RESEARCH

Anti-locality and subject extraction

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In many languages, Ā-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.

1 Introduction

Many languages of the world morphosyntactically differentiate the Ā-extraction of subjects from the Ā-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 this constraint blocks the subject Ā-movement in (1a). This results in a ban on subject extraction or (more likely) force a language to use an alternative strategy to extract subjects. In contrast, non-subjects are not affected by this constraint as their base positions are lower, so their movement is not "too close" (1b).

(1)   **Anti-locality may block movement from canonical subject position:**
   a.   Movement from Spec,TP to Spec,CP is "too short":

      * [CP *subject* [TP _____ ...

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

      ✓ [CP *non-subject* [TP ... [... _____

For concreteness, in this paper, I consider the anti-locality constraint in (2), schematized in (4) below. Assuming no intervening functional projections, movement of the subject 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.

(4)
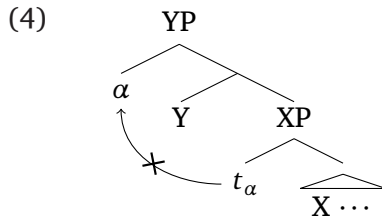
This particular anti-locality constraint has been adopted in a range of recent work, including Bošković (2016), Douglas (2016; 2017), Amaechi & Georgi (2019), Deal (2019), Issah & Smith (2020), and Branan (2020). In particular, although originally formulated in Erlewine (2014; 2016) as a constraint on Ā-movement, Deal (2019) has argued that the constraint holds of A-movement as well and so I give the "generalized" formulation here.[1] Other anti-locality constraints have also been invoked for the analysis of subject extraction asymmetries, as in Schneider-Zioga (2007) and Cheng (2006).

Here I set aside the question of the deeper motivation for (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 due to Spec-to-Spec Anti-Locality will show a number of diagnostic properties:

(5)   **The anti-locality signature of subject extraction asymmetries:**
Suppose behavior α is associated with the extraction of subjects, but not of non-subjects. If α is due to Spec-to-Spec Anti-Locality (2), we may expect:
a.   obviation of α with additional material 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. First, if additional material above the canonical subject position reflects the presence of an additional projection between TP and CP, it should make movement from Spec,TP to Spec,CP exceptionally licit, obviating α (5a). Second, we expect that 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 potentially violate Anti-Locality (5b). Third, Spec-to-Spec Anti-Locality is not sensitive to the identity of the mover. Its frequent association with subjects is only due to subjects' canonically high position in the clause.

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[1] I assume there are additional projection(s) between vP and TP to facilitate subject raising, as also suggested by a reviewer.

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

Constraints on movement that is "too short" are not new, but vary in their specific statements; see Abels (2003) and Grohmann (2003) for two prominent proposals. Here I focus only on Spec-to-Spec Anti-Locality in (2). This formulation is particularly "fragile" — in Baier's (2017) terms — as the addition or removal of just a single projection could affect whether a particular movement is in or out. This relative "fragility" will be a key feature of the approach developed here, not shared by other formulations of anti-locality such as Grohmann's. I discuss the relationship of Spec-to-Spec Anti-Locality to these other formulations in the conclusion.

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

2 Complementizer-trace effects[2]

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). Perlmutter (1968) observes that English long-distance subject extraction requires the declarative complementizer local to the gap to be null rather than *that* (6a). In contrast, long-distance extraction of non-subjects imposes no restriction on the choice of complementizer (6b). The null complementizer requirement is a behavior associated with subject extraction.

(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 be null in cases 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):

(7)   **Complementizer-trace effect in Levantine Arabic:**   (Kenstowicz 1989: 264)
     a.   ʔayy   bint Fariid kaal [$_{CP}$ **(*innu)** __ ištarat l-fusṭaan]?
           which girl Fariid said   that   bought the-dress
           'Which girl did Fariid say bought the dress?'
     b.   ʔayy   fusṭaan Fariid kaal [$_{CP}$ **(innu)** l-bint   ištarat __]?
           which dress   Fariid said   that   the-girl bought
           'Which dress did Fariid say that the girl bought?'

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[2] Some of the arguments presented in this section are also discussed in Erlewine (2017), but with a different analysis. See footnote 6.

(8)	**Complementizer-trace effect in Swedish:**			(Boef & Franco 2012)
    a.	mannen [$_{RC}$ (som) du hoppas [$_{CP}$ **(*att)** __ kommer hit]]
        man.the   C$_{REL}$ you hope   that   comes   here
        'the man that you hope will come here'

    b.	mannen [$_{RC}$ (som) du hoppas [$_{CP}$ **(att)** Maria ska träffa __ imorgon]]
        man.the   C$_{REL}$ you hope   that Mary will meet   tomorrow
        'the man that you hope Mary will meet tomorrow'

See Pesetsky (2017) for a recent overview and Kandybowicz (2009: 328–329) for a summary of previous approaches. There are also languages such as French which exhibit a related 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.

I argue that such complementizer-trace effects are due to Spec-to-Spec Anti-Locality.[3] In all of these languages where the declarative complementizer may generally be pronounced or 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 [PROBE: D] which Agrees with the subject, facilitating ϕ-agreement, nominative case assignment, and EPP movement, and C in these intermediate clause contexts bears [PROBE: Ā] to facilitate intermediate movement. I propose following Giorgi & Pianesi (1996), Martinović (2015), Hsu (to appear), and others, that languages may allow the bundling of C and T into a single head, CT. Furthermore, following Erlewine (2018), I take *CT* to combine the probes on C and T into a single, composite [PROBE: Ā + D], which seeks a goal with both [Ā] and [D] features and disallows partial matches; see also Branan & Erlewine (2020). The choice between bundled CT or split C and T can be thought of as a lexical choice made when choosing the numeration for the phase.[4]

(9)	**Complementizer-trace effects due to anti-locality:**
    a.	Non-subject extraction with split C and T:
        ✓ ... [$_{CP}$ ___ (*that/innu/att*) [$_{TP}$ *subject* ...			$\Rightarrow$ complementizer optional

    b.	Subject extraction with split C and T:
        * ... [$_{CP}$ ___ (*that/innu/att*) [$_{TP}$ ___ ...			$\Rightarrow$ movement too short!

    c.	Subject extraction with bundled CT:
        ✓ ... [$_{CTP}$ ___ ...			$\Rightarrow$ ok with no overt complementizer

I assume that long-distance movement proceeds successive-cyclicly through intermediate clause edges, and for the highest head of the clausal extended projection to function as a phase head (Bošković 2014): When unbundled, C is a phase head; when bundled, CT functions as a phase head. (9a) shows the grammatical intermediate movement of a non-

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[3] Douglas (2016; 2017) also presents an account for *that*-trace effects and anti-*that*-trace effects based on Spec-to-Spec Anti-Locality, but his proposal differs substantially in the details of English CP structure assumed.

