

Anatomy of a Counterexample: Extraction from Relative Clauses

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Relative clauses (RCs) are considered islands for extraction, yet acceptable cases of overt extraction from RCs have been attested over the years in a variety of languages: Danish, Swedish, Norwegian, Japanese, Hebrew, English, Italian, Spanish, French, and also in Lebanese Arabic and Mandarin Chinese, where covert extraction from an RC is observed. The possibility for extraction has often been presented as evidence against a syntactic theory of locality, and in favor of constraints defined in terms of information structure, or processing limitations and constraints on working memory. Another possibility, still hardly explored, is that locality is determined syntactically, combined with a more fine-grained structure for RCs and a theory of how extraction from this structure interacts with the theory of locality. I argue in favor of the latter approach. I assume the structural ambiguity of RCs and argue that while externally headed RCs do block extraction, extraction is possible, under certain conditions, from a raising RC, and is formally similar to extraction from an embedded interrogative.

Keywords: *wh*-movement, islands, relative clauses, *wh*-islands, weak islands, raising relatives, embedded interrogatives, presuppositional DP, canonical and noncanonical existentials

1 Introduction

Relative clauses (henceforth RCs) are well-known islands for extraction, yet acceptable cases of extraction from an RC have been attested repeatedly in a wide variety of languages. Starting with Erteschik-Shir's (1973, 1982) early work on Danish, overt extraction from an RC has also been observed in Swedish, Norwegian, Hebrew, English, and Japanese and more recently in Italian, Spanish, and French (Kuno 1976, Engdahl 1980, McCawley 1981, Taraldsen 1981, 1982, Chomsky 1982, Doron 1982, Chung and McCloskey 1983, Rubowitz-Mann 2000, Hawkins 2004, Kayne 2008, Cinque 2010, Kush, Omaki, and Hornstein 2013). Examples of covert movement out of RCs have also been attested, in languages as diverse as Hebrew, Lebanese Arabic, Mandarin Chinese, and English (Doron 1982, Aoun and Li 2003, Hulsey and Sauerland 2006). Here, I focus on Hebrew and on the conditions that conspire to allow overt extraction, as shown in (1).

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- (1) a. ba-mis'ada ha-zot₂, šamati rak al [kinuax exad]₁ še-keday
 in.the-restaurant the-this heard.I only on dessert one that-worth
 le hazmin t₁ t₂.
 to.order
 'In this restaurant, I heard about only one dessert that's worth ordering.'
- b. al lexem šaxor₂, ani makira rak [gvina levana axat]₁ še-efšar
 on bread black I know only cheese white one that-possible
 limroax t₁ t₂.
 to.spread
 'On black bread, I know only one white cheese that can be spread.'
- c. me-ha-sifria ha-zot₂, od lo macati [sefer exad]₁ [še-keday PRO
 from-the-library the-this yet not found.I book one that-worth
 le haš'il t₁ t₂].
 to.borrow
 'From this library, I haven't yet found a single book that's worth borrowing.'
- d. PP₂ ... V [DP ... NP₁ [... V t₁ t₂]]

The possibility of extraction has often been presented as evidence against a syntactic theory of locality and in favor of constraints defined in terms of information structure (Erteschik-Shir 1973, 1982, 1997, Engdahl 1982, 1998, Rubowitz-Mann 2000, Ambridge and Goldberg 2008) or in terms of processing and constraints on working memory (Hofmeister and Sag 2010). Another possibility, still hardly explored (but see Kush, Omaki, and Hornstein 2013), is that island sensitivity is determined syntactically, as in Ross 1967, Chomsky 1973, and subsequent work, combined with a more fine-grained structure for RCs and a theory of how extraction from this structure interacts with the theory of locality. I argue in favor of the latter approach. The analysis to be presented includes two independent factors:

1. Extraction is launched from a raising RC (e.g., Schachter 1973, Vergnaud 1974, Carlson 1977, Kayne 1994, Sauerland 1998, Bhatt 2002; see also Aoun and Li 2003 and Hulsey and Sauerland 2006 for earlier suggestions, mostly in passing, that covert movement is launched from a raising RC).
2. Extraction is launched from an RC contained within a DP in a nonderived position.

The first ingredient assimilates extraction from an RC to extraction from a *wh*-island, since the RC head of a raising RC is located in Spec,CP, on a par with the *wh*-phrase in a *wh*-island; to the extent that extraction from a *wh*-island is selectively tolerated, so is extraction from an RC sometimes possible. The second ingredient is shared with extraction from DP in general (e.g., Wexler and Culicover 1980, Diesing 1992, Takahashi 1994, Ormazábal, Uriagereka, and Uribe-Etxebarria 1994, Uriagereka 1999, Chomsky 2000, 2001, 2008, Stepanov 2001, Rizzi 2004, 2006, Gallego and Uriagereka 2006, 2007, Bianchi and Chesi 2014). The combination of these two ingredients defines grammatical extraction from an RC: a raising RC in nonderived position allows extraction, selectively, but extraction is impossible either from a raising RC in a derived position or from a head-external RC in derived or nonderived position. Viewed this way, extraction

from RC presents no particular mystery and no particular challenge to the syntactic theory of locality.

In the examples of extraction from an RC in (1), the RC is a nonpresuppositional indefinite, and in such contexts extraction is optimal. The existential nature of the RC has also been noted in the context of English and other languages. Accounting for the restriction to nonpresuppositional indefinites has been the focus of most of the literature on extraction from RCs.

- (2) a. Then you look at what happens in languages that you know and languages₁ that you have [a friend who knows t_1].
(McCawley 1981:108)
- b. This is the child₁ that there is [nobody who is willing to accept t_1].
(Kuno 1976:423)

As properties indicating context dependence and nonsystematic variation appeared to motivate a departure from syntactic conceptions of island locality, these properties began to dominate the discussion of the existential restriction (e.g., Engdahl 1998, Rubowitz-Mann 2000). However, the conclusion that extraction from an RC is akin to extraction from a *wh*-island, and that it does not, after all, violate standard constraints on movement, opens the door to a syntactic treatment of this set of restrictions as well. Following Diesing (1992), I argue that the generalization regarding RCs that allow extraction has an information-structural component that involves presuppositionality: extraction is restricted to nonpresuppositional RCs (see Bianchi and Chesi 2014 for discussion). The presuppositional status of a DP determines its position, and the position of a DP—in this case, a relative clause within a DP—determines whether extraction is possible: extraction is limited to DPs in situ. This generalization has been repeatedly supported over the years, consistent with the syntactic conception of island locality.

The article is organized as follows. Section 2 argues that examples like (1) involve true movement. Section 3 motivates the raising RC analysis of extraction from an RC, and section 4 develops an analysis of the restrictions on extraction presented in section 3. Section 5 addresses the restriction to nonpresuppositional indefinites and argues in favor of a structural approach. Section 6 discusses a challenge presented by RC extraposition, and section 7 summarizes and concludes.

2 Evidence for a Movement Analysis

It is conceivable, of course, that the examples in (1) with a fronted constituent do not really involve a movement derivation. There are three possibilities to exclude: (a) the initial constituent is base-generated in its position and is associated with a pronominal empty category in the embedded clause; (b) the initial constituent is a matrix adjunct standing in an ‘‘aboutness’’ relation to the matrix predicate; (c) the initial constituent is a matrix clause dependent. Cinque (1990) discusses the first option and observes that cases of apparent extraction from an island in Italian always involve an extracted DP; see (3a). This is due to an association with a *pro* at the tail of the chain. In contrast, similar cases of fronted PPs are ungrammatical; see (3b).

- (3) a. I Rossi, che dubito ci sia qualcuno disposto a rivedere dopo quanto è
 the Rossis who I.doubt there is anybody willing to see.again after what is
 successo, . . .
 happened
 ‘The Rossis, who I doubt there is anyone who is willing to see again after what
 happened, . . .’
- b. *I Rossi, in cui dubito ci sia qualcuno disposto a confidare, dopo
 the Rossis in whom I.doubt there is anyone willing to confide after
 quanto è successo, . . .
 what is happened
 (Cinque 1990:103, (19))

To control for this possibility, the examples in (1) and throughout all involve extraction of a PP. If Hebrew is like Italian in not having a null PP, the initial PP could not be related to an embedded position via a nonmovement pronominal chain. That Hebrew lacks a null PP is shown by the ungrammaticality of PP-extraction from the adjunct island in (4a) and from the non-RC complex NP in (4b). Parasitic gaps corresponding to PP are also impossible (4c), suggesting that Hebrew lacks a pronominal operator of category PP.

- (4) a. *im dina₁ hit’alaft [PP axrey še-dibart ____₁].
 with Dina fainted.you after that-spoke.you
- b. *im dina₁ mistovevet [DP šmu’a še-dani hitxaten ____₁].
 with Dina going.around rumor that-Dani got.married
- c. *me-mi₁ lakaxt et ha-sefer t₁ [axrey še-hit’axzavt ____₁]?
 from-who took.you ACC the-book after that-were.disappointed.in.you

With respect to the second possibility, Davies (2005) considers the PP in (5) to be an adjunct, standing in an ‘‘aboutness’’ relation to the matrix predicate.

- (5) I believe about Kate that she won the daughter-of-the-year award.

An analysis of (1) along these lines is highly unlikely since the predicates ‘know’ and ‘find’ in (1b–c) cannot be about anything; ‘hear’ in (1a) could, in principle, be about something, but the choice of preposition is incompatible with this meaning. The third option, in which PP is an ordinary argument of the matrix predicate, is not very likely either, given the particular combinations of locative prepositions and matrix predicates: ‘in-hear’, ‘on-know’, ‘from-find’.

There is also positive evidence in favor of the movement analysis. Note, first, that the contrast between PP-extraction from an RC, in (1a–c), and from an adjunct island or a non-RC complex NP, in (4a–b), is surprising if (1a–c) do not involve true movement, since whatever mechanism renders (1a–c) grammatical should have the same effect on (4a–b). If extraction from an RC is extraction from a weak island, as argued below, these contrasts fall into place.

Two other kinds of evidence support a movement analysis. First, the addition of a strong island between the RC head and the gap position within the RC causes grammaticality to degrade

more than the addition of a complement clause does; see (6a–b).¹ Furthermore, the fronted PP can include a reflexive bound within the RC, as in (7), suggesting that reconstruction is involved and that the fronted PP is related to the gap position within the RC via a movement chain.

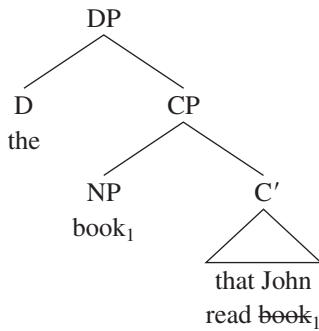
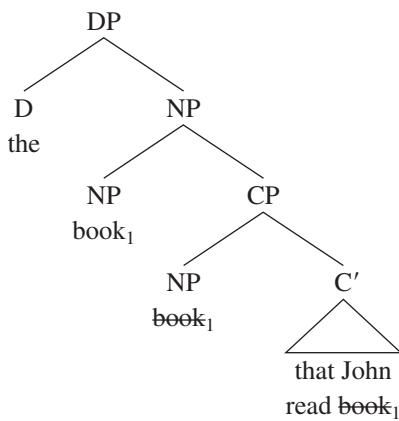
- (6) a. ?al lexem šaxor₂, yeš rak gvina axat₁ še-karati še-keday limroax t₁ t₂.
 on bread black BE only cheese one that-read.I that-worth to.spread
 ‘On black bread, there’s only one cheese that I read was worth spreading.’
- b. *al lexem šaxor₂, yeš rak gvina axat₁ še-ta’amt₁ t₁ [bli limroax ota₁ t₂].
 on bread black BE only cheese one that-tasted.I without to.spread it
 Intended: ‘On black bread, there is only one cheese that I tasted without spreading.’
- (7) [al acmam₁]₂, yeš nora me’at talmidim₁ še-muxanim lixtov t₂.
 about themselves BE very few students that-willing to.write
 ‘About themselves, there are very few students who are willing to write.’

The evidence presented in the next section is also evidence for the broader claim that movement is involved.

3 The Raising RC Source

I assume the structural ambiguity of RCs (e.g., Grosu and Landman 1998, Sauerland 1998, 2003, Bhatt 2002) and demonstrate that while externally headed RCs do block extraction, extraction is possible, under certain conditions, from a raising RC (see Schachter 1973, Vergnaud 1974, Carlson 1977, Kayne 1994, for earlier raising analyses). A variety of head-raising RC structures have been proposed in the literature following Kayne 1994 (see, e.g., Sauerland 1998, 2003, Bianchi 1999, Bhatt 2002). For expository purposes, I adopt the structure proposed in Kayne 1994 (to be slightly modified in section 4); see (8a). This CP, with a filled specifier, is sister to a D⁰ that projects a DP. The head-external structure is the matching structure, where the identity relation between the two lowest copies is determined by movement, and identity between the two highest copies is determined by ellipsis: NP moves to Spec,CP and is deleted under identity with the head NP (Sauerland 1998, 2004, Bhatt 2002).

