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 the distinction between 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 the purpose of successive-cyclic wh-movement. The proposal is shown to account for 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.

The construction in question is 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 might suggest that the wh-Island Condition (Ross 1967)—or any more contemporary 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, 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 this construction.

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All errors are my own.

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 the wh-element is moved:

(1) a. [et mi]$_1$ Dan pagaʃ t$_1$?
ACC who Dan met
'Who did Dan meet?'
b. * Dan pagaʃ 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)-(2b). 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.[1]

(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 ʃaxexa [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$_2$ t$_1$?'

Indeed, (3a) and (3b) represent the two types of multiple-wh questions one finds in Hebrew. The first type, which also exists in English, is *Pair-List* questions—or more accurately, *Tuple-List* questions (where a *pair* is just a specific instantiation of a *tuple*, with a size of $n = 2$). Like their English counterparts, the answer to these is a list—or perhaps a singleton—of pairs/tuples, with each element in a given pair/tuple corresponding to one wh-element in the original question. The sentence in (3a) above is one such case, and further examples are given below:[2]

(4) a. [mi]$_1$ t$_1$ axal ma?
who ate what
'Who ate what?'
b. [mi]$_1$ t$_1$ amar [$_{CP}$ ʃe-mi ne'elam]?
who said that-who disappeared
'Who said that who disappeared?'

[1] As will be shown in section §3, this is by no means a sufficient condition for the grammaticality of a Hebrew question involving multiple wh-elements.

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

c. [mi]$_1$ t_1 amar [$_{CP}$ ʃe-Dan tilfen le-mi]?
who said that-Dan phoned DAT-who
'Who said that Dan phoned whom?'

d. [mi]$_1$ t_1 ʃalax ma le-mi?
who sent what DAT-who
'Who sent what to whom?'

(5) a. [mi]$_1$ Yosi xaʃav [$_{CP}$ ʃe-(t_1-)axal ma]?
who Yosi thought that-ate what
'Who did Yosi think ate what?'

b. [mi]$_1$ Yosi xaʃav [$_{CP}$ ʃe-(t_1-)amar [$_{CP}$ ʃe-mi ne'elam]]?
who Yosi thought that-said that-who disappeared
'Who did Yosi think said that who disappeared?'

c. [mi]$_1$ Yosi xaʃav [$_{CP}$ ʃe-(t_1-)amar [$_{CP}$ ʃe-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 xaʃav [$_{CP}$ ʃe-(t_1-)ʃalax 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 nested within one another, with one wh-element moving to the periphery of each of the interrogative clauses. Consider the following example:

(6) Yosi yada [$_{CP}$ [et ma]$_2$ Dan ʃaxax [$_{CP}$ [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.'

The meaning of Nested Interrogatives is decidedly different from that of Pair/Tuple-List questions. In (6), what Yosi knows is something about individuals, not about pairs. A rough schematization of the meaning of (6) is given below:

(7) Yosi knew the extension of $\{x \mid$ Dan forgot what the extension of $\{y \mid$ Rina gave x to $y\}$ was$\}$

If the structure that is 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 ʃaxax [$_{CP}$ [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-xadaʃ] / *[et ha-sefer ha-xadaʃ, le-Roni]
ACC the-book the-new ACC the-book the-new DAT-Roni
'The new book / *The new book, to Roni.'

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

3.1. SUPERIORITY EFFECTS

The first phenomenon exhibited by Nested Interrogatives in Hebrew that I will discuss is a robust superiority pattern.[3] Consider the following contrast:

(9) a. [et ma]$_2$ Dan ʃaxax [$_{CP}$ [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 ʃaxax [$_{CP}$ [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/Tuple-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 ʃaxax [$_{CP}$ [le-mi]$_1$ siparti t$_1$ [$_{CP}$ ʃe-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 ʃaxax [$_{CP}$ [et ma]$_2$ siparti t$_1$ [$_{CP}$ ʃe-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 ʃaxax [$_{CP}$ [le-mi]$_1$ siparti t$_1$ [$_{CP}$ ʃe-(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 ʃaxax [$_{CP}$ [mi]$_2$ siparti t$_1$ [$_{CP}$ ʃe-(t$_2$-)niceax ba-taxarut]]?
DAT-who Dan forgot who told.1SG that-won in.the-contest

[3] In many respects, the data discussed here goes back to Reinhart's (1981) paper, which is 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's (1981) paper. 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 found in English relative clauses, and is perhaps no more than a topicalized resumptive pronoun (as its morphological form would suggest). 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 these differences were noticed by Reinhart, they were considered "dialectal", and very few minimal pairs were constructed around this property of the derivation.

(12) a. [et ma]$_2$ Dan ʃaxax [$_{CP}$ [mi]$_1$ t$_1$ xaʃav [$_{CP}$ ʃe-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 ʃaxax [$_{CP}$ [et ma]$_2$ t$_1$ xaʃav [$_{CP}$ ʃe-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.[4] Similar 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, among others).

In section §5, I will show 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 syntactic superiority and interpretation. Typical superiority effects, of the kind found in *Pair/Tuple-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 xoʃev [$_{CP}$ ʃe-(t1-)axal ma]?
who Dan thinks that-ate what
'[Who]$_1$ does Dan think t$_1$ ate what?'
b. * [ma]$_1$ Dan xoʃev [$_{CP}$ ʃe-mi axal t$_1$]?
what Dan thinks that-who ate

[4] In fact, it seems likely that Nested Interrogatives in Hebrew obey this constraint invariably, and that apparent deviations from this pattern, which were 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:

(i) a. [et ma]$_1$ Dan xaʃav ʃe-hexzarta t$_1$ [le-mi]?
ACC what Dan thought that-returned.2SG DAT-who
'What did Dan think that you returned to whom?'
b. [le-mi]$_1$ Dan xaʃav ʃe-hexzarta t$_1$ [et ma]?
DAT-whom Dan thought that-returned.2SG ACC what
'To whom did Dan think that you returned what?'
(from Preminger 2005, (183a-b), p. 73)

The grammaticality of both (ia) and (ib) 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).

Similar observations appear in Landau (1994), among others.

In other words, the putative meaning of (14b) is the same as the meaning of (14a)—namely, (13); superiority effects simply determine that the meaning in (13) will be expressed in English as (14a), rather than (14b). The same holds for (15a) vs. (15b) in Hebrew.

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)* =
{x| Dan forgot what the extension of {y| y ate x} was}
b. *putative-meaning(9b)* =
{y| Dan forgot what the extension of {x| y ate x} was}

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

(17) a. *meaning(10a)* =
{x| Dan forgot what the extension of {y| I told y that Rina ate x} was}
b. *putative-meaning(10b)* =
{y| Dan forgot what the extension of {x| I told y that Rina ate x} was}

Thus, syntactic superiority actually limits the set of meanings that can be expressed using the Nested Interrogative construction in Hebrew—the meanings in (16b) and (17b) simply cannot be expressed using this construction. In itself, this is not a particularly shocking observation; there are languages (e.g., prescriptive English) that bar this construction completely, so some paraphrase must obviously be available. Nevertheless, this effect is still noteworthy, in that it restricts the set of possible interpretations for which the Nested Interrogative construction could be employed.