[4] Bossi & Diercks (2019: 16–19) develops a similar approach, but with probe splitting without head splitting, for word order facts in Kipsigis (Nilo-Saharan; Kenyan). The bundled versus split CT approach from Erlewine (2018) may extend to Kipsigis as well.

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.[5] 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.[6] 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

Consider the observation that null subject languages do not exhibit complementizer-trace effects. This is illustrated for Italian in (10). This correlation is robust: Gilligan (1987) shows, with a 100-language sample, that the general availability of postverbal subjects entails the lack of complementizer-trace effects.

(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, subjects need not move to their preverbal position (see also Roberts 2010), allowing for Ā-extraction directly from a base position, as in (11). Such movement is not in danger of violating Spec-to-Spec Anti-Locality, and therefore does not trigger the complementizer-trace effect. 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/...* [$_{TP}$ ∅ ...

Even in a language without null subjects, if the EPP is satisfied through alternative means, the subject can be extracted across an overt complementizer by moving directly from its predicate-internal position. This can be observed in English, for subjects which are compatible with the *there*-construction. Rizzi (2006) presents the contrast in (12), arguing that the subject skips Spec,TP in (12b), allowing for grammatical subject extraction across a complementizer.

(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]]]?

For Rizzi (2006) and Rizzi & Shlonsky (2007), the contrast in (12) is due to the subject position (Spec,SubjP for Rizzi & Shlonsky) being a "criterial" position from which further

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[5] This bundled CT with [PROBE: Ā + D] may also apply to matrix subject *wh*-questions where there is no evidence of a need to pronounce T in C (e.g. English *do*-support). See 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 CT-bundling.

[6] Erlewine (2017) presents an alternative analysis, also compatible with the anti-locality motivation presented here, based on Cyclic Linearization (Fox & Pesetsky 2005). Abe (2015: 5–6) mentions a similar intuition.

movement is disallowed. But their suggestion that skipping the Spec,TP position allows for subject extraction across an overt complementizer also applies to my anti-locality-based account in (9). Evidence from the following section will, furthermore, lead us to abandon the "Criterial Freezing" account.

2.2 Obviation by high adverbs

Next, consider obviation by high adverbs. As noted in Bresnan (1977) and Culicover (1993), the addition of an adverb between *that* and the subject trace position obviates the English *that*-trace effect.

(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)

Such adverb obviation is also attested in Swedish, as observed through the contrast in (14):

(14) **Adjunct obviation in Swedish:**   (Löwenadler 2012: 214–215)
   a. *Peter, [$_{RC}$ som jag misstänker [$_{CP}$ (***att**) __ måste gå på mötet]]
        Peter   C$_{REL}$ I   suspect   that   must go to meeting
        'Peter who I suspect must go to the meeting'

   b. ?Peter, [$_{RC}$ som jag misstänker [$_{CP}$ att **under rådande omständigheter**
        Peter   C$_{REL}$ I   suspect   that under current   circumstances
        måste gå på mötet]]
        must go to meeting
        '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 only *high* adjuncts obviate the complementizer-trace effect, attributing this observation to Kinsuke Hasegawa. Compare the addition of the epistemic adverb *fortunately* and the manner adverb *quickly* in the English (15):

(15) **Obviation only by higher adverbs:**   (Brillman & 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 Spec-to-Spec Anti-Locality. I assume that the introduction of the adjuncts in (13) and (15) involves the projection of additional functional structure between TP and CP, here labeled AdvP. As Bošković (2016) also notes, this extra functional material makes movement from Spec,TP to Spec,CP no longer violate Spec-to-Spec Anti-Locality. This allows for the overt complementizer, projecting a CP independent of TP.[7]
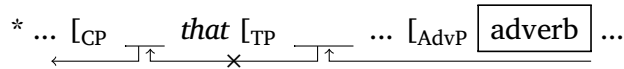
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[7] Browning (1996) also attributes adverb obviation effects to the projection of additional structure.

(16) **Explaining adverb obviation of complementizer-trace effects:**
      a. Obviation by high adverb:

          ✓ ... [_CP_ ___ *that* [_AdvP_ | adverb | [_TP_ ___ ...
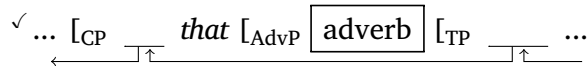
      b. No obviation by lower adverb:

          * ... [_CP_ ___ *that* [_TP_ ___ ... [_AdvP_ | adverb | ...

A note is in order regarding the optional projection of functional structure. I assume with Giorgi & 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 morphophonologically, interpretationally, or by hosting material such as specifiers. See also Bošković (2016: 42 fn. 28). As noted by a reviewer, Cinque (1999: 133) tentatively rejects this approach on conceptual grounds. The sensitivity of complementizer-trace effects — and 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, briefly described above, material in "criterial" positions, including subject positions, is unable to move out. But the addition of higher material should not affect this "criterial" status. 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 the 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 this approach is purely configurational: its logic will apply to other arguments which are in an exceptionally high position in the clause, not just subjects. Bresnan (1977: 186) observes that locative PPs in locative inversion (LI) constructions (17) are also subject to complementizer-trace effects when extracted. This contrast is observed in (18): (18a) involves Ā-movement of the PP from the clause-initial LI position, requiring a null complementizer. However, the same PP can be extracted across an overt complementizer in (18b), without LI.