¹ I thank an anonymous reviewer for suggesting this diagnostic.

(8) a. *Raising RC*b. *Matching RC*

The most important property of the raising structure in (8a) is that the NP head is located in Spec,CP (Kayne 1994). This entails that when a phrase is extracted, movement will cross the DP layer but it will not cross the NP node. In the structure in (8b), however, it will cross both layers.

(9) a. *Extraction from (8a)*

$XP_1 \dots [_{DP} D [_{CP} NP [\dots t_{NP} \dots t_1]]]$

b. *Extraction from (8b)*

* $XP_1 \dots [_{DP} D [_{NP} NP [_{CP} \dots t_{NP} \dots t_1]]]$

In what follows, I argue that extraction from an RC proceeds from a raising RC, and in this respect it is formally similar to extraction from an embedded interrogative. From this perspective, examples like (1a–c) present no more serious a challenge than tolerated violations of the *Wh*-Island Constraint. I also argue that extraction from the matching RC ((8b)/(9b)) is always excluded because of the phase status of the NP node, combined with a theory of antilocality (Bošković 2014, 2017).

Before we turn to the evidence for extraction from a raising RC, note that like other languages, Hebrew does respect the Complex NP Constraint. As (4b) illustrates, a non-RC complex NP does not give rise to grammatical extraction. I now present three arguments for the claim that only

raising RCs allow extraction and that RCs of the sort in (8b) do not. The binding evidence presented in section 3.1 allows us to distinguish, directly, between (8a) and (8b), and it suggests that when extraction is grammatical, it is always launched from (8a). The two kinds of evidence presented in sections 3.2 and 3.3 suggest a formal similarity between extraction from an RC and extraction from an embedded interrogative. This is due to the similarity of raising RCs to *wh*-islands.

3.1 Binding Considerations

The claim that RCs are in principle ambiguous is based on the observation that there are contexts in which only one of the structures is possible. This makes it possible to disambiguate the structures and to test each structure, separately, for extraction. By hypothesis, extraction is only possible from (8a), because the NP head of the RC is in Spec,CP and extraction would not cross the NP node. Extraction from (8b), on the other hand, should behave like the complex NP with a complement clause in (4b). The two structures can also be discriminated by the number of chains and copies, and by the location in which the copies are interpreted.

- (10) a. *Raising RC*
 [RC head₁ . . . RC-head₁]
 b. *Head-external RC*
 RC head₁ . . . [~~RC-head₁~~ . . . ~~RC-head₁~~]

The raising structure features a single chain and two copies, both contained within the embedded CP. This chain is derived by movement, and the low copy must be interpreted (Sauerland 2003, Hulse and Sauerland 2006). The head-external structure adopted is the matching structure, and it contains two chains and three copies. The two lower copies are related via a movement chain, and the head-external copy and the copy in Spec,CP are related via ellipsis. In this structure, the external copy is interpreted, and so are the low copies within CP (Sauerland 1998, 2003, 2004).

The structures can be discriminated in contexts that require only the low copy to be interpreted and in structures in which the high copy is necessarily interpreted. In contexts of the first kind, only the raising structure is possible because the high copy in the matching structure would lead to a violation. Reconstruction for idiomatic interpretation is an example of this sort of context (Bhatt 2002). Assuming that idiom chunks must be interpreted in a local configuration with the idiomatic predicate, interpretation of the high copy would lead to a violation.

- (11) a. We made headway.
 b. *The headway was satisfying.
 c. The headway that we made was satisfying.
 (Schachter 1973, via Bhatt 2002:47, (4))

In order to demonstrate the restriction of extraction to the raising RC, the matching structure should be isolated and extraction should be blocked. The matching structure can be forced in two ways: (a) when a Principle C violation would be triggered by interpretation of the low copy (12a),

and (b) when an anaphor within the RC head would have to be bound by an external antecedent (12b).

- (12) a. Those are the bar mitzvah photos of John₁ that he₁ stole from my office.
 b. He₁ tried to deny the rumors about himself₁ that Mary spread at school.

These examples would violate the binding theory if generated in the raising structure: *John* within the low copy in (12a) would violate Principle C, and *himself* within the low copy in (12b) would violate Principle A. In the matching structure, these violations are not incurred since *John* and *himself* may be interpreted only in the head-external position, where they are licit. To exclude a violation induced by the low copies in (12), the matching analysis relies on vehicle change, whereby the low copy in ellipsis needs to be semantically identical to the licensing copy, but is not itself a copy of it (Fiengo and May 1994, Sauerland 1998, 2003, 2004). This allows the low copy in (12a), for example, to contain a pronoun, not a name. This would not be possible in the raising RC, where the movement derivation entails strict identity between the copies.²

To demonstrate that extraction from the RC is blocked in these two contexts, the optimal conditions for extraction must be in place. In particular, the RC should be a narrow scope indefinite, as in the existential construction. The discourses in (13) provide contexts for existential head-external RCs, with either an R-expression in the RC head (B's response in (13a)) or an anaphor bound from the matrix clause (B's response in (13b)).

- (13) a. A: šamati še-dani₁ sone et kol tmunot ha-bar micva šelo₁.
 heard.I that-Dani hates ACC all pictures the-bar mitzvah his
 'I heard that Dani hates all of his bar mitzvah photos.'
 B: lo, yeš kama tmunot bar micva šel dani₁ še-hu₁ lakax mi-doda šelo₁.
 no BE few pictures bar mitzvah of Dani that-he took from-aunt his
 'No, there are a few bar mitzvah pictures of Dani that he took from his aunt.'
 b. A: šamati še-dani₁ hexbi et kol ha-tmunot šel miri še-hu₁ cilem.
 heard.I that-Dani hid ACC all the-pictures of Miri that-he photographed
 'I heard that Dani hid all the photos of Miri that he photographed.'
 B: naxon, ein la₁ af tmuna šel acma₁ še-dani cilem.
 true NEG to.her no picture of herself that-Dani photographed
 'True, she doesn't have any photo of herself that Dani photographed.'

The following examples test extraction in these existential contexts. In (14), the RC head contains an R-expression, and a violation of Principle C would be at stake in the raising structure. (14a) shows that extraction from such a head-external structure is degraded (alternatively, Principle C is violated in the raising structure). In contrast, (14b) and (14c) do allow extraction. No violation is at stake and the raising structure may be used.

² There are other ways to derive the effects of (12) without positing different containing structures, such as Late Merge of the complements within the RC head (Thoms and Heycock 2014, Cecchetto and Donati 2015). See section 4 for further discussion.

- (14) a. *me-ha-doda ha-zot₃, yeš [kama tmunot bar micva šel dani₁]₂ še-hu₁
 from-the-aunt the-this BE few photos bar mitzvah of Dani that-he
 ša'al t₂ t₃.
 borrowed
 b. me-ha-doda ha-zot₃, yeš [kama tmunot bar micva šelo₁]₂ še-hu₁
 from-the-aunt the-this BE few photos bar mitzvah of.his that-he
 ša'al t₂ t₃.
 borrowed
 'From this aunt, there are a few bar mitzvah photos of his that he borrowed.'
 c. me-ha-doda ha-zot₃, yeš [kama tmunot bar micva šel dani₁]₂ še-ima
 from-the-aunt the-this BE few photos bar mitzvah of Dani that-mother
 šelo₁ ša'ala t₂ t₃.
 his borrowed
 'From this aunt, there are a few bar mitzvah pictures of Dani that his mother
 borrowed.'

In (15), the RC head contains an anaphor. In (15a), it is bound by an external antecedent, which entails, by hypothesis, that the raising structure is blocked. Extraction is degraded, compared with (15b) where the antecedent is within the RC, interpretation of the low copy is obligatory, and the raising RC is allowed.

- (15) a. *[al kir ba-maxlaka]₃, yeš lo₁ rak [tmuna axat šel acmo₁]₂ še-anaxnu
 on wall in.the-department BE to.him only picture one of himself that-we
 muxanim litlot t₂ t₃.
 willing to.hang
 b. [al kir ba-maxlaka]₃, yeš lanu rak [tmuna axat šel acmo₁]₂ še-hu₁
 on wall in.the-department BE to.us only picture one of himself that-he
 muxan litlot t₂ t₃.
 willing to.hang
 'On a wall in the department, we have only one picture of himself which he is
 willing to hang.'

Free relatives, on the other hand, are uncontroversially raising RCs (Grosu and Landman 1998, Bianchi 2000). Here too extraction should be possible, and it is, in (16b), on a par with the embedded interrogative (16a).

- (16) a. al ma at yoda'at [im mi [efšar ledaber]]?
 about what you know with whom possible to.talk
 'About what do you know with whom it is possible to talk?'
 b. al ma yeš lax [im mi [ledaber]]?
 about what BE to.you with whom to.talk
 'About what do you have with whom to talk?'

The contrast between (14a) and (15a), where extraction is blocked, and (1a–c), (15b), or (16a–b) suggests a correlation between reconstruction and extraction: where extraction is possible, reconstruction is obligatory. This is encoded in terms of the structural ambiguity of RCs: extraction is possible from a raising RC, but not from a matching RC. As shown in the next section, when extraction is possible, it is possible selectively, suggesting that raising RCs are weak islands. Matching RCs, in contrast, are strong islands, also excluding complement extraction.³ The argument for a raising analysis is based on similarities with extraction from embedded interrogatives.

3.2 Similarity to Wh-Islands I: RCs Are Weak Islands

Previous literature has suggested that RCs are strong islands for extraction (Chomsky 1986, Cinque 1990, Postal 1998, Szabolcsi 2006), consistent with the adjunct status of RCs and the strong island status of adjuncts (an important exception is Lindahl 2017, where it is claimed that Swedish RCs are weak islands). If, however, the good cases of extraction proceed from a raising RC, we expect the pattern of extraction to be similar to the selective pattern observed for *wh*-islands. By hypothesis, the extracting constituent may bypass a phrase in the specifier of a dominating CP, similar to extraction from an embedded interrogative (Reinhart 1981; for now, the order of traces in (17) is irrelevant; see section 3.3 for the interaction of the two chains).⁴

(17) a. *Extraction from an embedded interrogative*

XP₂ . . . [CP *wh*-phrase₁ [. . . t₁ . . . t₂]]

b. *Extraction from a raising RC*

XP₂ . . . [DP D [CP RC head₁ [. . . t₁ . . . t₂]]]

Extraction from an embedded interrogative is possible in Hebrew and shows weak island effects, as the contrast between complement extraction and adjunct extraction in (18) illustrates.⁵

³ Besides Hebrew, other languages provide evidence that extraction is sensitive to the structure of the RC. Cinque (2010) observes that in languages in which extraction is possible, the RC from which extraction takes place must be introduced by the complementizer that also introduces other clause types, and not by the complementizer or operator dedicated to introducing RCs; with the latter, extraction is blocked. In Italian, Spanish, and French, for example, the RC must be introduced by *che/que*, and in the Scandinavian languages, by *som/sem*. Cinque claims that this sensitivity to choice of complementizer can also explain why some languages allow no extraction from RCs at all. German and Bulgarian, for example, do not allow extraction from RCs, and also do not have RCs introduced by the element that introduces other clause types. It is tempting to recast Cinque's generalization in structural terms: the RC that resembles other clause types is the raising RC, and "ordinary" RCs are of the matching variety. For example, Norwegian RCs introduced by *som*, the element that introduces other clause types, are associated with reconstruction (see Afarli 1994 for examples and discussion). This empirical picture is merely suggestive, as I cannot do justice here to the many questions raised by a fuller consideration of Cinque's generalization.

⁴ In some languages, like English (and French and Dutch, among others), selective extraction and weak island effects are observed only in nonfinite *wh*-complements. Other languages, like Hebrew, also allow selective extraction from finite *wh*-complements.

⁵ Different kinds of generalizations have been proposed to account for the difference between those *wh*-phrases that can extract from embedded interrogatives and those that cannot. The characterization in the text in terms of an argument-adjunct asymmetry (Rizzi 1990) was later modified (e.g., Kroch 1989, Cinque 1990, Abrusan 2011, 2014). Here, I will not address details pertaining to the correct generalization or its ultimate source. The present argument only aims to show that, when care is taken to isolate those RCs that do allow extraction, the selective pattern that characterizes embedded interrogatives—whatever it may be, for particular languages or speakers—is also observed with RCs.

- (18) a. eyfo be-yerušalayim amart li mi hiskim lagur?
 where in-Jerusalem told.you me who agreed to.live
 b. *eyfo be-yerušalayim amart li mi hiskim le'exol?
 where in-Jerusalem told.you me who agreed to.eat
 'Where in Jerusalem did you tell me who agreed to live/*to eat?'

A similar pattern is observed for extraction from RCs.⁶ Extraction of an adjunct is blocked.