3.2. THE DISTRIBUTION OF WH-ISLANDHOOD

As the very existence of Nested Interrogatives demonstrates, the conventional wh-Island Condition (Ross 1967) does not hold of Hebrew. This does not mean, however, that no wh-island effects exist. Compare the felicitous (18a)-(18c) to the infelicitous (19a)-(19c):

(18) a. [eyze sefer]$_2$ ʃaxaxta [$_{CP}$ [le-mi]$_1$ Dan ʃalax 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 xaʃva [$_{CP}$ ʃe-Dan ʃa'al [$_{CP}$ [le-mi]$_1$ Roni ʃalax 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 [$_{CP}$ ʃe-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$_2$ t$_1$?'

(19) a. * [eyze sefer]$_2$ ʃaxaxta [$_{CP}$ [le-mi]$_1$ Rina xaʃva [$_{CP}$ ʃe-Dan ʃalax 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 ʃa'ala [$_{CP}$ [le-mi]$_1$ Dan xoʃev [$_{CP}$ ʃe-Roni ʃalax 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 [$_{CP}$ ʃe-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_2 t_1?'

Notice that in terms of the relative nesting of filler-gap dependencies, (19a)-(19c) mirror the relations in (18a)-(18c). Similarly, (19a)-(19c) represent the same superiority configurations as their felicitous counterparts in (18a)-(18c). 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)-(19c), there is at least one clausal periphery through which more than one wh-element has passed, such that each of those wh-elements has undergone long wh-movement. In the felicitous cases (18a)-(18c), 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 C^0 IN HEBREW

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:[5]

(20) Dan amar [$_{CP}$ ʃe-[et ha-sefer limud]$_1$ hu kvar kara t_1]
Dan said that-ACC the-book teaching he already read
'Dan said that he has already 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 is able to license them:

[5]The use of the term "topicalization" here is somewhat misleading. Topicalization and focalization in Hebrew result in the same word orders, exhibit the same syntactic properties, and are mutually exclusive in the same clause—suggesting that the syntactic mechanism referred to here as *SCT* may underlie either of the two discourse functions.

(21) Dan amar [$_{CP}$ ʃe-[et ha-sefer ha-ze]$_1$ hu kara t_1 (mi-)bli liknot *e*]
Dan said that-ACC the-book the-this he read from-without buy.INF PG
'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 [$_{CP}$ ʃe-[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 [$_{CP}$ ʃe-[ha-sefer ha-ze]$_1$ amur t_1 le'orer maxloket (mi-)bli
Dan said that-the-book the-this supposed wake.INF controversy from-without
liknot *e*]
buy.INF PG

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*:[6]

(23) a. Dan amar [$_{CP}$ ʃe-Rina$_i$ ohevet et acma$_i$]
Dan said that-Rina likes ACC herself
'Dan said that Rina$_i$ likes herself$_i$.'
b. Dan amar [$_{CP}$ ʃe-[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 [$_{CP}$ ʃe-ha-miʃtara acra ota$_i$ [axrey ʃe-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 [$_{CP}$ ʃe-[hi$_i$]$_1$ ne'ecra t_1 [axrey ʃe-Rina$_i$ xazra]]
Dan said that-she arrested.PASV after that-Rina returned

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

Borer (1995) claims that SCT in Hebrew is in fact a case of scrambling, manifesting mixed A-/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:

[6]Note that accusative-marked noun-phrases—such as *et acma* ('ACC herself') in (23b)—do give rise to Condition C violations under normal circumstances:

(i) ʃixnati ot-a$_{i/*j}$ ʃe-Rina$_j$ tenaceax
convinced.1SG ACC-3SG.FEM that-Rina win.FUT
'I convinced her$_{i/*j}$ that Rina$_j$ will win.'

(25) a. Dan yode'a [$_{CP}$ ʃe-kol yeled$_i$ ohev et ima ʃelo$_i$]
Dan knows that-every boy loves ACC mother his
'Dan knows that every boy$_i$ loves his$_i$ mother.'
b. Dan yode'a [$_{CP}$ ʃe-[et ima ʃelo$_i$]$_1$ kol yeled$_i$ ohev t_1]
Dan knows that-ACC mother his 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 as shown in (26b), WCO effects fail to appear in appositive relative clauses in Hebrew as well:

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

It seems highly plausible that if appositive relative clauses are *non-quantificational* by nature (as opposed to wh-questions, for example)—and this obviates the potential WCO violation in (26a)-(26b)—then SCT is non-quantificational in precisely the same way. Broadly speaking, 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 properties. Moreover, Borer (1995) fails to note the failure of the landing site of SCT to A-bind (as shown in (23b), 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. higher projection:
   (i) serves as the clausal escape-hatch
   (ii) hosts the overt complementizer (presumably, as its head)

   b. lower projection:
   (i) is the complement of the head of the higher projection (in (27a))
   (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 should be labeled *CP*? This is partially a matter of aesthetic preference (since neither is completely equivalent to the English CP), 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, in addition, independent reasons to assume no additional projections 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 [Spec,TP] 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 WCO data, and disregards the failure of the landing site of SCT to A-bind (see section §4 for a detailed discussion).

Since I am aware of no clear-cut empirical reason to prefer either (27a) or (27b) as the projection 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 [Spec,CP]; rather, it targets the specifier of a lower peripheral projection, which we could call FocP (see 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* (henceforth, *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 (Hungarian)
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 [Spec,XP], sluicing will invariably elide the

complement of X^0. The analysis therefore hinges on the fact that Hungarian wh-movement targets the same position as focalization does, namely [Spec,FocP]. Van Craenenbroeck and Liptak argue that RD is allowed in exactly those languages that have clause-internal wh-movement: of the languages in their sample, it is allowed in Hungarian, Polish, and Russian (which have clause-internal wh-movement), and disallowed in English, Dutch, and German (which do not have clause-internal wh-movement).

Interestingly, Hebrew allows RD as well:

(29) Dan hizmin miʃehu la-mesiba, nidme li ʃe-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.

Therefore, I will adopt the following naming conventions with respect to the projections outlined in (27a)-(27b):

(30) a. higher projection: CP
(i) serves as the clausal escape-hatch
(ii) hosts the overt complementizer (presumably, as its head)

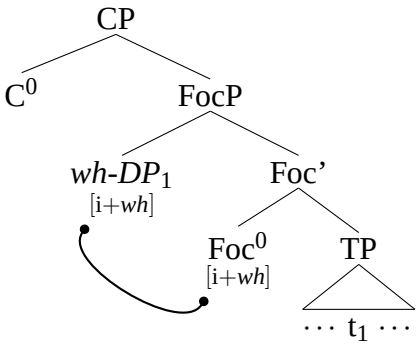
b. lower projection: FocP
(i) is the complement of the head of the higher projection (in (27a)/(30a))
(ii) is the locus for A-bar operator interpretation

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 a unification (see section §4). I leave this open for further research.