(17) **Locative inversion (LI):**
      [_PP_ In these villages] can be found the best examples of this cuisine.

(18) ***That*-trace effects triggered by extracted LI 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].
      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 LI (see Salzmann 2011; Diercks 2017). One takes the locative PP to function as the subject, and therefore occupy Spec,TP.

With the locative PP in Spec,TP, the approach to complementizer-trace proposed here in (9) would extend to these PPs as well. The other approach to LI proposes that locative PPs are not in Spec,TP, but in a higher topic position. The examples in (19) and (20) from Stowell (1981) show that LI is unavailable in various environments that disallow topics.

(19)   **No LI 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 __].
    b.   i. *[That [$_{PP}$ in the chair] was sitting my older brother] is obvious.
         ii. *I don't believe John's claim [that [$_{PP}$ in the chair] was sitting my older brother].

(20)   **No LI in certain nonfinite clauses:**
    a. *I anticipated [$_{nonfinite}$ [$_{PP}$ on this wall] being a picture].
                   (Aissen 1975: 10, reproduced in Bresnan 1994: 108)
    b. *I believe [$_{nonfinite}$ [$_{PP}$ down the hill] to have rolled a ball]. (Stowell 1981: 271)

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

The anti-locality approach to complementizer-trace effects can explain the contrast in (18), even if the topic analysis for LI is adopted. Following the discussion in the previous section, suppose that the high topic position (TopicP) is only projected when necessary to host a topic, such as in LI 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 — *CTopic* below — will allow for LI and also put the locative PP at the edge of the embedded clause, at the cost of disallowing an overt complementizer.[8]

(21)   **Complementizer-trace effects with LI:**
    a. *... [$_{CP}$ ___ *that* [$_{TopicP}$ (PP) [$_{TP}$ ...

    b. ✓... [$_{CTopicP}$ (PP) [$_{TP}$ ...

2.4 Yiddish prefield extraction

The fourth and final argument for the anti-locality approach 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* (22). Following Diesing, I assume the V2 verb is in T (her Infl), with the prefield (italicized 'wine' below) being in Spec,TP.

(22)   **Yiddish embedded V2:**   (Diesing 1990: 44)
    Ir   zolt   visn   zayn, mayne libe kinderlekh, [$_{CP}$ az [$_{TP}$ *vayn* ken
    you should know be   my   dear children   that   wine can
    [$_{VP}$ men makhn fun   troybn oykh]]].
        one make   from grapes also
    'You should know, my dear children, that one can make wine from grapes also.'

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[8] An anonymous reviewer asks about extraction of subjects across the fronted locative PP. Although there indeed should be no anti-locality problem, Stowell (1981) notes that locative inversion generally blocks extraction out. See also Rizzi & Shlonsky (2006). This must be due to an independent factor.

Yiddish exhibits complementizer-trace effects targeting the extraction of material in the embedded prefield, not specifically subjects. Consider first the examples in (23).[9] 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*.

(23)   **A complementizer-trace effect in Yiddish:**   (*ibid.*: 71)
    a. Vos hot er nit gevolt [$_{CP}$ __ az [$_{TP}$ *mir* zoln   [$_{VP}$ leyenen __]]]?
       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 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 (Spec,TP).

(24)   **Ungrammatical object extraction from prefield:**   (*ibid.*: 71)
    Vos hot er nit gevolt [$_{CP}$ __ az [$_{TP}$ __ zoln   mir leyenen __]]?
    what has he not wanted   that   should we read
    Intended: 'What did he not want us to read?' (cf 23a)

The ungrammaticality of the 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 from the EPP requirement of Yiddish Spec,TP; see Diesing (1990) for motivating arguments for the EPP in Yiddish.

   We observe next that subject extraction itself becomes grammatical across *az* if another constituent occupies the embedded prefield (Spec,TP):

(25)   **Grammatical subject extraction with prefield object:**   (*ibid.*: 74)
    Ver hot er nit gevolt [$_{CP}$ __ az [$_{TP}$ *ot* *di* *bikher* zol   [$_{VP}$ __ leyenen]]]?
    who has er 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 e.g. Pesetsky & 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 this proposal 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, the anti-locality approach is purely configurational: It is not tied to other subjecthood properties such as nominative case or being specifically in Spec,TP/Spec,SubjP. This approach thus successfully extends to

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

complementizer-trace effects in locative inversion and with Yiddish embedded V2 clauses. I presented a new analysis for *that*-less complement clauses and their equivalents, based on the bundling of 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 French *que/qui* alternation. Preliminary evidence suggests that such alternations are also amenable to an anti-locality-based account. I briefly illustrate here with evidence from the *gànán/'án* alternation in Nupe (Niger-Congo; Nigeria). Example (26a) shows long-distance object extraction out of an embedded clause headed by the regular complementizer gànán. In contrast, long-distance subject extraction is ungrammatical across *gànán*, instead triggering the use of the *'án* complementizer, as in (26b). There is no null complementizer option.

(26) ***Gànán/'án* alternation in Nupe:**   (Kandybowicz 2009: 327, 330–331)
    a. Long-distance object relative:
        nakàn [$_{RC}$ na Musa gàn [$_{CP}$ **gànán** 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 [$_{CP}$ {*****gànán**, ✓**'án**, *****Ø} __ 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 subject extraction across the default *gànán* complementizer, as in (27a). This obviation effect does not hold of lower adverbs, such as *dàdà* 'quickly' (27b). See Kandybowicz (2008: 40–41) and Kandybowicz (2009: 310), respectively, for evidence that *pányí lě* is above the subject position and *dàdà* is below.