- (19) a. be-yerušalayim hem hayu hayexidim še-hiskimu lagur.
 in-Jerusalem they were the.only.ones that-agreed to.live
 b. *be-yerušalayim hem hayu hayexidim še-hiskimu le'exol.
 in-Jerusalem they were the.only.ones that-agreed to.eat
 'In Jerusalem, they were the only ones who agreed to live/*to eat.'
- (20) a. be-yerušalayim, mizman lo šamati al mišehu še-roce lagur.
 in-Jerusalem ages not heard.I about somebody that-wants to.live
 b. *be-yerušalayim, mizman lo šamati al mišehu še-roce le'exol.
 in-Jerusalem ages not heard.I about somebody that-wants to.eat
 'In Jerusalem, it's been ages since I've heard of anybody who wants to live/*to eat.'

This pattern is expected if extraction from an RC is formally similar to extraction from an embedded interrogative. Since the selective pattern is unexpected if no movement is involved, it also provides further support for a movement analysis.

3.3 Similarity to Wh-Islands II: Multiple Chain Interactions

Extraction from RCs resembles extraction from embedded interrogatives with respect to multiple chain interactions as well (e.g., Pesetsky 1982, Richards 1997, 2001, Preminger 2010). Like extraction from a *wh*-island or *wh*-movement in multiple interrogatives, extraction from an RC necessarily involves two chains: the chain forming the RC and the chain formed by extraction from within the RC. Crucially, the interaction of the two chains in extraction from RCs bears the signature of extraction from an embedded interrogative: alongside a strict subject-object asymmetry, the interaction of two internal arguments exhibits flexibility. Either one of the internal arguments may be fronted across the other one.

- (21) a. Obj ... [CP Subj ... t_{Subj} ... t_{Obj}] / *Subj ... [CP Obj t_{Subj} ... t_{Obj}]
 b. Obj₁ ... [CP Obj₂ ... V t₁ ... t₂] / Obj₂ ... [CP Obj₁ ... V t₁ ... t₂]

The two parts of (21) are first introduced in standard *wh*-islands. Hebrew allows the object to be extracted over the subject, and not vice versa; see (22). This is part of a more general nesting pattern, discovered by Pesetsky (1982), and shared also by English (see (23)) and other languages.

⁶ See also Chung and McCloskey 1983, Cinque 2010, and Lindahl 2017 for argument-adjunct asymmetries in English, Italian, and Swedish, respectively, and Lindahl 2017 for the claim that Swedish RCs constitute weak islands for extraction.

In both (22) and (23), the lower CP attracts the highest *wh*-phrase to its specifier, and the lower *wh*-phrase (the object in (22a) and the embedded object in (23a)) bypasses this intermediate specifier on its way to the higher CP.

- (22) a. ani yoda'at ma₂ šaxaxt [CP mi₁ t₁ axal t₂]. šaxaxt mi axal uga.
 I know what forgot.you who ate forgot.you who ate cake
 'I know what you forgot who ate. You forgot who ate cake.'
 b. *ani yoda'at mi₁ šaxaxt [CP ma₂ t₁ axal t₂]. šaxaxt ma yosi axal.
 I know who forgot.you what ate forgot.you what Yosi ate
- (23) a. Which books₂ do you know [who₁ to persuade t₁ [PRO to read t₂]]?
 b. *Who₁ do you know [which books₂ to persuade t₁ to read t₂]?

For internal argument interactions, let us focus on verbs that have two PP-internal arguments, such as 'talk' ('with DP about DP'; see Preminger 2006).⁷ Here we find near symmetry: for most speakers it doesn't matter at all whether 'with whom' is attracted to the lower Spec,CP and 'about what' is moved long-distance, or vice versa, as in (24b). The few speakers who have a preference for (24a) report that it is significantly more subtle than the contrast in (22), and that it goes away when descriptive content in the form of ['which DP'] is added to either one of the PP arguments in (24b), as in (25).⁸ However, adding descriptive content in the same way to the degraded subject-object pattern in (22b) has no effect; see (26).

- (24) a. ani yoda'at al ma₂ šaxaxt [CP im mi₁ dibart t₁ t₂]. šaxaxt
 I know about what forgot.you with whom talked.you forgot.you
 im mi dibart al ha-bxirot.
 with whom talked.you about the-elections
 'I know about what you forgot with whom you talked. You forgot with whom you talked about the elections.'
 b. ?ani yoda'at im mi₁ šaxaxt [al ma₂ dibart t₁ t₂]. šaxaxt al
 I know with whom forgot.you about what talked.you forgot.you about
 ma dibart im rut.
 what talked.you with Ruth
 'I know with whom you forgot about what you talked. You forgot about what you talked with Ruth.'
- (25) a. im eyze yeled šaxaxt al ma dibart?
 with which boy forgot.you about what talked.you
 'With which boy did you forget what you talked about?'

⁷ I set aside verbs taking DP and PP as internal arguments, to control for the effects of resumption on extraction from RCs. Movement of a DP complement of P⁰ in relativization involves obligatory resumption (there is no preposition stranding in Hebrew). Having two PPs implies local resumption in each case, and this ensures that whatever contrast emerges is not due to resumption in the local chain.

⁸ An anonymous reviewer considers (24b) ungrammatical, with no improvement in (25a), where the *which*-NP replaces the bare *wh*-phrase. These are subtle distinctions, and additional speaker variation is not unexpected. What is important is not so much the absolute status of each construction, but the correlation between embedded interrogatives and RCs. That is what the reviewer reports when comparing the two.

- b. im mi šaxaxt al eyze nose dibart?
 with whom forgot.you about which topic talked.you
 ‘With whom did you forget which topic you talked about?’
- (26) a. *mi šaxaxt eyze kinuax axal?
 who forgot.you which dessert ate
 b. *eyze yeled šaxaxt ma axal?
 which boy forgot.you what ate

The contrast between (25) and (26) suggests that the role of the ‘which’-phrases is to introduce descriptive content, making it easier to understand which *wh*-phrase is associated with which position. That this can help (24b) but not (22b) suggests that (24b) is not really ungrammatical, though (22b) is. I will assume this interpretation of the facts, and I conclude that the interaction of two PP-internal arguments is distinct from the interaction of subjects and objects. This is schematized in (27).

- (27) a. Subj-Obj interactions: Obj₂ ... Subj₁ ... t₁ ... t₂ ‘‘Nesting’’
 b. Obj-Obj interactions: Obj₂ ... Obj₁ ... t₁ ... t₂ ‘‘Nesting’’
 Obj₁ ... Obj₂ ... t₁ ... t₂ ‘‘Crossing’’

I return to the difference between (27a) and (27b) below. For the purposes of comparison with the pattern of extraction from RC, the existence of this difference is a blessing, since chance similarity decreases the more complex the pattern is. In other words, given this quirk, the likelihood that the RC pattern is derived from a similar underlying structure becomes greater. As shown in (28a–b), the combination of a subject chain and an object chain yields strict asymmetry and a nested pattern. The combination of two internal argument PPs yields flexibility, where either PP may be relativized and extracted from the RC; see (29).

- (28) a. tikim ka-ele₂, ani mekira [mišehu₁ [še-t₁ moxer t₂]].
 bags like-that I know someone that sells
 ‘Bags like that, I know someone who sells.’
 (Rubowitz-Mann 2000:135, (4.1))
 b. *anašim ka-ele₁, ra’iti [mašehu₂ [še-t₁ moxrim t₂]].
 people like-that saw.I something that sell
 (Rubowitz-Mann 2000:fn.2, (ib))
- (29) a. im ha-balšan ha-ze₂, od lo macati [be’aya₁ [PRO ledaber
 with the-linguist the-this yet not found.I problem to.talk
 t₂ aleya₁]].
 about.it
 ‘With this linguist, I haven’t yet found a problem to talk about.’
 b. ?al ha-be’aya ha-zot₂, od lo macati [taxbiran₁ PRO ledaber
 about the-problem the-this yet not found.I syntactician to.talk
 ito₁ t₂].
 with.him
 ‘About this problem, I haven’t yet found a syntactician to talk to.’

Examples such as (29a–b) falsify previous claims that extraction from an RC is acceptable only if the position relativized within the RC is a subject (Erteschik-Shir 1973, Engdahl 1980, 1998, Taraldsen 1981, Kluender 1992, Kush, Omaki, and Hornstein 2013; see also Lindahl 2017 for discussion of the restriction to subject relatives). A restriction to subject relativization would be specific to RCs and would require a special kind of analysis, supporting the view that extraction from RCs is truly exceptional. Examples with internal arguments show that the so-called subject restriction actually falls under a broader generalization that constrains the interaction between the two chains, and this is the restriction familiar from the study of multiple *wh*-movement (e.g., Pesetsky 1982, Richards 1997, 2001, Preminger 2010). As expected if the underlying mechanism is related to Minimality and Shortest Move, the requirement for subject relativization holds only in interactions between subject and objects and an internal argument may be relativized under appropriate conditions (Rizzi 1990, Chomsky 1995, Richards 1997). Crucially, the pattern of multiple chain interactions in RCs is exactly the same as in embedded interrogatives and multiple questions. This provides further support for a movement analysis of extraction, and more specifically for the raising analysis of extraction from RCs.⁹

To summarize, this section has provided three arguments in favor of the idea that extraction proceeds from a raising RC. Since it is difficult to see how else the selective contour of extraction could be derived, these are also arguments for a movement analysis.

1. Binding considerations. When the high RC-external copy is interpreted, extraction is impossible. This suggests that matching RCs are strong islands and that extraction is launched from a raising RC (see further discussion in section 4).
2. Weak island effects
3. Nesting multiple chains

The combination of patterns 2 and 3 suggests that the RC structure that allows extraction is a weak island, formally similar to an embedded interrogative—in other words, a raising RC. These generalizations form the basis of the analysis developed in the next section.

4 Analysis of Extraction from Raising RCs

This section aims to identify the crucial difference(s) between the matching RC, which behaves like a strong island in blocking all extraction, and the raising RC, which patterns with weak islands in selectively allowing complement extraction. As explained below, the weak/strong island distinction provides new evidence for implementing the structural ambiguity of RCs in terms of the two distinct containing structures sketched in (8). In the discussion to follow, the only property distinguishing weak and strong islands that I will presuppose is their empirical contour: selective

⁹ The flexibility observed in PP-PP interactions falls under a consistent nesting pattern, once we take into account the asymmetry between the two PP arguments. While both $PP_{\text{with}} > PP_{\text{about}}$ and $PP_{\text{about}} > PP_{\text{with}}$ are possible orders, Preminger (2006) argues that in the underlying hierarchical arrangement, PP_{with} is higher than PP_{about} , the second order being derived by a step of A-movement—that is, $PP_{\text{about}} > PP_{\text{with}} \dots PP_{\text{about}}$. With this in place, the flexibility observed between internal arguments in (24) and (29) is no longer surprising, since \bar{A} -movement may proceed from either one of these structures, and for each initial configuration there is only one possible outcome.

extraction from weak islands and no extraction from strong islands. Given the landscape of extraction from noun phrases that contain clauses, I will propose that the strong island status of matching RCs follows from the phase status of NP, combined with a theory of antilocality. After section 4.1 fleshes out the relevance of the weak/strong island typology for the structure of RCs, section 4.2 isolates the property responsible for the strong island status of matching RCs, and section 4.3 develops an analysis of raising RCs as weak islands.

4.1 *Island Typology and the Structural Ambiguity of RCs*

This section is devoted to motivating an analysis of extraction along the lines of the ambiguity hypothesis expressed in (8). An important first step is to observe that extraction is limited to configurations in which only the low copy is interpreted (section 3.1). How do extraction and reconstruction interact? On the approach developed here, the two configurations are associated with distinct containing structures. The raising RC has CP as a direct complement to D^0 , and the matching RC has CP adjoined to NP. The presence of an NP node dominating the extraction site forms the basis for the analysis of strong island effects in matching RCs in section 4.2. Here, I show how the selective pattern of extraction further supports the structures in (8).

There is an alternative to (8) that would deny that the extraction pattern requires separate containing structures for different kinds of RCs. According to this proposal, there would be only one RC structure, the raising structure (see, for example, Bianchi 1999, 2000 and Bhatt 2002 for different versions of the single-containing-structure hypothesis). Instead of expressing the interaction between extraction and reconstruction via two distinct RC structures, this proposal would express it via two LF structures: in LF_1 the high copy would be interpreted and extraction is blocked, and in LF_2 the low copy would be interpreted and extraction would be allowed. Crucially, there would be no high copy in LF_2 . In this analysis, the circumvention of Subjacency would be related to the absence of a high copy in the RC head position. The relevant details are given in (30), abstracting away from whether this raising RC is contained within an NP (Bhatt 2002, Thoms and Heycock 2014) or not (Bianchi 1999, 2000).

