

Anti-locality and subject extraction

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In many languages, \bar{A} -extraction of local subject arguments behaves differently from the extraction of other arguments, for example in triggering specialized morphosyntactic processes or being subject to additional restrictions. I argue that many such interactions are due to an anti-locality constraint on movement, which bans movement which is too short. Subject extraction is often distinguished due to the high canonical position of subjects in their clauses (e.g. Spec,TP), making their movement to the clause edge (e.g. Spec,CP) uniquely in danger of violating the Spec-to-Spec Anti-Locality constraint (Erlewine, 2016). Concretely, three subject extraction asymmetry behaviors are discussed and analyzed: complementizer-trace effects, subject anti-agreement effects, and bans on subject resumption, including the so-called Highest Subject Restriction. In each case, we observe that the special behavior associated with subject extraction (a) can be obviated by increasing the distance of movement, (b) also applies to exceptionally high non-subjects, and (c) does not correlate with other subjecthood properties. These facts are straightforwardly explained by the anti-locality-based approach to these asymmetries, but are challenging for alternative accounts.

Keywords: anti-locality, subject extraction, bundling, complementizer-trace effects, anti-agreement effects, resumption, Highest Subject Restriction

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1 Introduction

Many languages of the world morphosyntactically differentiate the \bar{A} -extraction of subjects from the \bar{A} -extraction of non-subject arguments. In this paper, I argue that many such asymmetries are due to the fact that subjects canonically occupy a high structural position in the clause (e.g. Spec,TP), together with a general ban on movement that is “too short.” In particular, suppose movement is generally constrained by an *anti-locality* constraint, blocking movement of the subject from its canonical position (Spec,TP) to its \bar{A} -landing site (Spec,CP), in (1a). This will result in an outright ban on subject extraction or (more likely) force a language to use an alternative strategy to extract the subject argument. In contrast, non-subjects would not be affected by such a ban because non-subjects have a lower base position (1b), making their movement to Spec,CP not “too close.”

(1) **Anti-locality may block movement from canonical subject position:**

a. Movement from Spec,TP to Spec,CP is “too short”:

* [CP *subject* [TP _____ ...
 \uparrow ————— \times —————]

b. But movement to Spec,CP from lower is long enough:

✓ [CP *non-subject* [TP ... [... _____
 \uparrow —————]

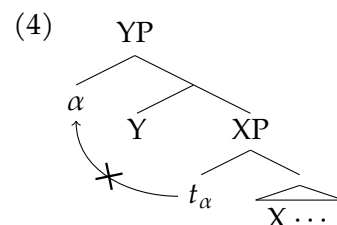
For concreteness, in this paper, I consider the anti-locality constraint in (2) and schematized in (4) below. Assuming no intervening functional projections, movement of the subject directly from Spec,TP to Spec,CP in (1a) is blocked by this constraint.

(2) **Spec-to-Spec Anti-Locality:**

(from Erlewine, 2016: 431, as revised in Deal, 2019: 408)

Movement of a phrase from the Specifier of XP must cross a maximal projection other than XP.

(3) Movement from position α to β *crosses* γ if and only if γ dominates α but does not dominate β .



This particular anti-locality constraint has been adopted in a range of recent work, including Bošković 2016, Douglas 2016, 2017, Amaechi and Georgi 2019, Deal 2019, Vera 2019, Issah and Smith 2020, and Branen 2020. In particular, although originally formulated in Erlewine 2014, 2016 as a constraint on \bar{A} -movement, Deal 2019 has argued that the constraint holds of A-

movement as well and so I give the “generalized” formulation here.¹ The idea that various subject/non-subject extraction asymmetries are due to an anti-locality constraint on movement has also been argued for based on other formulations of anti-locality, for example in Schneider-Zioga 2007 and Cheng 2006.

Here I set leave aside the question of the deeper motivation for this constraint (2), but refer the interested reader to Bošković 2016 for one explanation from considerations of Labeling. I also only consider extraction asymmetries which are arguably due to the organization of the clause edge, i.e. concentrating on the effects of Spec-to-Spec Anti-Locality between a clause-peripheral position (generally CP) and the immediately lower projection (generally TP).

A subject extraction asymmetry which is due to Spec-to-Spec Anti-Locality in (2) will show a range of diagnostic properties. I summarize these properties in (5):

(5) **The anti-locality signature of subject extraction asymmetries:**

Suppose a particular behavior α is canonically associated with the extraction of subjects, but not of non-subjects. If this behavior α is due to Spec-to-Spec Anti-Locality (2), we may expect to observe:

- a. obviation of α when additional material is added above the subject position,
- b. the application of α to the extraction of non-subjects that are exceptionally high (e.g. right below CP), and
- c. no correlation of α with other subjecthood properties such as case.

I briefly sketch the logic behind these predictions in turn. Suppose subject extraction triggers the behavior α because movement from its canonical position (Spec,TP) to Spec,CP violates Spec-to-Spec Anti-Locality. First, if additional material above the canonical subject position reflects the presence of an additional projection between TP and CP, its addition should make movement from Spec,TP to Spec,CP exceptionally licit, obviating the special behavior α (5a).

Second, we expect that a behavior α canonically associated with subject extraction will also apply to the extraction of non-subjects if they are exceptionally high in the clause (e.g. in the canonical high position for subjects, or in an additional position projected above the subject), as their extraction may then be in danger of violating Anti-Locality (5b). The Anti-Locality constraint in (2) is not sensitive to the identity of the moved constituent. Its frequent association with subjects is only due to subjects’ canonically high position in the clause. By this same

¹ For the movement of agentive subjects from Spec,vP to Spec,TP, I presume that there are additional projection(s) between vP and TP in grammatical derivations of this sort, as also suggested by a reviewer.

token, the anti-locality approach to subject extraction asymmetries predicts no sensitivity to other subjecthood properties such as being a nominal in a particular morphological case or having been in a local relationship with T/Subject (5). These properties distinguish the anti-locality approach to subject extraction asymmetries from some recent alternative approaches such as that in Pesetsky and Torrego 2001, Rizzi 2006, and Deal 2017.

Many other authors over the past two decades have also proposed constraints against movement which is too local, although differing in the specific configurations that are targeted; see e.g. Abels 2003 and Grohmann 2003 for two prominent proposals. Here I will focus only on the Spec-to-Spec Anti-Locality constraint in (2). This formulation in (2) is particularly “fragile” — in Baier’s (2017) terms — as the addition or removal of just a single projection could lead to a particular movement being deemed in or out. This “fragility” will be a key feature of the approach advocated for here, not shared by other formulations of anti-locality such as Grohmann’s proposal. I will discuss the relationship of Spec-to-Spec Anti-Locality to these other formulations in the conclusion.

In this paper, I survey three different types of subject extraction asymmetry behavior in languages of the world: complementizer-trace effects in §2, subject anti-agreement effects in §3, and bans on subject resumption in §4. In each section, I present an analysis for the subject extraction asymmetry behavior based on Spec-to-Spec Anti-Locality and then discuss further details regarding these behaviors in different languages. We will see that these behaviors indeed show the properties in (5) that make them characteristic of a configurational, anti-locality-based restriction. In §5, I then discuss possible sources of cross-linguistic and cross-constructional variation in the distribution of such subject extraction asymmetry behavior.

2 Complementizer-trace effects²

We begin by discussing *complementizer-trace effects*, where long-distance subject extraction requires a particular variant of embedded complementizer morphology. By way of example, consider the English *that*-trace effect contrast in (6) below. Perlmutter 1968 observes that English long-distance subject extraction requires the declarative complementizer local to the gap to be the null rather than *that*, in (6a).³ In contrast, long-distance extraction of non-subjects imposes no restriction on the choice of complementizer (6b). The requirement for there to be no overt complementizer is a quirk particular to subject extraction.

² Some of the arguments presented in this section are also discussed in Erlewine 2017, but with a different analysis. See footnote 9.

³ David Pesetsky (Facebook, January 31, 2016) notes that the effect is also observed in passing by Fillmore (1963: 221).

(6) **The English *that*-trace effect:** (Perlmutter, 1968: 214)

- a. Who did he say [_{CP} (***that**) ____ hid the rutabaga]?
- b. What did he say [_{CP} (**that**) Laura hid ____]?

Interestingly, this exact same interaction — an optional (overt or null) embedded complementizer, which must not be present specifically in the case of subject extraction — is observed in other languages as well. Examples include varieties of Arabic (Kenstowicz, 1983, 1989) and a subset of Scandinavian languages (see e.g. Lohndal, 2009), exemplified below:

(7) **Complementizer-trace effect in Levantine Arabic:** (Kenstowicz, 1989: 264)

- a. ʔayy bint Fariid kaal [_{CP} (***innu**) ____ iʃtarat l-fuṣṭaan]?
which girl Fariid said that bought the-dress
'Which girl did Fariid say bought the dress?'
- b. ʔayy fuṣṭaan Fariid kaal [_{CP} (**innu**) l-bint iʃtarat ____]?
which dress Fariid said that the-girl bought
'Which dress did Fariid say that the girl bought?'

(8) **Complementizer-trace effect in Swedish:** (Boef and Franco, 2012)

- a. Jag känner mannen [_{RC} (som) du hoppas [_{CP} (***att**) ____ kommer hit]].
I know man.the som you hope that comes here
'I know the man that you hope will come here.'
- b. Jag känner mannen [_{RC} (som) du hoppas [_{CP} (**att**) Maria ska träffa ____
I know man.the som you hope that Mary will meet
imorgon]].
tomorrow
'I know the man that you hope Mary will meet tomorrow.'

There are also languages which exhibit a related similar subject extraction asymmetry, whereby a different form of complementizer is used specifically when the local subject is extracted. Here I concentrate on cases with the null/overt complementizer alternation as in (6–8) above, but I will also briefly touch on such cases in section 2.5 below. See Pesetsky 2017 for a recent overview of complementizer-trace effects and Kandybowicz 2009: 328–329 for a concise summary of many previous analytic approaches and the cross-linguistic range of the effect.

I argue that such complementizer-trace effects are due to Spec-to-Spec Anti-Locality.⁴ In all of these languages where the declarative complementizer may generally be pronounced or

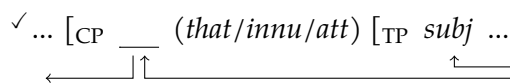
⁴ Douglas 2016, 2017 also presents an account of English *that*-trace effects based on Spec-to-Spec Anti-Locality, which attempts to also derive the so-called anti-*that*-trace effect whereby the *that* complementizer is obligatory in English subject relatives. The details of Douglas's proposal differs substantially from my own here in the details of English CP structure assumed. I refer the interested reader to Douglas's own work.

not, it is notably the unpronounced option which is chosen in the case of subject extraction. I suggest that this direction of the asymmetry is indicative of an important structural difference.

I start from the assumptions that T in these languages bears $[\text{PROBE: D}]$ which Agrees with the subject, facilitating ϕ -agreement, nominative case assignment, and EPP movement, and C in these intermediate clause contexts bears $[\text{PROBE: } \bar{A}]$ to facilitate intermediate movement. I propose following Giorgi and Pianesi 1996, Martinović 2015, Hsu to appear, and others, that languages may allow the bundling of C and T into a single head, CT.⁵ Furthermore, following Erlewine 2018, I take the bundled CT to combine the probes on C and T into a single, composite $[\text{PROBE: } \bar{A}+D]$, which seeks a goal with both $[\bar{A}]$ and $[D]$ features and disallows partial matches. The choice between a bundled CT or split C and T can be thought of as a lexical choice made when choosing the numeration for the phase, but where bundled CT can be productively employed only in a case where the subject is the intended \bar{A} -target.⁶ Possible derivations for long-distance non-subject and subject extraction are presented in (9) below.⁷

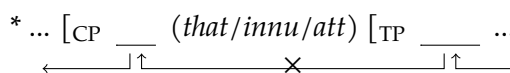
(9) **Complementizer-trace effects due to anti-locality:**

a. Non-subject extraction with split C and T:



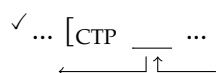
⇒ complementizer optional

b. Subject extraction with split C and T:



⇒ movement too short!

c. Subject extraction with bundled CT:



⇒ ok with no overt complementizer

⁵ See also Ouali 2008, Legate 2011, and Aldridge 2017 for related proposals described in terms of the failure of C-T inheritance (Chomsky, 2008) to take place.

⁶ A similar intuition, but described in terms of probe splitting without head splitting, is recently described by Bossi and Diercks (2019: 16–19) for the analysis of word order facts in Kipsigis (Nilo-Saharan; Kenyan). The bundled versus split CT approach from Erlewine 2018 appears to be applicable to Kipsigis as well.

⁷ If CT is used in a derivation where the subject is not the \bar{A} -target, $[\text{PROBE: } \bar{A}+D]$ will either find no goal or find an alternate goal, and either way, the subject will fail to be case-licensed. Such a derivation will simply not converge. I do not consider derivations with multiple \bar{A} -movement here, but see Erlewine 2018 for some possibilities.

This bundled CT with $[\text{PROBE: } \bar{A}+D]$ may also be applicable for matrix subject *wh*-questions where there is no evidence of a need to pronounce T in C (e.g. English *do*-support). See e.g. Messick 2020 for a recent summary of evidence that matrix subject *wh*-phrases do occupy Spec,CP, while also satisfying the EPP requirement of T. These facts are all compatible with the bundled CT account. I will leave further elaboration of such derivations for future work.

I assume that long-distance movement proceeds successive-cyclicly through intermediate clause edges (Chomsky, 1973), and for the highest head of the clausal extended projection to function as a phase head (Bošković, 2014; see also Bobaljik and Wurmbrand, 2005): when unbundled, C is a phase head; when bundled, CT then functions as a phase head.⁸ (9a) shows the grammatical intermediate movement of a non-subject with split C and T. Unbundled C can be pronounced or null. In contrast, intermediate movement of the subject with split C and T will violate Spec-to-Spec Anti-Locality (9b), as also discussed in Bošković 2016. In this case, the bundled CT derivation in (9c) must be used. A consequence of bundling is that the regular morphological exponent of C alone, such as *that*, will not be realized. In other words, the bundled CT derivation leads to a null complementizer.

This proposal explains the observed asymmetry across a wide range of languages where null complementizers allow for local subject extraction but overt complementizers do not.⁹ With this basic proposal in place, in the rest of this section I present four sets of facts regarding complementizer-trace effects which support the anti-locality approach.

2.1 Complementizer-trace effects and inversion

The first argument for the anti-locality based approach to complementizer-trace effects comes from the observation that null subject languages do not exhibit complementizer-trace effects. This is illustrated from Italian in (10). This correlation between the null subject parameter and the lack of complementizer-trace effects is robust. Gilligan 1987 shows, with a 100-language sample, that the general availability of postverbal subjects entails the lack of complementizer-trace effects.

⁸ This proposal differs from alternatives where *that*-less clauses are no longer cyclic domains (phases). For example, following Bošković 1997, Ishii 2004 proposes that *that*-less complement clauses in English are not phases, lacking a CP projection and then allowing non-successive-cyclic movement. However, a prediction of Ishii's CP-less account is that movement generally will not be successive-cyclic through *that*-less clause edges, and therefore moved constituents cannot reconstruct there for binding. This prediction is false, as verified by the fact that *herself* can be bound by *Keely* equally well in (i) with and without an overt complementizer on the embedded clause.

(i) [Which picture of herself_i] does Keely_i think [(that) Ted likes ____]? (modified from Barss, 1986: 25)

⁹ See also Erlewine 2017 for an alternative analysis which is also compatible with the anti-locality motivation presented here. In brief, Erlewine 2017 proposes that null complementizers are special in allowing for exceptional movement from Spec,TP, precisely as they are unpronounced, under a Cyclic Linearization approach to successive cyclicity requirements (Fox and Pesetsky, 2005). A similar intuition is explored in Abe 2015: 5–6.

(10) **No complementizer-trace effect in Italian:**

(Rizzi, 1982: 117)

Chi credi [CP che verrà ____]?
who believe.2sg that will.come ____
'Who do you believe will come?'

Rizzi 1982 proposes that in null subject languages, there is not a need to fill the preverbal subject position,¹⁰ allowing for \bar{A} -extraction of the subject directly from a base position, as illustrated in (11). Movement from this lower position is not in danger of violating Spec-to-Spec Anti-Locality, and therefore does not result in the complementizer-trace effect interaction in (9). This explains the correlation between the null subject parameter and the lack of complementizer-trace effects.

(11) **No complementizer-trace effects in null subject languages:**

✓ ... [CP ____ *che* / ... [TP \emptyset ...
← ↑

Even in a language without null subjects, such as English, if the EPP can be satisfied through alternative means, the subject can be extracted across an overt complementizer by moving directly from its predicate-internal position.

This effect can also be observed in English, for subjects with weak quantifiers which are compatible with the *there*-construction. Rizzi 2006 presents the contrast in (12), arguing that the subject skips the canonical Spec,TP position in (12b), allowing for grammatical subject extraction across a complementizer.¹¹

(12) **Avoiding anti-locality by skipping Spec,TP:**

(Rizzi, 2006: 124)

- a. * What do you think [CP ____ that [TP ____ is [Pred ____ in the box]]]?
b. ✓ What do you think [CP ____ that [TP there is [Pred ____ in the box]]]?

Rizzi 2006 and Rizzi and Shlonsky 2007 attribute the contrast in (12) to the subject position — Spec,TP here but Spec,SubjP for Rizzi and Shlonsky — being a “criterial” position from which further movement is disallowed. But the logic of subject extraction across a complementizer being exceptionally available by skipping its high, canonical position applies equally to our anti-locality based account in (9) as well. Evidence from the following section will, however, lead us to abandon the “Criterial Freezing” account.

¹⁰ The subject position in such cases can be thought of as filled by an empty element, or it could be that these languages have a weak EPP, requiring no specifier of TP. See e.g. Roberts 2010 for discussion.

¹¹ Lohndal (2009: 216) observes that Danish uses the expletive pronoun *der* for the same function, facilitating subject extraction across its complementizer *at*.

2.2 Obviation by high adverbs

The second argument for the anti-locality approach to complementizer-trace effects comes from obviation by high adverbs. As noted in Bresnan 1977 and later discussed in Culicover 1993, the addition of an adverb between *that* and the subject trace position obviates the English *that*-trace effect.¹²

(13) ***That*-trace effect obviated by adjuncts:**

- a. Who did she say [_{CP} ___ that *(**tomorrow**) ___ would regret his words]?
 - b. Which doctor did you tell me
[_{CP} ___ that *(**during an operation**) ___ had had a heart attack]?
 - c. Robin met the man [_{RC} {that/who} Leslie said
[_{CP} ___ that *(**for all intents and purposes**) ___ was the mayor of the city]].
- ((a–b): Bresnan, 1977; (c): Culicover, 1993: 557)

Similar adverb obviation effects are also attested in Swedish. Recall from example (8) above that long-distance subject extraction across the overt complementizer *att* is generally ungrammatical. This effect disappears when a high adjunct is introduced, as observed through the contrast in (14):

(14) **Adjunct obviation in Swedish:** (Löwenadler, 2012: 214–215)

- a. * Jag pratar om Peter, som jag misstänker [_{CP} (***att**) ___ måste gå på mötet].
I talk about Peter who I suspect that ___ must go to meeting
'I talk about Peter who I suspect must go to the meeting.'
- b. ? Jag pratar om Peter, som jag misstänker [_{CP} att **under rådande**
I talk about Peter who I suspect that under current
omständigheter måste gå på mötet].
circumstances must go to meeting.
'I talk about Peter who I suspect under the current circumstances must go to the meeting.'

But not all adjuncts have this obviation effect. Rizzi (1997: 311) notes that it is only *high* adjuncts that obviate the complementizer-trace effect, attributing this observation to Kinsuke

¹² An anonymous reviewer and Yusuke Imanishi (p.c.) ask whether the overt complementizer *that* with these high adjuncts, or when they serve to obviate the *that*-trace effect. Experimental evidence reported in Sobin 2002 suggests that they are not; see discussion there on page 544. This behavior is also noted by Pesetsky and Torrego (2001: 410 note 37), as it is counter to the predictions of their theory for the *that*-trace effect. For the theory presented here, it must be the case that English unbundled declarative C is still ambiguous in being realized as *that* or being unpronounced.

