhibit two interesting characteristics. The first is a robust superiority pattern, with respect to the base-generated positions of the moved wh-elements. The second is, quite surprisingly, the existence of wh-island effects. Though the very existence of these constructions may suggest that the wh-Island Condition (or any modern successor to it) is inoperative in Hebrew, this is shown not to be the case. Rather, a more intricate distinction, involving short wh-movement vs. long wh-movement, is shown to regulate the distribution of wh-island effects.

I then present an analysis of these phenomena, based on the assumption that in Hebrew, the relevant wh-feature is located in a projection lower than CP. This assumption is independently motivated by the existence of another type of A-bar movement in Hebrew that targets a position below the overt complementizer. Crucially,

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All errors are my own.

even though the overt landing site of wh-movement is below C^0, CP itself still provides a single specifier position through which successive-cyclic wh-movement may occur.

This analysis is shown to predict both the superiority and the wh-islandhood phenomena exhibited by these constructions.

2. PROLOGUE: MULTIPLE WH-MOVEMENT IN HEBREW

Hebrew performs its wh-movement overtly. If one takes care to exclude Echo-Question readings, interrogatives with only one wh-element become ungrammatical unless that wh-element is moved:

(1) a. [et mi]$_1$ Dan pagash t_1?
ACC who Dan met
'Who did Dan meet?'
b. * Dan pagash et mi?
Dan met ACC who

In addition, there is a seemingly independent limitation prohibiting the appearance of more than one wh-element at a given clausal periphery, as shown in (2a-b). This is not a ban on two wh-elements being base-generated in the same clause; Pair-List questions such as (3a), in which one of the internal arguments of *natan* 'gave' undergoes wh-movement and the other remains in situ, are fine. Nor is this a ban on movement of more than one wh-element base-generated in a given clause. As shown in (3b), two internal arguments of *natan* 'gave' can both undergo wh-movement, provided they do not land at the same clausal periphery.

(2) a. * [ma]$_1$ [le-mi]$_2$ Dan natan t_1 t_2?
what DAT-who Dan gave
b. * [le-mi]$_1$ [ma]$_2$ Dan natan t_2 t_1?
DAT-who what Dan gave

(3) a. [ma]$_1$ Dan natan t_1 le-mi?
what Dan gave DAT-who
'What did Dan give to whom?'
b. [ma]$_2$ Dina shaxexa [le-mi]$_1$ Dan natan t_1 t_2?
what Dina forgot DAT-who Dan gave
'[What]$_2$ did Dina forget [to whom]$_1$ Dan gave t_1 t_2?'

Indeed, (3a) and (3b) represent the two types of multiple-wh questions found in Hebrew. The first type, which also exists in English, is Pair-List questions (or more accurately, Set-List questions). Like their English counterparts, the answer to these is a

list of pairs/sets, with each element in a given pair/set corresponding to one wh-element in the original question. The sentence in (3a) above is one such case, and further examples are given below:[1]

(4) a. [mi]$_1$ t$_1$ axal ma?
who ate what
'Who ate what?'
b. [mi]$_1$ t$_1$ amar [$_{CP}$ she-mi ne'elam]?
who said that-who disappeared
'Who said that who disappeared?'
c. [mi]$_1$ t$_1$ amar [$_{CP}$ she-Dan tilfen le-mi]?
who said that-Dan phoned DAT-who
'Who said that Dan phoned whom?'
d. [mi]$_1$ t$_1$ shalax ma le-mi?
who sent what DAT-who
'Who sent what to whom?'

(5) a. [mi]$_1$ Yosi xashav [$_{CP}$ she-(t$_1$-)axal ma]?
who Yosi thought that-ate what
'Who did Yosi think ate what?'
b. [mi]$_1$ Yosi xashav [$_{CP}$ she-(t$_1$-)amar [$_{CP}$ she-mi ne'elam]]?
who Yosi thought that-said that-who disappeared
'Who did Yosi think said that who disappeared?'
c. [mi]$_1$ Yosi xashav [$_{CP}$ she-(t$_1$-)amar [$_{CP}$ she-Dan tilfen le-mi]]?
who Yosi thought that-said that-Dan phoned DAT-who
'Who did Yosi think said that Dan phoned whom?'
d. [mi]$_1$ Yosi xashav [$_{CP}$ she-(t$_1$-)shalax ma le-mi]?
who Yosi thought that-sent what DAT-who
'Who did Yosi think sent what to whom?'

The second type of multiple-wh questions, shown in (3b) above, is what I will term *Nested Interrogatives*. These sentences involve multiple interrogative clauses, with one wh-element moving to the periphery of each interrogative clause. Consider the following example:

(6) Yosi yada [$_{CP}$ [et ma]$_2$ Dan shaxax [$_{CP}$ [le-mi]$_1$ Rina natna t$_1$ t$_2$]]
Yosi knew ACC what Dan forgot DAT-who Rina gave
'Yosi knew [what]$_2$ Dan forgot [to whom]$_1$ Rina gave t$_2$ t$_1$.'

[1] As the felicity of (5a-d) indicates, Hebrew does not manifest an English-like "that-trace effect".

The meaning of Nested Interrogatives is decidedly different from that of Pair/Set-List questions. In (6), what Yosi knows is something about individuals, not about pairs. The meaning of (6) is roughly schematized below:

(7) "Yosi knew the denotation of
$\left\{x \middle|\right.$ Dan forgot the denotation of $\left\{y \middle|\right.$ Rina gave x to $y\left.\right\}\left.\right\}$."

If the structure embedded in (6) appears as a matrix question, the conversationally appropriate answer would be one about individuals, not about pairs:

(8) A: [et ma]$_2$ Dan shaxax [$_{CP}$ [le-mi]$_1$ Rina natna t_1 t_2]?
ACC what Dan forgot DAT-who Rina gave
'[What]$_2$ did Dan forget [from whom]$_1$ Rina gave t_2 t_1?'
B: [et ha-sefer ha-xadash]/ *[et ha-sefer ha-xadash, le-Roni]
ACC the-book the-new ACC the-book the-new DAT-Roni
'The new book./*The new book, to Yosi.'

In this paper, I will be primarily concerned with Nested Interrogatives in Hebrew, the phenomena they manifest, and the analysis of these phenomena.

3. NESTED INTERROGATIVE PHENOMENA[2]

3.1. SUPERIORITY EFFECTS

The phenomenon exhibited by Nested Interrogatives in Hebrew that I will discuss first is a robust superiority pattern. Consider the following contrast:

[2] In many respects, the data discussed here goes back to Reinhart's (1981) paper, itself a response to Rizzi (1978). Indeed, the analysis proposed in section §5 is in many ways inspired by Reinhart's analysis, though the latter was formulated in a decidedly different framework (namely, early Government and Binding theory). The reader may therefore find it surprising that this paper uses very few data points from Reinhart (1981). The reasons for this are twofold:

First, Reinhart's paper conflated three types of A-bar movement in Hebrew: interrogative wh-movement, topicalization, and relativization with an overt pronoun. Topicalization in Hebrew has distinctly different properties than interrogative wh-movement does (e.g., a much reduced sensitivity to islands). The (optional) overt pronoun found in Hebrew relativization structures is arguably very different from the overt wh-pronoun in Hebrew relative clauses, and is perhaps no more than a topicalized resumptive pronoun (as its form seems to indicate). Therefore, the data used in this paper (unless otherwise stated) is carefully restricted to interrogative wh-movement.

Second, the analysis here is more than just a reformulation of Reinhart's GB analysis in contemporary minimalist terms. Specifically, the current analysis places a great deal of importance on the distinction between long and short wh-movement, and the examples are carefully chosen to control for this distinction. While the differences were noticed by Reinhart, they were considered "dialectal", and very few minimal pairs were constructed around this property of the derivation.

(9) a. [et ma]$_2$ Dan shaxax [$_{CP}$ [mi]$_1$ t_1 axal t_2]?
ACC what Dan forgot who ate
'[What]$_2$ did Dan forget [who]$_1$ t_1 ate t_2?'
b. * [mi]$_1$ Dan shaxax [$_{CP}$ [et ma]$_2$ t_1 axal t_2]?
who Dan forgot ACC what ate

Notice that (9a) is not simply a case of *mi* 'who' remaining in situ. First, as noted in section §2, wh-elements in Hebrew can only remain in situ in Echo-Question and Pair/Set-List readings, and (9a) is not such a case. Second, the same superiority effects can be replicated in cases that do not involve subject wh-elements at all:

(10) a. [et ma]$_2$ Dan shaxax [$_{CP}$ [le-mi]$_1$ siparti t_1 [$_{CP}$ she-Rina axla t_2]]?
ACC what Dan forgot DAT-who told.1SG that-Rina ate
'[What]$_2$ did Dan forget [to whom]$_1$ I told t_1 that Rina ate t_2?'
b. * [le-mi]$_1$ Dan shaxax [$_{CP}$ [et ma]$_2$ siparti t_1 [$_{CP}$ she-Rina axla t_2]]?
DAT-who Dan forgot ACC what told.1SG that-Rina ate

Further examples are given below:

(11) a. [mi]$_2$ Dan shaxax [$_{CP}$ [le-mi]$_1$ siparti t_1 [$_{CP}$ she-(t_2-)niceax ba-taxarut]]?
who Dan forgot DAT-who told.1SG that-won in+the-contest
'[Who]$_2$ did Dan forget [to whom]$_1$ I told t_1 [t_2 won the contest]?'
b. * [le-mi]$_1$ Dan shaxax [$_{CP}$ [mi]$_2$ siparti t_1 [$_{CP}$ she-(t_2-)niceax ba-taxarut]]?
DAT-who Dan forgot who told.1SG that-won in+the-contest

(12) a. [et ma]$_2$ Dan shaxax [$_{CP}$ [mi]$_1$ t_1 xashav [$_{CP}$ she-Roni axal t_2]]?
ACC what Dan forgot who thought that-Roni ate
'[What]$_2$ did Dan forget [who]$_1$ t_1 thought that Roni ate t_2?
b. * [mi]$_1$ Dan shaxax [$_{CP}$ [et ma]$_2$ t_1 xashav [$_{CP}$ she-Roni axal t_2]]?
who Dan forgot ACC what thought that-Roni ate

The emergent pattern, already observed by Reinhart (1981), is that for the most part, Nested Interrogatives in Hebrew seem to observe a "non-intersection" constraint – informally, multiple wh-movements must be nested, rather than crossing.[3] Similar

[3] In fact, it seems likely that Nested Interrogatives in Hebrew uniformly obey this constraint, and that apparent deviations from this pattern, noted by Reinhart (1981), can be attributed to the freedom of merging order among internal arguments of Hebrew ditransitives – a fact that was not yet discussed at the time. Since then, it has been occasionally noted in the literature that the internal arguments of ditransitive verbs in Hebrew behave as though they were equidistant to the clausal periphery. Consider the following paradigm, involving multiple-wh questions in a Pair-List configuration:

patterns have been observed for other languages that allow Nested Interrogatives (e.g., French, Italian, and some varieties of English), and were originally handled by positing a general principle of the language faculty against crossing dependencies (see Fodor 1978, Kayne 1984, Pesetsky 1982, i.a.).