- (30) a. LF_1
 [_{RC} RC head . . .]
 b. LF_2
 [_{RC} . . . RC head]

The first question raised by (30) is how an LF structure could block overt extraction. For concreteness, the discussion is based on a combination of proposals in Aoun and Benmamoun 1998 and the division into stem movement and PF movement in Elbourne and Sauerland 2002.¹⁰ On this approach, LF_2 is also part of overt syntax. Stem movement is movement at S-Structure in pre-Minimalist frameworks, and PF movement occurs after the split into LF and does not feed

¹⁰ Single-output models (Bobaljik 1995, 2002, Brody 1995) could also represent the correlation in this way and would encounter similar difficulties.

LF. LF_1 corresponds to a structure in which relativization is derived by stem movement and feeds LF, and LF_2 would correspond to a derivation with PF movement of the RC head, so that at LF only the low copy would be visible. Since extraction correlates with reconstruction (section 3.1), it follows that extraction would be blocked in LF_1 (now understood as the representation derived by stem movement) and allowed in LF_2 (now understood as representing the stem portion of the derivation, prior to PF movement). In other words, extraction would be excluded in the presence of a *wh*-island and allowed when the copy is low.

This implementation, however, would fail to derive the selective pattern of extraction seen in section 3.2. First, when the analysis excludes extraction (30a), at least complement extraction should be possible, given the weak island status of the *wh*-island configuration. We have seen, however, that when the high copy is interpreted, complement extraction is also excluded in this configuration ((14a)/(15a)). This implies that (30a) is not sufficient for representing a strong island RC structure. Second, when the analysis allows extraction, as in (30b), adjunct extraction should also be allowed, since here there is no *wh*-island. But adjunct extraction is never allowed (section 3.2). This suggests that (30b) is not an adequate representation of a weak island RC structure. The theory encoded in (30) fails, therefore, to derive the weak/strong island typology of RCs.¹¹

4.2 Matching RCs as Strong Islands

I now return to the implementation of the structural ambiguity hypothesis in (8), where the crucial difference between the two structures is that only in the matching structure does the extraction trajectory cross NP. In the raising RC, on the other hand, the RC head is embedded within Spec,CP. It is not the location of a copy in Spec,CP that blocks extraction, as it was in (30a); in both structures, Spec,CP is filled in the stem. Given the difference between raising and matching RCs, and the difference between extraction from RCs and extraction from non-RC complex NPs, the ingredient that creates a strong island in complex NPs appears to be the NP layer: present in matching RC and in other complex NPs, and absent in raising RCs. This account of strong islandhood, in terms of the phase status of NP, replaces earlier government-based accounts of the complex NP island, which relied on the complement-adjunct asymmetry in extraction domains (Huang 1982, Chomsky 1986) and as a result failed to account for the island status of complex NPs in which CP is a complement. In what follows, I will show how an account in terms of NP phasehood can be integrated into a general theory of locality.

Bošković (2017) formulates a single generalization to capture a variety of limitations on extraction observed for NPs but not for VPs. Adjunct extraction, deep complement extraction, and the Complex NP Constraint are all subsumed under the generalization in (31).

¹¹ Within the class of approaches that attribute a single containing structure to reconstructing and nonreconstructing relatives, there is an alternative to (30) that derives, via Late Merge of complements into the RC head, configurations in which only the high copy is interpreted (Thoms and Heycock 2014, Cecchetto and Donati 2015). It is unclear how Late Merge would interact with extraction to derive the patterns in section 3.

(31) NP is a phase for elements that are not theta-marked by its head/within it.

Bošković's proposal to combine (31) and other constraints can straightforwardly account for the difference between raising and matching RCs. These other constraints include (a) the phasehood of DP in languages that have a DP layer, including Hebrew; (b) the Phase Impenetrability Condition (PIC), whereby only the edge of a phase is accessible for phrasal movement outside of the phase (Chomsky 2000, 2001); (c) an antilocality constraint, whereby each step of movement must cross at least one full maximal projection (Bošković 1994, 1997; see Abels 2003, Grohmann 2003, Ticio 2003, Erlewine 2016); and (d) the absence of an \bar{A} -specifier in NP (Bošković 2014). The combination of these ingredients derives intricate crosslinguistic differences associated with the parameter in (a), whether DP is a phase in a language; in English it is, but not in Serbo-Croatian, where there is no DP. One effect of this parameter is that complement extraction is possible in English but not in Serbo-Croatian, since in English, NP is not a phase for complements. Therefore, the complement is free to move directly to Spec,DP without violating Antilocality. In Serbo-Croatian, where NP is the highest nominal projection and therefore an absolute phase, the complement must adjoin to NP, given the PIC, but this configuration then violates Antilocality. As a language with determiners and a DP layer, Hebrew falls on the side of English.¹²

The combination of these ingredients conspires to prevent extraction of a phrase not θ -marked by N from an NP, unless NP isn't immediately dominated by DP (as in Serbo-Croatian, where it isn't, and where adjunct extraction is surprisingly possible). When NP is dominated by DP, as it always is in English or Hebrew, there will be a step of movement that violates Antilocality. This is the source of the Complex NP Constraint, and the analysis extends directly to matching RCs. Extraction from an RC must involve adjunction to NP, since the extracting constituent is not a complement of the head noun, that is, the RC head. The next step will involve movement to Spec,DP, since DP is a phase as well, but this step violates Antilocality since it crosses only a segment of NP. The same considerations explain why extraction from a raising RC is possible. In the absence of an NP node, the movement step, which culminates in Spec,DP, will be launched from Spec,CP. Since CP is fully crossed, this step does not violate Antilocality.¹³

4.3 Raising RCs as Weak Islands

I now turn to the *wh*-island contained within raising RCs, and to how extraction from CP bypasses a filled Spec,CP and circumvents a *wh*-island violation. Following Preminger (2010), I assume an articulated CP, in which CP immediately dominates other projections associated with the \bar{A} -system (Rizzi 1997; see also Bianchi 1999, 2000 and Cinque 2013 for extensions to RC CPs).

¹² Hebrew is predicted, therefore, to allow complement extraction. This is confirmed in (i), although on the whole, complement extraction appears to be more restricted in Hebrew than in English.

(i) me-eyze erac ro'im axšav be-tel aviv haxi harbe tayarim?
 from-which country see.PL now in-Tel Aviv most many tourists
 'From which country do you now see in Tel Aviv the most tourists?'

¹³ In addition to the 'escape hatch' Spec,CP, the CP area hosts the relative head, which produces the *wh*-island configuration. See section 4.3 for further discussion of how these positions interact.

Preminger derives the nesting pattern observed in embedded interrogatives from this structure, as schematized in (32b) and (33b). CP immediately dominates FocP.¹⁴ FocP hosts \bar{A} -operators, and given Shortest Move and the PIC (Chomsky 1995, 2000, 2001), the closest *wh*-phrase is attracted to its specifier. This will be the subject in sentences with multiple *wh*-phrases in which one is a subject and the other is an object. The object, or the more distant *wh*-phrase, will be attracted to Spec,CP. The PIC dictates that attraction by the matrix CP will target the *wh*-phrase in the embedded Spec,CP, in this case the object, and this produces the nesting pattern. I assume that RC CPs are no different and can similarly include more than one \bar{A} -position. Since the same pattern is observed, and the interactions between multiple chains are essentially the same as in multiple questions, it must be that the differences between RCs and interrogatives are not relevant for the computation of Relativized Minimality/Shortest Move. This is schematized for an embedded interrogative in (32) and for a raising RC in (33). DP₂ will adjoin to the RC DP on its way up, as described above.

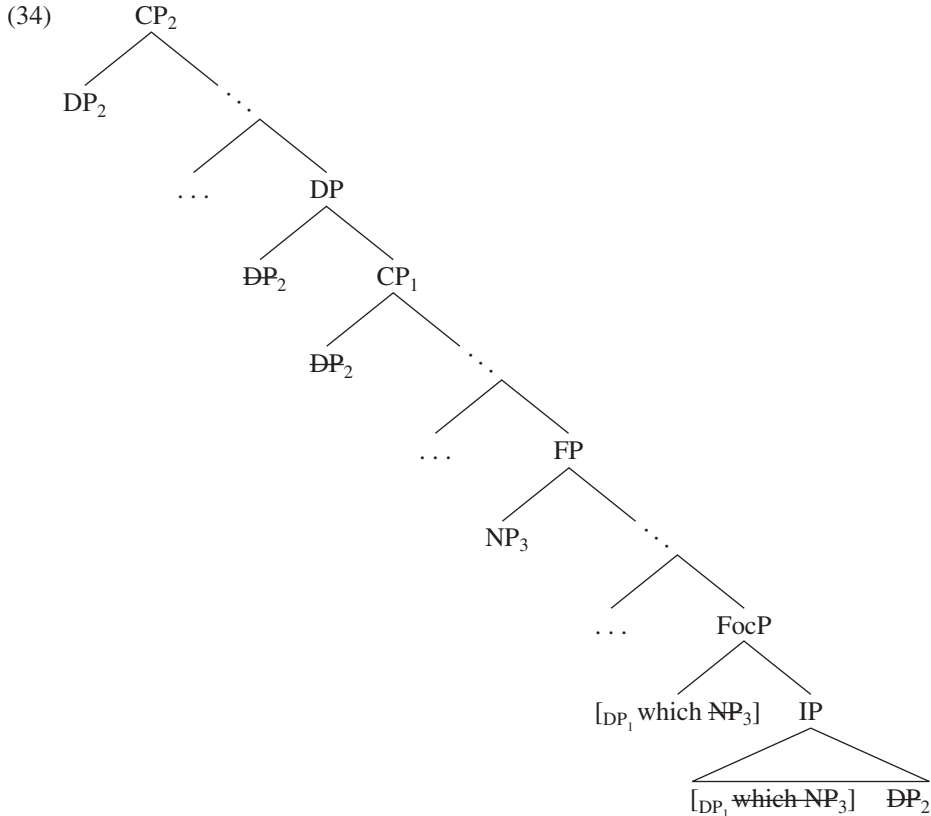
- (32) a. ma₂ šaxaxt [CP mi₁ t₁ axal t₂]?
 what forgot.you who ate
 ‘What did you forget who ate?’
 b. [CP₂ DP₂ . . . forgot . . . [CP₁ $\bar{D}P_2$ [FocP DP₁ . . . [IP $\bar{D}P_1$. . . $\bar{D}P_2$. . .]]]]
- (33) a. tikim ka-ele₂, ani mekira [mišehu₁ še-t₁ moxer t₂].
 bags like-that I know someone that sells
 ‘Bags like that, I know someone who sells.’
 b. [CP₂ DP₂ . . . know . . . [DP $\bar{D}P_2$ [DP D⁰ [CP₁ $\bar{D}P_2$ [FocP DP₁ . . . [IP $\bar{D}P_1$. . . $\bar{D}P_2$. . .]]]]]]

I now turn to the syntax of relativization within the raising RC. To derive the *wh*-island contour of extraction from a raising RC, I assume the structure proposed by Kayne (1994), in which D⁰ directly selects CP. In Kayne’s original formulation, the relativizing constituent is an NP, and it becomes adjacent to D⁰ in its derived position. Borsley (1997) argues against relativizing an NP, and these objections are addressed by Bianchi (1999, 2000) within the general framework of Kayne’s raising RC. Bianchi (2000) presents two raising RC structures, one for English *that*-relatives and one for *wh*-relatives, and in both, the trace within the RC is associated with a moved DP, not NP.¹⁵ Only the latter is compatible with the details of the analysis above. In the version with *that*, the moved DP is [DP D⁰ someone], the D⁰ head is silent, licensed by incorporation into the matrix D⁰ that selects CP. This structure would not be compatible with the articulated CP sketched above because incorporation requires the two instances of D⁰ to be local, but in (33b) DP₂ in Spec,CP intervenes. In the derivation of *wh*-relatives, [DP which NP] first moves to the

¹⁴ The precise labels of these CP-related projections are not intended to suggest any particular semantic interpretation (of focus, as opposed to topic, for example). Labels such as CP₁ and CP₂ would be just as informative.

¹⁵ See also Bhatt 2002 for a related proposal, where DP raises and NP further moves and reprojects an NP head. That analysis, however, is not compatible with the view of extraction developed here. See the discussion surrounding (30).

specifier of some functional head XP within the CP area, followed by extraction of NP to a higher specifier. This derivation is compatible with the PIC requirement that the escape hatch be highest, since it requires no particular relation between the external D^0 and [$_{DP}$ which NP]. The combination of these positions is illustrated schematically in (34).



As discussed above, Shortest Move dictates that the relativizing constituent [which NP] starts out higher within IP than the constituent undergoing long movement.¹⁶ Following DP-relativization, NP moves to the next specifier up, and the lower DP raises to the escape hatch Spec,CP. This is the only order possible. Given the PIC, movement to the escape hatch cannot precede, or target a position lower than, movement of [which NP]. It also cannot precede the step of NP-movement from [which NP], since here too the PIC would be violated and NP-movement would have to skip a filled specifier.¹⁷

¹⁶ Since the two *wh*-phrases are not associated with the same semantics of interrogativity, the operation of Shortest Move in RC syntax raises an interesting question: in what sense are the two constituents, the DP to be relativized and the DP to be extracted, similar enough to be competing for Shortest Move?