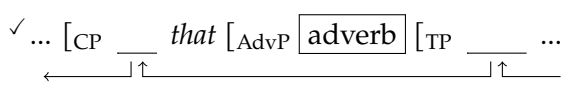
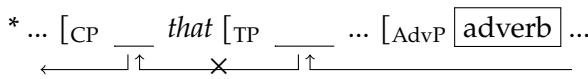
Hasegawa. This is illustrated with the contrast between the epistemic adverb *fortunately* and the manner adverb *quickly* in the English (15) below.

(15) **Obviation only by higher adverbs:** (Brillman and Hirsch, 2016: 78)

- a. Who did John say [CP ____ that [AdvP **fortunately** [TP ____ ran to the store]]]?
- b. * Who did John say [CP ____ that [TP ____ [AdvP **quickly** [vP ran to the store]]]]?

Both the obviation of complementizer-trace effects by adjuncts and the fact that this is limited to structurally high adjuncts is explained by the Spec-to-Spec Anti-Locality approach to complementizer-trace effects, sketched in (9) above. Let us assume that the introduction of the relevant adjuncts in (13) and (15) involve the projection of dedicated additional functional structure between TP and CP, here for presentational purposes labeled AdvP. As also noted in Bošković 2016, the addition of this extra functional material makes movement from Spec,TP directly to Spec,CP no longer violate Spec-to-Spec Anti-Locality, allowing for the use of the overt complementizer projecting a CP independent of TP. See also Browning 1996 for an earlier proposal which similarly attributes adverb obviation effects to the projection of additional structure.

(16) **Explaining adverb obviation of complementizer-trace effects:**

- a. Obviation by high adverb:

- b. No obviation by lower adverb:


A note is in order regarding the optional projection of functional structure. I assume with Giorgi and Pianesi 1996: 13–17, Rizzi 1997: 314–315, and Erlewine 2016: 475 that functional projections are only projected in the clausal spine if they contribute to the interfaces, either morphophonologically, interpretationally, or by hosting material such as specifiers. This view of clause structure is also present in the notions of the “functional sequence (fseq)” in Starke 2001 and the “hierarchy of projections” in Adger 2003, and also discussed in Bošković 2016: 42 fn. 28. As noted by a reviewer, Cinque 1999 tentatively rejects this approach on conceptual grounds, stating, “Though attractive, I think that such idea [where ordered functional projections are projected only when necessary] is more costly than the idea that functional notions are always all structurally represented” (p. 133). The sensitivity of complementizer-trace effects — as well as other subject extraction phenomena, as we will see — to the addition of material between the

subject position and the clause edge forms an empirical argument against Cinque’s conceptual critique.

Such adverb obviation data present a challenge for a range of other approaches to complementizer-trace effects. For Rizzi and Shlonsky’s approach to subject extraction asymmetries, briefly described in the previous section, material in “criterial” positions — including the subject position of Spec,TP, described as Spec,SubjP there — are unable to move out. The addition of higher material should not affect this status of the subject position being “criterial.”¹³ The interaction is also not predicted under other, less fine-grained anti-locality constraints such as the “prolific domains” approach of Grohmann 2003. For Grohmann, clauses are organized into three domains — roughly, the extended CP, extended TP, and theta domain — and movement must cross between these domains. If the ungrammaticality of the original complementizer-trace violation (as in (9a) above) is due to Grohmann’s anti-locality, moving within a single domain, it is unclear how the addition of an optional functional projection will make the movement now proceed across two different domains.

2.3 Locative inversion

The third argument for the anti-locality approach to complementizer-trace effects comes from locative inversion. Recall that the anti-locality approach to subject extraction asymmetries is purely configurational: its logic will apply to other arguments which are in an exceptionally high position in the clause, rather than specifically being tied to any other subjecthood properties. Bresnan (1977: 186) observes that locative PPs in *locative inversion* constructions (17) are also subject to complementizer-trace effects when fronted. This contrast is observed in (18): example (18a) involves \bar{A} -movement of the PP from the clause-initial locative inversion position, which requires a null complementizer. In contrast, the same PP can be extracted across an overt complementizer in (18b) where locative inversion did not take place.

(17) **Locative inversion:**

[_{PP} In these villages] can be found the best examples of this cuisine.

(18) ***That*-trace effects triggered by extracted locative inversion PPs:** (Bresnan, 1994: 97)

a. It’s [_{PP} in these villages] that we all believe

[_{CP} ____ (*that) ____ can be found the best examples of this cuisine].

¹³ See Rizzi 2014: 32ff for some discussion of adverb obviation and Criterial Freezing. In brief, Rizzi proposes there that the projection of an adverb allows for the introduction of an expletive which satisfies the EPP (Subject Criteria), allowing for the subject to skip its canonical position. To my knowledge, however, there is no independent evidence for such adverbs licensing the insertion of expletive pronouns.

- b. It's [PP in these villages] that we all believe
[CP ____ (**that**) the best examples of this cuisine can be found ____].

There are broadly two families of analyses to the structure of locative inversion.¹⁴ One approach is to take the locative PP to truly function as the subject in (17), and therefore occupy Spec,TP. With the locative PP in Spec,TP, the same approach to complementizer-trace proposed here in (9) would apply to these locative inversion PPs as well. This Spec,TP approach for locative inversion is suggested by Pesetsky and Torrego (2001: 407–408 note 20), but runs counter to the overall intuition of their analysis, that complementizer-trace effects specifically affect the extraction of arguments receiving nominative case.

An alternative approach to locative inversion proposes that locative PPs are not in Spec,TP, but rather in a higher topic position. The examples in (19) and (20) from Stowell 1981 show that locative inversion is unavailable in various environments that disallow topics.

- (19) **No locative inversion in clauses that disallow topicalization:** (Stowell, 1981: 272)

- a.
 - i. * [That this book, you should read ____] is obvious.
 - ii. * I don't believe John's claim [that this book, you should read ____].
 - iii. * It shocked me [that this book, Bill liked ____].
- b.
 - i. * [That [PP in the chair] was sitting my older brother] is obvious.
 - ii. * ...John's claim [that [PP in the chair] was sitting my older brother].
 - iii. * It shocked me [that [PP in the chair] was sitting my older brother].

- (20) **No locative inversion in certain nonfinite clauses:**

- a. * I expect [_{nonfinite} for [PP on this wall] to be hung a picture of Leonard Pabbs].¹⁵
 b. * I anticipated [_{nonfinite} [PP on this wall] being a picture].
 c. * I believe [_{nonfinite} [PP down the hill] to have rolled a ball].

((a–b): Aissen, 1975: 10, reproduced in Bresnan, 1994: 108; (c): Stowell, 1981: 271)

Such data argues against the complementizer-trace effects generally being limited to movement from Spec,TP to Spec,CP. If locative PPs are in a topic position (e.g. Spec,TopicP) projected above TP, movement from Spec,TopicP to Spec,CP must then be subject to complementizer-trace effects.

¹⁴See Salzmann 2011 and Diercks 2017 for recent overviews and discussion.

¹⁵ Bresnan 1994 follows Aissen 1975 in also reporting a *for*-less version of (20a) as ungrammatical, and Stowell 1981 reports a similar *for*-less example to be ungrammatical as well: *I expect in the room to be sitting my older brother*. However, in my own judgment, the *for*-less examples are grammatical, clearly contrasting from their ungrammatical *for*-full variants.

The anti-locality approach to complementizer-trace effects can explain the effects with locative inversion in (18), even if this higher position for locative inversion is adopted. Following the discussion in the previous section, let us suppose that the high topic position (TopicP) is only projected when necessary to host a topic, such as in locative inversion constructions. With a PP moved to Spec,TopicP above the subject in (21a), movement of the locative PP from Spec,TopicP to Spec,CP will violate Spec-to-Spec anti-locality. Instead, the projection of a bundled C and Topic head — *C_{Topic}* below — will allow for locative inversion and also put the locative PP at the edge of the embedded clause, at the cost of disallowing an overt complementizer.

(21) **Complementizer-trace effects with locative inversion:**

- a. * ... [CP ____ *that* [TopicP (PP) [TP ...
 ←—————|↑—————X—————|↑—————
- b. ✓ ... [*C_{TopicP}* (PP) [TP ...
 ←—————|↑—————

2.4 Yiddish prefield extraction

The fourth and final argument for the anti-locality approach to complementizer-trace effects comes from the behavior of complementizer-trace effects in Yiddish as described in Diesing 1990. Yiddish allows for embedded V2 clauses with an overt complementizer *az*, as in (22) below. Following Diesing, I assume the V2 verb is in T (her Infl), with the prefield — here, the italicized ‘wine’ — in Spec,TP.

(22) **Yiddish embedded V2:** (Diesing, 1990: 44)

Ir zolt visn zayn, mayne libe kinderlekh, [CP *az* [TP *vayn* ken [VP men makhn
 you should know be my dear children that wine can one make
 fun troybn oykh]]].
 from grapes also
 ‘You should know, my dear children, that one can make wine from grapes also.’

Yiddish exhibits complementizer-trace effects targeting the extraction of material in the embedded prefield, not specifically subject arguments. Consider first the examples in (23).¹⁶ In this minimal pair, it appears that Yiddish exhibits a complementizer-trace effect whereby non-subjects but not subjects can be extracted from embedded clauses with *az*.

¹⁶ To simplify the presentation, predicate-internal gaps for subjects and main verbs are not indicated in the examples in this section.

(23) **A complementizer-trace effect in Yiddish:** (*ibid.*: 71)

- a. Vos hot er nit gevolt [CP ___ az [TP *mir* zoln [VP leynen ___]]]?
 what has he not wanted that we should read
 ‘What did he not want us to read?’
- b. **Ver* hot er moyre [CP ___ az [TP ___ vet [VP kumen]]]?
 who has he fear that will come
 Intended: ‘Who is he afraid will come?’

However, upon further inspection, what is specifically banned is not subject extraction across *az*, but rather extraction from the prefield — following Diesing, in Spec,TP, and in italics here — across the complementizer *az*. This is observed in two ways. First, in (24), we see that object extraction across the complementizer *az* is also ungrammatical if the object first occupied the prefield position, leaving a gap in Spec,TP.

(24) **Ungrammatical object extraction from prefield:** (*ibid.*: 71)

- **Vos* hot er nit gevolt [CP ___ az [TP ___ zoln *mir* leynen ___]]?
 what has he not wanted that should we read
 Intended: ‘What did he not want us to read?’ (cf 23a)

The ungrammaticality of the surface string in (24) also teaches us that a derivation where the *wh*-word *vos* moves from its base position directly to the intermediate Spec,CP — leaving Spec,TP empty — is also unavailable. This follows more generally from the EPP requirement of Yiddish Spec,TP, also described by Diesing.¹⁷

This Yiddish EPP requirement is particularly clear from the behavior of embedded *wh*-questions, which descriptively appear to be “verb-third” structures. Consider the embedded subject questions in (25–26) below. The subject *wh*-phrase comes first in the embedded question but, in Diesing’s words, “in indirect questions, the *wh*-word does not count for V2” (p. 50), requiring another constituent before the finite verb or auxiliary. This post-*wh*, pre-verb position can be filled by a topic (italicized) as in (25 a,b):

(25) **V3 in embedded subject questions:** (*ibid.*: 50)

- a. Ikh veys [CP *vos* [TP *bay mir* rut [VP zikh]]].
 I know what by me does REFL
 ‘I know [what goes on with me].’
- b. Zi iz gekumen zen [CP *ver* [TP *frier* vet [VP kontshen]]].
 she has come see who earlier would finish
 ‘She has come to see [who would finish earlier].’

¹⁷ I thank Hadas Kotek and an anonymous reviewer for requesting discussion of this point.

In the absence of such a topic constituent, an expletive must be inserted in this position:

- (26) Ikh veys nit [CP ver [TP *(es) iz [VP gekumen]]].
 I know not who it has come
 'I do not know [who came].'
(ibid.: 68)

Diesing argues that this behavior of embedded questions is best analyzed by (a) the *wh*-phrase necessarily moving to Spec,CP, (b) embedded *wh*-questions having a null complementizer, and (c) the general requirement that Spec,TP be filled. The obligatory expletive in (26) also shows that the subject *wh* cannot first satisfy the EPP requirement by moving through Spec,TP on the way to the embedded Spec,CP position. See Diesing 1990 for further arguments and discussion.

Returning now to the complementizer-trace effect, we observe next that subject extraction itself becomes grammatical across the complementizer *az* if another constituent occupies the embedded prefield (Spec,TP). This is observed in (27):

- (27) **Grammatical subject extraction with prefield object:** (ibid.: 74)
 Ver hot er nit gevolt [CP ___ az [TP ot di bikher zol [VP ___ leynen]]]?
 who has he not wanted that PRT the books should read
 'Who did he not want to read the books?'

As noted by Branigan (2005), the complementizer-trace effect in Yiddish thus cannot specifically be about subject properties such as nominative case, contra Pesetsky and Torrego 2001. Instead, it is specifically about movement from the closest, embedded specifier position (here labeled Spec,TP) to Spec,CP.

2.5 Summary

I have argued here that complementizer-trace effects should be analyzed as due to Spec-to-Spec Anti-Locality, as also recently proposed in Bošković 2016. We have seen that the approach to complementizer-trace effects developed here is able to explain a number of peculiarities of these effects. Because movement of subjects from Spec,TP across an overt complementizer to Spec,CP is banned by anti-locality, we predict obviation of the effect by the addition of high functional material such as high adverbs. In contrast to other approaches to complementizer-trace effects, the anti-locality approach is purely configurational: it is not tied specifically to other subjecthood properties such as nominative case or being specifically in Spec,TP. Therefore, this approach to the effect successfully extends to complementizer-trace effects in locative

inversion and with Yiddish embedded V2 clauses.¹⁸ I furthermore presented a new analysis for *that*-less complement clauses and their equivalents, based on the bundling of function projections C and T into a single head (Martinović, 2015; Erlewine, 2018; Hsu, to appear).

We have concentrated here on the analysis of complementizer-trace effects where the complementizer varies between null and pronounced variants. As noted in the introduction to this section, there are also complementizer-trace effects where subject extraction triggers the use of a distinct complementizer instead, such as the well-studied French *que/qui* alternation and the similar Nupe *gàrán/’án* alternation. Preliminary evidence suggests that such alternations are also amenable to an anti-locality-based account.¹⁹ I briefly illustrate here with evidence from Nupe (Niger-Congo; Nigeria), as presented in Kandybowicz 2006, 2008, 2009. Example (28a) below shows a long-distance object extraction out of an embedded clause headed by the regular complementizer *gàrán*. In contrast, long-distance subject extraction is ungrammatical across *gàrán*, instead triggering the use of the *’án* complementizer instead, as in (28b). There is no null complementizer option.

(28) *Gàrán/’án* alternation in Nupe: (Kandybowicz, 2009: 327, 330–331)

a. Long-distance object relative:

nakàn [RC na Musa gàn [CP **gàrán** bagi-zì ba ____]] na
 meat C_{REL} Musa say C man-PL cut PRT
 ‘the meat that Musa said that the men cut’

b. Long-distance subject relative:

bagi-zì [RC na Musa gàn [CP {***gàrán**, [✓]**’án**, ***∅**} ____ ba nakàn]] na
 man-PL C_{REL} Musa say C C_{AN} cut meat PRT
 ‘the men that Musa said cut the meat’

Kandybowicz then observes that the addition of the high adverb *pányí lě* ‘a long time ago’ exceptionally allows for the subject extraction to proceed across the default *gàrán* complementizer, as in (29a). This obviation effect does not hold of lower adverbs, such as *dàdà* ‘quickly,’ in (29b). Elsewhere, it is independently argued that *pányí lě* is a high adverb adjoined to TP (Kandybowicz, 2008: 40–41) whereas *dàdà* follows the subject and overt tense markers, adjoining to the left edge of *vP* (Kandybowicz, 2009: 310).

¹⁸ Postal 2004 presents an additional argument that the English *that*-trace effect cannot specifically be a fact about subject extraction, as summarized in Bruening 2010: 51–52.

¹⁹ For French, see Taraldsen 2002 and Rizzi and Shlonsky 2007 for analyses which are very close to Rizzi’s (1982) analysis for Italian subject extraction in (10–11) above, where subjects are exceptionally allowed to skip their canonical, high position (Spec,TP) with *qui* but not *que*.

(29) **Obviation only by high adverb:** (*ibid.*: 332)

- a. bagi-zì [_{RC} na Musa gàn [_{CP} gànnán [_{AdvP} pányí lě [_{TP} ba nakàn]]]] na
 man-PL C_{REL} Musa say C long ago formerly cut meat PRT
 ‘the men that Musa said that long ago cut the meat’
- b. * bagi-zì [_{RC} na Musa gàn [_{CP} gànnán [_{TP} ba [_{AdvP} dàdà [_{vP} ba nakàn]]]]]] na
 man-PL C_{REL} Musa say C quickly cut meat PRT
 Intended: ‘the men that Musa knows quickly cut the meat’

In other words, the need to use the special ‘*án* subject extraction complementizer is obviated by the addition of additional material above the canonical subject position but not below it, just as we observed for English in section 2.2 above, suggesting that an anti-locality constraint may underly this alternation as well. I will leave the evaluation of anti-locality-based approaches to this and other complementizer-trace effects for future work.

3 Subject anti-agreement effects

The next extraction asymmetry behavior which I discuss is anti-agreement effects. *Anti-agreement* refers to the disappearance of regular ϕ -agreement with an argument which is \bar{A} -extracted (Ouhalla, 1993). See Baier 2018 for a recent overview. A classic example comes from the Northern Italian dialects of Fiorentino and Trentino, discussed in Brandi and Cordin 1989 and Suárez 1992. Fiorentino and Trentino exhibit subject agreement with both preverbal clitics and inflection on the tensed verb. Here I concentrate on Fiorentino examples throughout, although the relevant behaviors are the same in Trentino.

(30) **Preverbal subjects in Fiorentino are agreed with:** (Campos, 1997: 93)

Le ragazze l’ hanno telefonato.
 the girls 3pl has.3PL phoned
 ‘The girls called.’

However, there is no agreement with *wh*-fronted subjects, with the verb and preverbal clitic realizing default third singular masculine features. This is a specific quirk of subject extraction; subject agreement is unaffected by non-subject extraction.

(31) **No agreement with *wh*-fronted subjects:** (Brandi and Cordin, 1989: 124–125)

Quante ragazze {*le hanno, \checkmark gli ha} parlato con te?
 How many girls 3pl has.3PL 3sgm has.3SG spoken with you
 ‘How many girls spoke with you?’

Brandi and Cordin relate the anti-agreement in (31) to the fact that postverbal subjects of “free inversion” are also not agreed with, as seen in (32). Based on this observation, and following Rizzi’s (1982) analysis of subject movement in standard Italian, they propose that \bar{A} -moved subjects in Fiorentino and Trentino do not move through Spec,TP, but rather \bar{A} -move directly from postverbal base position, foregoing agreement.

(32) **No agreement with postverbal subjects:** (*ibid.*: 115)

{*Le hanno, \checkmark GI’ ha} telefonato delle ragazze.
 3pl has.3PL 3sgm has.3sg telephoned some girls
 ‘Some girls called.’

Here I will adopt Brandi and Cordin’s intuition that subject anti-agreement is linked to the lack of agreement with the low postverbal subjects as in (32).²⁰ What is left open by this analysis is why the subject cannot to move to the preverbal subject position to control full agreement, followed by movement to Spec,CP. As noted by Erlewine (2016: 471–472), the explanation could be a constraint such as Spec-to-Spec Anti-Locality (2). I schematize the logic of this anti-locality-driven approach to anti-agreement effects in (33) below.