(27) **Obviation only by high adverb:**   (*ibid.*: 332)
    a. bagi-zì [$_{RC}$ na Musa gàn [$_{CP}$ gànán [$_{AdvP}$ **pányí**   **lě**   [$_{TP}$ __ ba
        man-PL   C$_{REL}$ Musa say   C   long ago formerly   cut
        nakàn]]] na
        meat   PRT
        'the men that Musa said that long ago cut the meat'
    b. *bagi-zì [$_{RC}$ na Musa gàn [$_{CP}$ gànán [$_{TP}$ __ [$_{AdvP}$ **dàdà**   [$_{vP}$ ba nakàn]]]]]
        man-PL   C$_{REL}$ Musa say   C   quickly   cut meat
        na
        PRT
        Intended: 'the men that Musa said quickly cut the meat'

In other words, the need to use the special *'án* subject extraction complementizer is obviated by the addition of 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. Within the framework of bundled vs split functional heads discussed here, *'án* may reflect the realization of C bundled with the lower head associated with the subject position (e.g. T), whereas *gànán* may realize the split C; see Erlewine (2018) for discussion of the morphological realization of bundled vs split heads. I leave the evaluation of anti-locality-based approaches to this and other complementizer-trace effects for future work.

3 Subject anti-agreement effects

Next I discuss anti-agreement effects. *Anti-agreement* refers to the disappearance of regular ϕ-agreement with an argument which is Ā-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 & Cordin (1989) and Suñer (1992). Fiorentino and Trentino exhibit subject agreement with both preverbal clitics and inflection on the tensed verb. Here I present only Fiorentino examples.

(28)   **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 instead realizing default third singular masculine features. This is a specific property of subject extraction; subject agreement is unaffected by non-subject extraction.

(29)   **No agreement with *wh*-fronted subjects:**   (Brandi & Cordin 1989: 124–125)
       Quante   ragazze {***le hanno,** ✓**gli**   **ha**}   parlato con te?
       How many girls   3PL has.3PL   3SGM has.3SG spoken with you
       'How many girls spoke with you?'

Brandi & Cordin relate the anti-agreement in (29) to the fact that postverbal subjects of "free inversion" are also not agreed with, as seen in (30).

(30)   **No agreement with postverbal subjects:**   (*ibid.*: 115)
       {***Le hanno,** ✓**Gl'   ha**}   telefonato delle ragazze.
        3PL has.3PL   3SGM has.3SG telephoned some girls
       'Some girls called.'

Based on this observation, and following Rizzi's (1982) analysis of subject movement in standard Italian, they propose that Ā-moved subjects in Fiorentino and Trentino do not move through Spec,TP, but rather Ā-move directly from their postverbal base position, foregoing agreement.

    Here I adopt Brandi & Cordin's intuition that subject anti-agreement is linked to the lack of agreement with low postverbal subjects as in (30).[10] What is left open by this analysis is

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[10] Brandi and Cordin's analysis has been challenged by Suñer (1992), who presents three empirical challenges for their account:

    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 may probe down for local person and thus Agrees with local person postverbal subjects, but only agrees fully with Spec,TP. What is important here is that full agreement, e.g. with third-plural, is not available for postverbal subjects.
    ii. Different Ā-constructions differ in the presence or absence of this anti-agreement effect (pp. 653–654, 660–662, 669–970). I discuss this point of variation in section 5 below.
    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" in *wh*-questions. The non-agreeing postverbal subjects as in (30) are that of "free inversion," where the subject must be a new information focus in Italian; see Brandi & Cordin (1989: 137 note 6). Belletti shows that these postverbal subjects occupy a low position. In contrast, Belletti argues — following Kayne & 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.

why the subject cannot move to the preverbal subject position to control full agreement, and then move to Spec,CP. Following Erlewine (2016: 471–472), I propose that this is due to Spec-to-Spec Anti-Locality (2), as schematized in (31):

(31)   **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 ... $[_{vP}$ ... __ ...   ⇒ 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

Suppose (full) subject-verb agreement correlates with movement of the subject to a high position in the clause, Spec,TP (31a). Subsequent movement to Spec,CP would violate Spec-to-Spec Anti-Locality (31b). Instead, as Brandi & Cordin propose for Fiorentino and Trentino, a language may have the option of exceptionally moving the subject directly from a lower position to Spec,CP, skipping the agreeing position (31c). This allows the subject to be extracted without violating anti-locality, but at the cost of forgoing full agreement with the verb.

   In the remainder of this section, I highlight two sets of facts regarding anti-agreement effects which are naturally accounted for under the anti-locality approach: 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 targeting absolutive arguments as a natural class.

3.1 Obviation by negation and Ouhalla's generalization

The first piece of evidence supporting the anti-locality-based approach to anti-agreement effects comes 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 & Vargas Pereira (2013) corpus, as reported in Baier (2018) but with glosses simplified. (32a) shows that Matsigenka verbs have a prefixal agreement marker. In subject relatives such as (32b), 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 (32c).

(32)   **Matsigenka:**   (Baier 2018: 262–263, from Vargas Pereira & 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 is Turkish. In Turkish subject relatives, the relativized verb is unable to exhibit plural agreement with the subject (33), which is optional in regular SOV clauses. Here, the addition of negation does not obviate anti-agreement as seen in (33b).

(33) **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 (34). For precision, here I give the formulation from Baier (2018).

(34) **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, 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 no counterexamples to Ouhalla's Generalization were found.

   Further support for Ouhalla's Generalization comes from the effects of two different negators in Welsh, not discussed in Ouhalla (1993). The Welsh copula has a special non-agreeing "relative" form (*sy* be.REL) used in subject extraction constructions. This is illustrated in (35). (35a) shows the agreeing copula, which cannot be used in the subject cleft in (35b).

(35) **Welsh:**   (Borsley et al. 2007: 130–131)
    a.   Dinas hardd   **yw**   Caerdydd.
           city   beautiful be.PRES.3SG Cardiff
           'Cardiff is a beautiful city.'

    b.   Caerdydd {✓**sy,**   ***yw**}   'n   ddinas hardd.
           Cardiff   be.REL be.PRES.3SG PRED city   beautiful
           'It's Cardiff that is a beautiful city.'