5.1.3. MECHANICS

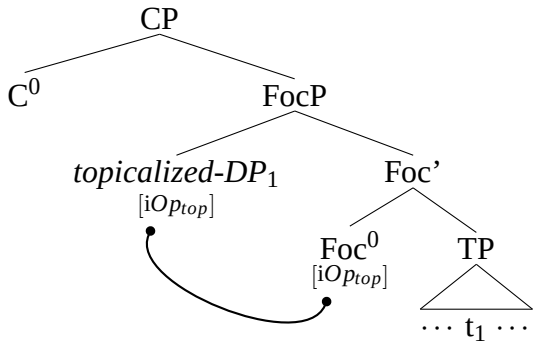
Given that in Hebrew, [u+*wh*] is on Foc^0 (see §5.1.2), we predict that wh-elements move to [Spec,FocP] to receive question-operator interpretation:

(31)



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

(32)



Given that in Hebrew, declarative C^0 is overt, (32) gives us the attested surface order for clauses that have undergone SCT (see section §4); but the general schema in (31)-(32) 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 presented in section §3.

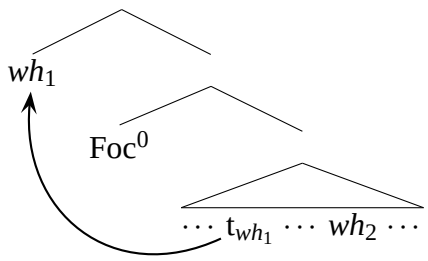
At this point, it is worthwhile to make explicit some fundamental (and hopefully uncontroversial) assumptions. First, allowing C^0 to have multiple specifiers would obviate any wh-island effects, because there would always be an additional vacant edge position to be utilized at the CP phase. As shown in §3.2, Hebrew does manifest at least some wh-island effects—therefore, Hebrew C^0 cannot be allowed to have multiple specifiers.

Second, wh-island effects are often attributed to the *P(hase)I(mpenetrability)C(ondition)* (Chomsky 2000, 2001), the modern successor to Subjacency (Chomsky 1986) and/or the explicit wh-Island Condition (Ross 1967). I will remain neutral here as to whether the PIC is actually a grammatical primitive, or rather derivable from other principles of the grammar.[7] In what follows, I will merely assume that the PIC is a valid generalization.

5.2.1. DRIVING SUCCESSIVE CYCLICITY

Given the proposal in §5.1, Foc^0 in Hebrew interrogative clauses is equipped with [uOp_{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—e.g., wh_1:

(33)



[7] See Richards (in press) for a particularly intriguing proposal, deriving not only the PIC, but also the identity of the phase heads and their properties, from considerations having to do with the selection of lexical sub-arrays.

What will be the fate of wh_2? Since there are no remaining active wh-features (or more precisely, [uOp_{wh}] features) in the current clause, its situation is comparable to the situation faced by a wh-element located inside an English declarative clause. Consider the embedded clause in (34), below:

(34) Who do you think (that) Dan met?

This exceedingly simple example represents a long-standing problem with respect to the *Probe-Goal* theory of movement. We know that *who* makes it out of the embedded clause in (34). Locality (e.g., the PIC) tells us that this cannot happen in one fell swoop; rather, it happens successive-cyclically, through the intermediate [Spec,CP]. However, none of this explains what drives this movement: why does *who* vacate its position within the embedded clause in the first place?

Claiming that *who* moves to the edge of the embedded CP in (34) 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:

(35) 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 (34) but not in (35)) 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 (see Preminger 2007, to appear for some discussion), I will mention two of them here. First, one may seek to refine the two-way division of syntactic features. In Chomsky's (1995) system, 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 (2007) 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$Op_{\emptyset}$]. This feature would attract a wh-element, if present (as in (34)), to [Spec,CP]—but would not crash the derivation of a clause without such a wh-element (as in (35)).

Alternatively (and these alternatives are not, in principle, mutually exclusive), one may argue that the existence of probe-driven movement does not rule out the possibility of foot-driven movement—in other words, 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, Preminger 2007, to appear, van Riemsdijk 1997). In this case, one could say that *who* moves out of the embedded clause in (34) because it needs to be in an operator position, and one is unavailable within the embedded clause.

For expository purposes, I will adopt Pesetsky and Torrego's (2007) approach—though nothing that follows hinges on this particular implementation, nor rules out the alternative approaches to this issue.

The derivation of (34) thus proceeds by means of [i$Op_{\emptyset}$]—an unvalued but interpretable operator feature on the embedded C^0—attracting *who*. However, being unvalued, [i$Op_{\emptyset}$] fails to value the corresponding feature on *who*, and the latter remains visible to the probe at the matrix periphery.

Since features must be valued in order to be interpreted (see Pesetsky and Torrego 2007), and [i$Op_{\emptyset}$] leaves the corresponding feature on the wh-element itself unvalued, the wh-element cannot be left in a declarative [Spec,CP] position:

(36) * 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 [uOp_{wh}] on the matrix C^0 in (34).

In the case of a clause that does not contain a wh-element, the [i$Op_{\emptyset}$] will simply reach the *C(onceptual)I(ntentional)* interface (or "LF")—a harmless result, since being interpretable, it will not cause the derivation to crash.

Of course, long-distance wh-movement out of declarative clauses, as in the English (34), exists in Hebrew as well:

(37) et-mi ata xoʃev ʃe-Dan pagaʃ?
ACC-who you think that-Dan met
'Who do you think that Dan met?'

The likely conclusion is that declarative C^0 in Hebrew (as in the embedded clause in (37)) is just like its English counterpart—namely, equipped with an unvalued [i$Op_{\emptyset}$]. However, unlike the state of affairs in English, the same phenomenon exemplified by (34) and (37) is also found in embedded interrogative clauses in Hebrew. For example, recall (18a), repeated below:

(18) a. [eyze sefer]$_2$ ʃaxaxta [$_{CP}$ [le-mi]$_1$ Dan ʃalax 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?'

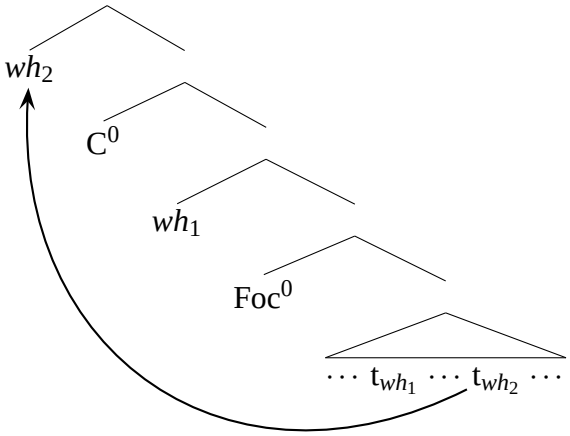
The simplest possible account for this would be that in Hebrew, interrogative C^0—just like declarative C^0—is equipped with [i$Op_{\emptyset}$].[8] Thus, after [uOp_{wh}] on Foc^0 attracts the hierarchically closest wh-element to [Spec,FocP] (as described above), [i$Op_{\emptyset}$] on C^0 can attract another

[8] In fact, nothing goes wrong if one assumes that both types of C^0, both in Hebrew and in English, are equipped with [i$Op_{\emptyset}$]. Since interrogative C^0 in English has, in addition, a [uOp_{wh}] feature, the latter will value the corresponding feature on wh-elements—and they will therefore move no further. The "superfluous" unvalued [i$Op_{\emptyset}$] will be prevented from attracting another wh-element by the restriction of CP to a single specifier position (and just like in the case of declaratives that lack a wh-element, it will reach the interface without harm). The relevant difference between Hebrew and English would then be restricted to the availability, in Hebrew, of a valued operator feature (i.e., [uOp_{wh}]) on a projection lower than CP.