(33) **Anti-agreement due to anti-locality:**

a. T agrees with the subject in Spec,TP:

[TP *subject* ••• T [vP ... ____ ...
 ↑_____]

b. Movement of subject from Spec,TP to Spec,CP is ungrammatical:

* [CP *subject* C [TP ____ ••• T ... [vP ... ____ ...
 ↑_____X_____] _____] ⇒ movement too short (2)

c. Movement of subject to Spec,CP instead skips Spec,TP:

\checkmark [CP *subject* C [TP T(no agreement) ... [vP ... ____ ...
 ↑_____] _____] ⇒ anti-agreement

²⁰ Brandi and Cordin’s analysis has been challenged by Suñer (1992), who presents three empirical challenges for their account. I briefly address each here:

- i. Postverbal subjects continue to agree when first- or second-person (pp. 653–654). This fact does not undermine Brandi and Cordin’s link when we concentrate on the distribution of *full* agreement. Suppose that T probes down for postverbal subjects, but only matching local persons, reminiscent of other languages such as Arabic or Icelandic where T agrees fully with preverbal goals but only partially with postverbal goals. What is important for the logic here is that full agreement, for example with third person plurals, is not available for postverbal subjects.
- ii. Different \bar{A} -constructions differ in the presence or absence of this anti-agreement effect (pp. 653–654, 660–

Suppose (full) subject-verb agreement correlates with movement of the subject to a high position in the clause, Spec,TP (33a). Subsequent movement to Spec,CP would violate Spec-to-Spec Anti-Locality (33b). Instead, as Brandi and Cordin propose for Fiorentino and Trentino, a language may have the option of exceptionally moving the subject directly from its predicate-internal base position to Spec,CP, skipping the agreeing Spec,TP position (33c). This allows the subject to be extracted without violating anti-locality, but forgoing full agreement with the verb.²¹

In the remainder of this section, I highlight two sets of facts regarding anti-agreement effects in a range of languages which are naturally accounted for under the anti-locality approach to anti-agreement: first, Ouhalla’s Generalization regarding languages where negation does or does not obviate anti-agreement and, second, the existence of ergative languages with anti-agreement effects targeting intransitive subjects and transitive objects, i.e. absolutive arguments, as a natural class.

I should also note, however, that there are examples of anti-agreement effects which appear to be not amenable to the anti-locality-based approach sketched in (33) above. For example, Baier (2018: 30) notes that “there are clear examples of languages [with anti-agreement] where ϕ -agreement is not parasitic on movement to a specifier in an anti-local configuration with Spec-CP,” making the first step of the account (33a) not apply. See for example Baier 2017’s discussion of Tarifit Berber. Particularly challenging are cases of anti-agreement targeting ar-

662, 669–970). I will discuss this point of variation in section 5 below, where we will see that it does not challenge the overall approach developed here.

- iii. Postverbal subjects fully agree in non-subject *wh*-questions (pp. 655–656). Belletti 2004 shows that there are two different postverbal subject constructions in Italian, with distinct behaviors: that of “free inversion” with no preverbal constituent and “stylistic inversion” as in *wh*-questions. The non-agreeing postverbal subjects as in (32) are that of “free inversion,” where the subject must be a new information focus in Italian; see Brandi and Cordin 1989: 137 note 6. Belletti shows that these postverbal subjects occupy a low position. In contrast, Belletti argues — following Kayne and Pollock 2001 on French stylistic inversion — that postverbal subjects of Italian stylistic inversion occupy a high position, with remnant movement of the clause around it. The information structure of these fully agreeing subjects in Suñer 1992: 655–656 are topics or corrective focus — the latter associated with a high focus position, not the low postverbal one (see e.g. Belletti, 2004: 24). This suggests that these fully-agreeing postverbal subjects of *wh*-questions do not occupy the true, low subject position implicated by Brandi and Cordin.

I thank Nico Baier and an anonymous reviewer for bringing these concerns to my attention.

²¹ Recall that Rizzi 1982 first proposed the idea that subject extraction can proceed in a null subject language by skipping its high, Spec,TP position, in order to explain the lack of complementizer-trace effects in Italian; see (11) above. However, unlike Fiorentino and Trentino, standard Italian continues to agree with postverbal and skipping subjects, so we do not observe anti-agreement in that case. See Rizzi and Shlonsky 2007 for further discussion. See also Schneider-Zioga 2007 for a similar “skipping” derivation of anti-agreement effects in Kinande, but based on substantially different clause structure assumptions.

guments which in fact do not undergo movement, such as with \bar{A} -bound pronouns presented in Baier and Yuan 2017. Here I highlight the existence of anti-agreement effects which do exhibit signatures of an anti-locality-driven interaction, as in (5), leaving open the possibility that anti-agreement effects in some other languages will require an alternative explanation.

3.1 Obviation by negation and Ouhalla's generalization

The first piece of evidence supporting the anti-locality based explanation to anti-agreement effects come from the effect of negation on anti-agreement. In his pioneering work on anti-agreement, Ouhalla 1993 notes that in some languages, the addition of negation can obviate anti-agreement. Consider the Matsigenka (Arawak; Peru) data below, originally from the Vargas Pereira and Vargas Pereira 2013 corpus, as reported in Baier 2018 but with glosses simplified. (34a) shows that Matsigenka verbs have a prefixal agreement marker. In subject relatives such as (34b), the verb loses this subject agreement prefix. The addition of negation *te*, which precedes the verbal complex and hosts the relativization clitic *=rira*, triggers the reappearance of subject agreement on the verb, as in (34c).

(34) **Matsigenka:** (Baier, 2018: 262–263, from Vargas Pereira and Vargas Pereira, 2013)

- a. Iogari surari i-tsamaitakotakiro sekatsi.
DEM man 3sg-cultivate manioc
 'The man cultivates manioc.'
- b. iogari [_{RC} magempitiri =rira iitane]
DEM joke.with =REL relatives
 'those who joke around with their relatives'
- c. iogari [_{RC} te =rira i-nkematsatante]
DEM NEG =REL 3sg-obey
 'he who does not obey'

However, Ouhalla also notes that there are languages where the addition of negation does not affect anti-agreement. One such language, discussed by Ouhalla, is Turkish. In Turkish subject relatives, the relativized verb is unable to exhibit plural agreement with the subject (35), which is optionally available in regular SOV clauses. Here, the addition of negation does not obviate anti-agreement as seen in (35b).

(35) **Turkish:**

(Ouhalla, 1993: 484, 500)

- a. [_{RC} hoca-yi gör-en-(***ler**)] öğrenci-ler
lecturer-ACC see-PART-(*PL) student-PL
‘the students who saw the lecturer’
- b. [_{RC} hoca-yi gör-me-yen-(***ler**)] öğrenci-ler
lecturer-ACC see-NEG-PART-(*PL) student-PL
‘the students who did not see the lecturer’

Such data led Ouhalla to a generalization as in (36). For precision, here I give the formulation from Baier 2018.

(36) **Ouhalla’s Generalization:**

(Baier, 2018: 262)

Anti-agreement is affected by negation in languages with the head order Neg > Agr > V but not in languages with the head order Agr > Neg > V, where the symbol > indicates c-command.

Descriptively, we see that negation involves a high head *te* in Matsigenka above the locus of subject agreement, whereas negation is in a structurally lower position in Turkish (35b), closer to the verb root. In his survey of anti-agreement behaviors, including 18 languages with anti-agreement where data on negation was available, Baier 2018 reports that there is no counterexamples to Ouhalla’s Generalization has been found.

Further support for Ouhalla’s Generalization comes from the effects of two different negators in Welsh, which is not discussed in Ouhalla 1993.²² The Welsh copula has a special non-agreeing “relative” form (*sy* be.REL) used in subject extraction constructions. This is illustrated in (37). (37a) shows the agreeing copula, which cannot be used in the subject cleft in (37b).

(37) **Welsh:**

(Borsley, Tallerman, and Willis, 2007: 130–131)

- a. Dinas hardd **yw** Caerdydd.
city beautiful be.PRES.3SG Cardiff
‘Cardiff is a beautiful city.’²³
- b. Caerdydd {[✓]**sy**, ***yw**} ‘n ddinas hardd.
Cardiff be.REL, be.PRES.3SG PRED city beautiful
‘It’s Cardiff that is a beautiful city.’

²² I thank Miriam Nussbaum (p.c.) for discussion of Welsh facts.

²³ The *yw* form is also special in that it occurs in \bar{A} -fronting constructions, as opposed to the default PRES.3SG copula, *mae*. Example (38b–c) below shows that this copula nonetheless exhibits subject agreement: *yw* is the third singular form and *ydyn* is the third plural form.

Welsh has two different negators, *na(d)* and *ddim*, which differ in register and in their structural heights; see e.g. Borsley, Tallerman, and Willis 2007: 79 for discussion. In (38), we introduce these two different negators in subject extraction constructions. In (38a), we add the colloquial negator *ddim* which is structurally lower than the copula and it does not obviate anti-agreement. That is, the copula in (38a) must be the “relative non-agreeing” form *sy*. In contrast, in (38b–c) the structurally higher literary negator *na(d)* is added which precedes the copula. Here, we observe that the relative form is no longer used and instead the full agreeing form of the copula is introduced. The structurally higher negator obviates anti-agreement but the structurally lower negator does not, supporting Ouhalla’s Generalization (36).

(38) **Welsh subject *wh*-questions:** (*ibid.*: 139–140)

a. Low *ddim* negator (colloquial) \Rightarrow non-agreeing copula:

Pwy *sy* ddim yn gwybod am y gân adnabyddus hon?
 who be.REL NEG PROG know.INF about the song well.known this
 ‘Who doesn’t know about this well-known song?’

b. High *na(d)* negator (literary) \Rightarrow agreeing copula:

Pwy nad *yw* ‘n gwybod am y gân adnabyddus hon?
 who NEG be.PRES.3SG PROG know.INF about the song well.known this
 ‘Who doesn’t know about this well-known song?’

c. Copula after high *na(d)* showing subject agreement:

Pa rai nad *dynt* yn addas?
 which ones NEG be.PRES.3PL PRED suitable
 ‘Which ones are not suitable?’

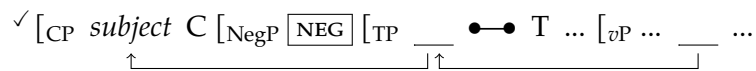
This obviation of anti-agreement by high negation but not low negation echoes the obviation of complementizer-trace effects by high adverbs but not low adverbs in section 2.2. In fact, one example of complementizer-trace obviation was by the addition of negation in Swedish, in (14). Under the anti-locality approach to complementizer-trace effects and anti-agreement effects, this pattern is not accidental. Both subject extraction behaviors are reactions to the subject’s canonical position being too close to the edge of the clause, bearing out prediction (5a) from the introduction.

Ouhalla’s Generalization (36) is predicted by the anti-locality approach to anti-agreement schematized above (33). Suppose full subject agreement reflects the subject occupying a high position associated with subject agreement morphology (33a), and sentential negation reflects the presence of an additional functional head. If the negative head is structurally higher than the position of agreeing subjects — as reflected by negation being exterior to subject agreement

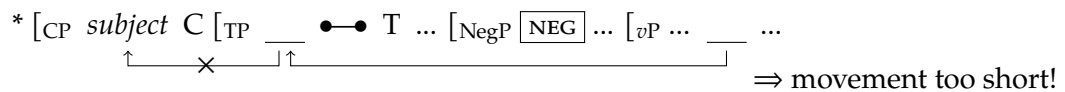
morphology, assuming the Mirror Principle — its addition will increase the distance between the subject position (Spec,TP) and its \bar{A} -landing site (Spec,CP). This allows subjects to first occupy its agreeing position and then \bar{A} -extract without violating Spec-to-Spec Anti-Locality (39a). In contrast, the projection of negation in a lower position will not affect the fact that the subject cannot be extracted to Spec,CP through the agreeing Spec,TP position without violating Spec-to-Spec Anti-Locality.

(39) **Deriving Ouhalla's Generalization:**

- a. High negation allows for movement through Spec,TP, obviating anti-agreement:



- b. Low negation doesn't affect anti-agreement:



Ouhalla's Generalization (36) is thus naturally derived by the anti-locality approach to anti-agreement, and can in turn be taken as evidence for this approach.

3.2 Abslutive anti-agreement

A second argument for the anti-locality approach to anti-agreement comes from anti-agreement effects in non-nominative-accusative languages. In sketching this approach to anti-agreement in (33) above, I assumed that T agrees with transitive subjects and intransitive subjects in Spec,TP, following the analysis of Brandi and Cordin 1989 and further discussion in Ouhalla 1993. But the logic of anti-agreement (33) would apply equally to other sets of arguments which canonically move to Spec,TP and concurrently agree with the verb.

An example of such a pattern of anti-agreement comes from Karitiãna (Tupian; Brazil). The verb in Karitiãna agrees with transitive objects (40a–c) and intransitive subjects (40d–e) — i.e. absolutive arguments. There is generally no agreement with transitive subject. There is no case marking on nominals.

(40) **Absolutive agreement in Karitiâna:**

(Storto, 1999: 121, 157)

- | | |
|---|--|
| <p>a. An y-ta-oky-t yn.
2sg 1sg-DECL-kill/hurt-NFUT 1sg
'You will hurt me.'</p> <p>b. Yn a-ta-oky-j an.
1sg 2sg-DECL-kill/hurt-IRR 2sg
'I will hurt you.'</p> <p>c. Taso Ø-na-oky-t boroja.
man 3-DECL-kill/hurt-NFUT snake
'The man killed the snake.'</p> | <p>d. Y-ta-opiso-t yn.
1sg-DECL-listen-NFUT 1sg
'I listened.'</p> <p>e. A-ta-opiso-t an.
2sg-DECL-listen-NFUT 2sg
'You listened.'</p> <p>f. Ø-naka-hỹryja-t i/taso.
3-DECL-sing-NFUT he/man
'He/the man sang.'</p> |
|---|--|

Karitiâna furthermore exhibits absolutive-aligned extraction asymmetries, including anti-agreement with extracted absolutive arguments. Transitive subject extraction does not affect object agreement, as seen in (41a). In contrast, *wh*-movement of transitive objects and intransitive subjects takes the form of what Storto refers to as a cleft, reflected by the addition of the copula *-mon* in (41b–c). (I return to the derivation of these structures below.) In these cases, the agreement morpheme is replaced by an invariant *i-* or *ti-* prefix, instantiating an instance of absolutive-aligned anti-agreement.

(41) ***Wh*-questions in Karitiâna:**

(ibid.: 159, 194)

- a. Transitive subject:
- Morã y-sokõ'i?
who 1sg-tie.up
'Who tied me up?'
- b. Transitive object:²⁴
- Mora-mon an ti-hit-Ø taĩ-ty?
who-COP 2sg ti-give-NFUT knife-OBL
'Who did you give the knife?'
- c. Intransitive subject:
- Mora-mon i-hyryp?
who-COP i-cry
'Who cried?'

Anti-agreement also affects other \bar{A} -constructions, which do not underlyingly involve clefting. Focus fronting of transitive objects is particularly interesting, as it involves what Hale and Storto 1996 calls "eccentric agreement": in these cases, the verb bears the *ti-* marker from

²⁴ The goal argument of the ditransitive 'give' verb here is the object, with the theme being an oblique (Storto, 1999: 194 fn. 77).

(41b) above, together with exceptional agreement with the transitive subject, which is otherwise never agreed with. See (42). This too is an instance of anti-agreement, as the canonical agreement target — the transitive object — loses its verbal agreement due to its movement.

(42) **Transitive object fronting, with exceptional subject agreement:** (*ibid.*: 163)

‘Ep aj-ti-pasagngã-t ajxa.
trees 2pl-TI-COUNT-NFUT 2pl
‘Trees, you all are counting.’

As noted by Erlewine (2016: 472–473), these absolutive-aligned anti-agreement effects in Karitiâna can also be explained by the anti-locality approach to anti-agreement. Storto (1997, 1998) proposes that absolutive arguments move to Spec,TP in Karitiâna, i.e. that Karitiâna is a “raising ergative” language (Bittner and Hale, 1996a,b).²⁵ Subsequent movement of an absolutive argument from Spec,TP to Spec,CP will violate Spec-to-Spec Anti-Locality. In contrast, the movement of transitive subjects is not in danger of violating Spec-to-Spec Anti-Locality, leading to no change in agreement. Absolutive agreement may proceed by skipping the agreeing position — schematized in (33c) above — with T then exceptionally agreeing with the transitive subject in the case of object focus fronting as in (42).

The asymmetry observed in Karitiâna *wh*-questions also highlights an additional point. Recall that Karitiâna transitive object and intransitive subject *wh*-questions (41b–c) appear with a copular morpheme. Storto analyzes these structures as clefts involving nominalization of the verb, which explains their lack of agreement.²⁶ According to this view, there is no agreement because the verbs in (41b–c) are nominalized, not simply because their extracted arguments bypassed Spec,TP due to anti-locality, as sketched in (33). But at the same time, we can also ask what necessitates this nominalization/clefting strategy, i.e. why transitive objects and intransitive subjects cannot be *wh*-moved directly from their regular positions. *Wh*-movement without this clefting strategy is possible for transitive subjects (41a), and also with the extraction of obliques (see Storto 1999: 200ff). Here again, the canonical high position of absolutive

²⁵ The agreeing, absolutive argument is generally in a postverbal position as in (40), following obligatory verb-movement to a head above TP (called X in Storto 1997, 1998), and therefore Karitiâna word order by itself does not reflect this EPP requirement on T. See Storto 1997, 1998 for discussion.

Ergativity in Karitiâna is reanalyzed in Storto 1999, but I believe the facts discussed there which motivate the reanalysis are also compatible with the analysis for anti-agreement presented here, with the logic in (33). I leave this fuller discussion of Karitiâna for future work.

²⁶ Storto 1997 describes *-mon* as a case-licensing variant of C, which is also compatible with the general anti-locality approach here. If we suppose that movement to Spec,TP is necessary for case-licensing of absolutive arguments but anti-locality forces extracted absolutive arguments to skip Spec,TP, they will require an alternative case-licensor when extracted. I thank Kenyon Branen for also raising this possibility.

arguments, in Spec,TP, together with Spec-to-Spec Anti-Locality, explains why these arguments cannot be extracted regularly, forcing an alternative derivation to be invoked. Even though the precise mechanism underlying why agreement disappears is different than what is sketched in (33) above, the key factor that explains the interaction may still be an anti-locality constraint on movement.

3.3 Summary

In this section, we described a basic approach to anti-agreement effects driven by anti-locality. If verbal agreement with certain arguments correlates with the movement of that argument to a structurally high position (Spec,TP), that argument may be unable to agree with the verb and simultaneously be \bar{A} -extracted to Spec,CP. Moving from Spec,TP to Spec,CP would violate Spec-to-Spec Anti-Locality, assuming no intervening functional projections. Instead, these languages have the exceptional option of \bar{A} -extracting the subject directly from a lower base position, skipping the agreeing Spec,TP position, or otherwise follow a different derivational strategy which also avoids this violation, as discussed briefly for Karitiâna above. We saw in this section that additional higher functional material can obviate anti-agreement, but not lower (Ouhalla's Generalization), as it increases the structural distance between the agreeing Spec,TP position and Spec,CP. We also saw that this approach to anti-agreement effects can also be productively extended to nominative-accusative languages with nominative anti-agreement.

4 Bans on subject resumption

The third and final subject extraction asymmetry considered will come from bans on subject resumptive pronouns, including the well-known so-called Highest Subject Restriction on resumption. Consider the Serbo-Croatian, Hebrew, and Irish object relatives in (43–45) below. Each relative clause can be formed with a gap in the object position or a corresponding accusative pronoun.

- (43) **Serbo-Croatian object relative:** (Hladnik, 2015: 7)

auto [RC što sam (ga) kupio]
 car C_{REL} PRES.1SG he.ACC bought
 'the car that I bought'

- (44) **Hebrew object relative:** (Borer, 1984: 220)

ha-yeled [_{RC} še= Rina 'ohevet ('**oto**)].
 the-boy that Rina loves ACC.3sgm
 literally 'the boy that Rina loves (him)'

- (45) **Irish object relative:** (McCloskey, 2002: 189)

- a. an ghirseach [_{RC} a ghoid na síogaí ____]
 the girl a^L stole the fairies
 b. an ghirseach [_{RC} a-r ghoid na síogaí í]
 the girl a^N-PAST stole the fairies her
 literally 'the girl that the fairies stole away (her)'

In Irish, this alternation correlates with a change in complementizer form, which will be discussed below.

In contrast, local subject relatives cannot utilize resumption. This is again illustrated for Serbo-Croatian, Hebrew, and Irish in turn:

- (46) **Serbo-Croatian subject relative:** (Bošković, 2009: 82)

čovjek [_{RC} što je (***on**) sreo Petra]
 man C_{REL} PRES.3SG he.NOM met Petar.ACC
 literally 'the man that (he) met Petar'

- (47) **Hebrew subject relatives:** (Borer, 1984: 244)

ha-'arie [_{RC} še= (***hu**) taraf 'et ha-yeled]
 the-lion that 3sgm devoured ACC the-boy
 literally 'the lion that he devoured the boy'

- (48) **Irish subject relatives:**

- | | |
|---|--|
| <p>a. an fear [_{RC} a bhí ____ breoite]
 the man a^L was ill
 'the man that was ill'
 (Ó Baoill and Maki, 2012: 361)</p> | <p>b. *an fear [_{RC} a raibh sé breoite]
 the man a^N was he ill
 literally 'the man that he was ill'
 (McCloskey, 2002: 201)</p> |
|---|--|

An important additional aspect of these bans on subject resumptives is that there is variation in whether the effect also extends to the long-distance relativization of embedded subjects. The ban indeed extends to embedded subject positions in Serbo-Croatian (49), as well as in Slovenian, as we will see below.