Welsh has two different negators, *na(d)* and *ddim*, which differ in register and in their structural heights; see e.g. Borsley, Tallerman & Willis (2007: 79). Consider the effect of these negators in the subject *wh*-questions in (36). The lower *ddim* leaves us with the non-agreeing copula *sy* (36a), but the agreeing copula reappears with the higher *na(d)* negation (36b). The higher negator obviates anti-agreement but the lower one does not, supporting Ouhalla's Generalization (34).

(36) **Welsh subject *wh*-questions:**   (*ibid.*: 139–140)
    a.   Low *ddim* negator (colloquial) ⇒ 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) ⇒ agreeing copula:

Pa   rai |nad| **ydynt**   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; see (15). Under the anti-locality approach to complementizer-trace effects and anti-agreement effects, this pattern is not accidental. Both 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.
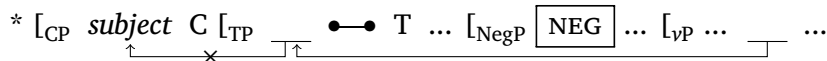
Ouhalla's Generalization (34) is predicted by the anti-locality approach to anti-agreement (31). Suppose full subject agreement reflects the subject occupying a high position associated with subject agreement morphology (31a), and sentential negation reflects the presence of an additional functional head. If the negative head is structurally higher than the position of agreeing subjects, as determined by the locus of subject agreement, its addition will increase the distance between the subject position (Spec,TP) and its Ā-landing site (Spec,CP). This allows subjects to first occupy their agreeing position and then Ā-move without violating Spec-to-Spec Anti-Locality (37a). 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.

(37) **Deriving Ouhalla's Generalization:**
   a. High negation allows for movement through Spec,TP, obviating anti-agreement:

   $^{\checkmark}$ [$_{CP}$ *subject* C [$_{NegP}$ |NEG| [$_{TP}$ ___ •—• T ... [$_{vP}$ ... ___ ...
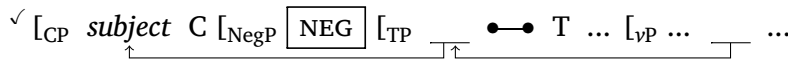
   b. Low negation doesn't affect anti-agreement:

   * [$_{CP}$ *subject* C [$_{TP}$ ___ •—• T ... [$_{NegP}$ |NEG| ... [$_{vP}$ ... ___ ...

   ⇒ movement too short!

Ouhalla's Generalization (34) 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 Absolutive anti-agreement

A second argument for the anti-locality approach to anti-agreement comes from anti-agreement effects in non-nominative-accusative languages. In introducing my approach to anti-agreement in (31) above, I assumed that T agrees with transitive subjects and intransitive subjects in Spec,TP, following the analysis of Brandi & Cordin (1989) and further discussion in Ouhalla (1993). But the logic of anti-agreement (31) would apply equally to other arguments which canonically move to Spec,TP and concurrently agree with the verb.

An example of such a pattern of anti-agreement comes from Karitiâna (Tupian; Brazil). The verb in Karitiâna agrees with transitive objects (38a) and intransitive subjects (38b) — i.e. absolutive arguments. There is generally no agreement with transitive subjects. There is no case marking on nominals.

(38) **Absolutive agreement in Karitiâna:**   (Storto 1999: 157)
   a. An   **y**-ta-oky-t   yn.
       2SG 1SG-DECL-kill/hurt-NFUT 1SG
       'You will hurt me.'

    b.   **Y**-ta-opiso-t   yn.
          1SG-DECL-listen-NFUT 1SG
          'I listened.'

Karitiâna exhibits absolutive-aligned extraction asymmetries, including anti-agreement with extracted absolutive arguments. *Wh*-phrases are initial in *wh*-questions, but using different derivations. Transitive objects and intransitive subjects cooccur with the copula *-mon* in initial position in (39a–b). In these cases, the agreement morpheme is replaced by an invariant *i-* or *ti-* prefix, instantiating an instance of absolutive-aligned anti-agreement. Storto analyzes the structures in (39a–b) as clefts involving nominalization of the verb, which explains their lack of agreement. *Wh*-movement without this clefting strategy is possible for transitive subjects (39c), and also with the extraction of obliques (see Storto (1999: 200ff)).[11]

(39)   ***Wh*-questions in Karitiâna:**   (*ibid.*: 159, 194)
        a.   Intransitive subject:
           Mora-mon **i**-hyryp?
           who-COP   I-cry
           'Who cried?'

        b.   Transitive object:[12]
           Mora-mon an   **ti**-hit-Ø   taj̃-ty?
           who-COP   2SG TI-give-NFUT knife-OBL
           'Who did you give the knife?'

        c.   Transitive subject:
           Morã **y**-sokõ'i?
           who   1SG-tie.up
           'Who tied me up?'

Why can't transitive objects and intransitive subjects *wh*-move directly from their regular positions? As noted in Erlewine (2016: 472–473), the answer could be anti-locality. Storto (1997; 1998) proposes that absolutive arguments move to Spec,TP in Karitiâna. 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 restricted by anti-locality, leading to direct movement and no change in agreement in (39c).

   Here again, the canonical high position of absolutive 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.

3.3 Summary

In this section, we described a basic approach to anti-agreement effects driven by anti-locality. If agreement correlates with the movement of an argument to a structurally high position (Spec,TP), it may be unable to ϕ-agree and also Ā-move 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 Ā-extract the subject in a different manner,

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[11] Other Ā-constructions in Karitiâna also exhibit anti-agreement, without this clefting or nominalization. In particular, fronting focused transitive objects leads to the verb expressing ϕ-agreement with the transitive subject, which does not happen otherwise. This too can be explained by the absolutive object skipping its Spec,TP agreeing position, leaving T then free to exceptionally agree with the subject. See Storto (1999: 163ff).

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

forgoing agreement. We saw in this section that additional, higher functional material can obviate anti-agreement, but not lower functional material (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 be productively extended to ergative-absolutive languages with absolutive anti-agreement.