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 (2007) approach with respect to driving long-distance wh-movement.

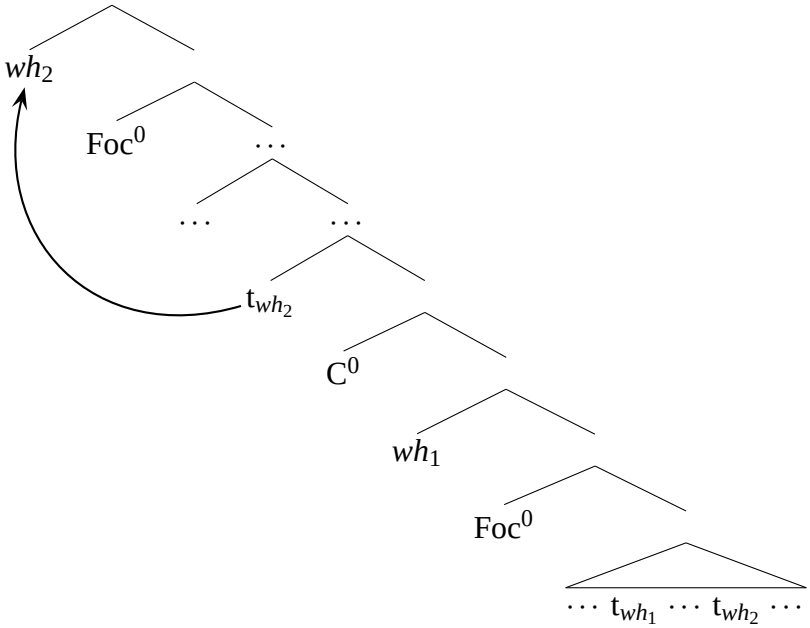
wh-element to [Spec,CP]. Once again, given two wh-elements wh_1 and wh_2, such that wh_1 has already been attracted by Foc^0, the following pattern will emerge:

(38)



Given that CP is a phase, 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:

(39)



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)-(2b), repeated below:

(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

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

(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 ʃaxexa [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$_2$ t$_1$?'

The current approach captures this generalization quite neatly: while the [uOp_{wh}] feature on Foc^0 values the corresponding feature on the wh-element, the [i$Op_{\emptyset}$] feature on C^0 does not. Therefore, a wh-element that has been attracted to C^0 by [i$Op_{\emptyset}$] 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 (36), above—and fully expected, if as stated above, the featural content of Hebrew interrogative C^0 is on par with English declarative C^0. The ungrammaticality shown in (2) is therefore of the same nature as the ungrammaticality shown in (36).[9] Thus, while two wh-elements can derivationally occupy the same clausal periphery in Hebrew, only one—the one in [Spec,FocP]—can get its [i$Op_{\emptyset}$] operator feature valued there; the other will invariably have to move on in order to get its own [i$Op_{\emptyset}$] operator feature valued (at a higher [Spec,FocP]). As a result, no two wh-elements will ever appear overtly at the same clausal periphery in Hebrew.

5.2.2. The Superiority Pattern Derived

As shown in §3.1, when there are multiple interrogative clausal peripheries in a given sentence, 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, among others).

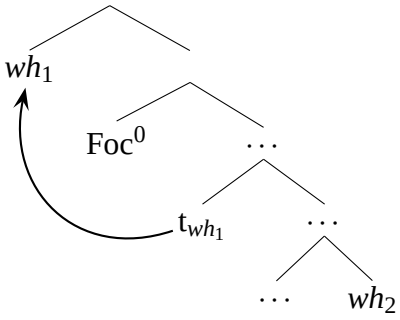
However, given the current proposal, there is no need for recourse to anything other than general, independently motivated primitives governing the economy of syntactic movement—and in particular, the structural proximity between probe and goal.

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 attract the hierarchically closest wh-element in its search domain.

[9] Note that superiority effects could rule out at most one of the two sentences in (2a)-(2b), and in fact probably rule out neither (see fn. 4).

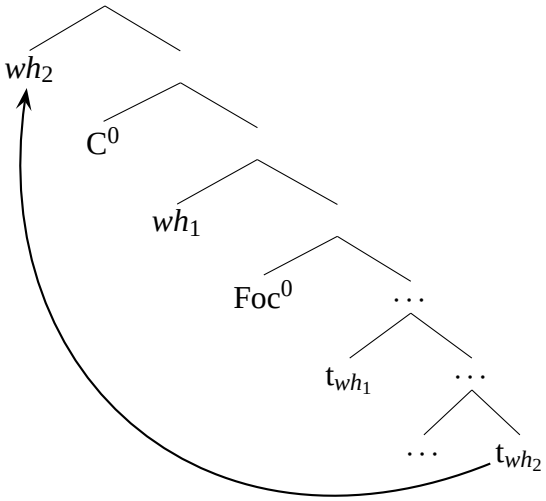
Let us now assume that our two wh-elements, wh_1 and wh_2, are such that wh_1 asymmetrically c-commands wh_2. In this state of affairs, it will necessarily be wh_1 that is attracted to [Spec,FocP]:

(40)



Assuming an unvalued [i$Op_{\emptyset}$] feature on C^0 (as outlined in §5.2.1), wh_2 will then be attracted to [Spec,CP]. Note that even though wh_1 is closer—in fact, both the copy of wh_1 in [Spec,FocP] and the topmost A-position of wh_1 are closer—its wh-feature has been valued and checked by [uOp_{wh}] on Foc^0, hence it is irrelevant for the current computation. We therefore arrive at the following state of affairs:[10]

(41)

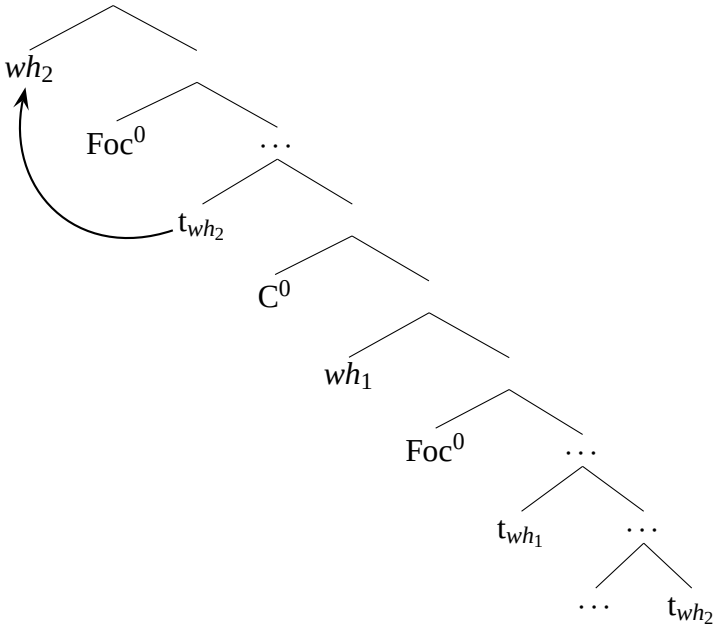


As discussed in §5.2.1, the fact that CP is a phase means that only wh_2 will be available for subsequent computation, and in particular, movement into a higher clause.[11] By hypothesis, such movement into a higher clause will be the result of a higher Foc^0 attracting wh_2 from the embedded [Spec,CP], as schematized below:

[10] On the effects (or lack thereof) of an additional phase at the VP level (e.g., v^*P), see §6.1.