In section §5, it will be shown that at least for Hebrew, there is no need to postulate any such principle. Rather, the emergent pattern follows naturally from independently motivated conditions on the economy of movement.

There is an interesting observation to be made here regarding the interaction of superiority and interpretation. Typical superiority effects, of the kind found in Pair/Set-List questions, do not affect interpretation. In those cases, there is a single putative meaning (a "target" LF, so to speak), as in (13), and superiority simply determines which syntactic structure will be used to express this meaning:

(13) $\{\langle x, y\rangle |$ Dan thinks that x ate $y\}$

(14) a. [Who]$_1$ does Dan think [$_{CP}$ t_1 ate what]?
b. * [What]$_1$ (does) Dan think [$_{CP}$ who ate t_1]?

(15) a. [mi]$_1$ Dan xoshev [$_{CP}$ she-(t_1-)axal ma]?
who Dan thinks that-ate what
'[Who]$_1$ does Dan think t_1 ate what?'
b. * [ma]$_1$ Dan xoshev [$_{CP}$ she-mi axal t_1]?
what Dan thinks that-who ate

In other words, the putative meaning of (14b) is the same as the meaning of (14a); superiority effects simply determine that this meaning will be expressed in English as (14a) and not as (14b). The same holds for (15a) vs. (15b) in Hebrew.

(i) a. [et ma]$_1$ Dan xashav she-hexzarta t_1 [le-mi]?
ACC what Dan thought that-returned.2SG to-who
'What did Dan think that you returned to whom?'
b. [le-mi]$_1$ Dan xashav she-hexzarta t_1 [et ma]?
to-whom Dan thought that-returned.2SG ACC what
'To whom did Dan think that you returned what?'
(Preminger 2005:(183a-b))

The grammaticality of both (i.a) and (i.b) is significant, since Hebrew normally exhibits the same kind of superiority effects in Pair-List questions as English does (e.g., when subjects vs. internal arguments are involved).

Superiority effects in Nested Interrogatives are quite different, in this respect. The meaning that the ungrammatical (9b) would have if it were grammatical is different from the meaning of the grammatical (9a):

(16) a. meaning(9a) = $\left\{x \middle|\right.$ Dan forgot the denotation of $\left\{y \middle|\right.$ y ate $x\left.\right\}\left.\right\}$

b. putative-meaning(9b) = $\left\{y \middle|\right.$ Dan forgot the denotation of $\left\{x \middle|\right.$ y ate $x\left.\right\}\left.\right\}$

The relation between (10a) and (10b) is similar:

(17) a. meaning(10a) =
$\left\{x \middle|\right.$ Dan forgot the denotation of $\left\{y \middle|\right.$ I told y that Rina ate $x\left.\right\}\left.\right\}$

b. putative-meaning(10b) =
$\left\{y \middle|\right.$ Dan forgot the denotation of $\left\{x \middle|\right.$ I told y that Rina ate $x\left.\right\}\left.\right\}$

Thus, superiority actually constrains the set of meanings that can be expressed in Hebrew using the Nested Interrogative construction; (16b) and (17b) simply cannot be expressed this way. In itself, this is perhaps not a shocking observation – there are languages (e.g., prescriptive English) that bar this construction completely, so a paraphrase is obviously available. Nevertheless, it is interesting to note this effect, with respect to the so-called "autonomy of syntax".

3.2. THE DISTRIBUTION OF WH-ISLANDHOOD

As the very existence of Nested Interrogatives demonstrates, the conventional wh-Island Condition does not hold of Hebrew. This does not mean, however, that no wh-island effects exist. Compare the felicitous (18a-c) to the infelicitous (19a-c):

(18) a. [eyze sefer]$_2$ shaxaxta [$_{CP}$ [le-mi]$_1$ Dan shalax t_1 t_2]?
which book forgot.2SG DAT-who Dan sent
'[Which book]$_2$ did you forget [to whom]$_1$ Dan sent t_2 t_1?'

b. ? [et ma]$_2$ Rina xashva [$_{CP}$ she-Dan sha'al [$_{CP}$ [le-mi]$_1$ Roni shalax t_1 t_2]]?
ACC what Rina thought that-Dan asked DAT-who Roni sent
'[What]$_2$ does Rina think that Dan asked [to whom]$_1$ Roni sent t_2 t_1?'

c. ? [et ma]$_2$ yadata [$_{CP}$ she-Rina zaxra [$_{CP}$ [mi-mi]$_1$ Dan lakax t_1 t_2]]?
ACC what knew.2SG that-Rina recalled from-who Dan took
'[What]$_2$ did you know that Rina recalled [from whom]$_1$ Dan took t_1 t_2?'

(19) a. * [eyze sefer]$_2$ shaxaxta [$_{CP}$ [le-mi]$_1$ Rina xashva [$_{CP}$ she-Dan shalax t_1 t_2]]?
which book forgot.2SG DAT-who Rina thought that-Dan sent
'[Which book]$_2$ did you forget [to whom]$_1$ Rina thinks that Dan sent t_2 t_1?'

b. * [et ma]$_2$ Rina sha'ala [$_{CP}$ [le-mi]$_1$ Dan xoshev [$_{CP}$ she-Roni shalax t_1 t_2]]?
ACC what Rina asked DAT-who Dan thinks that-Roni sent
'[What]$_2$ did Rina ask [to whom]$_1$ Dan thinks that Roni sent t_2 t_1?'

c. * [et ma]$_2$ yadata [$_{CP}$ [mi-mi]$_1$ Rina zaxra [$_{CP}$ she-Dan lakax t_1 t_2]]?
ACC what knew.2SG from-who Rina recalled that-Dan took
'[What]$_2$ did you know [from whom]$_1$ Rina recalled that Dan took t_1 t_2?'

Notice that in terms of the relative nesting of filler-gap dependencies, (19a-c) mirror the relations in (18a-c). Similarly, (19a-c) represent the same superiority configurations as their felicitous counterparts in (18a-c). Therefore, neither of these properties (filler-gap nesting or superiority) can explain the contrast in grammaticality between the two sets.

The difference that underlies the attested contrast seems to be one of *short wh-movement* (movement of a constituent to the periphery of the clause where it was base-generated) vs. *long wh-movement* (movement of a constituent to the periphery of a clause above the one where it was base-generated).

In all of the infelicitous cases (19a-c), there is at least one clausal periphery through which more than one element has performed long-distance wh-movement. In the felicitous cases (18a-c), for every given clausal periphery, at most one wh-element has moved long-distance through that periphery.

Another, perhaps simpler way to conceive of these facts is that short wh-movement does not "clog" the left periphery of the clause in Hebrew, while long wh-movement does. This means that once a wh-element has moved out of a given clause, the sole escape hatch of that clause is no longer available for movement of other wh-elements.

4. BACKGROUND: A-BAR MOVEMENT BELOW THE OVERT COMPLEMENTIZER

Hebrew has an extremely productive and pragmatically unmarked operation of topicalization, which targets a position below the overt complementizer. This phenomenon, which I will refer to as *Sub-Complementizer Topicalization* (henceforth, SCT), is exemplified below:[4]

[4] The use of the term *topicalization* is probably a misnomer here – *focalization* would probably be a more accurate description of the information-structural import of this operation – but one that I am inheriting from a substantial tradition of generative analyses of Hebrew.

(20) Dan amar [$_{CP}$ she-[et ha-sefer limud]$_1$ hu kara t$_1$]
Dan said that-ACC the-book teaching he read
'Dan said that he had read THE TEXTBOOK.'

To establish that SCT is indeed a case of A-bar movement, let us consider some of the relevant diagnostics. First, SCT behaves as A-bar movement with respect to the licensing of P(arasitic) G(ap)s – namely it licenses them:

(21) Dan amar [$_{CP}$ she-[et ha-sefer ha-ze]$_1$ hu kara t$_1$ (mi-)bli liknot PG]
Dan said that-ACC the-book the-this he read from-without buy.INF
'Dan said that he had read THIS BOOK$_i$ without buying it$_i$.'

Compare this with a clear-cut case of A-movement, of the kind involving the raising predicate *amur* 'supposed to' (lit. 'said.PASV'), which predictably fails to license PGs:

(22) a. Dan amar [$_{CP}$ she-[ha-sefer ha-ze]$_1$ amur t$_1$ le'orer maxloket]
Dan said that-the-book the-this supposed wake.INF controversy
'Dan said that this book is supposed to cause controversy.'
b. * Dan amar [$_{CP}$ she-[ha-sefer ha-ze]$_1$ amur t$_1$ le'orer maxloket
Dan said that-the-book the-this supposed wake.INF controversy
(mi-)bli liknot PG]
from-without buy.INF

In addition, the landing site of SCT fails to act as an A-binder. Note, for example, the lack of Condition C effects in (23b), below, with respect to the pronoun *acma* 'herself' and the R-expression *Rina*:

(23) a. Dan amar [$_{CP}$ she-Rina$_i$ ohevet et acma$_i$]
Dan said that-Rina likes ACC herself
'Dan said that Rina$_i$ likes herself$_i$.'
b. Dan amar [$_{CP}$ she-[et acma$_i$]$_1$ Rina$_i$ ohevet t$_1$]
Dan said that-ACC herself Rina likes
'Dan said that Rina$_i$ likes HERSELF$_i$.'