I also note, however, that there are examples of anti-agreement effects which appear to not be amenable to the anti-locality-based approach sketched in (31) 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 (31a) not apply. See the cases in Baier (2017) and Baier & Yuan (2017). Here I have highlighted the existence of anti-agreement effects which *do* exhibit signatures of an anti-locality-driven interaction, leaving open the possibility that some other anti-agreement effects require alternative explanations.

4 Bans on subject resumption

The third and final subject extraction asymmetry considered will be bans on subject resumptive pronouns, including the well-known Highest Subject Restriction on resumption. Consider the Serbo-Croatian, Hebrew, and Irish object relatives in (40–42). Each can be formed with a gap in the object position or a corresponding pronoun.

(40)   **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'

(41)   **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)'

(42)   **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 contrast, local subject relatives cannot utilize resumption:

(43)   **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'

(44)   **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'

(45)   **Irish subject relatives:**
   a.   an fear [RC a bhí __ breoite]
        the man a^L was   ill
        'the man that was ill'
(Ó Baoill & Maki 2012: 361)

   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)

These bans on subject resumption exhibit variation in whether or not they extend to embedded subjects. In Serbo-Croatian (46) and Slovenian (presented below), embedded subject relatives also must be gapped:

(46)   **Serbo-Croatian embedded subject relative:**   (Bošković 2009: 82)
   čovjek [RC što tvrdiš   [RC da je   (??**on**)   sreo Petra]]
   man   CREL 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, allowing embedded subject resumptives (47–48). This variant of the effect has thus been called the *Highest Subject Restriction* (HSR).

(47)   **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'

(48)   **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 above are best accounted for by Spec-to-Spec Anti-Locality (2). Here I consider only resumptive pronouns in non-island contexts, [13] and I furthermore concentrate on cases as in (40–42) 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.

    Following Sichel (2014), I identify the two relevant structures as head-raising and head-external. In head-raising derivations as in (49a), 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 (49b) is always pronounced. The two different derivations account for semantic differences between resumption and gaps in optional resumption contexts, discussed in detail in Bianchi (2004) and Sichel (2014).
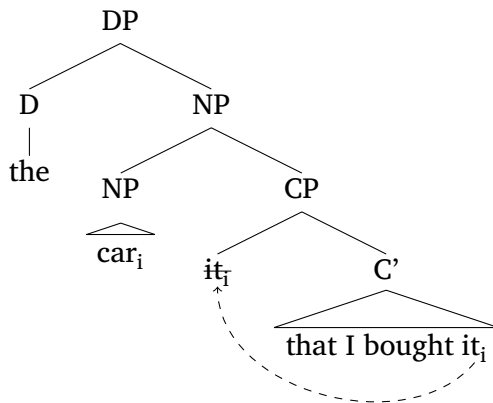
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[13] "Intrusive" pronouns which appear inside islands (Sells 1984) exhibit different semantic and reconstruction behaviors (see e.g. Bianchi 2004), and arguably result from different derivations, so I set them aside here.

(49)   **The two sources behind optional resumptives:**   (based on Sichel 2014: 657)
        a.   Head-raising:
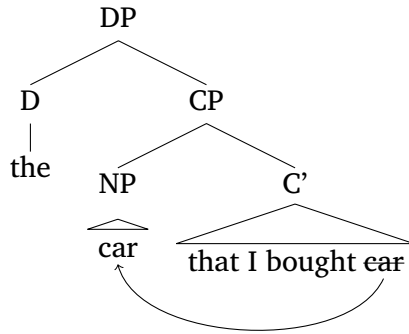
        b.   Head-external with covert pronoun movement:

In situations where the lower copy in (49a) 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 (49a) and (49b) yield relative clauses with resumptive pronouns, resulting in an obligatory resumptive pronoun with two possible underlying 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 covertly moves to the edge of the relative clause, illustrated in (49b) with a dashed arrow. Doing so allows it to be semantically associated with the external head noun, but (generally) not pronounced in this high position.[14]

This movement of the resumptive pronoun will be crucial for deriving the 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 (49b) without violating Spec-to-Spec Anti-Locality. This is schematized in (50), 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.[15]

(50)   **Ban on subject resumptives due to anti-locality:**
        * ... [$_{CP}$ *pro* [$_{TP}$ *pro* ...
                                                                    ⇒ movement too short (2)

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[14] Sichel (2014: 677) discusses the head-external derivation as not involving movement, but acknowledges that this is only one possibility. My (49b) 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 pronounced as a pronoun.

[15] Demirdache (1997: 201–202) also proposes that grammatical subject relatives in Hebrew skip the preverbal position, describing the relevant constraint as a complementizer-trace effect. The particular positions involved here are adjusted for the analysis of Irish, in the Appendix.

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

(51)   **Head-raised subjects can skip Spec,TP:**
       $\checkmark$ ... [$_{CP}$ NP [$_{TP}$ ∅ ...

I propose that skipping the canonical subject A-position in (51) is possible because the head noun does not need case 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.

   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 argue that this logic is also at the core of the Irish and Hebrew HSRs.

   As we saw with complementizer-trace and anti-agreement effects above, this anti-locality-based approach to bans on subject resumption predicts obviation by the addition of higher material (52a), as well as the extension of the ban to other arguments that are exceptionally high in the clause (52b).

(52)   **Predictions of the anti-locality account of bans on subject resumption:**
       a.   Additional material can obviate the ban:

            $\checkmark$ ... [$_{CP}$ ~~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 (52a), 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 (52). I include my discussion of Irish in the Appendix.

4.1 Serbo-Croatian and Slovenian

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 discuss only 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 their ban on subject resumptives is an anti-locality-driven effect.

   We begin by reviewing the Serbo-Croatian data above, beginning with the basic subject/non-subject asymmetry in relative clauses introduced by the relative complementizer (*što*). Example (53a) shows the availability of optional resumption in object relatives, whereas (53b) demonstrates the ban on subject resumptives for local subject relatives.

(53) **Serbo-Croatian:**
      a. Local object relative: = (40)
          auto [$_{RC}$ što = sam   (= **ga**) kupio]
          car   C$_{REL}$ PRES.1SG he.ACC bought
          'the car that I bought'

      b. Local subject relative: = (43)
          čovjek [$_{RC}$ što = je   (***on**)   sreo 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 (54a), whereas resumptive pronouns are generally disallowed for subject relatives, as in (54b).