[11] In fact, for this particular configuration, one need not appeal to the phasehood of CP at all. Assuming a hierarchically higher-up probe *P*, wh_2 will be the closest syntactically active wh-element in *P*'s domain. However, as will become evident during the discussion of islandhood phenomena in Nested Interrogatives (in §5.2.3), the phasehood of CP is indeed operative.

(42)



Given the general schema in (42), let us turn to analyzing the examples presented in §3.1. As a first example, recall (9a)-(9b), repeated below:

(9) a. [et ma]$_2$ Dan ʃaxax [$_{CP}$ [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 ʃaxax [$_{CP}$ [et ma]$_2$ t$_1$ axal t$_2$]?
who Dan forgot ACC what ate

Consider the embedded clause in (9a)-(9b), abstracting away from some irrelevant details:

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

In (43), both wh-elements are at their A-positions. The element *mi* ('who') is hierarchically higher (i.e., equivalent to *wh*$_1$ in the general schema, in (42)). When Foc^0 probes for wh-elements, it will attract *mi* ('who'), moving it to [Spec,FocP] and rendering it syntactically inactive:

(44) [$_{FocP}$ [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 [Spec,CP]:

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

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

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

This successfully derives the grammatical (9a).

In the ungrammatical (9b), the matrix Foc^0 putatively attracts *mi* (‘who’). Since both the A-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 (9b) an illicit computation.

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

(10) a. [et ma]$_2$ Dan ʃaxax $[_{CP}$ [le-mi]$_1$ siparti t$_1$ $[_{CP}$ ʃe-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 ʃaxax $[_{CP}$ [et ma]$_2$ siparti t$_1$ $[_{CP}$ ʃe-Rina axla t$_2$]]?
DAT-who Dan forgot ACC what told.1SG that-Rina ate

The most-embedded clause in (10) is declarative, as evinced by the overt declarative complementizer *ʃe* (‘that’). As a result, there is no feature on the most-embedded Foc^0 to attract *et ma* (‘ACC what’), and it cannot move there.

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 [Spec,CP], and is accessible for movement to the higher clause:

(47) $[_{TP}$ siparti le-mi $[_{CP}$ [et ma]$_2$ [C’ ʃe-Rina axla t$_2$]]]
told.1SG DAT-who ACC what that-Rina ate

When Foc^0 immediately above the TP in (47) probes, it will attract the hierarchically-higher *le-mi* (‘DAT-who’), moving it to [Spec,FocP]:

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

The C^0 immediately above the FocP in (48) will attract the remaining wh-element, namely *et ma* (‘ACC what’):

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

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:

(50) $[_{FocP}$ [et ma]$_2$ Dan ʃaxax $[_{CP}$ t$_2$ $[_{FocP}$ [le-mi]$_1$ $[_{TP}$ siparti t$_1$ $[_{CP}$ t$_2$ ʃe-…]]]]]
ACC what Dan forgot DAT-who told.1SG that-…

This successfully derives the grammatical (10a).

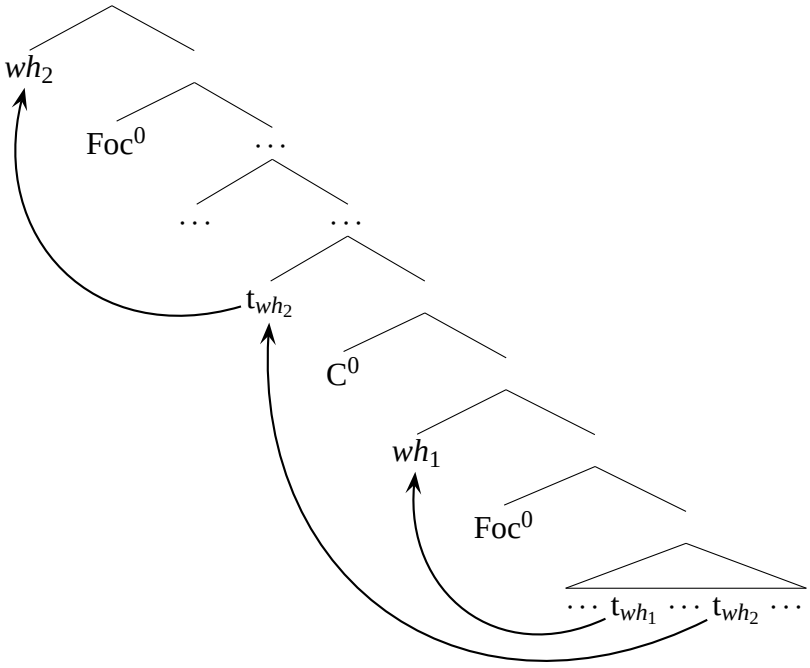
In the ungrammatical (10b), the matrix Foc^0 attempts to attract *le-mi* ('DAT-who'), all copies of which are within the complement domain of the embedded C^0, and thus inaccessible by that point in the derivation.

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 [uOp_{wh}] feature—as proposed in §5.1—it provides a left-peripheral landing site for a wh-element (i.e., [Spec,FocP]), 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 [Spec,CP] at all. This was schematized in (39), repeated below:

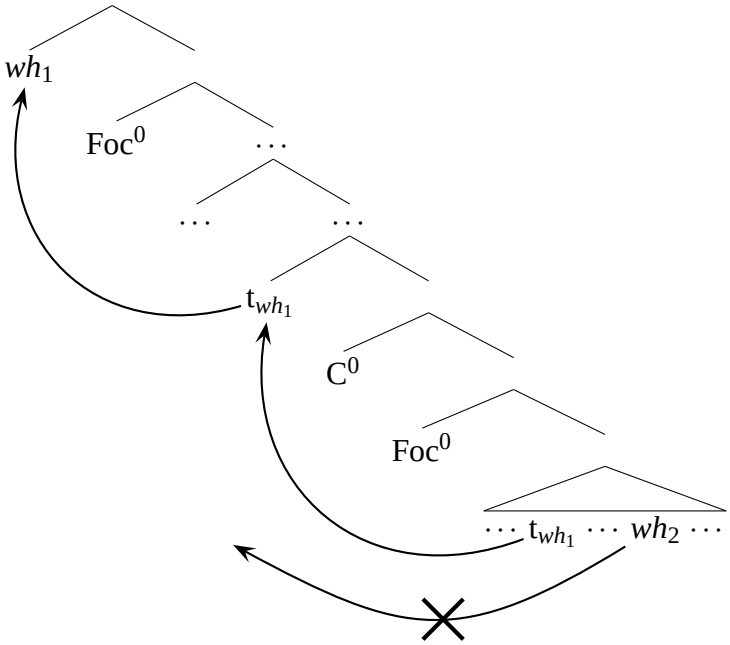
(39)



The availability of a left-peripheral landing-site, distinct from the clausal escape hatch, 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 [Spec,FocP] (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:

(51)



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:

(18) a. [eyze sefer]$_2$ ʃaxaxta [$_{CP}$ [le-mi]$_1$ Dan ʃalax 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 (18a) starts out as follows:

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

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

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

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

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

[12]It 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. 4.