¹⁷ It may seem that the articulated CP structure for RCs is problematic for the compositional derivation of the RC denotation, since the extracting phrase intervenes between D^0 and the NP that it is associated with. This does not create a problem for compositionality, however, since λ -abstraction at the level of CP_1 creates a predicate of type $\langle e, \langle e, t \rangle \rangle$ with

Summing up, this section situated the weak and strong island typology for RCs within a broader theory of locality. It was argued that single-containing-structure implementations of the structural ambiguity hypothesis would fail to derive the typology. The piece of structure responsible for the strong island status of matching RCs is NP, and extraction from a raising RC proceeds from an articulated CP structure in which [which NP] first moves to FocP, followed by extraction of NP to a higher projection and movement of the second *wh*-phrase to an escape hatch in Spec,CP.

5 The Existential Ingredient

Section 3 established that the raising structure is necessary for extraction from an RC. It is not the only condition, however. Recall that extraction from an RC is typically found when the RC head is indefinite and the utterance makes an existential statement. This is very clear in the canonical existential constructions in (35), but extraction is also possible in a variety of “non-canonical” existential sentences, one of which is given in (36) (see more below).

- (35) a. al lexem šaxor, yeš rak gvina axat še-keday limroax.
 on bread black BE only cheese one that-worth to.spread
 ‘On black bread, there is only one cheese that’s worth spreading.’
 b. me-ha-sifria ha-zot₂, yeš ulay [xamiša sfarim₁ [še-keday PRO
 from-the-library the-this BE maybe five books that-worth
 lehaš’il t₁ t₂].
 to.borrow
 ‘From this library, there are hardly five books worth borrowing.’
- (36) al lexem šaxor₂, ani makira rak [gvina levana axat]₁ še-efšar limroax t₁ t₂.
 on bread black I know only cheese white one that-possible to.spread
 ‘On black bread, I know only one white cheese that can be spread.’

The puzzle presented by extraction from RCs, and from DPs more generally, has to do with the proper characterization of the environments that allow extraction. While it is clear that (in)definiteness plays a role, it has been harder to state the relevant generalization, to explain why this factor should interact with extraction in the way that it does, and to incorporate this into a general theory of *wh*-movement. The literature on extraction from RC has been dominated by discussion of contextual factors of various sorts that enter into facilitating extraction (e.g., Erteschik-Shir 1973, 1982, Allwood 1982, Engdahl 1980, 1982, 1998, Rubowitz-Mann 2000). Since extraction from RC seemed to be insensitive to islands and to violate Subjacency, these factors have often been presented as a further challenge to syntactic conceptions of locality. This emphasis has obscured the fact that extraction from an RC is not significantly different in this respect from extraction from a simple DP.

which DP₂, of type ⟨e⟩, will compose. Another issue concerns the type of FocP, determined by predicate modification. I assume, following Heim and Kratzer (1998), that relative *which* denotes ⟨⟨e,t⟩,⟨e,t⟩⟩ and that [which NP₃] is therefore of type ⟨e,t⟩, which when composed with IP_{⟨e,t⟩} produces FocP_{⟨e,t⟩}. Combined with D⁰, of type ⟨⟨e,t⟩e⟩, the denotation of the containing DP is of type ⟨e⟩.

The raising analysis developed above brings extraction from RC back into the fold of syntactic theory, and the goal of this section is to develop a formal syntactic account of the existential ingredient without compromising its contextual contour. I argue that the constraints on extraction from RCs are the same as those imposed on extraction from simple DPs, also limited to nonspecific indefinites and subject to a variety of contextual factors (Fiengo and Higginbotham 1981, Diesing 1992, Mahajan 1992, Davies and Dubinsky 2003, Bianchi and Chesi 2014).¹⁸ Extending ideas in Diesing 1992 to extraction from RCs, and updating them to reflect the cyclic phase-based nature of current syntactic theory (Chomsky 2000, 2001, Nissenbaum 2000), the analysis below has two parts. First, in the spirit of previous accounts in which DP is an island if it is specific or presuppositional, I argue that only nonpresuppositional RCs allow extraction.¹⁹ On this account, the contextual sensitivity of extraction from RCs is to be attributed to the contextual nature of presuppositions of existence (Borschev and Partee 1998, 2002, Engdahl 1998, Rubowitz-Mann 2000). Second, I will show that syntactic position, and not presuppositionality per se, constrains extraction from an RC: extraction is possible only from RCs contained within DPs in nonderived positions. Following Diesing (1992), I will take it that presuppositional DPs raise from their base position and nonpresuppositional DPs remain in situ; extraction is possible only from a DP in a nonderived position (see references for the Freezing Condition below). The movement of a presuppositional DP bleeds subextraction from within it, and this movement may be overt or covert: in German, for example, the movement of presupposed objects is overt, while in English and Hebrew it is covert.²⁰ The structure of the analysis is summarized in (37). I will assume some version of the Freezing Condition, in (38) (for various rationales and different implementations, see Ormazábal, Uriagereka, and Uribe-Etxebarria 1994, Uriagereka 1999, Chomsky 2000, 2001, 2008, Stepanov 2001, Rizzi 2004, 2006, Gallego and Uriagereka 2006, 2007; see Gallego 2010 for discussion), and specifically, the Activity Condition (39) (Chomsky 2000, 2001).

- (37) a. Presuppositional DPs, including RCs, raise; nonpresuppositional DPs do not.
 b. Subextraction is impossible when the containing DP/RC is in a derived position.
 c. It follows that extraction is excluded from a presuppositional DP.

¹⁸ The factors that enter into allowing extraction from a simple DP in a language like English are notoriously complex, at least at first glance. Besides being subject to restrictions on the presuppositionality of the containing DP (see below in the text), extraction from simple DP is sensitive to whether the extracted constituent is a complement or an adjunct (e.g., Huang 1982, Chomsky 1986, Culicover and Rochemont 1992, Dubinsky and Davies 2003, Ticio 2003, Bošković 2014). Erteschik-Shir (1973, 1981) discusses choice of matrix verb (Bach and Horn 1976) and choice of possessor, arguing that the complicated ways in which lexical choices affect extractability call for a nonstructural account of the phenomenon. These complexities, however, probably fall under the argument/adjunct status of the extractee (see Dubinsky and Davies 2003 for discussion).

¹⁹ Closely related generalizations can be found in Erteschik-Shir 1973, 1981, 1982 and in Borschev and Partee 1998, 2002.

²⁰ The kind of covert movement assumed here is not triggered by the need to escape from existential closure (Diesing 1992), nor by Quantifier Raising (QR) in the narrow sense of movement in the service of resolving type mismatch (Heim 1987, Heim and Kratzer 1998), since it can apply also to names and pronouns. It is closer to movement in the domain of differential object marking (DOM), where pronouns and names can be part of the set of DOM material even though they are not quantificational. For approaches to DOM that treat it as movement to a higher position, possibly covert, see Woolford 1995, 2001 and López 2012.

(38) *Freezing Condition*

Constituents in derived A-positions are opaque to subextraction.

(39) *Activity Condition* (see Chomsky 2000:123)

- a. DPs with structural Case are *active*.
- b. A-movement (triggered by ϕ -probes) renders active DPs *frozen*, unable to move or allow movement of their constituents.

While constraints on movement, from this perspective, have a syntactic or morphosyntactic source, context sensitivity derives from the information-structural nature of presuppositionality. An alternative approach to definiteness effects in extraction from DP, in (40), relates the possibility of extraction to the amount of functional structure present in DP, not to its position (e.g., Bowers 1988, Corver 1992, Bošković 2005, 2008).

- (40) a. Who do you like [jokes about ____]?
- b. *Who do you like [the/those jokes about ____]?

On these accounts, DP blocks extraction, but when the DP layer is not present, extraction may be possible. The related contrast between RCs, however, could not be accounted for in this way, if a raising RC is $D^0 + CP$ (Kayne 1994) as argued above. If the relevant functional layers are stripped away from the indefinite RCs in (35)–(36), then all that would be left is an embedded CP, but RCs do not have the distribution of CPs. Furthermore, in section 4 I claimed that in a sequence of DP and NP projections, it is the NP projection that creates a problem for locality, not the DP projection. In what follows, I will present further evidence in favor of an analysis based on the position of DP, rather than the presence of the DP layer.

5.1 *Extraction Requires a Nonpresuppositional DP*

In the context of extraction from simple DPs, Diesing (1992) observes that the correct generalization is to be stated in terms of weak vs. strong quantifiers. DPs headed by strong quantifiers are those excluded in the existential construction (Milsark 1974).

- (41) a. Who did you see pictures of?
- b. Who did you see a picture of?
- c. Who did you see many/several/some pictures of?
- (42) a. *?Who did you see the/every/each picture of?
- b. *?Who did you see most pictures of?
- c. ??Who did you see the pictures of?
- (43) a. There were (many/several/some) pictures of Mary on the wall.
- b. *There was the/every/each picture of Mary on the wall.

Within the class of DPs headed by weak quantifiers there is a further division, into DPs whose denotation is presupposed to exist and DPs that do not involve an existence presupposition. Modification by *certain*, for example, brings out the presuppositional reading, and extraction is ungrammatical.

(44) *Who did you see a certain picture of?

Matushansky (2005) mentions the fact that comparative superlatives allow extraction despite being definite, and this suggests, independently, that the mere presence of a definite article is not enough to block extraction.²¹ It also supports the generalization in terms of presuppositionality, since no particular picture is presupposed in the superlative version of (45); it is only presupposed that some picture is the best picture.

(45) (Of those present) Who did you take the *(best) picture of?

These observations form the basis of the generalization that presuppositional DPs block extraction (Erteschik-Shir 1981, Fiengo and Higginbotham 1981, Diesing 1992, Mahajan 1992, Dubinsky and Davies 2003, Bianchi and Chesi 2014). According to Diesing (1992), among many others, the presuppositionality of a DP correlates with its position. Presuppositional readings are associated with a DP in a derived position, possibly at LF, whereas nonpresuppositional readings are associated with a low position and narrow scope.²²

This generalization extends to extraction from RCs, which is possible in a variety of contexts in which the RC is nonpresuppositional, as in (46)–(49), where this reading is forced or at least strongly preferred. The nonpresuppositional nature of the RC is obvious in canonical existential sentences such as (46a–b), but a preference for nonpresuppositional RCs is also observed in two other sentence types: (a) Nonverbal sentences, when the DP is a predicate nominal (47). The predicate nominal may be definite, but even then it is not presuppositional (see also Engdahl 1998 for Swedish). (b) Noncanonical existential sentences in which existence is asserted or implied (48), or denied (49). I consider these existential since the utterance as a whole asserts, implies, or denies the existence of the entity denoted by the RC, and the RC is not presuppositional.

- (46) a. al lexem šaxor, yeš rak gvina axat še-keday limroax.
 on bread black BE only cheese one that-worth to.spread
 ‘On black bread, there is only one cheese that’s worth spreading.’
 b. me-ha-sifria ha-zot₂, yeš ulay [xamiša sfarim₁ [še-keday PRO
 from-the-library the-this BE maybe five books that-worth
 lehaš’il t₁ t₂].
 to.borrow
 ‘From this library, there are hardly five books worth borrowing.’

²¹ See Szabolcsi 1986, Heim 1999, and Hackl 2009 (among others) for the claim that the definite article in superlatives is actually the spell-out of an indefinite/existential operator at LF. Thanks to an anonymous reviewer for pointing this out.

²² Diesing (1992) captures the difference in interpretation between DPs in situ and in derived position via her tree-splitting algorithm, but other methods of interpretation for the indefinite-in-situ are conceivable, such as semantic incorporation (Van Geenhoven 1998; though this will not readily work for a subject-in-situ) and Restrict (Chung and Ladusaw 2004). I set these other methods aside since they are not based on syntactic position and would not derive the pattern of extraction. However, see López 2012 for a structural implementation of Chung and Ladusaw’s Restrict/Choice function division, and more recently Bianchi and Chesi 2014.