(54) **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.'

I note that the availability of gapped versus resumptive non-subject relatives here are constrained by additional factors (Bošković 2009; see also Gračanin-Yuksek 2013), and also vary by speaker (Hladnik 2015: 99). Here I will set these factors aside and concentrate on the overall availability of resumptive pronouns for the relativization of non-subjects as in (53a) and (54a), but not for subjects as in (53b) and (54b).

   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 (53) and the object pronouns *ga*. In matrix clauses, these clitics follow one initial constituent, as in (55) below, but in embedded clauses (including relative clauses), the second-position clitics immediately follow the complementizer.

(55) **Subject before second-position clitic (Serbo-Croatian):** (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 clitic 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 (56) below. In the syntax, the subject moves from its predicate-internal base position to its canonical, high position (here Spec,TP) (56a). 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.

(56)   **Subjects movement and its resolution at PF:**
  a. Narrow syntax:
      [$_{CP}$ (C) [$_{TP}$ *subject* ... [=AUX ... [$_{vP}$ *subject* VP

  b. PF with null complementizer:
      [$_{CP}$ Ø [$_{TP}$ **subject** ... [=AUX ... [$_{vP}$ ~~subject~~ VP   ⇒ **on** *je sreo Petra* (55)

  c. PF with overt complementizer:
      [$_{CP}$ C [$_{TP}$ ~~subject~~ ... [=AUX ... [$_{vP}$ **subject** VP   ⇒ *što je* **on** *sreo Petra* (53b)

With a null complementizer and no other fronted material as in (56b), the subject can be pronounced in its movement-derived position and satisfy the second-position PF requirement of the clitic auxiliary. If however there is an overt complementizer (56c) or another constituent pronounced above the auxiliary, the subject will appear lower at PF through lower copy pronunciation. See Bošković (2001) for extensive argumentation for this approach. Crucially, for our purposes, this means that the subject is always moved high in the narrow syntax, even if pronounced below these second-position clitics.

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. Hladnik (2015) has independently argued for two distinct derivations for these strategies, 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. Hladnik provides evidence from parasitic gap licensing for the covert movement of the resumptive pronoun in Slovenian; see e.g. Hladnik (2015: 35–36).

Consider the derivation of the resumptive relatives in (53) above, beginning with the object relative in (57). The resumptive object pronoun here is a clitic pronoun and thus moves to the preverbal clitic-hosting position. It then moves covertly to the edge of the relative clause. The second-position requirement of the auxiliary and pronominal clitics are satisfied as they follow the complementizer *što* and the subject is a null pronoun. The object relative derivation is grammatical.

(57)   **Object relative derivation with resumption:**
    [$_{CP}$ ~~pro~~ C$_{REL}$ [$_{TP}$ *pro*.1SG ... [=AUX.1SG ... [=***pro*** ... [$_{vP}$ t_{subj} V ~~pro~~

                                    ⇒ *što sam* ***ga*** *kupio* (53a)

Now consider the attempted subject relative with resumption in (58). This derivation involves subject movement to Spec,TP, followed by covert movement to Spec,CP. This second movement violates Spec-to-Spec Anti-Locality, predicting this structure to be ungrammatical.

(58)   **Attempted subject relative derivation with resumption:**
    [$_{CP}$ ~~pro~~ C$_{REL}$ [$_{TP}$ ~~pro~~ ... [=AUX ... [$_{vP}$ **pro** VP   ⇒ **što je* **on** *sreo Petra* (53b)

In contrast, as seen in (53b) and (54b) above, the parallel gapped subject relatives are grammatical. Gapped relatives reflect a head-raising structure (49a).[16] Raised head nouns

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[16] Bošković (2009: 84) and Hladnik (2015: 100–101) present — for Serbo-Croatian and Slovenian, respectively — interpretational differences between gapped and resumptive relatives which parallel differences discussed for other languages in Bianchi (2004) and Sichel (2014) and explained by the contrasting head-raising vs head-external derivations, adopted here.

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 (58) above.

Note that this anti-locality violation in (58) is not immediately reflected in the surface string. The mechanisms for PF chain resolution in these languages, reviewed above, predict that the subject 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 pronunciation of its movement chain resolved only at PF, based on requirements imposed by the second-position clitic auxiliary. The structural proximity of the subject's high, canonical position to the edge of the clause results in the ungrammaticality of the subject relative with resumption in (53b/58).

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 (59). The effect is also replicated in Slovenian, in (60a), with baseline in (60b).

(59)   **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'

(60)   **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 Marija'

In examples (59) and (60a), the focused object is 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 are pronounced at the head of their overt movement chains, i.e. in Spec,TP. Movement of the object to an optional, clause-peripheral focus position increases the distance for the subject's covert movement from Spec,TP to Spec,CP, resulting in a grammatical subject resumptive relative.

Hladnik (2015) also observes that subject resumptives in Slovenian improve with the addition of a focus particle. The "(?)" judgment in (61) is Hladnik's. The focus particle increases the structural distance between the pronoun's overt position and Spec,CP, making its covert movement possible.

(61)   **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 in these languages, we now discuss long-distance relatives. Here too, resumptive pronouns are reported to be significantly degraded, if not ungrammatical:

(62) **Serbo-Croatian embedded subject relative:**   = (46)
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'

(63) **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 resumptives. Suppose that the organization of these embedded clauses straightforwardly has 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 (62–63) is schematized in (64) below. Recall that subjects generally move to Spec,TP, even in cases where they are ultimately pronounced in a lower position due to PF requirements of second-position clitics.[17] Movement of the subject out of the embedded clause will violate Spec-to-Spec Anti-Locality.

(64) **Deriving the ban on embedded subject resumption:**
* ... [_CP_ ~~pro~~ *da* [_TP_ *pro* ...

$$\Rightarrow \text{ movement too short!}$$

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 grammatically 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 Hebrew

Next we consider 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-Croation 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:

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[17] Overt declarative complementizers are obligatory in both languages, and thus there is no option to forgo the overt complementizer and bundle C and T, as proposed to be possible at embedded clause edges in our discussion of complementizer-trace effects above.