Compare this with a prototypical case of A-movement – namely (24b), which is the verbal passive counterpart of (24a):

(24) a. ? Dan amar [$_{CP}$ she-ha-mishtara acra ota$_i$ [axrey she-Rina$_i$ xazra]]
Dan said that-the-police arrested ACC.her after that-Rina returned
'Dan said that the police arrested her$_i$ after Rina$_i$ came back.'

b. * Dan amar [$_{CP}$ she-[hi$_i$]$_1$ ne'ecra t_1 [axrey she-Rina$_i$ xazra]]
Dan said that-she PASV.arrested after that-Rina returned

Once again, SCT fails to pattern with A-movement, instead patterning with A-bar movement.

Borer (1995) claims that SCT in Hebrew is in fact a case of scrambling, manifesting mixed A and A-bar properties. The central piece of evidence for non-A-bar behavior is the lack of W(eak) C(ross)O(ver) effects in SCT constructions, as shown below:

(25) a. Dan yode'a [$_{CP}$ she-kol yeled$_i$ ohev et ima shelo$_i$]
Dan knows that-everyboy loves ACC motherhis
'Dan knows that every boy$_i$ loves his$_i$ mother.'
b. Dan yode'a [$_{CP}$ she-[et ima shelo$_i$]$_1$ kol yeled$_i$ ohev t_1]
Dan knows that-ACCmotherhis every boy loves
'Dan knows that every boy$_i$ loves HIS$_i$ MOTHER.'

However, as argued by Lasnik and Stowell (1991), WCO effects are far from being a perfect diagnostic for A-bar movement. Specifically, they do not arise when non-quantificational variable-binding is involved. Appositive relativization is such a case, and WCO effects fail to appear in appositive relative clauses in Hebrew as well:

(26) a. John will speak to this girl$_k$, who her$_k$ mother truly loves.
b. Dina tedaber im ha-yeled ha-ze$_k$, she-im-o$_k$ be-'emet ohevet
Dina speak.FUT with the-boy the-this that-mother-his in-truth loves
'Dina will speak to this boy$_k$, who his$_k$ mother truly loves.'

It seems highly plausible that if appositive relative clauses are non-quantificational by nature (as opposed to wh-questions, for example), then SCT is non-quantificational in precisely the same way. Indeed, it would seem that the information-structural import of SCT bears similarity to that of an appositive relative clause: removing an appositive relative clause has no effect on the truth-conditions of a sentence, and undoing SCT in a sentence where it has applied has no truth-conditional effect either.

In light of the existence of such confounding factors, the lack of WCO effects in SCT can hardly be taken as straightforward evidence for non-A-bar characteristics. Moreover, Borer (1995) fails to note the failure of the landing site of SCT to A-bind (as shown in (23), above). The latter bolsters the idea that WCO effects fail to appear not because the landing site of SCT displays A-position properties, but rather due to some other property of the construction (such as the specific non-quantificational nature of the operator-variable relations created by SCT, as suggested here).

5. AN ANALYSIS OF HEBREW NESTED INTERROGATIVES

In this section, I present the proposed analysis of Nested Interrogatives in Hebrew, and demonstrate how it derives the phenomena discussed in section §3.

5.1. THE PROPOSAL

5.1.1. PROJECTIONS

In light of the SCT facts discussed in section §4, it is reasonable to assume that Hebrew has an A-bar operator position below its overt complementizer. In §3.2, it was demonstrated that short wh-movement (movement of a wh-element to the periphery of the clause where it was base-generated) does not "clog" the left periphery – i.e., subsequent movement of another wh-element out of the same clause is possible.

Taken together, these facts suggest that like SCT, Hebrew wh-movement targets a position below the complementizer. This suggests that the properties embodied in the English CP are not shared by a single projection in Hebrew, but rather distributed between at least two projections:

(27) a. <u>higher projection:</u>
   (i) serves as the clausal escape-hatch
   (ii) hosts the overt complementizer (presumably, as its head)
   b. <u>lower projection:</u>
   (i) is the complement of the head of the higher projection (in (a))
   (ii) is the locus for A-bar operator interpretation

5.1.2. LABELS

At this point, a choice must be made: which of the aforementioned projections shall we label "CP"? This is partially a matter of aesthetic preference (since neither is completely equivalent to its English counterpart), but not exclusively so. For example, if we had evidence that these two projections could be filled independently and simultaneously to TP being filled, then (27b) could not be TP. If one had an independent preference for no additional projections to exist between CP and TP, it would follow that (27b) is CP, and (27a) is something else. However, it is not clear that evidence of this kind exists.

Borer (1995) argues that SpecTP is the target position for SCT in Hebrew. In that case, one may be tempted to identify (27b) as TP, and (27a) as CP. However, her argument relies heavily on problematic WCO data, and disregards the failure of the landing site of SCT to A-bind (see section §4 for a discussion of both).

Since I am aware of no clear-cut empirical reason to prefer either (27a) or (27b) as the projection to be labeled "CP", I will choose (27a). This keeps the following properties of CP cross-linguistically constant: being the highest clausal projection, hosting the overt complementizer, and providing the clausal escape hatch for wh-movement – leaving only the target position of wh-movement to vary cross-linguistically.

This choice finds independent support in the analyses of wh-movement and related phenomena in other languages. In Hungarian, it has been argued that wh-movement, though overt, does not target SpecCP; rather, it targets the specifier of a lower peripheral projection, which we could call FocP (Brody 1995, É. Kiss 1987). This analysis of Hungarian supports the idea that even among languages that perform their wh-movement overtly, the target position of such movement may vary.

Furthermore, van Craenenbroeck and Liptak (2006) show that Hungarian supports a kind of sluicing they call Relative Deletion (RD). In RD, a TP internal to the relative clause is deleted. Crucially, RD leaves behind not only the nominal "head" of the relative clause, but also a clause-internal focused element:

(28) János meghívott valakit és azt hiszem, hogy Bélát
János PV.invited someone.ACC and that.ACC think that Bélá.ACC
'János invited someone, and I think it was Bélá whom he invited.'

I will not go into the details of their analysis here, but the relevant generalization is the following: in any given language, if wh-movement targets SpecXP, sluicing will invariably elide the complement of X^0. The analysis, then, hinges on the fact that Hungarian wh-movement targets the same position as focalization does, namely SpecFocP.

Van Craenenbroeck and Liptak argue that RD is allowed in exactly those languages that have clause-internal focus movement: of the languages in their sample, it is allowed in Hungarian, Polish, and Russian, and disallowed in English, Dutch, and German.

Interestingly, Hebrew supports RD as well:

(29) Dan hizmin mishehu la-mesiba, nidme li she-et Dina
Dan invited someone DAT.the-party seems DAT.1SG that-ACC Dina
'Dan invited someone to the party, and I think it was Dina whom he invited.'

The felicity of (29) is thus predictable if Hebrew wh-movement, like its Hungarian counterpart, targets the same position as focalization.

Returning to (27a-b), I will adopt the following naming convention:

(30) a. higher projection: CP
   (i) serves as the clausal escape-hatch
   (ii) hosts the overt complementizer (presumably, as its head)
  b. lower projection: FocP
   (i) is the complement of the head of the higher projection (in (a))
   (ii) is the locus for A-bar operator interpretation

It may be that in Hebrew, FocP is none other than TP (as Borer 1995 claims), in which case (30b) is nothing more than a notational equivocation – but I do not think the case has convincingly been made for such unification. I leave this open for further research.

5.1.3. LEXICAL SELECTION

What does it mean, syntactically, for wh-movement to target SpecFocP? A likely explanation is that in Hebrew, [*u*+wh] is on Foc^0 rather than C^0. Yet, such a move may appear to complicate lexical selection. The unsurprising reality is, that there exist verbs in Hebrew that select exclusively for interrogatives, and conversely, verbs that select exclusively for declaratives. Some example are given below:

(31) a. * Dan taha/sha'al she-ha-rakevet azva
   Dan wondered/asked that-the-train left
  b. Dan taha/sha'al le-mi Dina kar'a
   Dan wondered/asked DAT-who Dina called
   'Dan wondered/asked who Dina called.'

(32) a. Dan ta'an/hitakesh she-ha-rakevet azva
   Dan claimed/insisted that-the-train left
   'Dan claimed/insisted that the train had left.'
  b. * Dan ta'an/hitakesh le-mi Dina kar'a
   Dan claimed/insisted DAT-who Dina called

Assuming that lexical selection is and should be restricted to syntactic sisterhood of the relevant projections (see Landau 2006), this may appear to be at odds with the previous conclusion, regarding the locus of [*u*+wh]. To select exclusively for interrogatives, the relevant feature for which the verb selects must be on the highest clausal projection – in our terms, on CP.

The familiar observation is that interrogativity and wh-movement do not stand in a bi-conditional relation. The verbs in (31) are also fine when complemented by a "yes/no"-interrogative, in which no wh-movement has occurred:

(33) Dan taha/sha'al im Dina kvar higia
Dan wondered/asked if Dina already arrived
'Dan wondered/asked whether Dina already arrived.'

Thus, we arrive at the following pattern of lexical selection:

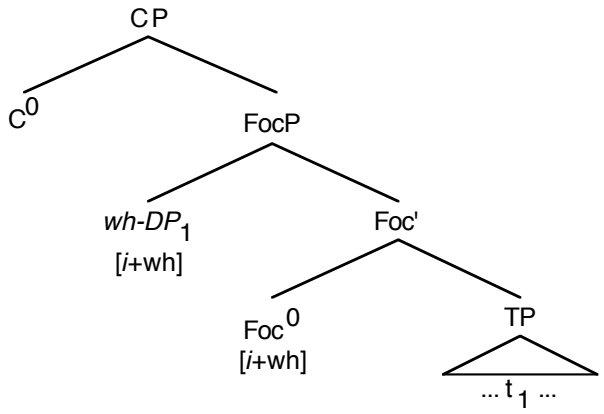
(34) a. {*class of verbs in (32)*} → C^0[–Q] → Foc^0[–wh]
b. {*class of verbs in (31/33)*} → C^0[+Q] → Foc^0[±wh]

What the verbs in (31-32) select for, then, is the value of [Q] – it is not clear that there is ever direct lexical selection by a verb for the value of [wh]; and since [Q] is on C^0, this does not pose a problem to keeping lexical selection restricted to syntactic sisterhood of the relevant projections.