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 [uOp_{wh}] on the matrix Foc^0, moving it to its surface position in the matrix periphery:

(55) [$_{FocP}$ [eyze sefer]$_2$ ʃaxaxta [$_{CP}$ t$_2$ [$_{FocP}$ [le-mi]$_1$ [$_{TP}$ Dan ʃalax t$_1$ t$_2$]]]]
which book forgot.2SG DAT-who Dan sent

Now recall (19a), repeated below—the ungrammatical counterpart of (18a), above:

(19) a. * [eyze sefer]$_2$ ʃaxaxta [$_{CP}$ [le-mi]$_1$ Rina xaʃva [$_{CP}$ ʃe-Dan ʃalax 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 (18a) and (19a) 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 passed, such that both wh-elements have undergone long-distance wh-movement.

To see how this follows from the current proposal, recall the restriction of the Hebrew CP to a single specifier. This entails that at most one element can ever “completely escape” a given clause—i.e., move to a position strictly outside the clause. In (19a), however, both wh-elements (*eyze sefer* ‘which book’, and *le-mi* ‘DAT-who’) appear overtly outside the most embedded clause, where both were base-generated. Given the PIC, this means that each must have passed through the specifier of the most embedded CP—but this is impossible, since by hypothesis, there is only one [Spec,CP] position.

The derivation of (19a) therefore incurs a PIC violation, with respect to either the link of *eyze sefer* ‘which book’ to its position inside the most-embedded CP, or the link of *le-mi* ‘DAT-who’ to its position inside that CP.

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

(18) c. ? [et ma]$_2$ yadata [$_{CP}$ ʃe-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$_2$ t$_1$?’

The most-embedded clause in (18c) starts out as follows:

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

The [uOp_{wh}] feature on the most-embedded Foc^0 would then attract *mi-mi* (‘from-who’) to [Spec,FocP]:[13]

(57) [$_{FocP}$ [mi-mi]$_1$ [$_{TP}$ Dan lakax t$_1$ [et ma]]]
from-who Dan took ACC what

[13]See fn. 4 regarding superiority in Hebrew ditransitives.

Subsequently, [i$Op_{\emptyset}$] on C^0 attracts *et ma* (‘ACC what’) to [Spec,CP]:

(58) $[_{CP}$ [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 (18c)—*et ma* (‘ACC what’) is moved successive-cyclically to the matrix [Spec,FocP]:

(59) $[_{FocP}$ [et ma]$_2$ yadata $[_{CP}$ t_2 ʃe-$[_{FocP}$ $[_{TP}$ 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, because the intermediate clause is declarative (as evinced by the overt declarative complementizer, *ʃe* ‘that’)—see the discussion of (10) in §5.2.2. Instead, it is attracted by the intermediate C^0; being at [Spec,CP], it is then accessible for movement to the matrix [Spec,FocP].

Now recall (19c), repeated below—the ungrammatical counterpart of (18c), above:

(19c) c. * [et ma]$_2$ yadata $[_{CP}$ [mi-mi]$_1$ Rina zaxra $[_{CP}$ ʃe-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_2 t_1?’

In (19c), both *et ma* (‘ACC what’) and *mi-mi* (‘from-who’) “completely escape” the most-embedded clause, where they were both base-generated—in other words, they both appear overtly outside of the most-embedded CP. As discussed earlier, this implies that they both moved through the most-embedded [Spec,CP]; 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 CP 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 (19c).

Finally, note that the analysis predicts Nested Interrogatives with more than two wh-elements should be possible, as long as all but one of the wh-elements undergo clause-local wh-movement.[14] This prediction is indeed borne out:

(60) ? [et ma]$_2$ Rina ʃaxexa $[_{CP}$ mi$_3$ t_3 zaxar $[_{CP}$ [mi-mi]$_1$ Dan kibel t_1 t_2]]?
ACC what Rina forgot who recalled from-who Dan received
‘[What]$_3$ did Rina forget [who]$_3$ t_3 recalled [from whom]$_1$ Dan received t_2 t_1?’

[14]Thanks to an anonymous reviewer for pointing this out.

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.[15] The analysis of superiority effects in §5.2.2 relied on the following property: at the point in the derivation at which operator-features probe for wh-elements, the internal arguments of the lexical verb are either at their base positions, or at least stand in a hierarchical configuration that mirrors the configuration that they had at their base positions. How would the existence of a phase-boundary at the VP level affect the results obtained so far?

In this section, I will examine the effects of such a phase-boundary on the predictions presented in previous sections, and show that in fact, there are no such effects—in other words, the existence of a VP level phase-boundary is immaterial to the current analysis.

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 VP-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 more subtle 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":

(61) 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 derivational 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.

[15] 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 VP-level phase is headed by little-*v*, and that only transitive and unergative verbs trigger (strong) phasehood (encoded as the distinction between v^*P and *v*P; Chomsky 2001). Fox (2002), Legate (2003), and Richards (2004, 2007) show evidence that passive/unaccusative/raising 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 and 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.

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

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

(9) a. [et ma]$_2$ Dan ʃaxax [$_{CP}$ [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 [Spec,CP]. As discussed above, regardless of which version of the PIC is adopted, the accessibility of *et ma* ('ACC what') to probing by C^0 entails that it first must move to [Spec,*v**P]. This means *v**P necessarily has more than one specifier.[16]

As shown by Richards (1997, 2001), movement to multiple specifiers of the same head observes a "tucking-in" topography—in other words, a moved phrase will form a new specifier in between the head of the targeted projection and its closest existing specifier (if one exists). Note that this conclusion obtains even if one adopts the view that all operations within a phase take place simultaneously at the phase level (Chomsky 2001, to appear)[17]—since Richards' (1997, 2001) argument is based on locality considerations, rather than the timing of movement operations.

If it were the case that locality considerations—such as "tucking-in"—could be subsumed by the simultaneity of operations at the phase level, one would not expect superiority effects to show up between two wh-arguments both of which are base-generated below the *v**P-phase in an interrogative clause. This is because, by the time the interrogative periphery probes, the two wh-elements would be located in multiple-specifiers of the relevant *v**P—where, given the aforementioned simultaneity, they could presumably appear in either hierarchical order. However, such superiority effects are in fact attested:[18]

(62) a. [To whom]$_1$ did Mary [$_{v^*P}$ mention t$_1$ that John would buy what]?
b. ?? [What]$_1$ did Mary [$_{v^*P}$ mention to whom that John would buy t$_1$]?

This demonstrates that even if phase-level simultaneity is assumed, it cannot subsume all of the phenomena meant to be handled by locality considerations, of the kind appealed to by Richards' (1997, 2001) arguments.

[16] It is more than somewhat 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.

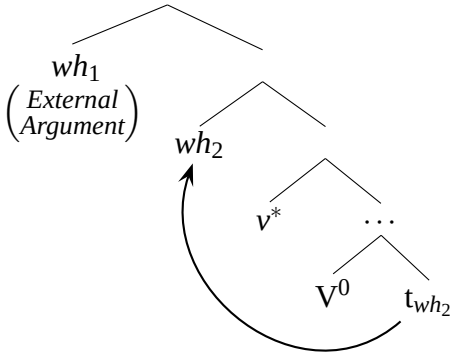
[17] Thanks to an anonymous reviewer for pointing out this concern.