- (49) **Serbo-Croatian embedded subject relative:** (Bošković, 2009: 82)

čovjek [_{RC} što tvrdiš [_{RC} da je (??**on**) sreo Petra]]
 man C_{REL} claim.2sg C PRES.3SG he.NOM met Petar.ACC
 literally 'the man that you claim that (he) met Petar'

In contrast, in Hebrew and Irish, the ban only holds of local subject relatives, thus allowing resumptive pronouns in embedded subject position as in (50) and (51). This type of ban on resumptive pronouns has thus been frequently described as a Highest Subject Restriction (HSR).

- (50) **Hebrew embedded subject relative:** (Borer, 1984: 247)

ha-’iš [RC še= Xana ’amra [CP še= (**hu**) ’ohev ’arayot]
 the-man that Hannah said that 3sgm loves lions
 literally ‘the man that Hannah said (he) loves lions’

- (51) **Irish embedded subject relative:** (McCloskey, 2002: 201)

an fear [RC a-r shíl muid [CP go raibh sé breoite]]
 the man a^N-PAST thought we C was he ill
 literally ‘the man that we thought he was ill’

In this section, I argue that these bans on subject resumptives observed in (46–49) above — including the well-studied HSRs of Hebrew and Irish — are best accounted for by the Spec-to-Spec Anti-Locality constraint on movement (2). Here I consider only resumptive pronouns in non-island contexts,²⁷ and I furthermore concentrate on constructions as in (43–45) where there is apparent optionality between the use of a resumptive pronoun or a gap. I follow Bianchi 2004, Sichel 2014, and Hladnik 2015 in analyzing this apparent optionality as reflecting two different derivations. This difference is motivated by various semantic differences, discussed in detail in Bianchi 2004 and Sichel 2014.

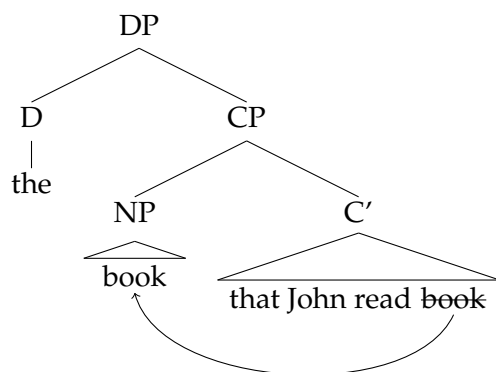
Following Sichel 2014, I identify the two relevant structures as head-raising and head-external relatives. In head-raising derivations as in (52a), the lower copy of the movement chain is subject to an Economy constraint, forcing complete deletion if possible, resulting in a gap. In contrast, the pronoun in the head-external derivation in (52b) can always be pronounced. In situations where the lower copy in (52a) cannot be completely deleted for morphological reasons — for example, when the pivot is the object of a preposition, as I discuss below for Hebrew — both structures (52a) and (52b) yield relative clauses with resumptive pronouns, resulting in an obligatory resumptive pronoun with two possible underlying derivations.

²⁷ So-called “intrusive” pronouns which appear inside islands (Sells, 1984) exhibit very different semantic and reconstruction behaviors (see e.g. Aoun, Choueiri, and Hornstein, 2001; Bianchi, 2004), and arguably result from very different derivations, so I set them aside here.

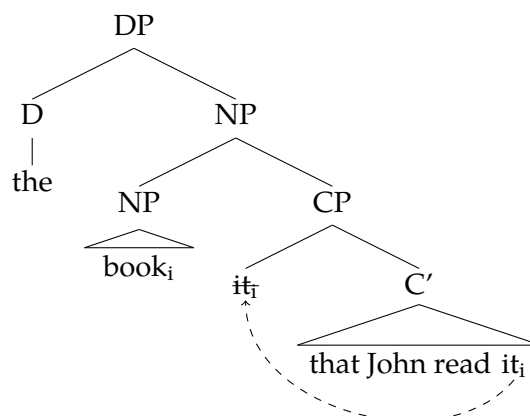
(52) **The two sources behind apparently optional resumptives:**

(based on Sichel, 2014: 657)

a. Head-raising:



b. Head-external with covert pronoun movement:



The two different derivations account for semantic differences between resumption and gaps in optional resumption contexts. I refer the interested reader to Bianchi 2004 and especially Sichel 2014 for discussion of these semantic properties and how they are explained by the two derivations.

Furthermore, here I follow the spirit of Demirdache 1991, 1997 and Hladnik's (2015) proposal for Slavic resumptive relatives in proposing that the resumptive pronoun must covertly move to the edge of the relative clause, illustrated in (52b) with a dashed arrow. Doing so allows it to semantically associate with the external head noun, but it is not allowed to be pronounced in this high position.²⁸ Evidence for this covert movement of the relative pronoun will be presented for Slovenian and Irish below.

This movement of the resumptive pronoun will be crucial for deriving these bans on subject resumption. If the resumptive pronoun is already too close to the edge of the clause, it cannot move further to satisfy the derivation in (52b) without violating Spec-to-Spec Anti-Locality.

²⁸Sichel 2014 considers a few different variants of the head-raising derivation, but generally discusses the head-external derivation as not involving movement. However, she clearly acknowledges that this is not the only possibility, on page 677: "Given the facts considered so far, we simply cannot tell whether pronouns are compatible with this structure [with movement of the resumptive pronoun] or not. For simplicity, I will assume that they are not, and that an optional pronoun is confined to a nonmovement head-external RC." What I describe as a head-external derivation with movement in (52b) could also be thought of as a matching structure as in Sichel's (39), with the highest copy of the chain in Spec,CP deleted under identity with the matching head noun, and a lower position in the chain necessarily being pronounced as a pronoun. Covert movement of resumptive pronouns in a head-external derivation is explicitly argued for by Hladnik (2015) for Slavic relative clauses, discussed in section 4.1 below.

In his discussion of so-called English "B-extractions" which are argued to involve null resumptive pronouns, Postal (1994: 175) similarly argues that the resumptive pronouns move to the edge of the structure. I thank Kenyon Branen for bringing this to my attention.

This is schematized in (53), assuming Spec,TP to be the canonical position for subjects and Spec,CP to be the target position for the resumptive pronoun in these relative clauses. (The particular positions involved will be adjusted for the analysis of Irish in section 4.3.)

(53) **Ban on subject resumptives due to anti-locality:**

* ... [_{CP} *pro* [_{TP} *pro* ...]] ⇒ movement too short (2)

^ - - ✕ - - ^ ↑

In contrast, in a head-raising derivation, I propose that the subject head noun may skip the Spec,TP position, moving directly to the edge from a lower position.

(54) **Head-raised subjects can skip Spec,TP:**

✓ ... [_{CP} NP [_{TP} Ø ...]]

↑

I propose that skipping the canonical subject A-position in (54) is possible because the head noun need not be Case-licensed or specified for a morphological case feature within the relative clause. In a head-raising derivation, the derived head noun will later be Case-licensed and receive its morphological case specification from the outside clause. However, this skipping possibility is unavailable in the head-external derivation as the resumptive pronoun itself is a separate nominal which must be licensed and case-assigned within the relative clause.²⁹

The above logic derives a simple ban on subject resumption from Spec-to-Spec Anti-Locality. Assuming successive cyclic movement at intermediate clause edges, this logic leads us to expect the unavailability of resumption for embedded subjects as well, as attested in Serbo-Croatian and Slovenian. I additionally argue that this same logic is at the core of the Irish and Hebrew HSR as well, and discuss why long-distance extraction behaves differently for Irish later in this section and for Hebrew in section 5.

As we saw with complementizer-trace and anti-agreement effects above, this anti-locality based approach to bans on subject resumption does not specifically affect all and only (highest)

²⁹ If a language did allow the resumptive pronoun to be licensed without moving to its A-position, a grammatical head-external structure may be possible. However, this would still not result in a resumptive pronoun pronounced in its canonical position, as the pronoun could not move through Spec,TP. This opens the possibility of a languages where subject resumptive relatives are grammatical but with the subject resumptive pronoun occupying a lower position in the clause. I am not currently familiar with any language which systematically and unambiguously allows for subject resumptive relatives in this way, although the Hebrew examples in (71) below may be an instance of such a derivation. I thank an anonymous reviewer for suggesting this possibility.

The idea that grammatically extracted subjects skip the canonical, high subject position — and thus a resumptive pronoun cannot be pronounced there, but this skipping is undetectable in gap derivations — is also suggested in Demirdache 1997: 201–202. Demirdache also draws an explicit parallel between these effects and complementizer-trace effects there.

subjects. Instead, it bans a particular structural configuration: movement from a high specifier (such as the conventional position for subjects) to the next highest specifier (for relative clause formation), which would be required for the derivation of relative clauses with resumptive pronouns in subject position. We thus predict obviation by the addition of intervening material (55a), as well as the extension of the ban on resumption to other arguments that are exceptionally high in the clause (55b).

(55) **Predictions of the anti-locality account of bans on subject resumption:**

- a. Additional material can obviate the ban:

✓ ... [CP ~~pro~~ [XP ... [TP *pro* ...

- b. The ban also applies to other exceptionally high arguments:

* ... [CP *pro* [XP *pro* [TP *subject* ...

I begin by discussing the behavior of Serbo-Croatian and Slovenian in section 4.1, where we will see evidence of obviation (55a), and for which the ban on subject resumptives applies both to local and long-distance relatives. Then in section 4.2, I discuss the Hebrew HSR, which bears out both predictions in (55), and finally discuss the Irish HSR, which also exhibits obviation by additional structure, in section 4.3.

4.1 Serbo-Croatian and Slovenian³⁰

I begin with discussion of resumptive relatives in two South Slavic languages, Serbo-Croatian and Slovenian. Both languages have relative clauses introduced by a *wh* relative pronoun and relative clauses introduced by a dedicated relative complementizer; we will only discuss the latter here. As noted above, both languages exhibit a general ban on resumptive pronouns in subject position, both for local and long-distance relatives. In this section, we take a closer look at these patterns, including evidence that the ban on subject resumptives in these languages are an anti-locality-driven effect.

We begin by reviewing Serbo-Croatian data above, beginning with the basic subject/non-subject asymmetry in relative clauses introduced by the relative complementizer (*što*), repeated here in (56). Example (56a) shows the availability of optional resumption in object relatives, whereas (56b) demonstrates the ban on subject resumptives for local subject relatives.

³⁰I thank Željko Bošković and Adrian Stegovec (p.c.) for helpful discussion of the examples here.

(56) **Serbo-Croatian:**

- a. Local object relative: =(43)

auto [RC što =sam (=ga) kupio]
car C_{REL} PRES.1SG he.ACC bought
'the car that I bought'

- b. Local subject relative: =(46)

čovjek [RC što =je (*on) sreio Petra]
man C_{REL} PRES.3SG he.NOM met Petar.ACC
'the man that met Petar'

The facts for Slovenian relative clauses with the relative complementizer (*ki*) are similar. Non-subject relatives involve resumptive pronouns, as in (57a), whereas resumptive pronouns are generally disallowed for subject relatives, as in (57b).

(57) **Slovenian:**

- a. Local object relative: (Hladnik, 2015: 26)

To je človek, [RC ki =ga iščejo].
this is man C_{REL} he.ACC search.3PL
literally 'This is the man that they are looking for him.'

- b. Local subject relative: (ibid.: 38–39)

Poznam človeka, [RC ki (*on) išče službo].
know.1SG man.ACC C_{REL} he.NOM search.3SG job
'I know a man who is looking for a job.'

A few caveats are in order regarding the flexibility of gapped versus resumptive relatives in non-subject relatives. First, in Serbo-Croatian non-subject relatives, the availability of the gapped and resumptive options as in (56a) are known to vary based on the animacy and gender of the head noun (Bošković, 2009; see also Gračanin-Yuksek, 2013), and are further reported to be subject to speaker variation (Hladnik, 2015: 99). Second, in Slovenian, non-subject relatives with the complementizer *ki* as in (57a) are traditionally described as requiring the resumptive strategy and disallowing gaps. But here again Hladnik (2015: 99) reports naturally occurring examples of Slovenian non-subject *ki* relatives with gaps, suggesting that for at least some speakers, under certain conditions, the resumptive pronoun in non-subject *ki* relatives is optional, similar to the traditional description of Serbo-Croatian. The overall facts suggest that there is a cline amongst South Slavic speakers in terms of their tolerance to having both gapped and resumptive forms available in non-subject relatives. Here I will set these questions of variation aside and concentrate on the overall availability of resumptive pronouns for the relativization of non-subjects as in (56a) and (57a), but not for subjects as in (56b) and (57b).

The examples above in both languages include second-position clitics, indicated with =, which warrant some discussion. This includes, above, the present tense copular auxiliaries *sam* and *je* in (56) and the object pronouns *ga*. In matrix clauses, these clitics must follow one initial constituent, as in (58) below, but in embedded clauses, the second-position clitics immediately follow the complementizer (Wilder and Ćavar, 1994: 8). Hence, in relative clauses such as (56a,b), these clitics are required to immediately follow the complementizer at PF.

(58) **Subject preceding second-position clitic:** (Željko Bošković, p.c.)

On =je sreo Petra.
 he.NOM PRES.3SG met Petar.ACC
 'He met Petar.'

Here I will follow the proposal developed in Bošković 2001 for the second-position effect. Bošković argues that their placement reflects a PF filter, but that these clitics themselves generally do not move. Rather, the PF resolution of other movement chains will be affected by this PF requirement. I concretely illustrate his proposal through the case of subject movement, presented schematically in (59) below. In the syntax, the subject moves from its predicate-internal base position to its canonical, high position, which I here label Spec,TP (59a). Between TP and *v*P are projections for the clitic auxiliaries such as *je* and for hosting clitic pronouns, not present in this example. Following a proposal of Franks's (1998) — later further motivated in Bošković 2002 — Bošković proposes that the head of a movement chain is pronounced unless it causes a violation at PF, in which case a lower copy in the chain is pronounced.

(59) **Subjects movement and its resolution at PF:**

a. Narrow syntax:

[_{CP} (C) [_{TP} *subject* ... [=AUX ... [_{vP} *subject* VP
 ↑
 └──┘

b. PF with null complementizer:

[_{CP} ∅ [_{TP} *subject* ... [=AUX ... [_{vP} *subject* VP ⇒ *on je sreo Petra* (58)

c. PF with overt complementizer:

[_{CP} C [_{TP} *subject* ... [=AUX ... [_{vP} *subject* VP ⇒ *što je on sreo Petra* (56b)

With a null complementizer and no other fronted material as in (59b), the subject can be pronounced in its movement-derived position and satisfy the second-position PF requirement of the clitic auxiliary, resulting in the high pronunciation of the subject as in (58) above. If however there is an overt complementizer (59c) or another constituent pronounced above the auxiliary, the subject will appear lower at PF through lower copy pronunciation. See Bošković 2001 for

We now turn to the syntax of these relative clauses in Serbo-Croatian and Slovenian. Both languages have both gapped and resumptive relatives introduced by their relative complementizers, for which Hladnik 2015 has independently argued for two distinct derivations, parallel to what I have proposed above: a head-raising derivation for gapped relatives and a head-external derivation for resumptive relatives, with covert movement of the resumptive pronoun to the edge of the relative clause.

(60) **Object relative derivation with resumption:**

Now consider the attempted subject relative with resumption in (61). This derivation involves canonical subject movement to the high Spec,TP position, followed by covert movement to Spec,CP. This movement step will violate Spec-to-Spec Anti-Locality, predicting this structure to be ungrammatical.

In contrast, as seen in (56b) and (57b) above, the parallel gapped subject relatives are grammatical. Gapped relatives reflect a head-raising structure.³¹ Raised head nouns need not move to A-positions to be Case-licensed internally, and thus a raised subject head noun can skip the Spec,TP position, avoiding the violation of Spec-to-Spec Anti-Locality illustrated in (61) above.

35

Note that this anti-locality violation in (61) is not immediately reflected in the surface string. The mechanisms for PF chain resolution independently established in the language predict that the subject pronoun will be pronounced in a lower position, with both the complementizer and auxiliary intervening between it and the edge of the clause. I follow Bošković in assuming that subject movement nonetheless takes place, with the realization of its movement chain resolved only at PF, due to requirements imposed by the second-position clitic auxiliary. It is the structural proximity of the subject from its high, canonical position to the edge of the clause which results in the ungrammaticality of the subject relative with resumption in (56b/61).

Hladnik provides evidence from parasitic gap licensing for the covert movement of the resumptive pronoun in Slovenian head-external relatives. Example (62a) is an object relative with the resumptive pronoun *ga*, with a grammatical parasitic gap (*pg*) within a relative clause on the embedded subject, literally ‘everyone that gets to know *pg*.’ The baseline in (62b) shows that a null object in this same position is generally ungrammatical.

(62) **Slovenian resumptive relative licenses parasitic gaps:** (Hladnik, 2015: 35–36)

- a. To je predavatelj, [_{RC} ki =*ga* vsak, [_{RC} ki spozna *pg*], ceni].
 this is lecturer.NOM C_{REL} he.ACC everyone C_{REL} meets appreciates
 lit. ‘This is the lecturer [that everyone [that gets to know *pg*_i] appreciates him_i].’
- b. *Vsak, [_{RC} ki spozna *pg*], ceni tega predavatelja.
 everyone C_{REL} meets appreciates this lecturer.ACC
 Intended: ‘Everyone [that gets to know him_i] appreciates this lecturer_i.’

Recall that, adopting Bošković’s (2001) account for these South Slavic second position clitics, the subject ‘everyone that gets to know *pg*’ in (62a) must have moved up to Spec,TP, despite being pronounced in a lower position. The subject is thus in a position above the object clitic pronoun *ga*. As resumptive pronouns must be licensed by \bar{A} -movement across the parasitic gap (Engdahl, 1983: 12–13), the grammaticality of (62a) shows that the relative clause involves \bar{A} -movement across this high subject position. Hladnik concludes that there is movement of the pronoun to the edge of the relative clause, subsequently pronounced below as the resumptive pronoun.

Evidence for the ban on subject resumption being due to anti-locality comes from the possibility of obviating the ban on subject resumption by increasing the distance between the high subject position and the edge of the clause. Bošković observes such an effect, exemplified by the relative acceptability of example (63). The effect is also replicated in Slovenian, in (64a). Example (64b) is a baseline for comparison.

(63) **Obviation by fronted object (Serbo-Croatian):**

(Bošković, 2009: 82)

? čovjek [RC što [samo Mariju] on voli ____]
man C_{REL} only Marija.ACC he.NOM loves
literally ‘the man that he loves only Marija’

(64) **Obviation by fronted object (Slovenian):**

(Adrian Stegovec, p.c.)

- a. človek, [RC ki [samo Marijo] (?on) ljubi ____]
man C_{REL} only Marija.ACC he.NOM love.3SG
b. človek, [RC ki (*on) ljubi [samo Marijo]]
man C_{REL} he.NOM love.3SG only Marija.ACC
‘the man that loves only Mariya’

In examples (63) and (64a), the focused object has been fronted to a position above the subject. Note in particular that these examples have no second-position clitics. Following the proposal of Franks 1998 and Bošković 2001, then, the subjects must be pronounced at the head of its overt movement chain, i.e. in Spec,TP. Movement of the object to a higher, clause-peripheral position has increased the distance for the covert movement step from Spec,TP to Spec,CP, resulting in a grammatical subject resumptive relative.

The examples in (63–64) additionally form an argument against two alternative, morphological accounts of the ban on subject resumption. First, grammatical resumptive pronouns in South Slavic languages are generally clitic pronouns, but nominative pronouns notably lack clitic forms. This may suggest an account whereby resumptive pronouns are somehow required to be clitic pronouns. While it is true that resumptive pronouns are generally clitic forms, the acceptability of examples such as (63) and (64a) shows that non-clitic pronouns are not themselves banned from being resumptives. Second, Hladnik (2015: 41–42, 160) proposes that resumptive pronouns appear in order for marked cases (accusative, dative, etc.) to have a corresponding morphological realization, but that nominative case is the absence of a case specification. This hypothesis too would falsely predict the subject resumption in (63) and (64a) to be completely ungrammatical, as there are no features to be recovered under Hladnik’s hypothesis. The ban on subject resumption must have a different, structural source.