5.1.4. MECHANICS

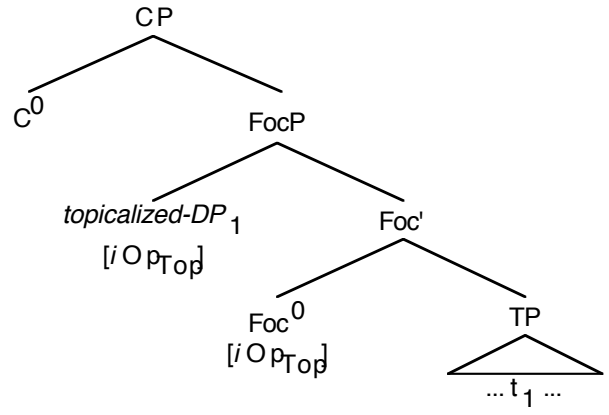
Given that in Hebrew, [*u*+wh] is on Foc^0, we would thus predict wh-elements to move to SpecFocP to receive question-operator interpretation:

(35)



In fact, it seems likely that [*u*+wh] is actually a specific value of the operator feature (see van Craenenbroeck & Liptak 2006), namely [*u*Op_{wh}]. We would therefore expect [*u*Op_{Top}], the topicalization value of the operator feature, to behave the same way:

(36)



Given that in Hebrew, declarative C^0 is overt, (36) gives us the attested surface order for clauses that have undergone SCT (see section §4); but the general schema in (35-36) has significantly more explanatory power, in terms of predicting the behavior of the left clausal periphery in Hebrew. These predictions are discussed below.

5.2. EMPIRICAL COVERAGE

Let us examine how the proposal in §5.1 fares in accounting for the phenomena exhibited by Nested Interrogatives, as they were discussed in section §3.

At this point, it is worthwhile to make explicit some fundamental (and hopefully uncontroversial) assumptions. First, a C^0 projection with multiple specifiers would obviate any wh-island effects, as there would always be one more edge position available at the CP phase. Since, as shown in §3.2, Hebrew does manifest at least some wh-island effects, it cannot have multiple CP specifiers.

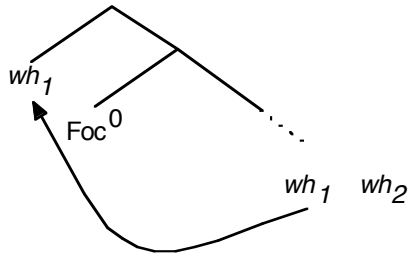
Second, wh-island effects are often attributed to the P(hase) I(mpenetrability) C(ondition) (Chomsky 2001), the modern successor to Subjacency and/or the explicit wh-Island Condition. I wish to remain neutral here as to whether the PIC is actually a grammatical primitive, or rather derivable from other principles of the grammar.[5] In what follows, I will be merely assuming that the PIC is a valid generalization.

[5] See Richards (2006) for a particularly intriguing proposal, deriving not only the PIC, but also the identity of the phase heads and their properties, from principles of optimal design

5.2.1. DRIVING SUCCESSIVE-CYCLICITY

Given the proposal in §5.1, Foc^0 in Hebrew interrogative clauses is equipped with [*u*Op_{wh}], which attracts a wh-element. For concreteness, let us assume a clause with exactly two wh-elements, wh_1 and wh_2, and for purposes of this sub-section, let us disregard their hierarchical configuration. Foc^0 will then attract one of these wh-elements, say wh_1:

(37)



What will be the fate of wh_2? Since there are no remaining active wh-features (or more precisely, [*u*Op_{wh}] features) in the current clause, its situation is comparable to the situation faced by a wh-element inside an English declarative clause. Consider the embedded clause in (38), below:

(38) Who_1 do you think (that) Dan met?

This exceedingly simple example represents a long-standing problem with respect to the probe-oriented, feature-attraction theory of movement. We know that *who* makes it out of the embedded clause in (38). Locality (e.g., the PIC) tells us that this cannot happen in one fell swoop; rather, it happens successive-cyclically, through the intermediate SpecCP. However, none of this explains what *drives* this movement. Why does *who* move out of its base position, in the first place?

Claiming that *who* moves to the edge of the embedded CP in (38) so it can later check a feature on the matrix C^0 amounts to computational look-ahead. Positing a syntactically active feature on the embedded C^0 runs into an immediate problem – explaining how this feature does not crash the derivation in simple declaratives, where there is no wh-element that passes through C^0:

(39) I think (that) Dan met Dina.

Claiming that wh-feature-equipped declarative C^0 is selected for the numeration in precisely those environments where it is needed (e.g., in (38) but not in (39)) simply

relegates the aforementioned look-ahead property from the derivation to the numeration, but the problem remains.

Several approaches of more interest have been taken to this problem. While it is beyond the scope of this paper to seriously evaluate and compare these proposals, I will mentioned two of them here. First, one may seek to refine the two-way division of syntactic features. In standard minimalist analyses, features are taken to be either syntactically active (i.e., capable of driving movement), in which case they are capable of crashing the derivation (if they arrive at the interfaces unchecked), or alternatively, syntactically inactive, in which case they are amenable to interpretation at the interfaces and will not crash the derivation. Pesetsky and Torrego (2006) argue that the bi-conditional implicated in this description should be severed. In particular, they argue for the existence of syntactically active features that are not uninterpretable. With respect to the case at hand, one could say that declarative C^0 in English carries an interpretable but unvalued wh-feature: [*i*$Op_{\varnothing}$]. This feature would attract a wh-element, if present (as in (38)), to SpecCP – but would not crash the derivation of a clause without such a wh-element (as in (39)).

Alternatively (and these alternatives are not mutually exclusive), one may argue that the existence of probe-driven movement does not rule out the possibility of foot-driven movement – that is, movement driven by the needs of the moved element, rather than its landing site (or some element close to its landing site). It has been argued that the existence of such movement is an empirical necessity (see van Craenenbroeck 2006, Platzack 1996, Riemsdijk 1997, i.a.). In this case, one could say that *who* moves out of the embedded clause in (38) because it needs to be in an operator position, and one is unavailable within the embedded clause.

For expositional purposes, I will adopt Pesetsky and Torrego's (2006) approach – though, as far as I can see, nothing that follows hinges on this particular implementation, nor rules out the alternative approaches to this issue.

The derivation of (38) thus proceeds by means of [*i*$Op_{\varnothing}$] – an unvalued but interpretable operature feature – on the embedded C^0 attracting *who*. However, being unvalued, [*i*$Op_{\varnothing}$] fails to value the corresponding feature on *who*, and the latter remains visible to the probe on the matrix C^0 – presumably [*u*Op_{wh}], just as on Hebrew Foc^0 in interrogative clauses.

Since features must be valued in order to be interpreted (see Pesetsky & Torrego 2006), and [*i*$Op_{\varnothing}$] leaves the corresponding feature on the wh-element itself unvalued, the wh-element cannot be left in a declarative SpecCP position:

(40) * I think who$_1$ (that) Dan met t_1.

The unvalued feature on the wh-element must eventually receive a value – e.g., as it does from [*u*Op$_{wh}$] on the matrix C^0 in (38).[6]

Long-distance wh-movement out of declarative clauses, as in the English (38), exists in Hebrew as well:

(41) et-mi ata xoshev she-Dan pagash?
ACC-who you think that-Dan met
'Who do you think that Dan met?'

So declarative C^0 in Hebrew (as in the embedded clause in (41)) must be just like its English counterpart – namely, equipped with an unvalued [*i*Op$_{\varnothing}$].

However, unlike the state of affairs in English, the same phenomenon exemplified by (38) and (41) is also found in embedded interrogative clauses in Hebrew. For example, recall (18a), repeated below:

(42) [eyze sefer]$_2$ shaxaxta [$_{CP}$ [le-mi]$_1$ Dan shalax t_1 t_2]?
which book forgot.2SG DAT-who Dan sent
'[Which book]$_2$ did you forget [to whom]$_1$ Dan sent t_2 t_1?'

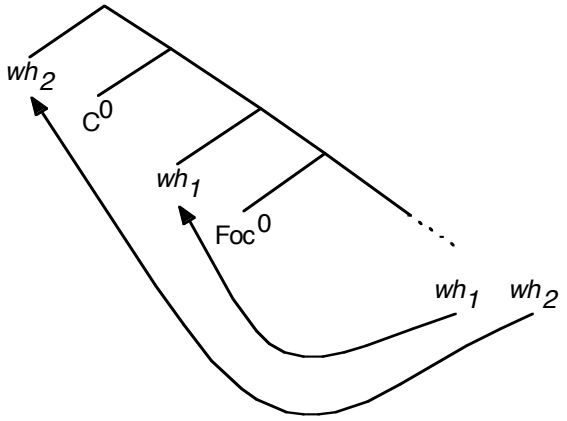
The simplest possible account for this would be that in Hebrew, interrogative C^0 – just like declarative C^0 – is equipped with [*i*Op$_{\varnothing}$].[7] Thus, after [*u*Op$_{wh}$] on Foc^0 attracts the hierarchically closest wh-element to SpecFocP (as described above), [*i*Op$_{\varnothing}$] on C^0 can attract a remaining wh-element to SpecCP. Once again, given two wh-elements, *wh*$_1$ and *wh*$_2$, such that *wh*$_1$ has been attracted by Foc^0, the following pattern will emerge:

[6] In Pesetsky and Torrego's (2006) framework, the unvalued (and uninterpretable) feature on the wh-element, as well as the unvalued (but interpretable) feature on the lower C^0, receive their value by means of a feature-sharing relation.

[7] In fact, nothing goes wrong if one assumes that both types of C^0, both in Hebrew and in English, are equipped with [*i*Op$_{\varnothing}$]. Since interrogative C^0 in English has, in addition, a [*u*Op$_{wh}$] feature, the latter will value the corresponding feature on wh-elements, and they will therefore move no further. The "superfluous" unvalued [*i*Op$_{\varnothing}$] will be prevented from attracting another wh-element (and creating a pattern comparable with Hebrew) by the restriction of CP to a single specifier position.