[18] Note that, abstracting away from *Pair/Tuple-List* questions, there is nothing wrong with extraction of the kind shown in (62b):

(i) What did Mary [$_{v^*P}$ mention to Bill that John would buy t$_1$]?

Assuming that a head performs lexical selection prior to performing *Agree*/search—a likely assumption, given the more stringent locality conditions on lexical selection, compared to *Agree*/search (see Matushansky 2006 for further discussion)—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 the v^* head:

(63)



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 head probing for wh-elements from outside this v^*P phase would be confronted with the same hierarchical relations (between wh_1 and wh_2) as it would if the strong phase had not been there at all; one might call this property "phase transparency". Hence, for cases involving a subject wh-element and a lower wh-element, a strong phase at the VP level makes no difference with respect to the predictions made by the current proposal.

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 which originate as internal arguments, both undergoing wh-movement. Recall (18a), repeated below:

(18) a. [eyze sefer]$_2$ ʃaxaxta [$_{CP}$ [le-mi]$_1$ Dan ʃalax 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$_1$?'

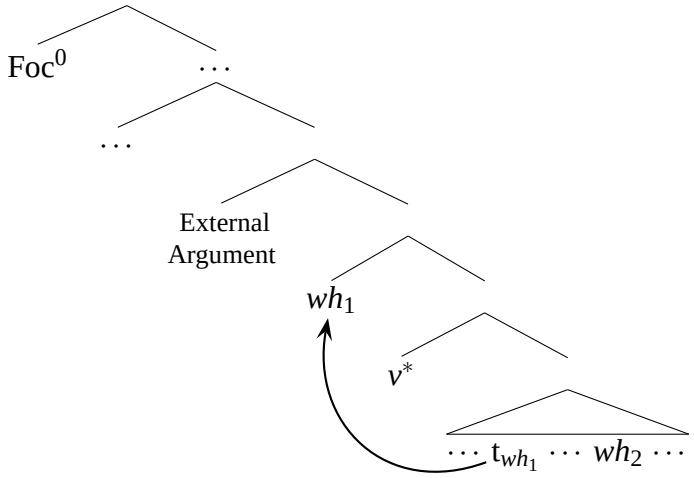
Both internal arguments have observably escaped the verb-phrase of *ʃalax* ('sent'). While *eyze sefer* ('which book') has moved all the way out of the embedded CP, *le-mi* ('DAT-who') has remained within it. Given the current proposal, *le-mi* ('DAT-who') has moved to the embedded [Spec,FocP].

Here, the two versions of the PIC diverge slightly (though, as will be shown, without significant consequence). Given PIC1 (61a), both Foc^0 and C^0 cannot probe into the complement domain of v^*. The formulation of PIC2 (61b), on the other hand, entails that the v^*P phase is not "closed off" until the next phase head (namely, C^0) is merged. Thus, Foc^0 is able to probe into the complement domain of v^*.

It may seem that the different versions of the PIC therefore give us different predictions regarding which of the wh-elements in (18a) 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 [Spec,CP] needs to move to [Spec,v^*P], since Foc^0 can probe all the way into v^*P.

However, such a conclusion would be mistaken. Consider what happens if only one of the internal arguments moves to [Spec,v^*P]:

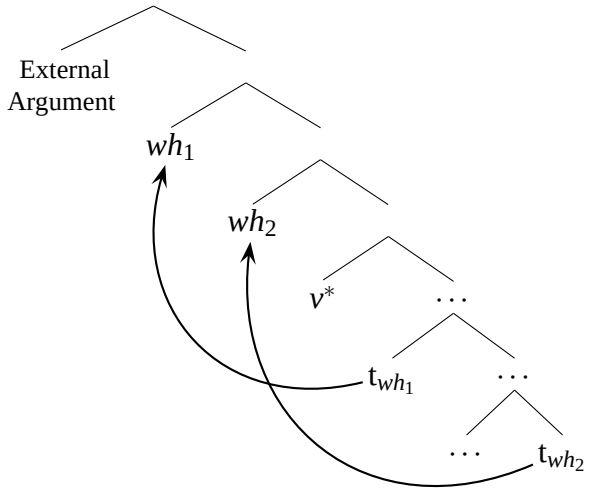
(64)



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 [Spec,FocP]. That is because wh_1 constitutes the closest syntactically active wh-element. Once at [Spec,FocP], 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—and as a result, would never give rise to a Nested Interrogative construction.

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:

(65)



Crucially, the representation in (65) shares with (63) the property of "phase transparency"—in other words, 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 VP level-phase exists, a higher Foc^0 or C^0 head will be faced with the same hierarchical configuration when it probes—and therefore, the predictions discussed in earlier sections stand, regardless of whether or not such a phase boundary exists.

6.2. WH-ADVERBIALS

In dealing with superiority effects in Hebrew Nested Interrogatives (sections §3.1 and §5.2.2), only wh-elements that function as arguments of the verb were considered. The behavior of wh-adverbials, on the other hand, might appear problematic:

(66) a. * [eyx]$_2$ Dina tahata [[eyze asir]$_1$ [$_{TP}$ t$_1$ nimlat me-ha-kele t$_2$]]?
how Dina wondered which prisoner escaped from-the-prison

b. ? [eyze asir]$_2$ Dina tahata [[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 [[how]$_1$ [$_{TP}$ 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 aforementioned superiority pattern on the assumption that the subject originates in a hierarchically higher position 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.[19] If this is indeed the case regarding *eyx* 'how' in Hebrew, then the superiority pattern in (66) is to be expected. The wh-adverbial would be base-generated in [Spec,FocP], which was independently established as an operator position in Hebrew (see §5.1.2), leaving only [Spec,CP] available for the subject wh-element—facilitating its subsequent movement to the matrix periphery:

(67) ? [eyze asir]$_1$ Dina tahata [$_{CP}$ t$_1$ [$_{FocP}$ 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 is indeed the case:

(68) a. ? [be-eyzo universita]$_2$ Dan ʃaxax [$_{CP}$ 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 ʃaxax [$_{CP}$ t$_2$ [$_{FocP}$ [be-eyzo universita]$_1$ [$_{TP}$ t$_1$ lamad t$_2$]]]?
who Dan forgot in-which university studied

[19] 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 discussion of the aforementioned sources.

Thus, it seems that the apparent exception posed by cases such as (66) is the result of the unique properties of wh-adverbials—and specifically, the possibility of such wh-adverbials being base-generated directly 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, and is the only way to move to positions strictly outside of CP.

This proposal was shown to derive both the superiority pattern and the distribution of wh-islandhood effects. It was also shown that the predictions made by this proposal are unaffected by the existence (or lack thereof) of a strong phase at the VP level (§6.1). Furthermore, the apparently 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).

REFERENCES

Borer, Hagit. 1995. The ups and downs of Hebrew verb movement. *Natural Language and Linguistic Theory* 13:527–606.

Boskovic, Zeljko. 2000. Sometimes in SpecCP, sometimes in-situ. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, ed. Roger Martin, David Michaels, and Juan Uriagereka, 53–88. Cambridge, MA: MIT Press.