In addition, Hladnik 2015 observes that subject resumptives also improve with the addition of a focus particle. The “(?)” judgment mark is reproduced from Hladnik. The focus particle serves to increase the structural distance between the pronoun’s overt position and Spec,CP, making its covert movement possible.

(65) **Grammatical subject resumptive with focus particle (Slovenian):**

- (?) človek, [_{RC} ki [_{tudi on}] kadi]
 man C_{REL} also he.NOM smokes
 'the man that also he smokes' (Hladnik, 2015: 42)

Having established the anti-locality-driven nature of the ban on subject resumption, we now discuss long-distance relatives. Here too, resumptive pronouns are reported to be significantly degraded, if not ungrammatical:

(66) **Serbo-Croatian embedded subject relative:** =(49)

- čovjek [_{RC} što tvrdiš [_{RC} da =je (??on) sreo Petra]]
 man C_{REL} claim.2sg C PRES.3SG he.NOM met Petar.ACC
 'the man that you claim met Petar'

(67) **Slovenian embedded subject relative:** (Hladnik, 2015: 40)

- Poznam človeka, [_{RC} ki mislim, [_{CP} da (*on) išče službo]].
 know.1sg man.ACC C_{REL} think.1sg C he.NOM search.3sg job
 'I know a man who I think is looking for a job.'

The anti-locality-based proposal here can also derive this ban on embedded subject resumption. Suppose that the organization of these embedded clauses straightforwardly have the complementizer *da* taking TP as its complement, where Spec,TP is the canonical subject position. I assume that long-distance relativization involves successive-cyclic movement through intermediate Spec,CPs up to the relative clause edge. In gapped relatives, this is movement of the head noun, whereas in resumptive relatives, this is covert movement of the resumptive pronoun.

The hypothetical head-external derivation for the ungrammatical resumptive forms in (49–67) is schematized in (68) below. Recall that subject pronouns move to the Spec,TP position, even in cases where they are ultimately pronounced in a lower position due to PF requirements of second-position clitics. Note that overt declarative complementizers are obligatory in both languages, and thus there is no option to forgo the overt complementizer and bundling C and T, as proposed to be possible at embedded clause edges in our discussion of complementizer-trace effects above.

(68) **Deriving the ban on embedded subject resumption:**

- * ... [_{CP} *pro* *da* [_{TP} *pro* ...
 ←-----↑-----X-----↑-----
 ⇒ movement too short!

In contrast, in a head-raising derivation, the head noun need not be licensed within the relative clause itself, allowing it to skip the canonical subject position in Spec,TP, and thus grammati-

cally covertly move through the intermediate Spec,CP to the edge of the relative clause. Thus, without further differentiation between the structure of embedded clause edges and the edge of relative clauses, the anti-locality-driven approach to bans on subject resumption here predicts — correctly for Serbo-Croatian and Slovenian — that these bans will extend to embedded subject positions as well.

4.2 Hebrew³²

Next we'll take a closer look at relative clauses in Hebrew. Recall that optional resumption in Hebrew is subject to the so-called Highest Subject Restriction (HSR): a ban on subject resumption only in local relativization. I argue that the HSR also follows the anti-locality-based logic described above, which we saw in action in Serbo-Croatian and Slovenian in the previous section. In this section I do not address why the ban on subject resumption only applies to local relativization in Hebrew, but we will return to this question in section 5.

I begin by discussing attested exceptions to the HSR. Borer 1984 and Shlonsky 1992 report that fronting another constituent to the edge of a relative clause allows for grammatical highest subject relatives with resumption.³³ This is illustrated in the examples in (69).

(69) **Grammatical highest subject resumptives with intervening material:**

- a. ha-'iš [RC še= [rak 'al kesef] (hu) xošev]
the-man that only about money 3sgm thinks
'the man that thinks only about money' (Borer, 1984: 247)
- b. ha-'iš [RC še= {'etmol, ha-šavu'a še=avar} (hu) pagaš 'et Dina]
the-man that yesterday the-week that=passed 3sgm met ACC Dina
'the man that {yesterday, last week} met Dina' (Hadas Kotek, p.c.)

Assuming that the fronted constituents in (69) are hosted by a dedicated functional projection such as FocusP, the fronted material in (69) has the effect of increasing the structural distance between the preverbal subject position and Spec,CP. This allows for a pronoun to first occupy the canonical preverbal subject position — which I will refer to as Spec,TP — and then move to Spec,CP in a head-external derivation (52b), resulting in pronunciation of the resumptive pronoun in the preverbal position.

Highest subject resumptives can also be made grammatical by adding additional structure to the pronoun itself, rather than adding structure to the clausal spine. In (70), the focus parti-

³² I thank Hadas Kotek for extensive discussion of the Hebrew facts here and Omer Preminger for discussion of its presentation.

³³ Borer 1984 and Shlonsky 1992 attribute this observation to Doron 1982/2011, but I do not see this observation in the paper as reprinted in Rouveret 2011.

cle *rak* ‘only’ is added to the subject *hu*, resulting in a grammatical subject resumptive, parallel to what we observed in Slovenian above in (65). The addition of *rak* adds another projection between the overt pronoun *hu*’s overt position and its covert landing site, making this movement possible.

(70) **Grammatical highest subject resumptive with focus particle:** (Hadas Kotek, p.c.)

? ha-’iš [RC še= [rak hu] ’ohev ’arayot]
 the-man that only 3sgm loves lions
 literally ‘the man_i that only *he*_i loves lions’

Yet another way to increase the distance between a subject pronoun and the relative clause edge is to put them in a postverbal position. Consider the examples in the local subject relative clauses in (71). These examples involve a high register V2-like inversion structure, where another constituent is fronted to the preverbal position, leaving the subject postverbal. In this case, resumption is allowed.

(71) **Grammatical postverbal highest subject resumptives:** (Hadas Kotek, p.c.)

- a. ha-’iš [RC še= ’et matana natan hu le-Dina]
 the-man that ACC present gave 3sgm DAT-Dina
- b. ha-’iš [RC še= le-Dina natan hu ’et matana]
 the-man that DAT-Dina gave 3sgm ACC present
 ‘the man that gave the present to Dina’

The subjects in (71) could be thought of as occupying either (a) a lower, predicate-internal subject position or (b) their canonical Spec,TP position but with subsequent movement of the verb and another constituent to a higher position. In either case, the structural distance between the pronounced position of the subject relative pronoun and Spec,CP is increased, allowing for the necessary covert movement to Spec,CP without violating Spec-to-Spec Anti-Locality. These exceptions to the HSR in (69) and (71) are predicted by the anti-locality approach to the HSR, presented above.

The anti-locality approach also predicts that the ban on resumption will also apply to other arguments at the high relative clause edge, right under its Spec,CP covert landing site. This prediction is borne out in the behavior of long-distance subject relatives with internal topicalization. Consider the following data. First, we note that resumptive pronouns can themselves be fronted within the relative clause, even long-distance. This is illustrated with a long-distance object relative with resumptive in (72). The {...} notation indicates that the pronoun *’oto* can be pronounced in any of the {...} positions.

- (72) **Embedded fronting of object resumptive:** (based on Borer, 1984: 250–251)

ha-’iš [RC še= {’oto} Xana ’amra [CP še= {’oto} Dalya ma’amina [CP
the-man that ACC.3sgm Hannah said that ACC.3sgm Dalya believes
še= {’oto} Kobi pagaš {’oto}]]]
that ACC.3sgm Kobi met ACC.3sgm
‘the man that Hannah said that Dalya believes that Kobi met’

Now recall that embedded subject resumptives are grammatical in Hebrew, as in (50), repeated here in (73); we discuss why this is so in section 5 below. However, (74) shows that fronting of the resumptive to the edge of the relative clause leads to ungrammaticality:

- (73) **Embedded subject relative with resumption:** =(50)

ha-’iš [RC še= Xana ’amra [CP še= **hu** ’ohev ’arayot]
the-man that Hannah said.3sgf that 3sgm loves.3sgm lions
‘the man that Hannah said loves lions’

- (74) **Fronted embedded subjects are subject to the HSR:** (*ibid.*: 250)

* ha-’iš [RC še= **hu** Xana ’amra [CP še= ____ ’ohev ’arayot]]
the-man that 3sgm Hannah said that ____ loves lions
Intended: ‘the man that Hannah said loves lions’

The data in (72–74) raise two questions. First, why is the internally-fronted subject resumptive pronoun in (74) ungrammatical? I propose that this ungrammaticality is the same effect as the HSR: resumptive pronouns are pronouns in a head-external derivation (52) which then necessarily move covertly to the relative clause edge Spec,CP. The structure in (74) would require fronting of the embedded subject pronoun to the high edge of the relative clause’s highest clause, followed by covert movement to Spec,CP. This movement from Spec,FocusP to Spec,CP violates Spec-to-Spec Anti-Locality. This example shows that the HSR in Hebrew is not specifically a ban on resumptive pronouns for local subject extraction, in a manner predicted by the anti-locality approach to the HSR.

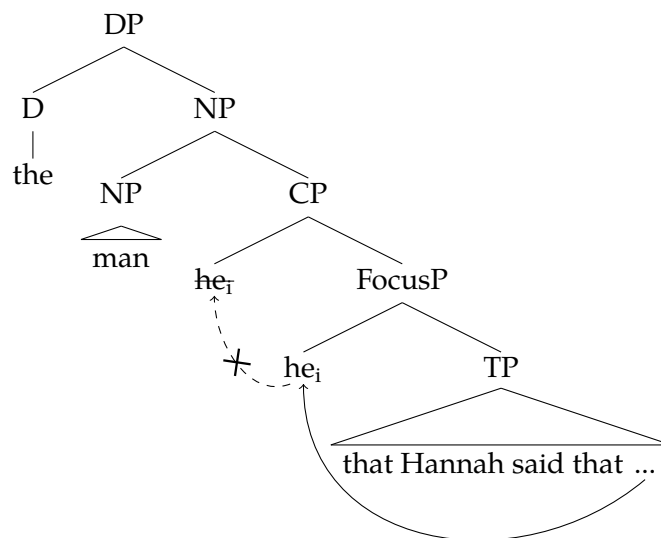
The second question that (72–74) raise is why this ban on high resumptives nonetheless only applies to subject pronouns (74) but not to object pronouns, as in (72). That is, the object resumptive *’oto* can be moved to the highest relative clause edge, preceding *Xana* in (72), unlike the subject resumptive *hu* in (74). I propose that this further subject/non-subject asymmetry is due to fact that subjects are the only nominals that are unambiguously preposition-less DP arguments in Hebrew. Pronouns in direct object position are generated with the DOM accusative marker *’et*, which in the examples here is realized together with the third singular masculine pronoun as *’oto*. Kotek 2014 shows that Hebrew *’et* is ambiguous between a preposition and a

case marker. The availability of a prepositional parse for *'et* allows for the high fronted direct object relative resumptives as in (72).

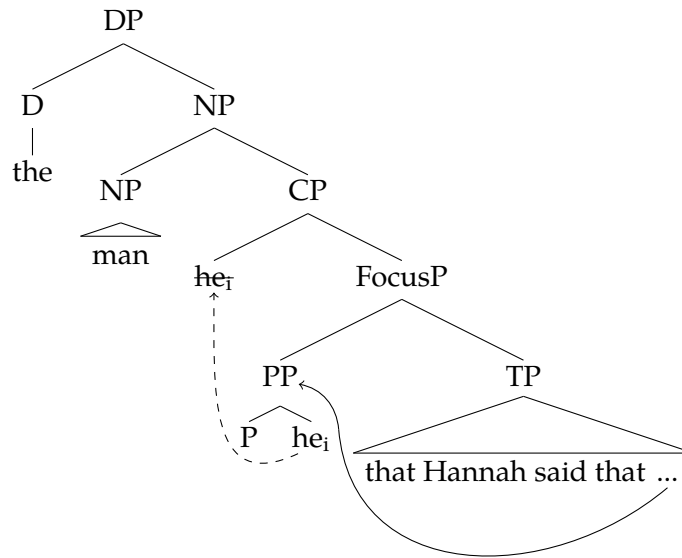
Consider the two head-external relative clause derivations in (75), following the derivation described in (52b) above, where the resumptive pronoun has been fronted to the edge of the relative clause's highest clause. The two derivations differ in whether or not the pronoun is bare or a prepositional object. For subject pronouns, there is no prepositional object option, and thus the only possibility would be the structure in (75a), where movement of the pronoun from its overt position to the relative clause edge violates Spec-to-Spec Anti-Locality. In contrast, object pronouns can be prepositional objects. Although the overt fronting within the relative clause moves the entire PP, as Hebrew has no option of preposition-stranding, covert movement of the pronoun to Spec,CP must be of the pronoun which matches the head noun, rather than the entire PP, as illustrated in (75b). Notice that this final movement step now crosses two maximal projections, PP and FocusP, and thus will not violate Spec-to-Spec Anti-Locality.

(75) **Two head-external relatives with pronouns in highest topic position:**

a. Bare pronoun:



b. Pronoun in PP, e.g. with accusative 'et:



In summary, we have seen that the Hebrew HSR exhibits the behaviors of an anti-locality-driven interaction: it is obviated by the addition of higher material and also applies to other, exceptionally high constituents. These behaviors are explained by optional resumptive pronouns being the result of a head-raising derivation (Sichel, 2014) with covert movement to the relative clause edge, as in (52b), with all movement being subject to Spec-to-Spec Anti-Locality. Along the way, we have established a new characterization for the Hebrew HSR as a ban on subject pronouns which are in the highest position inside the relative clause, rather than a ban specifically on local subject resumptive pronouns. The availability of object pronouns in this same high topic position also follows from the HSR's Spec-to-Spec Anti-Locality source, together with the independently motivated ambiguity of Hebrew accusative 'et as a case marker or preposition (Kotek, 2014). Finally, I note that we will return to the fact that the Hebrew ban on resumption only targets resumptives at the edge of the entire relative clause, not at embedded clause edges, in section 5.

4.3 Irish

This anti-locality-based approach to the HSR on optional resumption is also motivated by data from resumption in Irish. \bar{A} -dependencies in Irish famously allow for both gapped and resumptive dependencies, correlating with the use of different preverbal particles. Following the tradition in this literature, the morpheme associated with gapped dependencies is glossed a^L whereas the morpheme associated with resumptive dependencies is glossed a^N , where L and N reflect different phonological processes, and I will refer to both as complementizers. See especially McCloskey 1990, 2001b, 2002 and also Oda 2012 ch. 3 for background and an overview

of analytical approaches. This optional resumption is subject to the HSR: in local subject \bar{A} -dependencies, only the gapped strategy is available.

I assume following the discussion in Bianchi 2004 and Sichel 2014 that relativization with optional resumption in Irish also involves two different derivations: head-raising and head-external with movement. The head-raising derivation results in an unpronounced lower position (trace), whereas the head-external derivation yields resumption dependencies. As introduced above, and following Demirdache 1991, 1997, I propose that the resumptive pronoun move covertly to the edge of the relative clause. I discuss the precise geometry of this movement, and relevant assumptions regarding the formation of the Irish verb cluster, below.

I will first motivate the idea that Irish HSR is an anti-locality-based interaction and then discuss the precise derivation of Irish resumptive dependencies. Ó Baoill and Maki 2012 shows that the addition of certain high adjuncts obviates the HSR. Consider the local subject resumptive relatives in (76) below. (76b) below, which contrasts minimally with (76a), repeated from (48b) above. Here, the local subject relative ‘the man who was supposedly ill’ is grammatical with a resumptive pronoun, due to the addition of the conditional clause “if true,” translated as ‘supposedly.’

(76) **HSR obviation by conditional clause:**

- a. * an fear [RC a raibh sé breoite]
 the man a^N was he ill
 literally ‘the man that he was ill’ =(48b)
- b. ✓ an fear [RC a raibh sé breoite [más fíor]]
 the man a^N was he ill if+cop true
 literally ‘the man that he was supposedly ill.’ (Ó Baoill and Maki, 2012: 363)

Ó Baoill and Maki additionally present a range of other high adjuncts whose addition makes the resumptive strategy exceptionally available for highest subjects. Consider the baseline local subject *wh*-question in (77a), which is ungrammatical with resumption.³⁴ The addition of high epistemic temporal and comitative adjuncts in (77b) makes the same resumptive dependency grammatical.

(77) **HSR obviation by high adjuncts:** (ibid.: 363)

- a. * Cé [RC a-r imigh sé]?
 who a^{N-PAST} left he
 Intended: ‘Who left?’

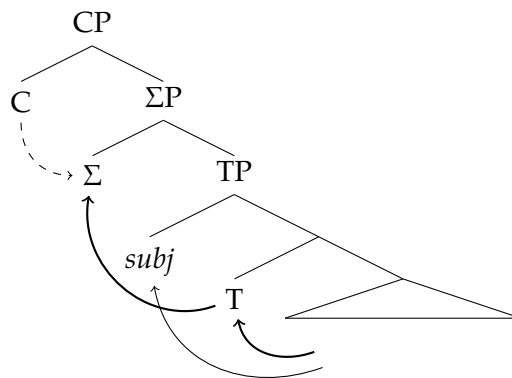
³⁴ Irish *wh*-questions also allow for both gaps and resumptive pronouns. I assume that there is an underlying process of relativization in *wh*-constructions, again allowing both head-raising and head-external derivations.

- b. ✓ Cé [RC a-r imigh sé {go hádhúil, is léir, is dócha, inné, trí lá
 who a^N-PAST left he fortunately evidently probably yesterday three days
 ó shin, in am, le Máire}]?
 ago in time with Mary
 ‘Who {fortunately, evidently, probably} left {yesterday, three days ago, in time,
 with Mary}?’

This obviation is also notable for the linear position of the additional material: in both (76) and (77), the additional material that obviates the HSR appears to the *right*, not linearly intervening between the resumptive pronoun and the edge of the clause. The contrasts here thus point to a *structural* source for the HSR, rather than a linear constraint.³⁵

To see how the anti-locality approach to the HSR derives the above facts, I now present my assumptions for Irish syntax and then discuss the derivation of resumptive relatives. Irish is famously VSO in finite clauses. A significant body of work on the syntax of Irish which has argued that the initial verb complex is formed by successive head movement of the verb root to a high inflectional head. Here I follow the recent proposal for Irish clause structure motivated at length in McCloskey 2017 and adopted in work such as Bennett, Elfner, and McCloskey 2016, where the high functional head that hosts the pronounced verb complex is a polarity head Σ (Laka, 1990).³⁶ Σ is projected in all finite clauses, whether affirmative or negative. The basic structure is schematized in (78) below, where the thicker arrows reflect steps of head movement to form the verbal complex.

(78) **Irish finite clause structure:**



³⁵ Note that some authors have offered a PF account for their obviation of complementizer-trace effects by higher adjuncts. These approaches suggest that there is a PF problem with the prosodic phrasing of complementizers followed by empty material (e.g. Kandybowicz, 2006, 2009; Sato and Dobashi, 2016; McFadden and Sundaresan, 2018). The data in (77) argues against such an approach, adapted for the HSR, which considers only the linear span between the edge of the clause and the pronoun.

³⁶ The later portion of McCloskey 2017 argues that the polarity head Σ as in (78) should in fact be split into Σ and another, higher tense-related head. There are various ways in which the analysis here could be adjusted to be com-

Two other details of this structure in (78) are of note. First, we note that the subject moves from a lower predicate-internal position to a higher, dedicated subject position. Although very early analyses of Irish assumed the postverbal subject to be in its predicate-internal position, such a movement of the subject to a dedicated position just below the pronounced position of the verb has been motivated by McCloskey 1996b, 2001a, 2014. In recent work such as McCloskey 2017 where a higher head (Σ) has been identified as the locus of the overt verbal complex, this derived subject position has been identified as Spec,TP. Second, I follow the view that the C head (e.g. a^N and a^L) lowers to the high functional head (Σ) just below it. This is indicated in (78) with a dashed line. See McCloskey 1996a for the initial motivation for this lowering account, but also Maki and Ó Baoill 2014 for critical discussion. Using both head-movement and lowering, we successfully derive the fact that “the combination of complementizer, inflectional element, and verb-stem is clearly a phonological word” (McCloskey, 1996a: 53), despite this material conventionally being written as multiple words.