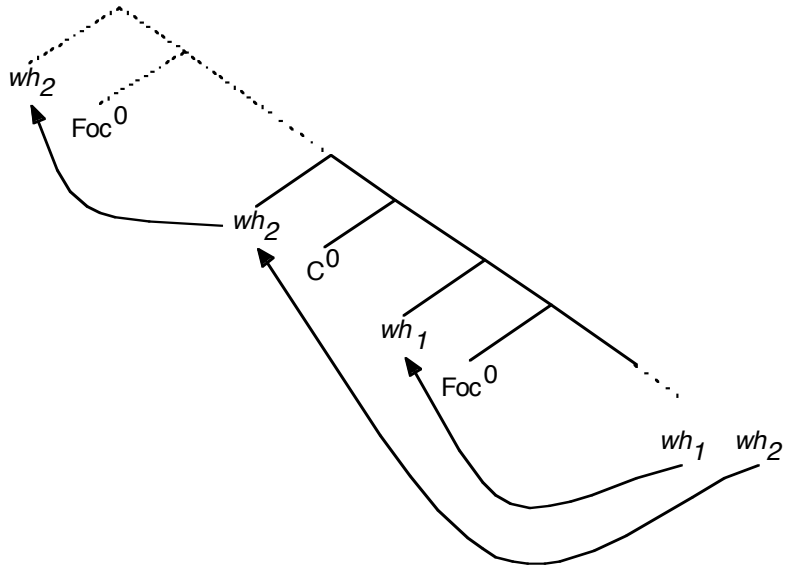
This version is arguably more uniform, and therefore perhaps more appealing, than the one presented in the text – but this is significant only if one commits oneself to Pesetsky and Torrego's (2006) approach with respect to driving long-distance wh-movement.

(43)



Given that CP is a phase, wh_2 (and only wh_2) will be accessible to further computation. In particular, a [uOp$_{wh}$] feature on a subsequent Foc^0 will be able to attract wh_2, as shown below:

(44)



Thus, successive-cyclic wh-movement out of Hebrew interrogative clauses (and in fact, out of any Hebrew clause) is facilitated, on par with English declarative clauses.

Moreover, such an account also derives another generalization about wh-movement in Hebrew. Recall that in section §2, it was pointed out that there is a seemingly independent constraint against the appearance of more than one wh-element at a given clausal periphery. Recall (2a-b), repeated below:

(45) a. * [ma]$_1$ [le-mi]$_2$ Dan natan t_1 t_2?
what *DAT-who* *Dan* *gave*
b. * [le-mi]$_1$ [ma]$_2$ Dan natan t_2 t_1?
DAT-who *what* *Dan* *gave*

As was shown in (3a-b), repeated below, this is not a constraint against two wh-elements being base-generated in the same clause (as in (46a)), or even against two wh-elements that were base-generated in the same clause both undergoing movement (as in (46b)):

(46) a. [ma]$_1$ Dan natan t_1 le-mi?
what *Dan* *gave* *DAT-who*
'What did Dan give to whom?'
b. [ma]$_2$ Dina shaxexa [le-mi]$_1$ Dan natan t_1 t_2?
what *Dina* *forgot* *DAT-who* *Dan* *gave*
'[What]$_2$ did Dina forget [to whom]$_1$ Dan gave t_1 t_2?'

The current approach captures this generalization quite neatly: while the [*u*Op$_{wh}$] feature on Foc^0 values the corresponding feature on the wh-element, the [*i*Op$_\varnothing$] feature on C^0 does not. Therefore, a wh-element that has been attracted to C^0 by [*i*Op$_\varnothing$] must eventually be attracted by a higher Foc^0, to have its feature valued.

This is completely equivalent to the behavior of English declarative C^0, as exemplified in (40), above – and fully expected, if as stated above, the featural content of Hebrew interrogative (as well as declarative) C^0 is on par with English declarative C^0. The ungrammaticality shown in (45) is therefore of the same nature as the ungrammaticality shown in (40).[8]

Thus, while two wh-elements can derivationally occupy the same clausal periphery in Hebrew, one will invariably have to move on. Hence, no two wh-elements will ever appear overtly at the same clausal periphery.

5.2.2. THE SUPERIORITY PATTERN DERIVED

As shown in §3.1, when there are multiple interrogative clausal peripheries, the lower periphery attracts the higher wh-element, in essence obeying *Shortest Attract*. The higher clausal periphery then attracts the remaining (lower) wh-element. As discussed in §3.1, this pattern is in line with a large body of work regarding the requirement that A-bar filler-gap dependencies be nested rather than crossing (see Fodor 1978, Kayne 1984, Pesetsky 1982, i.a.).

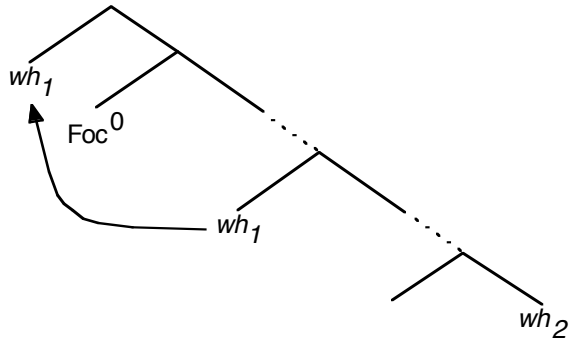
[8] Note that superiority effects could rule out at most one of the two sentences in (45a-b), and in fact probably rule out neither (see fn. 3).

However, given the current proposal, there is no need for recourse to anything other than general, independently motivated primitives governing the economy of syntactic movement, and in particular, the structural proximity between probe and goal.

Let us assume that something like *Shortest Attract*, the *Minimal Link Condition*, or any other comparable economy condition on movement, is operative. Upon merger of Foc^0, the [uOp$_{wh}$] feature on it will then attract the hierarchically closest wh-element in its search domain.

Let us now assume that our two wh-elements, wh_1 and wh_2, are such that wh_1 asymmetrically c-commands wh_2. In this state of affairs, it will necessarily be wh_1 that is attracted to SpecFocP:

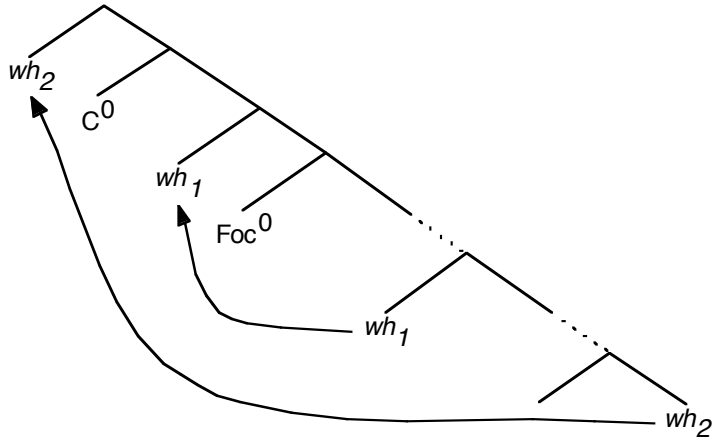
(47)



Assuming an unvalued [iOp$_{\varnothing}$] feature on C^0 (as outlined in §5.2.1), wh_2 will then be attracted to SpecCP. Note that even though wh_1 is closer (in fact, both the copy in SpecFocP and the copy at the base position are closer), its wh-feature has been valued and checked by [uOp$_{wh}$] on Foc^0, and so it is irrelevant for the current computation. We therefore arrive at the following state of affairs:[9]

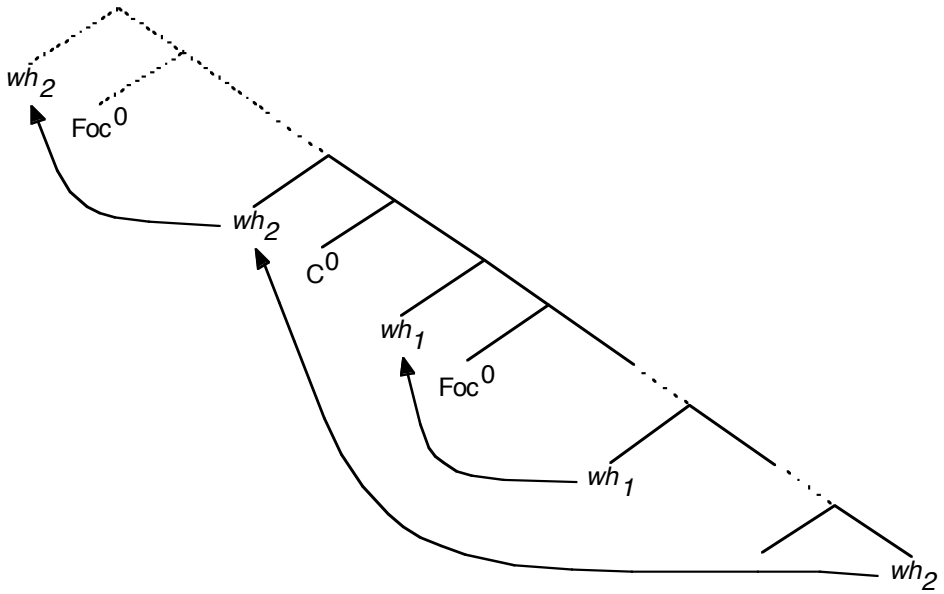
[9] On the effects (or lack thereof) of an additional phase at the verb-phrase level (e.g., v*P), see §6.1.

(48)



As discussed in §5.2.1, the fact that CP is a phase means that only *wh*$_2$ will be available for subsequent computation, and in particular, movement into a higher clause.[10] By hypothesis, such movement into a higher clause will be the result of a higher Foc^0 attracting *wh*$_2$ from the embedded SpecCP, as schematized below:

(49)



[10] In fact, for this particular configuration, one need not appeal to the phasehood of CP at all. Assuming a hierarchically higher-up probe, *wh*$_2$ will be the closest (and only) syntactically active wh-element. However, as will become evident during the discussion of islandhood phenomena in Nested Interrogatives, the phasehood of CP is indeed operative.