- (47) a. al ha-haxlata ha-zot₂, yair lapid haya [ha-axaron še-yada t₂].
 about the-decision the-this Yair Lapid was the-last that-knew
 ‘About this decision, Yair Lapid was the last to know.’
 b. et ha-toxnit ha-zot₂, ata [ha-yaxid še-ro’e t₂].
 ACC the-program the-this you the-single that-watches
 ‘This program, you’re the only one who watches.’
- (48) a. me-ha-mis’ada ha-zot₂, šamati rak al [kinuax exad]₁ še-keday
 from-the-restaurant the-this heard.I only on dessert one that-worth
 lakaxat t₁ t₂.
 to.take
 ‘From this restaurant, I heard about only one dessert that’s worth taking.’
 b. al lexem šaxor₂, ani makira rak [gvina levana axat]₁ še-efšar
 on bread black I know only cheese white one that-possible
 limroax t₁ t₂.
 to.spread
 ‘On black bread, I know only one white cheese that can be spread.’
 c. miškafayim yerukot ka-ele, ra’iti kan etmol mišehu še-moxer.
 eyeglasses green like-that saw.I here yesterday someone that-sells
 ‘That kind of green eyeglasses, I saw here yesterday someone who sells.’
- (49) a. me-ha-sifria ha-zot₂, od lo macati [sefer exad₁ [še-keday PRO
 from-the-library the-this yet not found.I book one that-worth
 lehaš’il t₁ t₂].
 to.borrow
 ‘From this library, I haven’t yet found a single book that’s worth borrowing.’
 b. me-ha-sifria ha-zot₂, od lo macati [et ha-sefer₁ [še-keday PRO
 from-the-library the-this yet not found.I ACC the-book that-worth
 lehaš’il t₁ t₂].
 to.borrow
 ‘From this library, I haven’t yet found the book that’s worth borrowing.’

The noncanonical existentials in (48)–(49) induce a strong tendency, depending on context, to interpret the object DP as not presuppositional. This gives them an existential flavor even though the matrix predicate is an ordinary lexical verb. That is, with most verbs and in most contexts, nonpresuppositional readings of object DPs will coexist with presuppositional readings, but in (48)–(49) the nonpresuppositional reading will be the preferred reading in many contexts of use. Rubowitz-Mann (2000) characterizes sentences such as (48a–c) as *evidential existentials*. Existence is asserted or implied through the use of a perceptual verb, such as ‘heard of’ or ‘seen’, and a first person subject: the speaker implies or asserts the existence of the denotation of the RC by using a first person statement about the way in which evidence was acquired. The numeral ‘one’ also helps to bring out the nonpresuppositional reading, where what is important is that some item exists (or is denied existence, as in (49)), a dessert in (48a) and a cheese in (48b). In

this kind of context, the actual denotation is beside the point. Situations in which the nonpresuppositional reading is virtually forced are perhaps optimal for identifying acceptable cases of extraction, but they are not the only configurations in which it is observed.²³

The effect of presuppositionality and scope on extraction can also be observed in other contexts. For (50a), there are two possibilities. First, the RC may take scope above ‘want’, (50b). In this reading, there is a dessert—say, Black Forest cake—that I wanted my friend to find, order, and take. Second, the RC may take scope below ‘want’ and produce the nonpresuppositional reading, (50c). For this reading, consider the following scenario. My friend has dietary restrictions and I am taking her to a restaurant that I love. I hope that among the fabulous desserts on the menu she will find at least one that she can eat.²⁴ Example (51), with extraction, shows a clear preference for this reading.

- (50) a. *raciti še-hi timca [kinuax exad₁ [še-tuxal lakaxat t₁ wanted.I that-she would.find dessert one that-could.she take me-ha-mis’ada ha-zot]].*
 from-the-restaurant the-this
 ‘I wanted her to find one dessert that she could take from this restaurant.’
 b. There is a particular dessert (that she could take) that I wanted her to find.
 c. I wanted her to find some dessert or other (that she could take).
- (51) *me-ha-mis’ada ha-zot₂, raciti še-hi timca [kinuax exad₁ še-hi from-the-restaurant the-this wanted.I that-she would.find dessert one that-she tuxal lakaxat t₁ t₂].*
 could take
 ‘From this restaurant, I wanted her to find one dessert that she could take.’

Example (49b) features a noncanonical existential with a definite RC, and here too extraction becomes degraded when the presuppositional reading is forced. This reading of (52A) is brought out by the continuation in B’s utterance, which contains a pronoun anaphoric to ‘the book that’s worth borrowing’.

- (52) A: *me-ha-sifria ha-zot₂, od lo macati [et ha-sefer₁ [še-keday PRO from-the-library the-this yet not found.I ACC the-book that-worth lehaš’il t₁ t₂]].*
 to.borrow
 ‘From this library, I haven’t yet found the book that’s worth borrowing.’

²³ The restriction to verbs of perception is discussed in the literature on extraction from RCs in the Scandinavian languages but given very different explanations (Allwood 1982, Engdahl 1982, 1998, Erteschik-Shir 1982). Engdahl (1982, 1998), for example, follows Allwood’s idea that these are verbs that select for either an individual or a state of affairs, and extraction from an RC disambiguates in favor of the latter.

²⁴ The RC has ‘take’ as its matrix predicate, rather than ‘eat’, to ensure that the extracted PP ‘from this restaurant’ is a true argument (recall that RCs are weak islands).

- B: #naxon, hexbeti lexa oto al madaf axer.
 true hid.I to.you it on shelf different
 ‘True, I hid it from you on a different shelf.’

These examples show that the effect that the presuppositionality of a DP has on extraction is not limited to a particular kind of utterance such as the existentials above, and they point in favor of a structural characterization. Subtle lexical choices can also have an effect on extraction (see Erteschik-Shir 1973 for Danish, Allwood 1982 for Swedish, and Rubowitz-Mann 2000 for Hebrew), and this too has been taken to suggest that the source of the (un)grammaticality of extraction from RCs cannot be syntactic. The Swedish example (53a) is a possible answer to the question ‘Do you know where I can get some flowers like that?’, especially if prefixed by ‘Yes, . . .’. (53b), however, is not a felicitous answer in that context. Rubowitz-Mann (2000) presents a similar difference between ‘talk’ and ‘converse’ in Hebrew; see (54).

- (53) a. De blommorna känner jag en man som säljer.
 those flowers know I a man who sells
 ‘Those flowers, I know a man who sells.’
 b. #De blommorna talar jag med en man som säljer.
 those flowers talk I with a man who sells
 ‘Those flowers, I talked with a man who sells.’
 (Allwood 1982:24, (30), (32))
- (54) a. ba-inyan ha-ze, dibarti im mišehu še-yuxal la’azor lexa.
 in.the-issue the-this talked.I with someone that-could to.help you
 ‘Regarding this issue, I talked to someone who could help you.’
 b. ?ba-inyan ha-ze, soxaxti im mišehu še-yuxal la’azor lexa.
 in.the-issue the-this conversed.I with someone that-could to.help you
 ‘Regarding this issue, I conversed with someone who could help you.’

Rubowitz-Mann (2000) suggests that there are conventionalized ways to make noncanonical existential statements (evidential existentials) and that (53b) and (54b) are more difficult to construe as such. Erteschik-Shir (1973, 1982) and Erteschik-Shir and Lappin (1979) observe that in order to facilitate extraction from Danish RCs, the matrix clauses should not be too complex and they should be relatively empty semantically. These observations are fully compatible with the idea that the source of the restrictions is presuppositionality. It is easier to construe the RC in (53a) and (54a) as nonpresuppositional when the verb is less specified and less informative. The more specified the event is, the stronger the tendency is to construe the arguments as DPs that provide denotations based on prior discourse and a presupposition of existence.

Factors affecting the information-structural status of a DP, such as choice of verb and subject as discussed above, are clearly important for determining whether a DP is construed as presuppositional or not in a given context. While these factors may have seemed, in the history of the discussion, to play a more major role when extraction takes place from an RC than from a simple

DP, (51)–(52) show that they are not a necessary ingredient. The next two sections further motivate a structural analysis and the correlation between position and extraction.²⁵

5.2 Surface Position and Subextraction

The effect of position on extraction from a simple DP is seen very clearly in German, where direct objects may scramble past an adverb. In (55) the object is in situ, following the adverb ‘always’, and extraction is possible, whereas in (56) the object is scrambled past ‘always’ and extraction is impossible.

- (55) a. . . . daß Hilda immer Sonaten von Dittersdorf spielt.
 that Hilda always sonatas by Dittersdorf plays
 ‘ . . . that Hilda is always playing sonatas by Dittersdorf.’
 b. Was₁ hat Hilda immer [_{NP} t₁ für Sonaten] gespielt?
 what has Hilda always for sonatas played
 ‘What kind of sonatas did Hilda always play?’
- (56) a. . . . daß Hilda Sonaten von Dittersdorf immer spielt.
 that Hilda sonatas by Dittersdorf always plays
 ‘ . . . that Hilda always plays sonatas by Dittersdorf.’
 b. *Was₁ hat Hilda [_{NP} t₁ für Sonaten] immer gespielt?
 what has Hilda for sonatas always played

Similar effects of position on subextraction are attested in Dutch (Broekhuis 2007) and Spanish (Uriagereka 1988, 1999, Torrego 1998, Gallego and Uriagereka 2007, Gallego 2010), for subject and object simple DPs. The correlation between position and extraction seems to hold in English as well, for subjects, when a subject in Spec,IP is compared with a lower subject in the existential construction, as in (57) (Moro 1997). As shown in (58), the effect of position on extraction is also attested in Hebrew, with a nonfinite clausal subject (simple DPs and subject finite clauses do not usually allow extraction). Extraction is impossible when the subject precedes the verb, but fine when it is postverbal, just as it is in German, Dutch, Spanish, and English.²⁶

²⁵ The mapping of interpretations to positions is actually not crosslinguistically uniform. Alongside the kind of languages predicted by the Mapping Hypothesis, there are languages, such as English and Dutch, in which Spec,IP also allows nonpresuppositional readings (Neeleman 1994, Bobaljik 1995, Runner 1995, Adger 1997, Neeleman and Van de Koot 2008), and there are also presuppositional DPs that remain in situ, such as Dutch objects (Neeleman 1994, Neeleman and Reinhart 1998, Stepanov 2007). Just as movement may not be the only mechanism that interprets presuppositional DPs, it is also possible that crosslinguistically, the requirement for movement is not determined only by presuppositionality (Woolford 1995, 2001). These questions are orthogonal to the main point—what matters for the present proposal is only that extraction is determined by position. For example, Dutch presuppositional objects-in-situ should allow extraction, and they do (Stepanov 2007).

²⁶ In the grammatical (58c) and (59a), the subject is actually VP-final, following complements and adverbs. This may reflect the true base position of the subject in Spec,vP/VP, with a specifier to the right, or the result of ‘heavy NP shift,’ since these subjects are clausal. The preference for this position holds also without extraction, as in (i). See section 6 for the interaction of extraction and extraposition.

- (57) a. Which candidate₁ C were [_{TP} there T [_{VP} v [posters of t₁] all over town]]?
 b. *Which candidate₁ C were [_{TP} [posters of t₁]₂ T [_{VP} v t₂ all over town]]?
- (58) a. [PRO ledaber im rut] ye'acben et rani.
 to.talk with Ruth will.annoy ACC Rani
 'Talking to Ruth will annoy Rani.'
 b. *im mi₁ (ata xošev še-) [PRO ledaber t₁] ye'acben et rani?
 with whom you think that to.talk will.annoy ACC Rani
 Intended: 'With whom (do you think that) talking will annoy Rani?'
 c. im mi₁ (ata xošev še-) ye'acben et rani [PRO ledaber t₁]?
 with whom you think that will.annoy ACC Rani to.talk
 'With whom (do you think that) it will annoy Rani to talk?'

A similar positional effect is observed when extraction takes place from an RC, possible when the RC subject is postverbal, but not when it is preverbal.

- (59) a. tikim ka-ele, omed kan kol šavua [mišehu še-moxer ____].
 bags like-that stands here every week someone that-sells
 'Bags like that, there's someone here every week who sells.'
 b. *tikim ka-ele, [mišehu še-moxer ____] omed kan kol šavua.
 bags like-that someone that-sells stands here every week
 (Rubowitz-Mann 2000:135, (4.2))

5.3 Scope and Subextraction

I now turn to the relationship between covert position and extraction. In a language like German, the presuppositionality of the object is reflected in its surface position, but in languages like Hebrew and English, presuppositional objects remain in their base position. Nevertheless, they block extraction, as in (60), repeated from (41)–(42).

- (60) a. Who did you see (many/several/some) pictures of?
 b. Who did you see a picture of?
 c. *?Who did you see the/every/each picture of?
 d. *?Who did you see most pictures of?
 e. ??Who did you see the pictures of?

Diesing (1992) argues that position determines extraction universally, possibly at LF, and this should apply to presuppositional object RCs as well. When an object RC occupies a derived

(i) a. ani xoševet še-ye'acben (*ledaber im ruti) et rani (ledaber im ruti).
 I think that-will.annoy to.speak with Ruti ACC Rani to.speak with Ruti
 'I think that it will annoy Rani to talk to Ruti.'
 b. omed (*[mišehu še-moxer tikim]) kan kol šavua ([mišehu še-moxer tikim]).
 stands someone that-sells bags here every week someone that-sells bags
 'There is standing here every week someone who sells bags.'

position at LF, extraction should be blocked, and when it doesn't, extraction should be possible. According to this hypothesis, the effect of covert position on extraction should be detectable in other LF-related domains, beyond the presupposition-related contrasts presented in (46)–(52). In particular, there could be cases in which a preverbal subject allows extraction when it is interpreted lower than its surface derived position, or cases in which an object blocks extraction when it is interpreted higher than its surface in-situ position. The first sort of effect does appear to hold for negative polarity item (NPI) licensing (Linebarger 1980, Uribe-Etxebarria 1995). When the subject takes scope below its surface position, an NPI within it can be licensed by sentential negation, as in (61a), with a stage-level predicate.