I now elaborate on the analysis of Irish resumptive relatives, following the general logic presented above and successfully adopted for Serbo-Croatian, Slovenian, and Hebrew above. Relative clauses with resumptive pronouns involve an obligatory movement of the relative pronoun to the edge of the relative clause (Demirdache, 1991, 1997; Hladnik, 2015). I propose that this movement targets Spec, Σ P, so that it is in a position to be locally bound by the a^N complementizer which serves as its semantic binder index.³⁷ As proposed above and discussed in (52b), the pronoun will generally not be pronounced in its highest position, with one type of exception introduced in (81) below.³⁸

The structure of the grammatical object relative with resumption in (45b), repeated here as (79), is illustrated in (80) below. For presentational purposes, the movement and lowering steps illustrated in (78) and discussed above are in gray in (80).

patible with this final proposal of McCloskey’s, including simply analyzing this higher function and Σ as bundled into a single head in the tree, leaving us again safe to assume a structure as in (78).

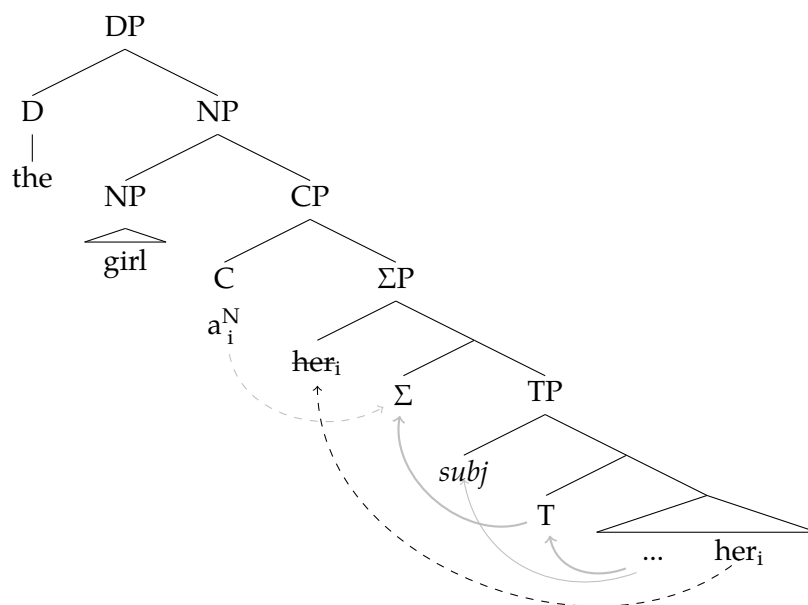
³⁷ $\llbracket a_i^N \alpha \rrbracket^g = \lambda x . \llbracket \alpha \rrbracket^{[i \mapsto x]||g}$, where $[i \mapsto x]||g$ is an assignment function that maps i to x but otherwise is equivalent to g . See the discussion of English *such that* relatives in Heim and Kratzer 1998 for an example of a lexicalized binder of this type. The “local” binding requirement of a^N — i.e. that the specifier of the complement of a_i^N be index i -dependent — must to my knowledge be enforced syntactically.

³⁸ The impossibility of pronouncing the pronoun in this high position accords with independently documented constraints on prosodic phrasing in Irish which sometimes have the result of postposing pronouns. See Bennett et al. 2016.

- (79) **Irish object relative with resumption:** =(45b)

an ghirseach [_{RC} a-r ghoid na síogaí í]
 the girl a^N-PAST stole the fairies her
 literally ‘the girl that the fairies stole away her’

- (80) **Object resumption in (79) via head-external derivation with movement:**



In very limited circumstances, the fronted resumptive in fact *can* be pronounced in this high. These “rather idiosyncratic conditions” are described in McCloskey 1979: 94–97. Roughly, this is in cases where the resumptive pronoun pied-pipes a preposition and where the head of the dependency is a light *wh* pronoun, although it is also shown that this option is historically attested with relative clauses as well. An example is reproduced in (81):

- (81) **In limited circumstances, the resumptive pronoun can be pronounced high:**

Cé [_{RC} leis_i a raibh tú ag caint ____]?
 who with.him a^N were you at talking
 ‘Who were you talking to?’

(McCloskey, 1979: 94)

As predicted by the analysis sketched in (80), the resumptive pronoun is pronounced to the left of the complementizer particle a^N, following lowering of C to the verbal complex.

Independent evidence for covert movement of in-situ resumptive pronouns, as in (80), comes from crossover effects reported in McCloskey 1990. The resumptive pronoun in (82) must be the pronoun *sé*, and this structure resists a reading where the higher epithet ‘the bastard’ is bound by the covertly crossing resumptive pronoun.³⁹

³⁹ Example (82) shows that the resumptive pronoun moves across ‘the bastard’ in the higher clause. As will be discussed below, I assume that the resumptive pronoun moves successive-cyclically through intermediate Spec,CP.

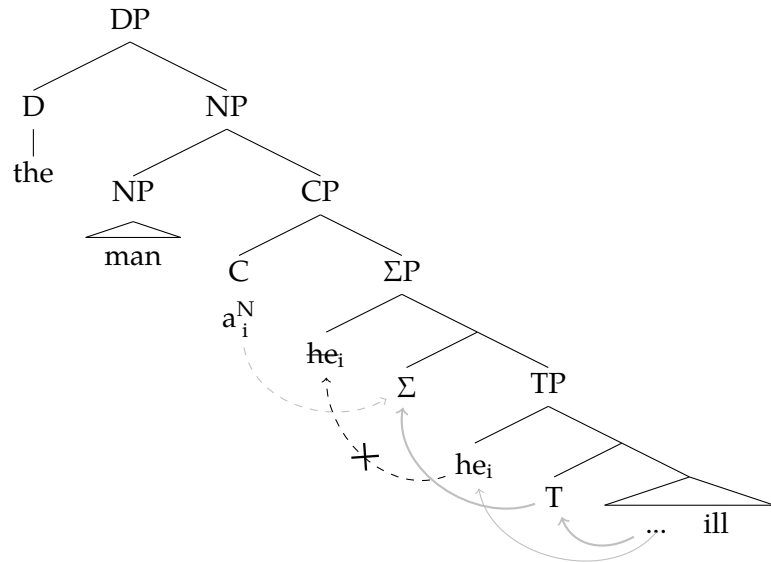
(82) **Irish resumptive relatives trigger crossover:**

(McCloskey, 1990)

* Sin [an fear [RC a-r dhúirt mé leis an bhastard_i [CP gur cheart é_i
 that the man a^N-PAST said I with the bastard C+COF right him
 a chaitheamh isteach i bpríosún]]].
 throw-INF into in prison

Int.: 'That is the man_i that I said to the bastard_i that he_i should be thrown in prison.'

Now consider the hypothetical derivation of a local subject relative with resumption in such as 'the man that he was ill' in (76a), illustrated in (83) below. Recall that subjects move to a dedicated higher position in the clause (McCloskey, 1996b *et seq*), just below the pronounced position of the verbal complex: here, Σ . The required movement of the subject pronoun from Spec,TP to Spec, Σ P will violate Spec-to-Spec Anti-Locality. This is the source of the ungrammaticality of local subject resumptives as in (76a).

(83) **Attempted subject resumption in (76a):**

This account naturally explains the obviation of the HSR by high adjuncts, presented above. Suppose these high adjuncts such as conditional clauses and epistemic, temporal, and committative adjuncts adjoin to TP via the projection of an additional functional layer between TP and Σ P.⁴⁰ Movement of the local subject pronoun from Spec,TP to Spec, Σ P as in (83) will no longer

Two points are worth making here. First, following the structure of Irish clauses in (78), movement of the pronoun from its pronounced position to the intermediate Spec,CP does not violate Spec-to-Spec Anti-Locality. Second, I propose below that such covert movement of resumptive pronouns does not trigger the a^L complementizer regularly associated with successive-cyclic movement, resulting in the unmarked declarative complementizer with copula *gur* here. See discussion of both points following (84) and in footnote 41 below.

⁴⁰ Technically, these adjuncts could also be thought of hosted in the specifiers of dedicated functional projections, but then obligatorily right-extraposed. I thank a reviewer for suggesting this possibility.

be too close, predicting the grammaticality of highest subject relatives with such high adjuncts, as reported in Ó Baoill and Maki 2012 and reproduced in (76) and (77) above.

Let us compare the proposed derivation for resumptive dependencies to the derivation of gapped dependencies. Recall that I follow the discussion in Bianchi 2004 and Sichel 2014 in taking dependencies with optional resumption to reflect two different derivations: a head-raising derivation which yields a gap and a head-external derivation which includes internal (generally covert) movement of a resumptive pronoun. These two structures as implemented for Irish are sketched in (84) below, in accordance with the basic structure for Irish clauses sketched in (78) above.

(84) **Head-raising vs head-external relative derivations in Irish:**

- a. $[_{DP} D [_{CP} NP \overset{\uparrow}{a^L} [_{\Sigma P} a^L=verb [_{TP} subject [\dots$
- b. $[_{DP} D [NP [_{CP} a_i^N [_{\Sigma P} pro_i a^N=verb [_{TP} subject [\dots$

An important feature of the proposal in (84) is the differing landing sites of movement in (84a,b). Movement of a local subject pronoun in a head-external derivation (84b) is banned as it will violate Spec-to-Spec Anti-Locality, unless additional functional material is projected between these projections, as we saw above. Movement of a local subject in a head-raising derivation (84a) will not violate Spec-to-Spec Anti-Locality, allowing for gapped local subject extraction. Likewise, in both gapped and resumptive long-distance dependencies, the head noun or pronoun will move successive-cyclicly through intermediate Spec,CPs. The required movement in long-distance subject relatives thus do not run afoul of Spec-to-Spec Anti-Locality, under either derivation. These features together derive the famed Highest Subject Restriction, as well as its exceptions.

I conclude with discussion of complementizer forms in Irish. I propose that the complementizer in the head-raising derivation (84a) is realized as a^L and the complementizer in the head-external derivation is realized as a^N . Both lower to the verbal complex pronounced at Σ . For the alternation between a^L and the unmarked declarative complementizers such as *go*, we can adopt the well-known analysis as in McCloskey 2002 where this correlates with the presence or absence of a movement-derived specifier. This accounts for the appearance of a^L at intermediate clause edges for gapped long-distance relatives.⁴¹ In contrast, a^N under my analysis does not itself regularly host a specifier, *pace* McCloskey, but is instead simply a lexicalized semantic binder index (footnote 37) which must locally bind a pronoun.

One advantage of the lower landing site for resumptive pronouns in (84b) is that it naturally allows for “mixed” chains of the form attested in (85). This relative clause exhibits a lower resumptive dependency with a^N and a pronoun and a higher a^L complementizer.

(85) **Irish mixed a^L - a^N relative:** (McCloskey, 2002: 198)

aon duine [RC a cheap sé [CP a raibh ruaine tobac **aige**]]
 any person a^L thought he a^N was scrap tobacco at.him
 ‘anyone that he thought had a scrap of tobacco’

The proposal above as in (84) allows us to immediately derive the example in (85). First, the resumptive pronoun moves to the inner edge of the embedded clause, being bound by a^N (84b). The head noun is generated right above it to semantically saturate the binder, then moving up in a head-raising derivation (84a). Moreover, the binder index semantics for a^N in footnote 37 yields the correct semantics for this structure.

(86) **Deriving the mixed relative in (85):**

[DP any [CP person a^L [Σ P a^L =thought [TP he [... [CP t a^N [Σ P at.him_T a^N =was [... at.him_i]]]]]]]]

The derivation in (86) would not be possible without the distinct positions for the moved resumptive pronoun (Spec, Σ P) and the edge of the clause (Spec,CP). This allows us to derive the structure in (85) while simultaneously maintaining that resumptive pronouns move to the edge of a^N dependencies and that a^L dependencies involve gaps formed by head-raising.

⁴¹ As noted above, I assume that long-distance gapped and resumptive relatives (in non-island contexts) involve successive-cyclic movement to the edge of the relative clause, although in the latter case, movement of the resumptive pronoun is generally covert. We therefore must tweak the specification for the realization of a^L so that it occurs only with *overt* movement chains. See Fox and Nissenbaum 2018 and Davis 2019 for motivation of the “Early De-termination” view that movement chains are known to be overt or covert from the bottom of the chain.

Preliminary evidence that supports such an account comes from example (i) below. Recall from (81) above that, under limited circumstances, the resumptive pronoun can front with a preposition to the edge of the relative clause. McCloskey (1979) gives (i) as an example of long-distance movement of such a resumptive pronoun, which is accepted by “most, but not all, speakers” (p. 95).

(i) Cé [RC **leis** a-r shíl tú [CP a bhí tú ag caint ____]]?
 who with.him a^N -PAST thought you a^L were you at talking
 ‘Who did you think you were talking to?’ (McCloskey, 1979: 95)

Of particular interest here is that the embedded clause edge has the a^L complementizer, instead of the *go*-type complementizer characteristic of embedded clauses in long-distance resumptive dependencies, as in (82). If movement of the resumptive pronoun to the intermediate clause edge is already known to be an overt movement, the appearance of this intermediate a^L is explained. The complementizer at the edge of the relative clause is the resumptive binder a^N , as expected. Recall that the complementizer lowers to Σ to form a phonological word with the verb; a^N is thus in the correct position to locally bind the overtly moved resumptive pronoun *leis* ‘with him.’

4.4 Summary

In this section I discussed restrictions on subject resumption in Serbo-Croatian, Slovenian, Hebrew, and Irish. In Serbo-Croatian and Slovenian, the restriction applies to both highest and embedded subject positions, whereas in Hebrew and Irish, the restriction famously holds only for local subject relativization. I argued that these restrictions are all reflections of Spec-to-Spec Anti-Locality, as evidenced by the fact that they can be obviated by the addition of high structural material above the subject position. In addition, in Hebrew, the restriction also applies to lower subjects that are fronted to the highest clause edge, where the HSR is observed.

I presented an analysis of different relativization types — combining the analysis of optional resumption in Bianchi 2004 and Sichel 2014 with the Demirdache 1991, 1997 proposal that resumptive pronouns also move to the edge, similar to what is independently proposed for Slavic languages in Hladnik 2015 — which then allows for these bans on subject resumption to follow from Spec-to-Spec Anti-Locality. This approach explains the obviation of these restrictions by additional structure. In addition, based on independently-motivated details regarding the clause structure of Irish, we explained why this logic only bans subject resumptives in local subject relatives. In the next section, we discuss this aspect of the Hebrew HSR, as well as other ways in which subject extraction behaviors can vary.

5 Explaining selective asymmetries

We have seen that three well-studied classes of subject extraction asymmetries — complementizer-trace effects, subject anti-agreement effects, and bans on subject resumption — in many different languages are amenable to an analysis based on anti-locality. These behaviors are often not all-or-nothing for a given language; they can be *selective*, for example only applying to local extraction, or only applying to particular \bar{A} -constructions. In this section, I discuss how we can account for such selectivity under the anti-locality approach to these effects.

Under the anti-locality-based approach to subject extraction asymmetries, subjects behave differently due to their high canonical position in the clause, making them too close to the edge of the clause. This is schematized in (87) below. Movement from Spec,TP to Spec,CP is not possible in (87a), as it violates the Spec-to-Spec Anti-Locality constraint on movement, and therefore the \bar{A} -extraction of subjects must take a different form. \bar{A} -extraction of non-subjects is generally unaffected by anti-locality, as they are extracted from lower in the clause (87b). Subjects can be made to behave on par with non-subjects, however, when additional material increases the distance of the subject extraction (87c).

(87) **Subject/non-subject extraction asymmetries through anti-locality:**

a. Anti-locality blocks straightforward subject \bar{A} -movement:

* [CP *subject* [TP _____ ...
 \uparrow ————— \times —————]

b. Movement of a non-subjects is unaffected:

✓ [CP *non-subject* [TP ... [... _____
 \uparrow —————]

c. Straightforward subject \bar{A} -movement becomes with intervening material:

✓ [CP *subject* [XP ... [TP _____ ...
 \uparrow —————]

The Spec-to-Spec Anti-Locality constraint adopted and advocated for here predicts that the addition of just a single additional projection is enough to make subject movement “long enough,” and thereby neutralize the subject/non-subject asymmetry. And indeed, in the case studies highlighted above, we have seen that the addition of a single adjunct or moved phrase — reflecting the addition of an optional AdvP, TopP, or similar projection (see discussion in section 2.2 above) — is enough to obviate the special behavior associated with subject extraction. Baier (2017) notes that such anti-locality-based theories are “*fragile*, in that they are very sensitive to minor differences in clause structure, both within a single language and crosslinguistically” (p. 368, emphasis his). This “fragility,” as we have seen, is a positive and welcome consequence of this anti-locality approach.

Building on this view, in this section, I propose that there are two main ways to account for the selectivity of an which anti-locality-driven subject extraction asymmetry: by varying the amount of functional structure projected in different clauses, and by varying the landing site of movement. We will see that both forms of variation are attested, and that their logic makes correct implicational predictions for the directionality of such selective behavior.

5.1 Variation in clause structure

Clauses of different types, within a single language, may vary in the richness of their functional projections. This is an intuition that has been developed most fruitfully in the literature on Main Clause Phenomena and its relation to cartographic structures. In this section, I will show how such independently-motivated differences in clause structure can productively explain the selectivity of subject extraction asymmetries.

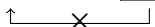
We begin by considering the variability in whether subject extraction behaves differently only for local extraction or also for long-distance extraction. As discussed in section 4.1, if we assume that long-distance movement proceeds successive-cyclically and that the embedded

clause edge is organized similarly — with no maximal projections separating the canonical subject position (Spec,TP) and the landing site of (successive-cyclic) movement (Spec,CP) — we predict the same subject/non-subject differentiation to also apply at the embedded clause edge for the long-distance movement of embedded subjects versus non-subjects. I proposed above that this is the case in Serbo-Croatian and Slovenian, where the ban on subject extraction applies to both local and long-distance relativization. The same can be said for subject anti-agreement in Fiorentino and Trentino, where the extraction of an embedded subject also triggers anti-agreement on the embedded verb (Brandi and Cordin, 1989).

However, it is also possible for a language to have embedded clauses, within an \bar{A} -construction, that are structurally richer than the topmost clause of the \bar{A} -construction itself. I illustrate this idea in (88) below, with the topmost clause of the \bar{A} -construction labeled $C_{TOP}P$ and embedded clauses within it labeled $C_{EMB}P$. If $C_{EMB}P$ includes an additional functional layer between the subject and the edge of the clause, long-distance subject movement will not be in danger of violating of Spec-to-Spec Anti-Locality, and therefore will be treated on par with non-subjects. The subject/non-subject asymmetry is then predicted to only hold of local extractions.

(88) **Embedded clauses with more structure \Rightarrow no asymmetry for l.d. movement:**

- a. Anti-locality differentiates local subject versus non-subject extraction:

* $[C_{TOP}P \text{ subject } [TP \text{ } ____ \text{ } \dots]$


- b. Anti-locality does not differentiate at embedded clause edges:

✓ $[C_{TOP}P \text{ subject } [TP \text{ } \dots [C_{EMB}P \text{ } ____ [XP \text{ } \dots [TP \text{ } ____ \text{ } \dots]$


Such a difference is one possibility for why the Hebrew ban on subject resumption only applies to the highest clause, although I also present an alternative possibility in the following section. This proposal would be supported by independent evidence for Hebrew relative clauses being structurally reduced as compared to its embedded clauses. I leave the identification of such diagnostics for future work.

Indirect support for this idea here — that the topmost clause of a particular structure may be reduced compared to embedded clauses that it dominates — comes from the literature on adverbial clauses. Haegeman 2006 discusses what she calls *central adverbial clauses*, which directly restrict the modal or temporal interpretation of an event. Haegeman shows that argument fronting inside this type of adjunct clause is unavailable in English:

(89) **No argument fronting in central adverbial clause:** (Haegeman, 2006: 33)

* [_{adjunct} While [this book] Mary was writing ____ this time last year], her children were staying with her mother.

But as noted by Bianchi and Frascarelli (2010) and discussed by Haegeman (2012: 115), argument fronting inside an embedded clause, *within* a central adjunct clause, is possible. In Haegeman's words, "since the relevant fronting is not in the adverbial clause as such but in an embedded domain it is indeed not expected to be unacceptable" (p. 115).