Given the general schema in (49), let us turn to analyzing the examples presented in §3.1. As a first example, recall (9a-b), repeated below:

(50) a. [et ma]$_2$ Dan shaxax [$_{CP}$ [mi]$_1$ t$_1$ axal t$_2$]?
ACC what Dan forgot who ate
'[What]$_2$ did Dan forget [who]$_1$ t$_1$ ate t$_2$?'
b. * [mi]$_1$ Dan shaxax [$_{CP}$ [et ma]$_2$ t$_1$ axal t$_2$]?
who Dan forgot ACC what ate

Consider the embedded clause in (50a-b), abstracting away from irrelevant details:

(51) [$_{TP}$ mi [axal [et ma]]]
who ate ACC what

In (51), both wh-elements are at their base positions. The element *mi* ('who') is hierarchically higher (i.e., equivalent to *wh$_1$* in the general schema, (49)). When Foc^0 probes for wh-elements, it will attract *mi* ('who'), moving it to SpecFocP and rendering it syntactically inactive:

(52) [$_{FocP}$ [mi]$_1$ [$_{TP}$ t$_1$ [axal [et ma]]]]
who ate ACC what

Now, when C^0 probes, only *et ma* ('ACC what') remains as an active wh-elements, and it will be moved to SpecCP:

(53) [$_{CP}$ [et ma]$_2$ [$_{FocP}$ [mi]$_1$ [$_{TP}$ t$_1$ [axal t$_2$]]]]
ACC what who ate

Being at SpecCP, *et ma* ('ACC what') is at the edge of the phase, and therefore accessible for further computation. Thus, it subsequently moves to the matrix SpecFocP, as illustrated below:

(54) [$_{FocP}$ [et ma]$_2$ Dan shaxax [$_{CP}$ t$_2$ [$_{FocP}$ [mi]$_1$ [$_{TP}$ t$_1$ [axal t$_2$]]]]]
ACC what Dan forgot who ate

This successfully derives the grammatical (50a).

In the ungrammatical (50b), the matrix Foc^0 attempts to attract *mi* ('who'). Since both the base-position of *mi* ('who'), and its position at the left periphery of the embedded clause, are within the complement domain of the embedded C^0, neither is accessible to

probing by the time the matrix Foc^0 probes (by virtue of the PIC). This renders (50b) an illicit computation.

As a further example, recall (10a-b), repeated below:

(55) a. [et ma]$_2$ Dan shaxax [$_{CP}$ [le-mi]$_1$ siparti t_1 [$_{CP}$ she-Rina axla t_2]]?
ACC what Dan forgot DAT-who told.1SG that-Rina ate
'[What]$_2$ did Dan forget [to whom]$_1$ I told t_1 that Rina ate t_2?'

b. * [le-mi]$_1$ Dan shaxax [$_{CP}$ [et ma]$_2$ siparti t_1 [$_{CP}$ she-Rina axla t_2]]?
DAT-who Dan forgot ACC what told.1SG that-Rina ate

In the derivation of (55), *et ma* ('ACC what') is not attracted by the most-embedded Foc^0. This follows from the current proposal. The most-embedded clause is declarative, as evinced by the overt declarative complementizer *she* ('that'). As discussed in §5.1.3, declarative C^0 selects only non-wh FocPs.[11] As a result, there is no feature on the most-embedded Foc^0 to attract *et ma* ('ACC what'), and it cannot move there – a welcome result, since the PIC would then have precluded it from moving further.

Since *et ma* ('ACC what') is attracted by the most-embedded C^0 rather than the most-embedded Foc^0, it moves to the most-embedded SpecCP, and is accessible for movement to the higher clause:

(56) [$_{TP}$ siparti le-mi [$_{CP}$ [et ma]$_2$ [$_{C'}$ she-Rina axla t_2]]]
told.1SG DAT-who ACC what that-Rina ate

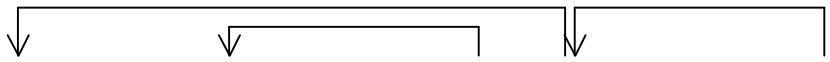
When the Foc^0 immediately above the TP in (56) probes, it will attract the hierarchically-higher *le-mi* ('DAT-who'), moving it to SpecFocP:

(57) [$_{FocP}$ [le-mi]$_1$ [$_{TP}$ siparti t_1 [$_{CP}$ [et ma]$_2$ she-Rina axla t_2]]]
DAT-who told.1SG ACC what that-Rina ate

The C^0 immediately above the FocP in (57) will attract the remaining wh-element, namely *et ma* ('ACC what'):

(58) [$_{CP}$ [et ma]$_2$ [$_{FocP}$ [le-mi]$_1$ [$_{TP}$ siparti t_1 [$_{CP}$ t_2 she-Rina axla t_2]]]]
ACC what DAT-who told.1SG that-Rina ate

[11] Declarative C^0 can still select FocPs capable of topicalization (i.e., FocPs equipped with [*u*Op$_{Top}$]), but this is irrelevant to the case at hand.



Being at the edge of the intermediate CP, *et ma* ('ACC what') will then be the only candidate for successive wh-movement to the periphery of the matrix clause:

(59) [FocP [et ma]$_2$ Dan shaxax [CP t$_2$ [FocP [le-mi]$_1$ [TP siparti t$_1$ [CP t$_2$ she-...]]]]]
ACC *what Dan forgot* *DAT-who told.1SG* *that-...*

This successfully derives the grammatical (55a).

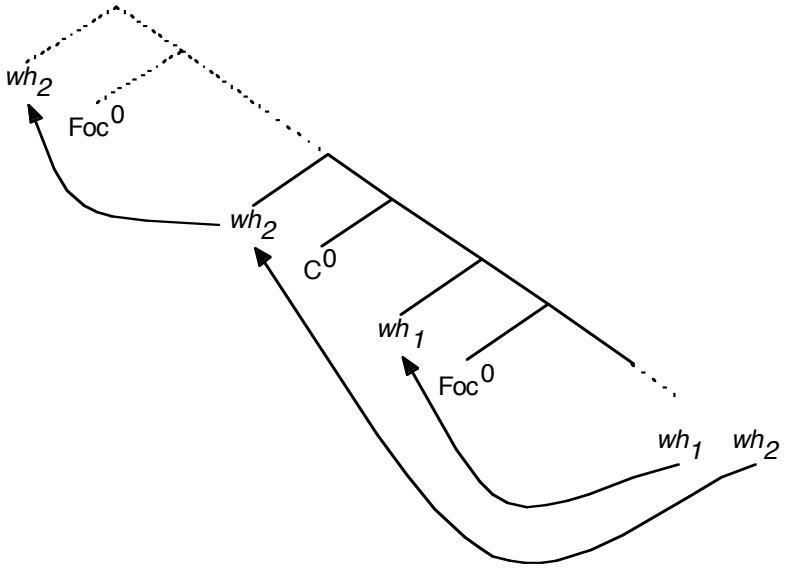
In the ungrammatical (55b), the matrix Foc^0 attempts to attract *le-mi* ('DAT-who'), all copies of which are within the complement domain of the embedded C^0, and thus inaccessible by that time.

5.2.3. THE DISTRIBUTION OF WH-ISLANDHOOD DERIVED

As noted in §3.2, short wh-movement (i.e., movement of an element to the periphery of the clause where it was base-generated) does not "clog" the left periphery of the Hebrew clause. Long wh-movement, however, does exactly that: it renders the clause from which the wh-element was extracted an island

If Foc^0 carries a [*u*Op$_{wh}$] feature, as proposed in §5.1, it provides a left-peripheral landing site for a wh-element (i.e., SpecFocP), which crucially does not involve the CP projection. Thus, when an element moves to the periphery of the clause where it was base-generated, it need not pass through SpecCP at all. Recall the schema in (44), repeated below:

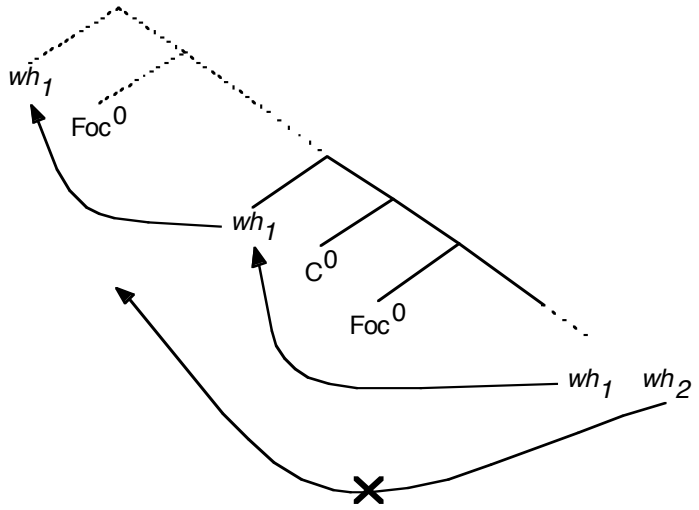
(60)



This explains why short wh-movement will not give rise to islandhood.

Long wh-movement, however, necessarily involves a wh-element moving out of the CP in which it was base-generated. Since the FocP projection is within the complement domain of C^0, it is not accessible to computation outside of the CP phase. Therefore, movement to SpecFocP (as described above) would not suffice to facilitate the wh-element escaping that phase. The element must exit the complement domain of C^0 entirely, and in Hebrew, that means passing through the single specifier position of CP:

(61)



This renders the single edge position of CP occupied, preventing any further extraction from within the CP phase, which explains why long wh-movement does give rise to islandhood in Hebrew.

Let us now turn to analyzing the examples presented in §3.2. Recall (18a), repeated below:

(62) [eyze sefer]$_2$ shaxaxta [$_{CP}$ [le-mi]$_1$ Dan shalax t_1 t_2]?
which book forgot.2SG DAT-who Dan sent
'[Which book]$_2$ did you forget [to whom]$_1$ Dan sent t_2 t_1?'

The embedded clause in (62) would start out as follows:

(63) [$_{TP}$ Dan shalax [le-mi] [eyze sefer]]
Dan sent DAT-who which book

By hypothesis, the embedded Foc^0 carries a [*u*Op$_{wh}$] feature. Consequently, it probes for a wh-element and attracts *le-mi* ('DAT-who'):[12]

(64) [$_{FocP}$ [le-mi]$_1$ [$_{TP}$ Dan shalax t_1 [eyze sefer]]]
DAT-who Dan sent which book

Crucially, this state of affairs leaves SpecCP available for subsequent movement of a wh-element out of the same embedded clause. Hence, when C^0 (or more accurately, [*i*Op$_{\varnothing}$] on C^0) probes, it will attract *eyze sefer* ('which book'):

(65) [$_{CP}$ [eyze sefer]$_2$ [$_{FocP}$ [le-mi]$_1$ [$_{TP}$ Dan shalax t_1 t_2]]]
which book DAT-who Dan sent

The phrase *eyze sefer* ('which book') is now at the edge of the CP phase, rendering it accessible to further computation. It will then be attracted by [*u*Op$_{wh}$] on the matrix Foc^0, moving it to its surface position in the matrix periphery:

(66) [$_{FocP}$ [eyze sefer]$_2$ shaxaxta [$_{CP}$ t_2 [$_{FocP}$ [le-mi]$_1$ [$_{TP}$ Dan shalax t_1 t_2]]]]
which book forgot.2SG DAT-who Dan sent

Now recall (19a), repeated below – the ungrammatical counterpart of (62), above:

(67) * [eyze sefer]$_2$ shaxaxta [$_{CP}$ [le-mi]$_1$ Rina xashva [$_{CP}$ she-Dan shalax t_1 t_2]]?
which book forgot.2SG DAT-who Rina thought that-Dan sent
'[Which book]$_2$ did you forget [to whom]$_1$ Rina thinks that Dan sent t_2 t_1?'