Brody, Michael. 1995. Focus and checking theory. In *Levels and structures*, ed. Istvan Kenesei, Approaches to Hungarian, 29–44. Szeged: JATE Press.

Bromberger, Sylvain. 1992. *On what we know we don't know: Explanation, theory, linguistics, and how questions shape them*. Chicago, IL: Chicago University Press.

Chomsky, Noam. 1986. *Barriers*. Cambridge, MA: MIT Press.

Chomsky, Noam. 1995. *The minimalist program*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, ed. Roger Martin, David Michaels, and Juan Uriagereka, 89–155. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. Michael Kenstowicz, 1–52. Cambridge, MA: MIT Press.

Chomsky, Noam. to appear. On phases. In *Foundational issues in linguistic theory*, ed. Robert Freidin, Carlos Otero, and Maria-Luisa Zubizaretta. Cambridge, MA: MIT Press.

Collins, Chris. 1991. Why and how come. In *More papers on wh-movement*, ed. Lisa L.-S. Cheng and Hamida Demirdache, MIT Working Papers in Linguistics, 31–45. Cambridge, MA: MITWPL.

van Craenenbroeck, Jeroen. 2006. Transitivity failures in the left periphery and foot-driven movement operations. In *Linguistics in the Netherlands 2006*, ed. Jeroen van de Weijer and Bettelou Los, 52–64. Amsterdam: John Benjamins.

van Craenenbroeck, Jeroen, and Aniko Liptak. 2006. The cross-linguistics syntax of sluicing: Evidence from Hungarian relatives. *Syntax* 9:248–274.

É. Kiss, Katalin. 1987. *Configurationality in Hungarian*. Dordrecht: Reidel.

Fodor, Janet D. 1978. Parsing strategies and constraints on transformations. *Linguistic Inquiry* 9:427–473.

Fox, Danny. 2002. Antecedent-Contained Deletion and the copy theory of movement. *Linguistic Inquiry* 33:63–96.

Horvath, Julia, and Tal Siloni. 2002. Against the Little-*v* Hypothesis. *Rivista di Grammatica Generativa* 27:107–122.

Horvath, Julia, and Tal Siloni. 2006. The Theta Phase: Successive internal V-merger. Ms., Tel-Aviv: Tel-Aviv University.

Kayne, Richard S. 1984. *Connectedness and binary branching*. Dordrecht: Foris.

Ko, Heejeong. 2005. Syntax of why-in-situ: Merge into [Spec,CP] in the overt syntax. *Natural Language and Linguistic Theory* 23:867–916.

Landau, Idan. 1994. Dative shift and extended VP-shells. M.A. thesis, Tel-Aviv University, Tel-Aviv.

Lasnik, Howard, and Tim Stowell. 1991. Weakest Crossover. *Linguistic Inquiry* 22:687–720.

Legate, Julie Ann. 2003. Some interface properties of the phase. *Linguistic Inquiry* 34:506–516.

Matushansky, Ora. 2006. Head movement in linguistic theory. *Linguistic Inquiry* 37:69–109.

McCloskey, James. 2002. Resumption, successive cyclicity, and the locality of operations. In *Derivation and explanation in the Minimalist Program*, ed. Samuel David Epstein and T. Daniel Seeley, 184–226. Oxford: Blackwell Publishers.

Muller, Gereon. 2004. Phrase impenetrability and wh-intervention. In *Minimality effects in syntax*, ed. Arthur Stepanov, Gisbert Fanselow, and Ralf Vogel, 289–325. Berlin: Mouton de Gruyter.

Pesetsky, David. 1982. Paths and categories. Ph.D. dissertation, MIT, Cambridge, MA.

Pesetsky, David, and Esther Torrego. 2007. The syntax of valuation and the interpretability of features. In *Phrasal and clausal architecture: Syntactic derivation and interpretation - In honor of Joseph E. Emonds*, ed. Simin Karimi, Vida Samiian, and Wendy Wilkins, 262–294. Amsterdam: John Benjamins.

Platzack, Christer. 1996. Germanic Verb Second languages – Attract vs. Repel: On optionality, A-bar movement and the symmetrical/asymmetrical Verb Second hypothesis. In *Deutsch - Typologisch*, ed. Ewald Lang and Gisela Zifonun, 92–120. Berlin: Walter de Gruyter.

Preminger, Omer. 2005. Argument-mapping and extraction. Unpublished M.A. thesis, Tel-Aviv University, Tel-Aviv.

Preminger, Omer. 2007. Toxic syntax. Ms., Cambridge, MA: MIT.

Preminger, Omer. to appear. (Im)perfect Domains: Yet another theory of syntactic movement. In *Proceedings of the 26th West Coast Conference on Formal Linguistics (WCCFL 26)*. Somerville, MA: Cascadilla Press.

Reinhart, Tanya. 1981. A second COMP position. In *Theory of markedness in generative grammar*, ed. Adriana Belletti, Luciana Brandi, and Luigi Rizzi, 517–557. Pisa: Scuola Normale Superiore di Pisa.

Richards, Marc. 2004. Object shift and scrambling in North and West Germanic: A case study in symmetrical syntax. Ph.D. dissertation, University of Cambridge, Cambridge.

Richards, Marc. 2006. On phases, phase heads, and functional categories. Ms., Cambridge: University of Cambridge.

Richards, Marc. 2007. Dynamic linearization and the shape of phases. *Linguistic Analysis* Special Issue: Dynamic Interfaces.

Richards, Marc. in press. On feature-inheritance: An argument from PIC. *Linguistic Inquiry* .

Richards, Norvin. 1997. What moves where when in which language? Ph.D. dissertation, MIT. Reprinted as Richards (2001).

Richards, Norvin. 2001. *Movement in language: Interactions and architecture*. Oxford: Oxford University Press. Reprint of Richards (1997).

van Riemsdijk, Henk. 1997. Push chains and drag chains: Complex predicate split in Dutch. In *Scrambling*, ed. Shigeo Tonoike, 7–33. Tokyo: Kurosio Publishers.

Rizzi, Luigi. 1978. Violations of the wh-island constraint and the Subjacency Condition. In *Montreal Working Papers in Linguistics*, ed. Colette Dubuisson, David W. Lightfoot, and Yves Charles Morin, Vol. 11. Reprinted as Rizzi (1982).

Rizzi, Luigi. 1982. Violations of the wh-island constraint and the Subjacency Condition. In Luigi Rizzi, *Issues in Italian syntax*, 49–76. Dordrecht: Foris. Reprint of Rizzi (1978).

Rizzi, Luigi. 1990. *Relativized minimality*. Cambridge, MA: MIT Press.

Rizzi, Luigi. 1999. On the position of "Int(errogative)" in the left periphery of the clause. Ms., Siena: Universitá di Siena.

Ross, John R. 1967. Constraints on variables in syntax. Ph.D. dissertation, MIT, Cambridge, MA. Reprinted as Ross (1986).

Ross, John R. 1986. *Infinite syntax!*. Norwood, NJ: Ablex Publishing. Reprint of Ross (1967).

Rudin, Catherine. 1988. On multiple questions and multiple wh-fronting. *Natural Language and Linguistic Theory* 6:445–501.