(90) **Argument fronting possible in embedded CP within central adverbial clause:**

(Bianchi and Frascarelli, 2010: 70)

He held back [_{adjunct} when I told him [_{CP} that [the staff], I myself would choose ____
(and the office, he would choose)]].

For Haegeman, this reflects a difference in the structural organization of these clauses: "central adverbial clauses have an impoverished CP" (Haegeman, 2006: 33) but this impoverishment does not extend to CPs embedded within them. The proposal sketched above in (88), as applied to the explanation of the Hebrew Highest Subject Restriction, would be another instance of this contrast.

The complementizer-trace effects that we have reviewed, as described above, specifically appear with long-distance movement, and therefore reflect an anti-locality-based interaction at these intermediate clause edges. But similar interactions are attested with local movement as well, for example in varieties of French with local *que/qui* alternations, as noted in Pesetsky 2017. The different organization of topmost clauses can also account for other interactions such as with the "anti-*that*-trace" effect of English subject relatives. See Douglas 2016, 2017 for a recent account for these effects in terms of Spec-to-Spec Anti-Locality, where a crucial ingredient is the availability of clauses with different amounts of functional structure.

Similarly, there are languages where subject anti-agreement only holds of local \bar{A} -extraction constructions but not their long-distance variants, including Tarifit Berber, Breton, and Turkish, all discussed in Ouhalla 1993. Here too, it may be that the topmost clauses of these structures are reduced as compared to their embedded clauses, leading to subject anti-agreement via anti-locality only in the instance of subject extraction from the highest clause. While further work on these languages must be carried out to independently motivate this difference in the structural organization of the topmost clause in these constructions versus their embedded clauses, Baier 2018 notes that "the asymmetry between local and long distance extraction with regards to anti-agreement in languages like Tarifit and Turkish is not predicted by any account of anti-

agreement,” potentially making the approach here the first concrete proposal to account for these asymmetries.

Similar constructions within a single language may also vary in the amount of functional material projected, and this may also be a source for selectivity. For example, it is known since at least Emonds 1979 that restrictive and non-restrictive (appositive) relatives differ in the availability of certain high adverbs. This is exemplified through the contrast in (91) below:

(91) ***Frankly* in non-restrictive relative but not restrictive relative:** (Emonds, 1979: 239)

- a. * The boys that have *frankly* lost their case should give up.
- b. The boys, who have *frankly* lost their case, should give up.

As *frankly* has the semantics of a speech-act modifier (see e.g. Ernst, 2002: 70–73), it must attach to a high, speech-act-related functional projection of the clause. Suppose this functional layer is projected in the edge of non-restrictive relatives but not restrictive relatives. This hypothesis immediately serves to explain the contrast in (91) above, and serves to account for other Main Clause Phenomena available in non-restrictive relatives but not restrictive relatives (Emonds, 1979).

Let us relate this contrast in (91) to our subject extraction asymmetries. Suñer 1992 notes that anti-agreement behavior in the Northern Italian dialects of Fiorentino and Trentino, described above in section 3, differs between restrictive and non-restrictive relatives. Specifically, whereas restrictive subject relatives trigger default, third singular masculine agreement (anti-agreement), non-subject relatives exhibit full agreement:

(92) **Selective anti-agreement in Fiorentino subject relatives:**

- a. Restrictive relative \Rightarrow subject anti-agreement: (Brandi and Cordin, 1989: 126)

le ragazze [_{RC} che { *le hanno, [✓]gli ha } parlato ieri alia riunione]
the girls C 3pl has.3PL 3sgm has.3SG spoken yesterday at the gathering
‘the girls who spoke yesterday at the gathering’

- b. Non-restrictive relative \Rightarrow no anti-agreement: (Suñer, 1992: 669)

La Maria, [_{RC} che { [✓]I’ ha, *gl’ ha } preso quattro in matematica], ...
the Maria C 3sgf has.3SG 3sgm has.3SG received four in math
‘Maria, who received a 4 in math, ...’

Assuming that the fine structure of relative clauses in (Northern) Italian resembles that of English above — with non-restrictive relatives projecting additional functional material, as compared to restrictive relatives — the contrast in (92) is explained by the anti-locality approach to anti-agreement. The projection of additional functional material in non-restrictive relatives will

allow for subject extraction to proceed via the agreeing Spec,TP position in the non-restrictive (92b) but not in the restrictive (92a).

5.2 Variation in the landing site

Another way in which constructions may vary, and thereby exhibit a subject extraction asymmetry in one case but not another, is in the precise position targeted by their \bar{A} -extraction. For example, let us suppose that all clauses under discussion in a language include an additional projection XP between TP and CP, but that one type of \bar{A} -extraction targets Spec,XP (93a), whereas another type targets Spec,CP (93b). This too would lead to a kind of selectivity: we predict a subject/non-subject extraction asymmetry for the former type of \bar{A} -movement (93a), but not the latter (93b).

(93) Varying the landing site of movement:

a. Lower landing site \Rightarrow subject extraction asymmetry:

* [CP ... [XP *subject* [TP ____ ...
 \uparrow X

b. Higher landing site \Rightarrow no asymmetry:

✓ [CP *subject* [XP ... [TP ____ ...
 \uparrow

This is, in effect, the outline of my explanation for why the Irish ban on subject resumption only holds of local relatives, in section 4.3 above. Based on prior work on the clause structure of Irish (e.g. McCloskey, 2017), I adopted the view that all Irish finite clauses have a structure with an additional projection, Σ P, consistently projected between CP and TP, with subjects hosted in Spec,TP; thus X in (93) is Σ . Σ is the locus of the pronounced verbal complex in Irish. Resumptive pronouns covertly move to Spec, Σ P at the relative clause edge, right below the relative complementizer. The ungrammaticality of (93a) thus underlies the ban on subject resumption for local embeddings. In contrast, long-distance movement involves movement of the resumptive pronoun through intermediate Spec,CP, and thus long subject movement will proceed through a (93b) derivation in the embedded clause. Therefore no subject/non-subject asymmetry is expected for long-distance movement.

This approach to selectivity could also be adopted for the distinction between Hebrew local and long-distance relativization as well. Suppose that both the topmost and embedded clauses in Hebrew relatives project an XP between TP and CP, and that resumptive pronouns covertly move to Spec,XP at the edge of the relative, as in (93a), whereas long-distance movement moves through intermediate Spec,CP, as in (93b). This too would derive the “highest” nature of the

Hebrew Highest Subject Restriction. It is worth noting that, for *wh*-movement constructions, Preminger 2010 independently proposes such a difference between the landing sites of overt *wh*-movement and intermediate *wh*-movement in Hebrew.

Variation in the landing site of movement could also account for selectivity between different \bar{A} -constructions in a single language. For example, Suñer 1992 observes that D-linked *wh*-phrase subjects in Fiorentino and Trentino are fully agreed with; i.e. they are not subject to subject anti-agreement. Example (94a) below repeats the basic anti-agreement data from (31) above. In contrast, example (94b) shows no anti-agreement with the fronted D-linked subject *wh*-phrase.

(94) **Selective anti-agreement in Fiorentino subject *wh*-fronting:**

- a. Non-D-linked *wh* \Rightarrow subject anti-agreement: =(31)

Quante ragazze {***le hanno**, \checkmark **gli ha**} parlato con te?
 How many girls 3pl has.3PL 3sgm has.3SG spoken with you
 ‘How many girls spoke with you?’

- b. D-linked *wh* \Rightarrow no anti-agreement: (Suñer, 1992: 660)

Quante de quelle ragazze **l’ hanno** parlato con te?
 How many of those girls 3pl has.3PL spoken with you
 ‘How many of the girls spoke with you?’

There is, however, an independent difference in the syntax of D-linked and non-D-linked *wh*-movement structures in Italian. Whereas *wh*-movement in Italian regularly triggers obligatory subject inversion (95a), D-linked *wh*-phrases are allowed to cooccur with preverbal subjects (95b). Brunetti 2002 attributes this observation to an early manuscript version of Manzini and Savoia 2005. See also Poletto and Pollock 2004: 278–281 for parallel observations and discussion.

(95) **Another effect of D-linking in Italian:** (Brunetti, 2002: 107)

- a. Non-d-linked *wh* \Rightarrow subject inversion:

- | | |
|---|--|
| i. Che cosa ti dirà Gianni?
what DAT.2SG say Gianni?
‘What will Gianni say to you?’ | ii. * Che cosa Gianni ti dirà?
what Gianni DAT.2SG say?
‘What will Gianni say to you?’ |
|---|--|

- b. D-linked *wh* \Rightarrow no subject inversion necessary:

Quale di questi due articoli Gianni ha letto?
 which of these two papers Gianni has.3SG read
 ‘Which of these two papers has Gianni read?’

Based on this and related observations, Brunetti 2002 argues that D-linked *wh*-phrases in Italian can target a higher landing site than that of non-D-linked *wh*-phrases. Poletto and Pollock 2004 develops a similar analysis in more detail, with a formalization of how this correlates with the presence or absence of subject inversion. See also Rizzi 2001 and Cecchetto 2004 for further evidence and suggestions that D-linked *wh*-phrases have different possible landing sites in Italian. For concreteness, following Brunetti's discussion, if D-linked *wh*-phrases differ in being able to target a higher landing site than non-D-linked *wh*-phrases, we predict that D-linked subject *wh*-phrases can move to their landing site from their agreeing Spec,TP position, without violating Spec-to-Spec Anti-Locality, as in (93b), whereas the movement of non-D-linked *wh*-subjects would necessarily force the "skipping" derivation discussed in section 3 above. This explains the selectivity of subject anti-agreement in Fiorentino observed in (94) above.

5.3 Summary

In this section I discussed the analysis of "selective" extraction asymmetries, which only apply to particular \bar{A} -extraction constructions, or only to their local variants, versus those which are not selective in this way. Following the anti-locality-based analysis of these effects, I sketched two possible manipulations which could lead to such sensitivity: varying the size of different types of clauses and varying the landing site of different movements. Each of these forms of variation have been independently proposed for various languages and constructions, and we have seen their positive predictions for the modeling of selective extraction asymmetries.

The discussion here not only offers an approach to such selective quirks of subject extraction, but it also can productively explain the *direction* of their selectivity. Suppose two clause types are independently known to vary in the richness of their left peripheries. If the language has a selective quirk of subject extraction, the anti-locality-based analysis makes a prediction: the special quirk will distinguish subject extraction from non-subject extraction in the structurally smaller clause, but not in the larger clause. This correctly predicts some subject extraction asymmetries in various languages to only apply to local \bar{A} -extraction, not both local and long-distance, or only in restrictive relatives but not in non-restrictive relatives. Similarly, if we independently know that the landing site of movement is farther up in one type of clause or construction than in another, a selective extraction asymmetry is predicted to be active in the case with the lower landing site, with the landing site of movement is just above the subject position, but not in the structure with the higher landing site. This correctly predicts the direction of selectivity in the Irish ban on subject resumption and for D-linked versus non-D-linked *wh*-movement in Northern Italian varieties.

For many alternative accounts to the subject extraction behaviors discussed here, it is not obvious how such selectivity could be analyzed, let alone how the directionality of selectivity is explained. For concreteness, consider the Baier 2018 morphological impoverishment approach to anti-agreement effects. This theory accounts for anti-agreement by positing different morphological impoverishment rules targeting different combinations of \bar{A} - and ϕ -features on a single probe, with broad empirical coverage. Selectivity can be modeled by distinct impoverishment rules for different environments, for example with distinct impoverishment rules applying to matrix clauses versus embedded clauses (see e.g. Baier, 2018: 194). But this approach leads to no *a priori* expectations about the direction of such differences, or how such selectivity could be predicted based on independent differences in clause type. The positive predictions that my approach makes for the direction of selectivity is a significant strength of the anti-locality-driven approach to subject/non-subject extraction asymmetries developed here.

And perhaps the most important prediction of all is that it is subject extraction, not non-subject extraction, which the grammar treats in an exceptional way. In cases where a particular extraction asymmetry does not apply — for example, by adding higher projections, or in an embedded clause or a particular \bar{A} -extraction — in all of the asymmetries described here and indeed in all such extraction asymmetries that I am aware of, the result is that subject extraction changes to behave like non-subject extraction. Uniformity is not achieved by non-subject extraction suddenly behaving like subject extraction. This too is explained naturally under the anti-locality-based approach. Subjects are regularly exceptionally high in the clause, uniquely too close to the edge, and therefore it is subject extraction that necessitates an exceptional repair or variant derivation. Non-subject extraction is the “normal” case.

6 Conclusion

Subject extraction asymmetries have been a major focus of investigation in generative syntax over the past forty years. In this paper I’ve advocated that many of these subject extraction asymmetry behaviors have a common source: subjects are uniquely high in the clause (e.g. in Spec,TP), making their movement to the clause edge (e.g. Spec,CP) *too close*, violating an anti-locality constraint on movement. I developed and motivated anti-locality-based explanations for three of the most well-studied subject extraction asymmetries — complementizer-trace effects, anti-agreement effects, and bans on subject resumption, including Highest Subject Restrictions — using the Spec-to-Spec Anti-Locality constraint on movement (Erlewine, 2016; Bošković, 2016; Deal, 2019; a.o.).

If a particular subject extraction asymmetry is due to anti-locality, we predict it to exhibit a particular signature. These predicted properties are repeated here in (96):

(96) **The anti-locality signature of subject extraction asymmetries:** = (5)

Suppose a particular behavior α is canonically associated with the extraction of subjects, but not of non-subjects. If this behavior α is due to Spec-to-Spec Anti-Locality (2), we may expect to observe:

- a. obviation of α when additional material is added above the subject position,
- b. the application of α to the extraction of non-subjects that are exceptionally high, and
- c. no correlation of α with other subjecthood properties such as case.

Each of the subject extraction behaviors studied here bears out these predictions, in various languages. Complementizer-trace effects are famously obviated by the addition of structurally high adjuncts, and also apply to non-subjects such as PPs in locative inversion and Yiddish prefield constituents. Anti-agreement effects are also famously obviated by high negation, but not low negation, as observed by Ouhalla (1993), and also extends to transitive objects in languages where they are exceptionally high. Bans on subject resumption are also sensitive to obviation by higher material, with Hebrew fronting examples also showing the importance of the overt position of resumptive pronouns, not simply local subject status. Along the way, I offered concrete analyses for each of these effects based on Spec-to-Spec Anti-Locality, which may be thought of as templates for proposals for other extraction asymmetries as well. And finally, I have shown how the “selectivity” of some such extraction asymmetries can be naturally explained through independent differences in the structure of different clause types and \overline{A} -constructions.

The intuition that movement is not allowed to be too short has been proposed in a number of previous works, but with different formulations, for different applications. Pesetsky and Torrego 2001 and Abels 2003 argue against movement from the complement of X to Spec,XP (*Comp-to-Spec*); see also Kayne 2005. Saito and Murasugi 1999 argues against the adjunction of Spec,XP to XP (*Spec-to-Adj*). Saito and Murasugi 1999; Bošković 1994, 1997, 2005 then propose that movement must cross at least one phrase, which unifies *Comp-to-Spec* and *Spec-to-Adj*; see also Boeckx 2009. Grohmann 2003 proposes a ban against movement within certain “prolific domains” of the clause, roughly corresponding to the (extended) *v*P, TP, and CP regions of the clause. For a review of formulations from the 90’s and 2000’s, see Grohmann 2011.

Of these, the behavior reflected in subject extraction asymmetries reviewed here is best ac-

counted for by the Spec-to-Spec formulation of anti-locality. The proposed bans on Comp-to-Spec or Spec-to-Adj movement are not relevant for regulating the particular movement configurations considered here. Grohmann’s (2003) “prolific domains” formulation of anti-locality has been invoked for previous accounts of subject extraction asymmetries in Schneider-Zioga 2007 and Cheng 2006, but it is specifically designed to allow for movement from the canonical subject position (in the inflectional/ Φ -domain) to the clause edge (in the discourse/ Ω -domain), regardless of the precise amount of material between these positions, and therefore also cannot straightforwardly model the interactions documented here.

What makes Spec-to-Spec Anti-Locality the most appropriate formulation for the analysis of subject extraction asymmetries is its fragility: it only takes a single extra projection to affect the behavior of subject extraction, and we have indeed seen this to be the case. This fragility then also makes it easy to determine whether or not a particular extraction asymmetry should be attributed to the effects of such an anti-locality constraint. This point is also made by Deal (2019): “As a theoretical matter, I suggest we should welcome this aspect of the theory: fragility means straightforward falsifiability, which is a virtue” (p. 408 fn. 27). To that end, I note the possibility that not all subject extraction asymmetries are necessarily due to anti-locality. For example, Baier 2017 argues that anti-agreement effects in Tarifit Berber are not amenable to an analysis in terms of anti-locality in the manner I described in section 3. Alternative analyses also exist for other case studies presented here as well, and it is further possible that some of these phenomena have different sources in different languages. But we’ve seen here that Spec-to-Spec Anti-Locality *does* appear to be the right motivation for a number of subject extraction asymmetries in the world’s languages, which bear out the characteristics in (96). In contrast, prominent alternative proposals attribute such asymmetries to other “subjecthood” properties, such as a relationship with T/Subj (Pesetsky and Torrego, 2001; Rizzi, 2006) or their morphological case (Deal, 2017). Under these alternative approaches, explaining the apparent anti-locality signature of these behaviors, highlighted here, poses a challenge. The existence of many subject extraction asymmetries with this signature suggests that a constraint such as Spec-to-Spec Anti-Locality is necessary in diverse languages of the world.

References

- Abe, Jun. 2015. The EPP and subject extraction. *Lingua* 159:1–17.
- Abels, Klaus. 2003. Successive cyclicity, anti-locality, and adposition stranding. Doctoral Dissertation, University of Connecticut.
- Adger, David. 2003. *Core syntax: A minimalist approach*. Oxford University Press.
- Aissen, Judith. 1975. Presentational-*there* insertion: A cyclic root transformation. In *Proceedings of CLS 11*, 1–14.
- Aldridge, Edith. 2017. ϕ -feature competition: A unified approach to the Austronesian extraction restriction. In *Proceedings of CLS 52*, ed. Jessica Kantarovich, Tran Truong, and Orest Xherija, 1–20.
- Amaechi, Mary, and Doreen Georgi. 2019. Quirks of subject (non-)extraction in Igbo. *Glossa* 4:1–36.
- Aoun, Joseph, Lina Choueiri, and Norbert Hornstein. 2001. Resumption, movement, and derivational economy. *Linguistic Inquiry* 32:371–403.
- Baier, Nico. 2017. Antilocality and antiagreement. *Linguistic Inquiry* 48:367–377.
- Baier, Nico. 2018. Anti-agreement. Doctoral Dissertation, University of California Berkeley.
- Baier, Nico, and Michelle Yuan. 2017. Anti-agreement with bound variables. In *Proceedings of WCCFL 35*, ed. William G. Bennett, Lindsay Hracs, and Dennis Ryan Storoshenko, 96–103.
- Barss, Andrew. 1986. Chains and anaphoric dependence. Doctoral Dissertation, Massachusetts Institute of Technology.
- Belletti, Adriana. 2004. Aspects of the low IP area. In Rizzi (2004), 16–51.
- Bennett, Ryan, Emily Elfner, and James McCloskey. 2016. Lightest to the right: An apparently anomalous displacement in Irish. *Linguistic Inquiry* 47:169–234.
- Bianchi, Valentina. 2004. Resumptive relatives and LF chains. In Rizzi (2004), 76–114.
- Bianchi, Valentina, and Mara Frascarelli. 2010. Is topic a root phenomenon? *Iberia* 2:43–88.
- Bittner, Maria, and Kenneth Hale. 1996a. Ergativity: towards a theory of a heterogeneous class. *Linguistic Inquiry* 27:531–604.
- Bittner, Maria, and Kenneth Hale. 1996b. The structural determination of case and agreement. *Linguistic Inquiry* 27:1–68.
- Bobaljik, Jonathan, and Susi Wurmbrand. 2005. The domain of agreement. *Natural Language & Linguistic Theory* 23:809–865.
- Boeckx, Cedric. 2009. *Understanding minimalist syntax: Lessons from locality in long-distance dependencies*. John Wiley & Sons.
- Boef, Eefje, and Irene Franco. 2012. On the morphosyntax of complementizer-trace effects.