- (61) a. [Tickets to any of the afternoon concerts] were not available.
 b. *[Tickets to any of the afternoon concerts] were not green.

When we turn to Hebrew RCs and compare preverbal subjects of stage-level and individual-level predicates, there is no obvious contrast in the acceptability of extraction. For example, it is hard to say that the preverbal subject of a stage-level predicate (62b) is any better than (62c), with an individual-level predicate.²⁷

- (62) a. tikim ka-ele, lo nimca kan [af exad še-moxer ____].
 bags like-that not present here nobody that-sells
 'Bags like that, there isn't anybody here who sells.'
 b. *tikim ka-ele, [af exad še-moxer ____] lo nimca kan.
 bags like-that nobody that-sells not present here
 c. *tikim ka-ele, [af exad še-moxer ____] lo yehudi.
 bags like-that nobody that-sells not Jewish
 Intended: 'Bags like that, nobody who sells is Jewish.'

It might be too ambitious, however, to expect a sentence to get better because of a possible low interpretation that coexists with the interpretation associated with the RC's surface position. In the reverse case, a wide scope reading would be expected to block extraction, and here an effect is clearly observed. Diesing (1992) uses antecedent-contained deletion (ACD) to force wide scope readings of objects (May 1985) and to argue that presuppositionality can be associated with syntactic position at LF. Example (63a) is ambiguous. In the presuppositional reading (63b), the adverb binds into the DP, and in the existential reading (63c), it binds a spatiotemporal argument. This ambiguity disappears in the context of ACD (64), suggesting that presuppositionality is represented structurally, in a derived position at LF.

- (63) a. I usually read books about wombats.
 b. Presuppositional reading: 'Whenever there is a book about wombats, I usually read it.'
 c. Existential reading: 'Usually (in the morning) I read a book about wombats.'

²⁷ See Chomsky 2008 for the significance of the derivational history of the containing DP for subextraction from within it. See Bianchi and Chesi 2014 for extensive discussion of the significance of stage- and individual-level predicates for extraction from a subject, and an account compatible with the pattern in (62).

- (64) a. I usually read books that you do.
 b. Presuppositional reading: ‘Whenever you read (some) books, I usually read them too.’
 c. *Existential reading: ‘Usually (in the morning) I read books that you read too.’
 (Diesing 1992:106, (28))

ACD can also be used to test extraction from a higher position at LF.²⁸ Extraction should be impossible in ACD structures, and it is; see (65c).

- (65) a. Who do you like two jokes about?
 b. I like two jokes about Bill that Fred does.
 c. *Who do you like two jokes about that Fred does?

This further supports the claim that extraction is mediated by syntactic position, possibly at LF. We can now apply this diagnostic to object RCs in Hebrew, since extraction from a definite RC is sometimes possible, as in (66) (repeated from (52)). Here the RC object appears in its base position, and the interaction between position and extraction refers to LF position. On the analysis developed above, the preferred reading for the object DP in this context is nonpresuppositional, so it remains in situ at LF and extraction is permitted. To test the claim that extraction correlates with LF position, I use ACD to force QR. Extraction should be impossible, and it is, as in (67a). Without extraction the ACD construction is grammatical, as in (67b), and without ACD the extraction is grammatical, as in (66).²⁹

- (66) me-ha-sifria ha-zot₂, od lo macati [et ha-sefer₁ [še-keday PRO
 from-the-library the-this yet not found.I ACC the-book that-worth
 lehaš’il t₁ t₂]].
 to.borrow
 ‘From this library, I haven’t yet found the book that’s worth borrowing.’
- (67) a. *me-ha-sifria ha-zot₂, od lo macati [et ha-sefer₁ [še-keday PRO
 from-the-library the-this yet not found.I ACC the-book that-worth
 lehaš’il t₁ t₂]] še-dina mac’a.
 to.borrow that-Dina found
 Intended: ‘From this library, I haven’t yet found the book that’s worth borrowing
 that Dina found.’
- b. od lo macati [et ha-sefer₁ [še-keday PRO lehaš’il t₁ me-ha-sifria
 yet not found.I ACC the-book that-worth to.borrow from-the-library
 ha-zot] še-dina mac’a.
 the-this that-Dina found
 ‘I haven’t yet found the book that’s worth borrowing from this library that Dina
 found.’

²⁸ Thanks to Danny Fox for suggesting ACD to test this.

²⁹ Hebrew ACD constructions include the verb because V⁰ raises to I⁰ prior to VP-ellipsis (verb-stranding VP-ellipsis; Doron 1999).

The previous section showed the effect of overt position on extraction, possible only when a subject RC is postverbal, as in (59). This section has shown the effect of covert position on extraction, blocked when object QR and wide scope are obligatory. Taken together, these effects place the possibility for extraction from an RC squarely within a syntactic theory of locality. Combining this with the conclusion reached in section 3, we arrive at the following generalization: extraction is selectively allowed from a raising RC contained within a DP in nonderived position.

At the time, the analysis in Diesing 1992 faced a number of theoretical challenges, but they have since been resolved. First, the characterization of extraction domain in terms of freezing and movement of the containing DP (Wexler and Culicover 1980) represented a substantial departure from the theory of locality (Huang 1982, Chomsky 1986), but now, the central role of freezing and movement of the containing DP is widely acknowledged (e.g., Uriagereka 1988, 1999, Chomsky 2000, 2008, Gallego and Uriagereka 2006, 2007, Stepanov 2007, Gallego 2010, Müller 2010, 2011).

The account also faced a difficulty with respect to cyclicity, for the analysis of configurations in which presuppositional DPs occupy a derived position only at LF. Within a Government-Binding type of model, where all covert movement follows all overt movement, the statement that covert movement can bleed overt movement creates a paradox. To address the problem, Diesing suggested that Subjacency was a representational constraint (Chomsky 1986) so that the ordering of operations wouldn't matter. It is no longer necessary to adopt this solution, however, since theoretical developments have led to a view of the cycle within which the ordering paradox does not arise. In late Minimalist models (Chomsky 2001, 2004), cycles correspond to pieces of structure such as the vP and CP phases. Syntactic operations have a single output, LF, and overt and covert movements may be interspersed. Since covert movement of a presuppositional DP may precede—that is, occur in a lower cycle than—overt *wh*-movement from within this DP (Bobaljik 1995, 2002, Brody 1995, Fox and Nissenbaum 1998, Nissenbaum 2000, Fox and Pesetsky 2009), it is also possible for covert movement to bleed overt movement.³⁰ At the point in the derivation at which overt movement to Spec,CP is considered, the object DP may have moved covertly to Spec,vP. Given the Activity Condition (see (39)), this bleeds subextraction. The reverse order, in which subextraction precedes covert movement of DP to Spec,vP, is also excluded, since the first step of movement would target a higher position than the second step, and this would lead to a countercyclic derivation.

6 Extraction and Extraposition

Two challenges for the proposal above are presented by RC-extraposition, and I address these here. Following up on Chomsky 1977, where extraction from an NP proceeds via extraposition, Taraldsen (1981) argues that extraction from an RC in Norwegian may evade a Subjacency

³⁰ There are a number of ways to understand the division between overt and covert movements that could produce this situation, all compatible with the idea that covert movement of an object to Spec,vP can bleed overt *wh*-movement from within the object. See Brody 1995 and Bobaljik 1995, 2002 for the idea that ‘covert’ movement is interpretation of a low copy at PF; Nissenbaum 2000 for covert movement preceding overt movement if it occurs within a lower phase; Fox and Pesetsky 2009 for the overt/covert distinction in terms of the directionality of movement and specifiers.

violation because the RC was first extraposed. Since the extraction path does not cross NP or DP, Subjacency is not violated. The current account shares the idea that there is a principled syntactic reason for the circumvention of Subjacency, but Taraldsen's analysis in terms of prior extraposition is problematic in at least two ways. First, if extraction from an RC is facilitated by extraposition, then the role attributed above to the raising structure becomes irrelevant. Below, I argue that extraposition cannot be a necessary ingredient for extraction from an RC, since extraction is also possible when extraposition is not an option. Second, if Hulsey and Sauerland (2006) are correct in claiming that extraposition is only possible from the matching structure, extraction from RC should not be compatible with extraposition, since this would entail extraction from a matching RC, argued above to be impossible. Below, I show that extraction from an extraposed RC is indeed sometimes possible. I present new evidence in favor of extraposition being launched from a raising RC (e.g., Bianchi 1999, De Vries 2002, Sheehan 2010), and I argue that when extraction proceeds from an extraposed RC, the extraposed RC has a raising RC as its source.

The following examples show that extraction from an extraposed RC is possible.³¹ In the canonical existential sentence in (68), where extraction is generally possible (68a), it may also proceed from an extraposed RC (68b).

- (68) a. sefer ka-ze, lo kayam ba-ir ha-zot karega [af mol
 book like-that not exist in.the-town the-this now no publisher
 še-yaskim lefarsem ____].
 that-would.agree to.publish
- b. sefer ka-ze, lo kayam ba-ir ha-zot [af mol] karega
 book like-that not exist in.the-town the-this no publisher now
 [še-yaskim lefarsem ____].
 that-would.agree to.publish
- 'A book like that, there is no publisher in this town now who would agree to publish.'

Following Taraldsen (1981), (68a) would obligatorily involve string-vacuous RC-extraposition (henceforth, RC-Ex). In some languages, the distributions of extraction and extraposition are similar, and this may seem to suggest that extraction from an RC is mediated by extraposition, especially if the conditions on extraction could be derived from the conditions on extraposition. In Italian, for example, extraposition is limited to narrow scope indefinite DPs (Bianchi 2013), similar to the distribution of extraction in Hebrew. This distributional correlation does not, however, guarantee a direct relationship between extraposition and extraction: extraction from an RC in Italian *cannot* proceed from an extraposed RC (Cinque 2010, and see Bianchi 2013 for Italian extraposed RCs as VP adjuncts), and extraposition in Hebrew is not limited to narrow scope

³¹ The literature on extraction from extraposed constituents is extremely mixed, and starting with Ross 1967, many studies have claimed that it is impossible (Engdahl 1980, Baltin 1984, Huck and Na 1990, Lasnik and Saito 1992, Koster 2000, De Vries 2002, Cinque 2013). However, see Kuno 1973, Chomsky 1977, Culicover and Rochement 1990, Huck and Na 1990, Biring and Hartmann 1997, and Sheehan 2010 for selective extraction from at least some kinds of extraposed constituents.

indefinites.³² It is still possible, of course, that extraposition is necessary for extraction, but other factors conspire to restrict extraction to narrow scope indefinites. This is falsified in contexts in which the RC is followed by additional material and string-vacuous extraposition could not have occurred.³³ In these contexts, the possibility for extraction is not diminished; see (69) and (70c).

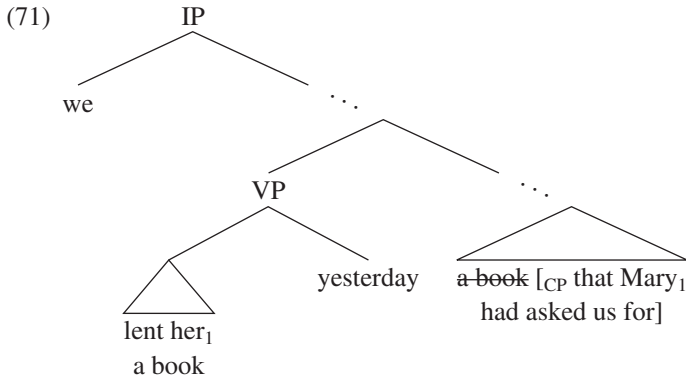
- (69) sefer ka-ze, ein [af mol še-yefarsem ____] ba-ir ha-zot
 book like-that NEG no publisher that-would.publish in.the-town the-this
 karega, ve-gam lo be-kol ha-medina.
 now and-also not in-all the-country
 ‘That kind of book, there’s [no publisher who would publish] in this town now, nor is there one in the entire country.’
- (70) a. sefer ka-ze, ani lo mekira ba-ir ha-zot karega [af mol
 book like-that I not know in.the-town the-this now no publisher
 še-yaskim lefarsem ____].
 that-would.agree to.publish
 ‘That kind of book, I don’t know in this town now any publisher that would agree to publish.’
- b. sefer ka-ze, ani lo mekira ba-ir hazot [af mol] karega
 book like-that I not know in.the-town the-this no publisher now
 [še-yaskim lefarsem ____].
 that-would.agree to.publish
 ‘That kind of book, I don’t know in this town any publisher now that would agree to publish.’
- c. sefer ka-ze, ani lo mekira [af mol še-yefarsem ____] ba-ir
 book like-that I not know no publisher that-would.publish in.the-town
 ha-zot karega, ve-gam lo be-kol ha-medina.
 the-this now and-also not in-all the-country
 ‘That kind of book, I don’t know [any publisher that would publish] in this town now, nor in the entire country.’