As discussed in §3.2, the difference that underlies the contrast between (62) and (67) is one of *short* vs. *long* wh-movement. Specifically, the crucial factor is whether there exists a clausal periphery through which two wh-elements have moved long-distance.

To see how this follows from the current proposal, recall that by hypothesis, the Hebrew CP is restricted to a single specifier. Thus, at most one element can ever "completely escape" a given clause – i.e., move to a position strictly outside the clause.

In (67), however, both wh-elements (*eyze sefer* 'which book', and *le-mi* 'DAT-who') appear overtly outside the most embedded clause. Given the PIC, this means that each must have passed through the specifier of the most embedded CP – but this is impossible, since there is only one SpecCP position.

[12] It just so happens that superiority, as discussed in §5.2.2, is immaterial to this step in the derivation, since two internal arguments are involved. See fn. 3.

The derivation of (67) therefore incurs a PIC violation, with respect to either the link of *eyze sefer* 'which book' to its base position inside the most-embedded CP, or the link of *le-mi* 'DAT-who' to its base position inside that CP.

As a further example, recall (18c), repeated below:

(68) ?[et ma]$_2$ yadata [$_{CP}$ she-Rina zaxra [$_{CP}$ [mi-mi]$_1$ Dan lakax t_1 t_2]]?
ACC what knew.2SG that-Rina recalled from-who Dan took
'[What]$_2$ did you know that Rina recalled [from whom]$_1$ Dan took t_1 t_2?'

The most-embedded clause in (68) would start out as follows:

(69) [$_{TP}$ Dan lakax [mi-mi] [et ma]]
Dan took from-who ACC what

The [*u*Op$_{wh}$] feature on the most-embedded Foc^0 would then attract *mi-mi* ('from-who') to SpecFocP:[13]

(70) [$_{FocP}$ [mi-mi] [$_{TP}$ Dan lakax t_1 [et ma]]]
from-who Dan took ACC what

Subsequently, [*i*Op$_{\varnothing}$] on C^0 would attract *et ma* ('ACC what') to SpecCP:

(71) [$_{CP}$ [et ma]$_2$ [$_{FocP}$ [mi-mi] [$_{TP}$ Dan lakax t_1 t_2]]
ACC what from-who Dan took

Given the PIC, only *et ma* ('ACC what') – and not *mi-mi* ('from-who') – will be visible for computation outside this CP. This is precisely what happens in (68): *et ma* ('ACC what') is moved successive-cyclically to the matrix SpecFocP:

(72) [$_{FocP}$ [et ma]$_2$ yadata [$_{CP}$ t_2 she-[$_{FocP}$ [$_{TP}$ Rina zaxra [$_{CP}$ t_2 […]]]]]
ACC what knew.2SG that- Rina recalled

Note that *et ma* ('ACC what') is not attracted by the intermediate Foc^0. As discussed with respect to (55), this follows from the current proposal – and specifically, from the

[13] See fn. 3 regarding superiority in Hebrew ditransitives.

selectional properties of the declarative C^0 (*she* 'that'), which selects for exclusively non-wh FocPs.

Since *et ma* ('ACC what') is attracted by the intermediate C^0 rather than the intermediate Foc^0, it moves to the intermediate SpecCP, and is accessible for movement to the matrix SpecFocP.

Now recall (19c), repeated below – the ungrammatical counterpart of (68), above:

(73) * [et ma]$_2$ yadata [$_{CP}$ [mi-mi]$_1$ Rina zaxra [$_{CP}$ she-Dan lakax t_1 t_2]]?
ACC what knew.2SG from-who Rina recalled that-Dan took
'[What]$_2$ did you know [from whom]$_1$ Rina recalled that Dan took t_1 t_2?'

In (73), both *et ma* ('ACC what') and *mi-mi* ('from-who') "completely escape" the most-embedded clause – that is, they both appear overtly outside of it. As discussed earlier, this implies that they both moved through the most-embedded SpecCP; but since there is only one specifier for CP, this could not occur. The only remaining alternative is that one of them moved out of the most-embedded clause from a position strictly within it (i.e., within the complement domain of the most-embedded C^0), therefore incurring a PIC violation.

The proposal therefore predicts the ungrammatical status of (73).

6. ODDS AND ENDS

6.1. PIC AND THE VERB PH(R)ASE

A putative problem for the account developed so far is the status of phases headed by a verbal projection.[14] The analysis of superiority effects in §5.2.2 was based on internal arguments of the lexical verb being at their base positions. How would the existence of a phase-boundary at the verb-phrase level affect the derivation?

In this section, I will examine the effects of such a phase-boundary on the predictions presented so far, and show that in fact, there are no such effects – that is, the existence of a verb-phrase level phase-boundary is immaterial to the current analysis.

[14] The identity of the head of the verb-phrase phase, as well as the exact set of verbs for which phasehood would be triggered, is subject to much debate in the literature. Chomsky (2001) states that the verb-phrase-level phase is headed by little-*v*, and that only transitive and unergative verbs trigger (strong) phasehood. Fox (2002), Legate (2003), and Richards (2004, in press) show evidence that passive verb-phrases constitute a phase on par with transitive verb-phrases. Horvath and Siloni (2002) argue against the very existence of the little-*v* projection, but later propose that the lexical verb itself serves as the head of the verbal phase (Horvath & Siloni 2006).

The exact view that one chooses to adopt regarding the phasehood of the verb-phrase is not crucial to the current discussion, as will be shown below.

For concreteness, let us assume that unergative and transitive verb-phrases are selected by *v**, which heads a strong phase (this specific implementation follows Chomsky 2001, but as will be shown below, nothing ends up depending on a particular conception or distribution of the verb-phrase level phase).

If the verb's internal arguments are enclosed within the *v**P phase, they will be inaccessible by the time C^0 probes for wh-elements – unless of course they have moved to the periphery of their phase (i.e., Spec*v**P), as is commonly assumed.

A somewhat subtler question concerns the accessibility of an internal argument to probing by Foc^0. As noted by Muller (2004) and Richards (2006), there are two variants of the P(hase) I(mpenetrability) C(ondition) currently "on the market":

(74) a. PIC1 (Chomsky 2000):
In a phase α headed by H^0, the domain of H^0 is not accessible to operations outside α. Only H^0 and its edge are accessible to such operations.

b. PIC2 (Chomsky 2001):
If Z^0 is the next phase head up after H^0, the domain of H^0 is not accessible to operations at ZP. Only H^0 and its edge are accessible to such operations.

As argued by Richards (2006), the only empirical difference between PIC1 and PIC2 is their predictions regarding the accessibility of the domain of H^0 to probing from outside of the HP phase in the interval before Z^0 (the next phase head up) has been merged.

In the following sub-sections, I will consider the predictions made by both variants of the PIC with respect to Nested Interrogatives in Hebrew.

6.1.1. A WH-SUBJECT AND A LOWER WH-ELEMENT

Consider a configuration involving a subject wh-element, in addition to another, lower wh-element. Such a configuration is attested in (9a), repeated below:

(75) [et ma]$_2$ Dan shaxax [$_{CP}$ [mi]$_1$ t$_1$ axal t$_2$]?
ACC what Dan forgot who ate
'[What]$_2$ did Dan forget [who]$_1$ t$_1$ ate t$_2$?'

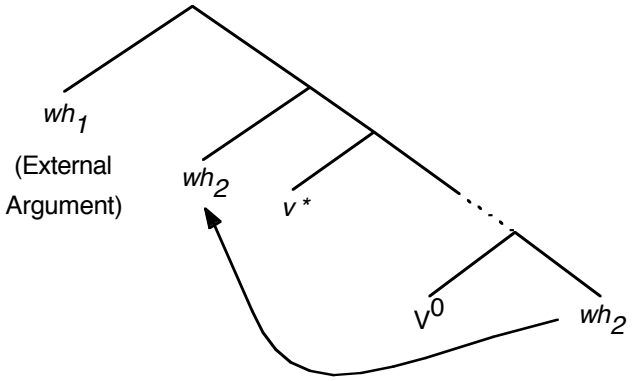
Since *axal* ('ate') is a transitive verb, the embedded clause must contain a *v**P, and the subject wh-element *mi* ('who') must originally be merged as a specifier of that *v**P. The object wh-element, *et ma* ('ACC what'), eventually moves out of the embedded CP entirely, meaning it passes through the embedded SpecCP. As argued above, regardless of which version of the PIC is adopted, its accessibility to probing by C^0 entails that *et*

ma ('ACC what') must first move to Spec*v**P. This means *v**P necessarily has more than one specifier.[15]

As shown by Richards (2001), movement to multiple specifiers of the same head observes a "tucking-in" topography – that is, a moved phrase will form a new specifier between the head of the targeted projection and its closest existing specifier (if one exists).

Assuming that a head performs lexical selection prior to *Agree*/search (a likely assumption, given the more stringent locality conditions on lexical selection; see also Matushansky 2006), the presence of an external argument will derivationally precede movement of the wh-element to Spec*v**P. Thus, "tucking-in" would predict that the object would be moved to a specifier position in between the external argument and *v**:

(76)



Crucially, this state of affairs preserves the hierarchical relations between wh_1 (the external argument) and wh_2 (the lower wh-element): wh_1 still c-commands wh_2.

Thus, a Foc^0 or C^0 probing for wh-elements from outside this *v**P phase would be exposed to the same structural configuration as it would if the strong phase had not been there at all; I call this property "phase transparency". Hence, for cases involving a subject wh-element and a lower wh-element, a strong phase at the verb-phrase level makes no difference with respect to the predictions made by the current proposal.