Presented at the 25th Scandinavian Conference of Linguistics.

- Borer, Hagit. 1984. Restrictive relatives in Modern Hebrew. *Natural Language & Linguistic Theory* 2:219–260.
- Borsley, Robert D., Maggie Tallerman, and David Willis. 2007. *The syntax of Welsh*. Cambridge University Press.
- Bossi, Madeline, and Michael Diercks. 2019. V1 in Kipsigis: Head movement and discourse-based scrambling. *Glossa* 4:1–43.
- Bošković, Željko. 1994. D-structure, θ -theory, and movement into θ -positions. *Linguistic Analysis* 24:247–286.
- Bošković, Željko. 1997. *The syntax of nonfinite complementation: An economy approach*. MIT Press.
- Bošković, Željko. 2001. *On the nature of the syntax-phonology interface: Cliticization and related phenomena*. Elsevier.
- Bošković, Željko. 2002. On multiple *wh*-fronting. *Linguistic Inquiry* 33:351–383.
- Bošković, Željko. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59:1–45.
- Bošković, Željko. 2009. On relativization strategies and resumptive pronouns. In *Studies in formal Slavic phonology, morphology, syntax, semantics, and information structure:: Proceedings of FDSL 7*, ed. Gerhild Zybatow, Uwe Junghanns, Denisa Lenertova, and Petr Biskup, 79–92. Peter Lang.
- Bošković, Željko. 2014. Now I’m a phase, now I’m not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45:27–89.
- Bošković, Željko. 2016. On the timing of labeling: Deducing comp-trace effects, the subject condition, the adjunct condition, and tucking in from labeling. *The Linguistic Review* 33:17–66.
- Branan, Kenyon. 2020. Locality and anti-locality: The logic of conflicting requirements. Manuscript, National University of Singapore.
- Brandi, Luciana, and Patrizia Cordin. 1989. Two Italian dialects and the null subject parameter. In Jaeggli and Safir (1989), 111–142.
- Branigan, Phil. 2005. The Trace-Fin effect. Manuscript, Memorial University.
- Bresnan, Joan. 1977. Variables in the theory of transformations. In *Formal syntax*, ed. Peter Culicover, Thomas Wasow, and Adrien Akmajian, 157–196. Academic Press.
- Bresnan, Joan. 1994. Locative inversion and the architecture of universal grammar. *Language* 70:72–131.
- Brillman, R. J., and Aron Hirsch. 2016. An anti-locality account of English subject/non-subject

- asymmetries. In *Proceedings of CLS 50*, ed. Ross Burkholder, Carlos Cisneros, Emily R. Coppess, Julian Grove, Emily A. Hanink, Hilary McMahan, Cherry Meyer, Natalia Pavlou, Özge Sarıgül, Adam Roth Singerman, and Anqi Zhang, 73–88.
- Browning, Margaret A. 1996. CP recursion and *that-t* effects. *Linguistic Inquiry* 27:237–255.
- Bruening, Benjamin. 2010. Language-particular syntactic rules and constraints: English locative inversion and *do*-support. *Language* 86:43–84.
- Brunetti, Lisa. 2002. On the differences between two focus positions in Italian. In *Quaderni del Dipartimento di Linguistica - Università di Firenze*, volume 12, 97–111.
- Campos, Héctor. 1997. On subject extraction and the antiagreement effect in Romance. *Linguistic Inquiry* 28:92–119.
- Cecchetto, Carlo. 2004. Remnant movement in the theory of phases. In Rizzi (2004), 166–189.
- Cheng, Lisa Lai-Shen. 2006. Decomposing Bantu relatives. In *Proceedings of NELS 36*.
- Chomsky, Noam. 1973. Conditions on transformations. In *A festschrift for Morris Halle*, ed. Stephen R. Anderson and Paul Kiparsky. New York: Holt, Reinhart, and Winston.
- Chomsky, Noam. 2008. On phases. In *Foundational issues in linguistic theory: Essays in honor of Jean-Roger Vergnaud*, ed. Robert Freidin, Carlos P. Otero, and Maria-Luisa Zubizarreta, 133–166. MIT Press.
- Cinque, Guglielmo. 1999. *Adverbs and functional heads*. Oxford University Press.
- Culicover, Peter W. 1993. Evidence against ECP accounts of the *that-t* effect. *Linguistic Inquiry* 24:557–561.
- Davis, Colin. 2019. What parasitic gaps reveal about overlapping a-bar chains, tucking-in, and the path containment condition. Presented at NELS 50.
- Deal, Amy Rose. 2017. Syntactic ergativity as case discrimination. In *Proceedings of WCCFL 34*, ed. Aaron Kaplan, Abby Kaplan, Miranda K. McCarvel, and Edward J. Rubin, 141–150.
- Deal, Amy Rose. 2019. Raising to ergative: Remarks on applicatives of unaccusatives. *Linguistic Inquiry* 50:388–415.
- Demirdache, Hamida. 1997. Dislocation, resumption, and weakest crossover. In *Materials on left dislocation*, ed. Elena Anagnostopoulou, Henk van Riemsdijk, and Frans Zwarts, 193–231. John Benjamins.
- Demirdache, Hamida Khadiga. 1991. Resumptive chains in restrictive relatives, appositives, and dislocation structures. Doctoral Dissertation, Massachusetts Institute of Technology.
- Diercks, Michael. 2017. Locative inversion. In Everaert and van Riemsdijk (2017).
- Diesing, Molly. 1990. Verb movement and the subject position in Yiddish. *Natural Language & Linguistic Theory* 8:41–79.

- Doron, Edit. 1982/2011. The syntax and semantics of resumptive pronouns. In *Texas Linguistics Forum* 19, 1–48. Reprinted in Alain Rouveret (ed.), *Resumptive pronouns at the interface*, John Benjamins, 2011, pages 289–318.
- Douglas, Jamie. 2017. Unifying the *that*-trace and anti-*that*-trace effects. *Glossa* 2:1–28.
- Douglas, Jamie Alexander. 2016. The syntactic structures of relativization. Doctoral Dissertation, University of Cambridge.
- Emonds, Joseph. 1979. Appositive relatives have no properties. *Linguistic Inquiry* 10:211–243.
- Engdahl, Elisabet. 1983. Parasitic gaps. *Linguistics and Philosophy* 6:5–34.
- Erlewine, Michael Yoshitaka. 2014. Anti-locality and Kaqchikel Agent Focus. In *Proceedings of the 31st West Coast Conference on Formal Linguistics (WCCFL 31)*, ed. Robert E. Santana-LaBarge, 150–159.
- Erlewine, Michael Yoshitaka. 2016. Anti-locality and optimality in Kaqchikel Agent Focus. *Natural Language & Linguistic Theory* 34:429–479.
- Erlewine, Michael Yoshitaka. 2017. Why the null complementizer is special in complementizer-trace effects. In *A pesky set: Papers for David Pesetsky*, ed. Claire Halpert, Hadas Kotek, and Coppe van Urk, 371–380. MIT Working Papers in Linguistics.
- Erlewine, Michael Yoshitaka. 2018. Extraction and licensing in Toba Batak. *Language* 94:662–697.
- Ernst, Thomas. 2002. *The syntax of adjuncts*. Cambridge University Press.
- Everaert, Martin, and Henk van Riemsdijk, ed. 2017. *Blackwell Companion to Syntax*. Wiley-Blackwell, second edition.
- Fillmore, Charles J. 1963. The position of embedding transformations in a grammar. *Word* 19:208–231.
- Fox, Danny, and Jon Nissenbaum. 2018. Pied-piping and covert movement: Evidence from parasitic gap licensing. Presented at the Hebrew University, December 2018.
- Fox, Danny, and David Pesetsky. 2005. Cyclic linearization of syntactic structure. *Theoretical Linguistics* 31:1–45.
- Franks, Steven. 1998. Clitics in Slavic. Paper presented at the Comparative Slavic Morphosyntax Workshop, Indiana University, Bloomington.
- Gilligan, Gary Martin. 1987. A cross linguistic approach to the pro-drop parameter. Doctoral Dissertation, University of Southern California.
- Giorgi, Alessandra, and Fabio Pianesi. 1996. *Tense and aspect: From semantics to morphosyntax*. Oxford University Press.
- Gračanin-Yuksek, Martina. 2013. The syntax of relative clauses in Croatian. *The Linguistic Review* 30:25–49.

- Grohmann, Kleanthes K. 2003. *Prolific domains: On the anti-locality of movement dependencies*. John Benjamins.
- Grohmann, Kleanthes K. 2011. Anti-locality: Too close relations in grammar. In *Oxford handbook of linguistic minimalism*, ed. Cedric Boeckx, 260–290. Oxford University Press.
- Haegeman, Liliane. 2006. Argument fronting in English, Romance CLLD and the left periphery. In *Cross-linguistic research in syntax and semantics: negation, tense and clausal architecture*, ed. Raffaella Zanuttini, Héctor Campos, Elena Herburger, and Paul H. Portner, 27–52. Georgetown University Press.
- Haegeman, Liliane. 2012. The syntax of MCP: Deriving the truncation account. In *Main clause phenomena: New horizons*, ed. Lobke Aelbrecht, Liliane Haegeman, and Rachel Nye, 113–134. John Benjamins.
- Hale, Kenneth, and Luciana Storto. 1996. Agreement and spurious antipassives. Manuscript, MIT.
- Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Malden, Massachusetts: Blackwell.
- Hladnik, Marko. 2015. Mind the gap: Resumption in Slavic relative clauses. Doctoral Dissertation, Utrecht University.
- Hsu, Brian. to appear. Coalescence: A unification of bundling operations in syntax. *Linguistic Inquiry*.
- Ishii, Toru. 2004. The phase impenetrability condition, the vacuous movement hypothesis, and *that*-trace effects. *Lingua* 114:183–215.
- Issah, Samuel A., and Peter W. Smith. 2020. Subject and non-subject *ex-situ* focus in Dagbani. *Glossa* 5:4.
- Jaeggli, Osvaldo, and Ken Safir, ed. 1989. *The null subject parameter*. Kluwer.
- Kandybowicz, Jason. 2006. Comp-trace effects explained away. In *Proceedings of WCCFL 25*, ed. Donald Baumer, David Montero, and Michael Scanlon, 220–228.
- Kandybowicz, Jason. 2008. *The grammar of repetition: Nupe grammar at the syntax-phonology interface*.
- Kandybowicz, Jason. 2009. Embracing edges: syntactic and phono-syntactic edge sensitivity in Nupe. *Natural Language & Linguistic Theory* 27:305–344.
- Kayne, Richard. 2005. Some notes on comparative syntax, with special reference to English and French. In *The Oxford handbook of comparative syntax*, ed. Guglielmo Cinque and Richard Kayne, 3–69. Oxford University Press.
- Kayne, Richard, and Jean-Yves Pollock. 2001. New thoughts on stylistic inversion. In *Subject*

- inversion in Romance and the theory of Universal Grammar*, ed. Aafke C.J. Hulk and Jean-Yves Pollock, 107–162. Oxford University Press.
- Kenstowicz, Michael. 1983. The null-subject parameter in modern Arabic dialects. In *Proceedings of NELS 14*, ed. Charles Jones and Peter Sells, 207–219.
- Kenstowicz, Michael. 1989. The null subject parameter in modern Arabic dialects. In Jaeggli and Safir (1989), 263–275.
- Kotek, Hadas. 2014. *Wh*-fronting in a two-probe system. *Natural Language & Linguistic Theory* 32:1105–1143.
- Laka, Miren Itziar. 1990. Negation in syntax: on the nature of functional categories and projections. Doctoral Dissertation, Massachusetts Institute of Technology.
- Legate, Julie Anne. 2011. Under-inheritance. Presented at NELS 42.
- Lohndal, Terje. 2009. *Comp-t* effects: Variation in the position and features of C. *Studia Linguistica* 63:204–232.
- Löwenadler, John. 2012. Form deviation and constraints on productivity: A study of comp-gap intervention effects in English and Swedish. *Constructions and Frames* 4:186–230.
- Maki, Hideki, and Dónall P. Ó Baoill. 2014. Embedded topicalization in Irish. *English Linguistics* 130–148.
- Manzini, Maria Rita, and Leonardo Maria Savoia. 2005. *I dialetti italiani e romanci: Morfosintassi generativa*. dell’Orso.
- Martinović, Martina. 2015. Feature geometry and head-splitting: Evidence from the morphosyntax of the Wolof clausal periphery. Doctoral Dissertation, University of Chicago.
- McCloskey, James. 1979. *Transformational syntax and model theoretic semantics: A case study in Modern Irish*. Dordrecht: Reidel.
- McCloskey, James. 1990. Resumptive pronouns, A-bar binding, and levels of representation in Irish. In *The syntax of the modern Celtic languages*, volume 23 of *Syntax and Semantics*, 199–248. Academic Press.
- McCloskey, James. 1996a. On the scope of verb movement in Irish. *Natural Language & Linguistic Theory* 14:47–104.
- McCloskey, James. 1996b. Subjects and subject positions in Irish. In *The syntax of the Celtic languages: A comparative perspective*, ed. Robert D. Borsley and Ian Roberts, 241–283.
- McCloskey, James. 2001a. The distribution of subject properties in Irish. In *Objects and other subjects*, ed. William D. Davies and Stanley Dubinsky, 157–192. Springer.
- McCloskey, James. 2001b. The morphosyntax of *wh*-extraction in Irish. *Journal of Linguistics* 37:67–100.

- McCloskey, James. 2002. Resumption, successive cyclicity, and the locality of operations. In *Derivation and explanation in the minimalist program*, ed. Samuel David Epstein and T. Daniel Seely, 184–226. Blackwell.
- McCloskey, James. 2014. Irish existentials in context. *Syntax* 17:343–384.
- McCloskey, James. 2017. Ellipsis, polarity, and the cartography of verb-initial orders in Irish. In *Elements of comparative syntax: Theory and description*, ed. Enoch Aboh, Eric Haeberli, Genoveva Puskás, and Manuela Schönenberger, 99–151. De Gruyter Mouton.
- McFadden, Thomas, and Sandhya Sundaresan. 2018. What the EPP and Comp-trace effects have in common: Constraining silent elements at the edge. *Glossa* 3:1–34.
- Messick, Troy. 2020. The derivation of highest subject questions and the nature of the EPP. *Glossa* 5:1–12.
- Ó Baoill, Dónall P., and Hideki Maki. 2012. On the Highest Subect Restriction in Modern Irish. *English Linguistics* 29:357–368.
- Oda, Kenji. 2012. Issues in the left periphery of Modern Irish. Doctoral Dissertation, University of Toronto.
- Ouali, Hamid. 2008. On C-to-T feature transfer: the nature of agreement and anti-agreement in Berber. In *Agreement restrictions*, ed. Roberta D'Alessandro, 159–180. Mouton de Gruyter.
- Ouhalla, Jamal. 1993. Subject-extraction, negation, and the anti-agreement effect. *Natural Language & Linguistic Theory* 11:477–518.
- Perlmutter, David M. 1968. Deep and surface constraints on syntax. Doctoral Dissertation, Massachusetts Institute of Technology.
- Pesetsky, David. 2017. Complementizer-trace effects. In Everaert and van Riemsdijk (2017).
- Pesetsky, David, and Esther Torrego. 2001. T-to-C movement: Causes and consequences. In *Ken Hale: A life in language*, ed. Michael Kenstowicz, 355–425. MIT Press.
- Poletto, Cecilia, and Jean-Yves Pollock. 2004. On the left periphery of some Romance *wh*-questions. In Rizzi (2004), 251–296.
- Postal, Paul M. 1994. Contrasting extraction types. *Journal of Linguistics* 30:159–186.
- Postal, Paul M. 2004. A paradox in English syntax. In *Skeptical linguistic essays*, 15–82. Oxford University Press.
- Preminger, Omer. 2010. Nested interrogatives and the locus of *wh*. In *The complementizer phase: subjects and operators*, ed. E. Phoevos Panagiotidis, 200–235. Oxford University Press.
- Rizzi, Luigi. 1982. *Issues in Italian syntax*. Foris, Dordrecht.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar*, ed. Liliane Haegeman, 281–337. Kluwer Academic Publishers.

- Rizzi, Luigi. 2001. Reconstruction, weak island sensitivity, and agreement. In *Semantic interfaces*, 145–176. CSLI Publications.
- Rizzi, Luigi, ed. 2004. *The structure of CP and IP*. Oxford University Press.
- Rizzi, Luigi. 2006. On the form of chains: Criterial positions and ECP effects. In *Wh-movement: Moving on*, ed. Lisa Lai-Shen Cheng and Norbert Corver, 97–133. MIT Press.
- Rizzi, Luigi. 2014. Some consequences of criterial freezing: Asymmetries, anti-adjacency, and extraction from cleft sentences. In *Functional structure from top to toe*, ed. Peter Svenonius, volume 9 of *The Cartography of Syntactic Structures*, 19–45. Oxford University Press.
- Rizzi, Luigi, and Uri Shlonsky. 2007. Strategies of subject extraction. In *Interfaces + recursion = language? Chomsky's minimalism and the view from syntax-semantics*, ed. Uli Sauerland and Hans-Martin Gärtner, number 89 in *Studies in Generative Grammar*, 115–160. Mouton de Gruyter.
- Roberts, Ian. 2010. A deletion analysis of null subjects. In *Parametric variation: Null subjects in Minimalist theory*, ed. Theresa Biberauer, Anders Holmberg, Ian Roberts, and Michelle Sheehan. Cambridge University Press.
- Rouveret, Alain, ed. 2011. *Resumptive pronouns at the interfaces*. John Benjamins.
- Saito, Mamoru, and Keiko Murasugi. 1999. Subject predication within IP and DP. In *Beyond principles and parameters*, ed. Kyle Johnson and Ian Roberts, 167–188. Springer.
- Salzmann, Martin. 2011. Towards a typology of locative inversion – Bantu, perhaps Chinese, and English – but beyond? *Language and Linguistics Compass* 5:169–189.
- Sato, Yosuke, and Yoshihito Dobashi. 2016. Prosodic phrasing and the *that*-trace effect. *Linguistic Inquiry* 47:333–349.
- Schneider-Zioga, Patricia. 2007. Anti-agreement, anti-locality, and minimality. *Natural Language & Linguistic Theory* 25:403–446.
- Sells, Peter. 1984. Syntax and semantics of resumptive pronouns. Doctoral Dissertation, University of Massachusetts Amherst.
- Shlonsky, Uri. 1992. Resumptive pronouns as a last resort. *Linguistic Inquiry* 23:443–468.
- Sichel, Ivy. 2014. Resumptive pronouns and competition. *Linguistic Inquiry* 45.
- Sobin, Nicholas. 2002. The Comp-trace effect, the adverb effect, and minimal CP. *Journal of Linguistics* 38:527–560.
- Starke, Michal. 2001. Move dissolves into Merge: a theory of locality. Doctoral Dissertation, University of Geneva.
- Storto, Luciana. 1997. Verb raising and word order variation in Karitiana. In *Boletim da Associação Brasileira de Linguística (ABRALIN)*, 20.

- Storto, Luciana. 1998. Karitiana: A verb second language from Amazonia. In *Proceedings of the Sixth Conference of Students of Linguistics of Europe (CONSOLE)*.
- Storto, Luciana. 1999. Aspects of a Karitiana grammar. Doctoral Dissertation, Massachusetts Institute of Technology.
- Stowell, Timothy Agnus. 1981. Origins of phrase structure. Doctoral Dissertation, Massachusetts Institute of Technology.
- Suñer, Margarita. 1992. Subject clitics in the Northern Italian vernaculars and the matching hypothesis. *Natural Language & Linguistic Theory* 10:641–672.
- Taraldsen, Knut Tarald. 2002. The *que/qui* alternation and the distribution of expletives. In *Subjects, expletives, and the EPP*, ed. Peter Svenonius, 29–42. Oxford University Press.
- Vargas Pereira, Haroldo, and José Vargas Pereira. 2013. Matsigenka text corpus. Compiled by Lev Michael, Christine Beier, and Zachary O'Hagan. Ms., University of California, Berkeley, June 2013.
- Vera, Gabriel Martínez. 2019. Phases, labeling, antilocality, and intonational phrases: recommentation in Spanish. *Probus* 3:187–231.
- Wilder, Chris, and Damir Ćavar. 1994. Long head movement? Verb movement and cliticization in Croatian. *Lingua* 93:1–58.