All of this implies that RC-Ex is not what makes extraction from an RC possible. This is important, but it does not fully address the challenge posed by RC-Ex. If Hulsey and Sauerland (2006) are correct, RC-Ex requires the matching structure. They assume that RC-Ex requires QR and Late Merge (Fox and Nissenbaum 1998), available only for matching RCs; see (71). In a raising RC, the NP head is within the RC, so RC-Ex would require Late Merge of C' , but that is impossible.

³² This is illustrated in (i).

(i) karati et ha-sefer etmol še-bekoši hiskamt lehaši'l le-ima šeli.
 read.I ACC the-book yesterday that-hardly agreed.you to.lend to-mother my
 ‘I read the book yesterday that you hardly agreed to lend to my mother.’

³³ See Büring and Hartmann 1997 for the claim that an extraposed RC must be final in its clause.



If this is correct, then extraction from a matching RC must be possible, contrary to the claim made above that extraction is always launched from a raising RC. Below, I argue that extraposed RCs may be of the raising variety and that extraction from an extraposed RC proceeds from an extraposed raising RC.

If it is possible to extract from an extraposed RC, as in (68b) and (70b), and if extraction from an RC is restricted to raising RCs, it must be possible to extrapose a raising RC, as argued in Bianchi 1999, De Vries 2002, and Sheehan 2010. In fact, the derivation of an extraposed RC that involves extraction cannot involve QR and Late Merge; extraction is restricted to nonpresuppositional indefinite extraposed RCs, where QR is not an option. It is necessary, then, that RC-Ex be able to apply to a raising RC, possibly implemented in a way that does not involve C'-movement, such as leftward movement of the NP head (Kayne 1994) in (72a) or the scattered-deletion approach to complement extraposition (Sheehan 2010) in (72b).³⁴

- (72) a. [a man]₁ walked in [_{DP} D⁰ [_{CP} t₁ who I told you about t₁ yesterday]]
 b. [a chance to meet the president] has come up [~~a chance to meet the president~~]

As it turns out, a number of reconstruction effects are observed with extraposition, further supporting the existence of raising RC-Ex. Hulseley and Sauerland (2006) present three types of reconstruction that are incompatible with extraposition (low readings of superlatives, anaphor

³⁴ The grammaticality of subextraction further limits the range of possible implementations for raising RC-Ex. Extraposition as predicate modification (Bianchi 2013, Overfelt 2015) will not work because the extraposed RC is a VP adjunct, and an implementation in terms of specifying coordination (Koster 2000, De Vries 2002) must also be set aside because extraction here would proceed from a conjunct (Sheehan 2010). Regarding the stranding analysis in (72a), as noted in the literature (see Sheehan 2010) many of the challenges that it faces do not come up in the existential context that is the focus of this analysis: the nonconstituency of leftward-moved definite RC heads; the PP source (*John is going to talk to someone tomorrow who he has a lot of faith in*); the high landing position of RC-Ex (Rochemont and Culicover 1997, Fox and Nissenbaum 1998). Regarding the applicability of the scattered-deletion approach to complement-Ex, see below for the claim that raising RC-Ex is a kind of complement-Ex. Here, I merely sketch the availability of at least two analyses for raising RC-Ex; the choice between (72a) and (72b), along with the distribution of (72a) outside the realm of existentials, is beyond the scope of this discussion.

binding, and idiom chunk interpretation), but Heycock (to appear) claims that *de dicto* readings for modifiers, as well as anaphor binding and idiom chunk interpretation, are available with extraposition. Another reconstruction effect that appears to be compatible with extraposition, not yet discussed in this context, is NPI licensing in subtrigging contexts (Dayal 1995, 1998). The phenomenon refers to the ability of NPI *any* to be licensed in non-downward-entailing environments just in case it is associated with a phrasal modifier, including a relative clause.

- (73) a. *Pictures of anyone were on sale.
 b. Pictures of anyone [that were displayed on the wall] were on sale.

The requirement for a modifier suggests that *any* is interpreted within the modifying phrase, and Dayal (1995, 1998) argues that the crucial ingredient is a spatiotemporal event operator. This suggests that the head of the RC, here *pictures of anyone*, reconstructs. This is supported by (74a), where reconstruction of the RC head would trigger a Principle C violation. The universal quantifier in (74b) does not require the RC or reconstruction.

- (74) a. *[Pictures of anyone₁]₂ which he₁ displays t₂ prominently are likely to be attractive.
 b. [The picture of every boy₁]₂ which he₁ displays t₂ prominently is likely to be attractive.
 (Safir 1999: 611:(66a); 612:(67a))

Further evidence for a reconstruction analysis of subtrigging is provided by a Principle C violation triggered by a name contained in the reconstructing RC head. In (75b), the NPI is replaced with a universal quantifier and the example is perfectly grammatical.³⁵

- (75) a. *[Pictures of [any friend of John's₁]₂]₃ that he₁ likes t₃ were on sale.
 b. [Pictures of [every friend of John's₁]₂]₃ that he₁ likes t₃ were on sale.

Reconstruction in the context of subtrigging is compatible with extraposition.

- (76) a. When I was at NYU I talked to anyone who came up to me.
 b. I talked to anyone when I was at NYU who came up to me.

This suggests that extraposition may very well be compatible with reconstruction and with the raising structure (raising-Ex), in addition to the matching structure (matching-Ex). By hypothesis, subtraction in (68b) and (70b) proceeds from raising-Ex. The existence of these two varieties of RC-Ex may follow from the existence of complement-Ex and adjunct-Ex, each with its own properties (see Fox and Nissenbaum 1998 and especially Sheehan 2010, where this division internal to RC-Ex is proposed). Matching-Ex would fall under adjunct-Ex, whereas raising-Ex, where the RC is a complement to D⁰, would fall under complement-Ex. Given this typology,

³⁵ In Safir 1999, example (74a) is constructed to show that head-external RCs include low full copies, and Principle C violations are triggered when Late Merge to the RC head and vehicle change are not an option (the former because *of anyone* is a complement, and the latter because vehicle change is assumed to not apply to quantifiers). The ungrammaticality of (75a) suggests, however, that vehicle change is not an option for names. Thanks to Luka Crnić and Danny Fox for discussion of subtrigging and reconstruction.

raising-Ex should exhibit properties associated with complement-Ex. The brief discussion below will focus on the potential for extraction, Principle C, and the interaction between them.

The property of complement-Ex relevant to this discussion is that it allows subextraction (Kuno 1973, Huck and Na 1990, Sheehan 2009, 2010).³⁶ In the following paradigm, extraction from an extraposed complement is even better than extraction from the nonextraposed version.

- (77) a. ?Which topic has a new book just appeared about?
 b. *Which topic has a new book about just appeared?
 (Sheehan 2010:78)

- (78) Okay, you saw a picture yesterday, but just whom did you see a picture yesterday OF?
 (Huck and Na 1990:66)

If raising-Ex is complement-Ex, it makes sense that it would allow subextraction. This conclusion is supported by Principle C effects, since Principle C is bled in adjunct-Ex, but not in complement-Ex (Fox and Nissenbaum 1998).

- (79) a. I gave him₁ an argument yesterday that supports John₁'s theory.
 b. */??I gave him₁ an argument yesterday that this sentence supports John₁'s theory.

We can now formulate a prediction: if extraction from an extraposed RC is extraction from a raising-Ex, and if raising-Ex is complement-Ex, extraction from an extraposed RC should not bleed Principle C. Though judgments here are delicate, and some speaker variation is observed, the prediction appears to be confirmed. First, note that Hebrew too exhibits a difference between complement-Ex (80) and adjunct-Ex (81), where only the latter bleeds Principle C.

- (80) a. *yeš la₁ [tmuna šel miri₁] al ha-kir ba-salon.
 BE to.her picture of Miri on the-wall in.the-living.room
 Intended: 'She₁ has a picture of Miri₁ on the living room wall.'
 b. *yeš la₁ tmuna [al ha-kir ba-salon] šel miri₁.
 BE to.her picture on the-wall in.the-living.room of Miri
 Intended: 'She₁ has a picture on the living room wall of Miri₁.'
- (81) a. *yeš la₁ [tmuna šel yosi še-miri₁ nora ohevet] al ha-kir
 BE to.her picture of Yosi that-Miri much loves on the-wall
 ba-salon.
 in.the-living.room
 b. ?yeš la₁ tmuna šel yosi [al ha-kir ba-salon] še-miri₁ nora
 BE to.her picture of Yosi on the-wall in.the-living.room that-Miri much
 ohevet.
 loves
 'She has a picture of Yosi on the wall in the living room that Miri truly loves.'

³⁶ Though it is not available crosslinguistically (e.g., not in Dutch; Koster 2000, De Vries 2002) and is further restricted by conditions that are poorly understood.

Turning to Principle C effects in extraposed RCs featuring movement, it appears that extraposition does not bleed Principle C when extraction is involved, in contrast to adjunct-Ex (81b). This is shown in (82b) and (83b), which are also significantly worse than the baselines in (82c) and (83c).

- (82) a. *al ha-dvarim ha-be'emet kašim, ein la₁ [af xaver še-medaber im rina₁]
 on the-things the-truly difficult not to.her no friend that-talks with Rina
 karega.
 now
- b. *al ha-dvarim ha-be'emet kašim, ein la₁ [af xaver] karega [še-medaber im
 on the-things the-truly difficult not to.her no friend now that-talks with
 rina₁].
 Rina
- c. al ha-dvarim ha-be'emet kašim, ein la₁ [af xaver] karega [še-medaber ____
 on the-things the-truly difficult not to.her no friend now that-talks
 ita₁].
 with.her
 'About the truly difficult things, she has no friend right now who talks to her/
 *Rina.'
- (83) a. *tmixa rigšit amitit, lo nimca ita₁ [af exad še-yaxol latet le-rina₁].
 support emotional real not present with.her nobody that-can to.give to-Rina
- b. *tmixa rigšit amitit, lo nimca ita₁ [af exad] karega [še-yaxol latet
 support emotional real not present with.her nobody now that-can to.give
 le-rina₁].
 to-Rina
- c. tmixa rigšit amitit, lo nimca ita₁ [af exad] karega [še-yaxol latet
 support emotional real not present with.her nobody now that-can to.give
 la₁].
 her
 'True emotional support, there's nobody now with her that could give her/*Rina.'

Two conclusions can be reached from these data: (a) the extraposed RC from which extraction occurs does not behave as a matching-Ex would lead one to expect; (b) with respect to Principle C, the extraposed RC behaves like complement-Ex. While more work is certainly needed on the interaction between RC-Ex and extraction, I tentatively conclude that when extraction proceeds from an extraposed RC, it is a raising RC, consistent with the claims made above.

7 Summary and Conclusions

Extraction from RCs has presented a puzzle for linguistic theory because it appears to violate syntactic constraints on extraction and to be affected by subtle contextual factors subject to speaker variability. I have argued that it can be brought into the fold of syntactic theory once it is acknowl-

edged that (a) RCs are ambiguous; (b) one of the structures, the raising RC, resembles a *wh*-island; and (c) selective violations of *wh*-islands are tolerated. On this proposal, extraction from an RC is always extraction from a raising RC, and it exhibits the selective pattern of extraction associated with embedded interrogatives and weak islands more generally. Matching RCs, along with complex NPs with complement CPs, are absolute “strong” islands because of the phase status of the NP layer. An analysis in terms of NP-as-phase represents a departure from earlier approaches, which identified the islandhood of a DP containing an RC with the adjunct status of the RC. The present approach offers a superior account of the selective pattern of extraction from an RC, extending to other kinds of complex NPs.

The analysis of extraction from a raising RC involves a cartographic structure in which the specifier position that hosts the escape hatch is above the position that hosts the relative head, consistent with the PIC. This suggests that languages that tolerate extraction from an embedded interrogative should also allow extraction from an RC under comparable conditions.

Having a raising RC as the source structure is a necessary condition, but it is not the only one. Contextual factors and sensitivity to information structure follow from the nonpresuppositional nature of the containing RC. Ultimately, however, the factor that determines the possibility of extraction is syntactic position, not presuppositionality per se, and in this respect extraction from an RC is just like extraction from a simple DP: movement of the containing DP to a derived position bleeds subextraction from within. Both of these generalizations, in terms of NP phasehood among types of complex NPs, and in terms of DP position across simple and RC-containing DPs, represent departures from the *Barriers* (Chomsky 1986) conception of extraction domains in terms of complements vs. adjuncts/subjects. With a clearer understanding of these factors in place, extraction from RCs falls squarely within syntactic theories of locality.

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