[15] It is more than a little suspicious that while CPs with single-specifier restrictions are cross-linguistically quite common, the same behavior for *v**P is rare or impossible. Whether this is to be taken as a counter-argument to the phasehood of little-*v*, or alternatively, as a counter-argument to the single-specifier restriction, is beyond the scope of this paper.

6.1.2. TWO INTERNAL WH-ARGUMENTS

In addition to the configuration discussed in §6.1.1, there are also cases of two wh-elements originating as internal arguments both undergoing wh-movement. Recall (18a), repeated below:

(77) [eyze sefer]$_2$ shaxaxta [$_{CP}$ [le-mi]$_1$ Dan shalax t_1 t_2]?
which book *forgot.2SG* *DAT-who* *Dan* *sent*
'[Which book]$_2$ did you forget [to whom]$_1$ Dan sent t_2 t_1?'

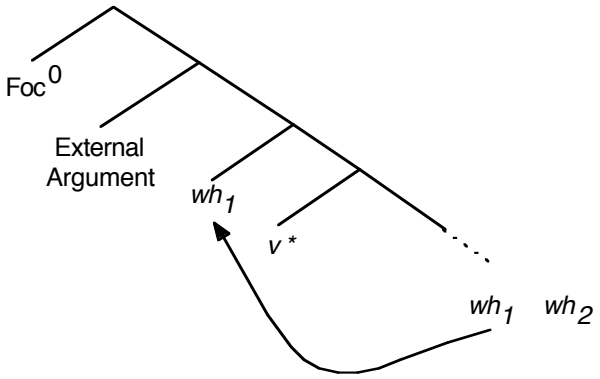
Both internal arguments have observably escaped the verb-phrase of *shalax* 'sent'. While *eyze sefer* ('which book') has moved all the way out of the embedded CP, *le-mi* ('DAT-who') has remained within it. Given the current proposal, *le-mi* ('DAT-who') has moved to the embedded SpecFocP.

Here, the two versions of the PIC diverge slightly (though, as will be shown, without significant consequence). Given PIC1 (74a), both Foc^0 and C^0 cannot probe into the complement domain of *v**. The formulation of PIC2 (74b), on the other hand, entails that the *v**P phase is not "closed off" until the next phase head, C^0, is merged. Thus, Foc^0 is able to probe into the complement domain of *v**.

It may seem, then, that the different PICs give us different predictions regarding which of the wh-elements in (77) need to relocate to Spec*v**P. Under PIC1, both wh-elements need to move to Spec*v**P. Under PIC2, it would appear that only the wh-element that moves to SpecCP needs to move to Spec*v**P, since Foc^0 can probe all the way into *v**P.

However, this appearance is mistaken. Consider what happens if only one of the internal arguments moves to Spec*v**P:

(78)

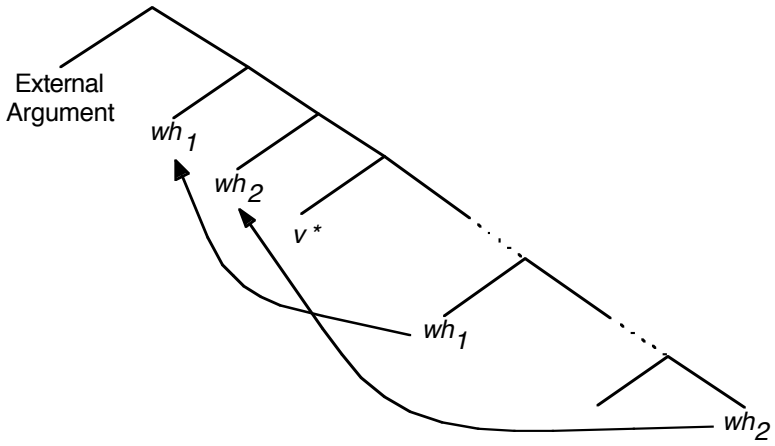


Note that movement to Spec*v**P is a form of successive-cyclicity; it does not value the features on the wh-element. Thus, in the configuration depicted above, probing by Foc^0 would result in *wh*$_1$, the wh-element that has been moved to Spec*v**P, being attracted

and moved to SpecFocP. That is because wh_1 constitutes the closest syntactically active wh-element. Once at SpecFocP, wh_1 would be valued, and thus move no further. As discussed earlier, C^0 could not probe into *v**P, and therefore wh_2 would not move either – meaning a derivation in which only one of the internal arguments has moved to Spec*v**P could never give rise to wh-movement of both internal arguments.

Therefore, every derivation involving wh-movement of more than one internal argument necessarily involves both of them moving to Spec*v**P. Given "tucking-in", this would give rise to the following configuration:

(79)



Crucially, the representation in (79) shares with (76) the property of "phase transparency" – that is, the *v**P phase preserves the hierarchical relations between wh_1 and wh_2, that existed at their base positions.

Once again, we have arrived at the conclusion that whether or not a verb-phrase level phase exists, a higher Foc^0 or C^0 will see the same hierarchical configuration when it probes, and therefore, the predictions discussed in earlier sections stand regardless of whether or not such a phase exists.

6.2. WH-ADVERBIALS

In dealing with superiority effects in Hebrew Nested Interrogatives (§3.1, §5.2.2), only wh-elements that function as verbal arguments were considered.

The behavior of wh-adverbials, on the other hand, might appear problematic:

(80) a. * [lama]$_2$ Dan shaxax [$_{CP}$ [eyze talmid]$_1$ t_1 lamad balshanut t_2]?
why Dan forgot which student studied linguistics

b. ? [eyze talmid]$_2$ Dan shaxax [$_{CP}$ [lama]$_1$ t_2 lamad balshanut t_1]?
which student Dan forgot why studied linguistics
'[Which student]$_2$ did Dan forget [$_{CP}$ [why]$_1$ t_2 studied linguistics t_1]?

(81) a. * [eyx]$_2$ Dina tahata [$_{CP}$ [eyze asir]$_1$ t_1 nimlat me-ha-kele t_2]?
how Dina wondered which prisoner escaped from-the-prison
b. ? [eyze asir]$_2$ Dina tahata [$_{CP}$ [eyx]$_1$ [$_{TP}$ t_2 nimlat me-ha-kele t_1]?
which prisoner Dina wondered how escaped from-the-prison
'[Which prisoner]$_2$ did Dina wonder [$_{CP}$ [how]$_1$ t_2 escaped from prison t_1]?

Prima facie, it seems that the superiority pattern observed in §3.1 (and analyzed in §5.2.2) is reversed: the wh-adverbial moves clause locally, whereas the subject moves out of the embedded clause, to the matrix periphery. However, this is only a reversal of the superiority pattern if the subject is hierarchically higher than the wh-adverbial. It has been argued (for various wh-adverbials in various languages) that some wh-adverbials can be base-generated in clause-peripheral operator position, as opposed to arriving there via A-bar movement.[16]

If this is indeed the case regarding *lama* 'why' (80) and *eyx* 'how' (81) in Hebrew, then the superiority pattern in (80-81) is to be expected. The wh-adverbial would be base-generated in SpecFocP, which was independently established as an operator position in Hebrew (see §5.1.2). This would leave only SpecCP available for the subject wh-element, facilitating its subsequent movement to the matrix periphery:

(82) a. ? [eyze talmid]$_1$ Dan shaxax [$_{CP}$ t_1 [$_{FocP}$ lama [$_{TP}$ t_1 lamad balshanut]]]?
which student Dan forgot why studied linguistics
'[Which student]$_1$ did Dan forget [$_{CP}$ why t_1 studied linguistics]?
b. ? [eyze asir]$_1$ Dina tahata [$_{CP}$ [$_{FocP}$ eyx [$_{TP}$ t_1 nimlat me-ha-kele]]]?
which prisoner Dina wondered how escaped from-the-prison
'[Which prisoner]$_1$ did Dina wonder [$_{CP}$ how t_1 escaped from prison]?

If this property of wh-adverbials were indeed the relevant characteristic, the prediction would be that wh-elements that are adjuncts (as opposed to arguments), but are not wh-adverbials, would pattern with verbal arguments in terms of superiority. This indeed seems to be the case:

[16] See Collins (1991) regarding *how come* in English; Bromberger (1992) on *why* in English; McCloskey (2002) regarding *cén fáth* 'what reason' and *cad chuige* 'why' in Irish; Boskovic (2000) and Rizzi (1990) regarding *pourquoi* 'why' in French; Rizzi (1999) on *come mai* 'how come' and *perche* 'why' in Italian; and see Ko (2005) for a comprehensive and insightful summary of the aforementioned sources.

(83) a. ? [be-eyzo universita]$_2$ Dan shaxax [$_{CP}$ t_2 [$_{FocP}$ [mi]$_1$ [$_{TP}$ t_1 lamad t_2]]]?
in-which university Dan forgot who studied
'[In which university]$_2$ did Dan forget [$_{CP}$ [who]$_1$ studied]?'

b. * [mi]$_2$ Dan shaxax [$_{CP}$ t_2 [$_{FocP}$ [be-eyzo universita]$_1$ [$_{TP}$ t_1 lamad t_2]]]?
who Dan forgot in-which university studied

Thus, it seems that the apparent exception posed by cases such as (80-81) is a result of the unique properties of wh-adverbials, and specifically their possibility of being base-generated in operator position.

7. CONCLUSION

The paper began by surveying the phenomena exhibited by the Nested Interrogative construction in Hebrew – namely, the superiority pattern, and the distribution of wh-island effects.

I then proposed an analysis in which the feature relevant to wh-movement in Hebrew is located on a head in the left periphery that is lower than C^0. This was independently motivated by the existence of Sub-Complementizer Topicalization, which is a case of A-bar movement in Hebrew that targets a position below the overt complementizer (as shown in section §4). Despite the fact that in this analysis, CP is not the target of overt wh-movement, its single specifier can still be utilized for successive-cyclic wh-movement.

This proposal was shown to derive both the superiority pattern and the distribution of wh-islandhood. It was also shown that the predictions made by the proposal are unaffected by the existence (or lack thereof) of a strong phase at the verb phrase level (§6.1). Furthermore, the apparent deviant behavior of wh-adverbials with respect to superiority was shown to follow from the assumption that at least certain wh-adverbials can be base-generated in operator position – an assumption that has significant cross-linguistic merit (§6.2).

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