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

Assuming that the fronted constituent in (65) is hosted by an optional, dedicated functional projection (e.g. FocusP or TopicP), the fronted material increases 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 call Spec,TP here — and then move to Spec,CP in a head-external derivation (49b), 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 (66), the focus particle *rak* 'only' is added to the subject *hu*, resulting in a grammatical subject resumptive, parallel to what we observed in Slovenian in (61). The focus particle adds another projection between the pronoun's overt position and its covert landing site, making its movement possible.

(66)   **Grammatical highest subject resumptive with focus particle:**
        $^?$ ha-'iša   [$_{RC}$ še= [rak **hi**]   'ohevet 'arayot]
        the-woman   that   only 3SGF loves   lions
        literally 'the woman$_i$ that only *she$_i$* loves lions'   (Hadas Kotek, p.c.)

Yet another way to increase the distance between the subject and the relative clause edge is to place it in a postverbal position. Consider the grammatical local subject relatives in (67). These examples involve a high register V2-like inversion structure, where another constituent is fronted to a preverbal position, leaving the subject postverbal. In this case, resumption is allowed.

(67)   **Grammatical postverbal highest subject resumptives:**   (Hadas Kotek, p.c.)
        a.   ha-'iša   [$_{RC}$ še= 'et   ha-matana natna **hi**   le-Dina]
             the-woman   that ACC the-present gave   3SGF   DAT-Dina
        b.   ha-'iša   [$_{RC}$ še= le-Dina   natna **hi**   'et   ha-matana]
             the-woman   that DAT-Dina gave   3SGF ACC the-present
             'the woman that gave the present to Dina'

The subjects in (67) may occupy either (a) a lower, predicate-internal 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 its movement to Spec,CP without violating Spec-to-Spec Anti-Locality. These exceptions to the HSR in (65–67) are predicted by the anti-locality approach to bans on subject resumption presented above.

   The anti-locality approach also predicts that the ban will also apply to resumption of other arguments at the high relative clause edge, right under its Spec,CP covert landing site. This prediction is borne out in long-distance subject relatives with internal fronting. First, we note that resumptive pronouns can be overtly fronted within relative clauses, even long-distance. This is illustrated with a long-distance object relative with resumptive in (68). The {…} notation indicates that the pronoun 'oto may be in any of the {…} positions.

(68)   **Embedded fronting of object resumptive:**   (based on Borer 1984: 250–251)
ha-'iš   [$_{RC}$ še = {**'oto**}   Xana   'amra [$_{CP}$ še = {**'oto**}   Dalya
the-man   that ACC.3SGM Hannah said   that ACC.3SGM Dalya
ma'amina [$_{CP}$ še = {**'oto**}   Kobi pagaš {**'oto**}]]]
believes   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 (47), repeated here in (69); we discuss why this is so in section 5 below. However, (70) shows that fronting this resumptive to the edge of the relative clause leads to ungrammaticality:

(69)   **Embedded subject relative with resumption:**   = (47)
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'

(70)   **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 (68–70) raise two questions. First, why is the internally-fronted subject resumptive pronoun in (70) ungrammatical? I propose that this follows from the general logic of the HSR. (70) requires fronting of the embedded subject pronoun to the high edge of the relative clause's topmost clause, followed by covert movement to the relative clause's Spec,CP. Movement from this high position 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 subjects, in a manner predicted by the anti-locality approach to the HSR.

The second question that (68–70) raise is why this ban on high resumptives nonetheless only applies to subject pronouns (70) and not to object pronouns (68). That is, the object resumptive *'oto* can be at the top of the relative clause in (68), unlike the subject resumptive *hu* in (70). I propose that this further asymmetry is due to the fact that subjects are the only nominals that are unambiguously preposition-less DPs in Hebrew. Pronouns in direct object position are generated with the DOM accusative marker *'et*, which in these examples fuse with the pronoun into *'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 (68).

Consider the two head-external relative clause derivations in (71), where the resumptive has been fronted to the edge of the relative clause's topmost clause. I simply label this relevant projection (Focus or Topic) XP below. The two derivations differ in whether or not the pronoun is bare or a prepositional object. For subject pronouns, there is no prepositional option, and thus the only possibility would be (71a), where covert 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 disallows preposition-stranding, covert movement to Spec,CP targets the pronoun alone, as illustrated in (71b). Notice that this final movement step now crosses two maximal projections, PP and XP (FocusP or TopicP), and thus will not violate Spec-to-Spec Anti-Locality.

(71)   **Two head-external relatives with pronouns moved to topmost clause edge:**
     a.   Bare pronoun:
       [$_{DP}$ the [$_{NP}$ man$_i$ [$_{CP}$ *pro$_i$* C [$_{XP}$ *pro$_i$* [$_{TP}$ Hannah said that [$_{CP}$ t_{DP} ...

     b.   Pronoun in PP, e.g. with accusative *'et*:
       [$_{DP}$ the [$_{NP}$ man$_i$ [$_{CP}$ *pro$_i$* C [$_{XP}$ [$_{PP}$ P *pro$_i$*] [$_{TP}$ Hannah said that [$_{CP}$ t_{PP} ...

In sum, 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 (49b), with movement restricted by 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 resumption. The availability of object pronouns in this same high position also follows from the anti-locality approach, together with the independently motivated ambiguity of Hebrew accusative *'et* as a case marker or preposition (Kotek 2014). I discuss why the Hebrew HSR only affects the highest clause in section 5.

4.3 Summary

In this section I discussed restrictions on subject resumption in Serbo-Croation, Slovenian, and Hebrew, with discussion of Irish included in the Appendix. 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 projection of additional structural material above the subject.

    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 move covertly to the edge, also independently proposed for Slavic languages in Hladnik (2015) — which then derives these bans on subject resumption from Spec-to-Spec Anti-Locality.

5 Explaining selective asymmetries

I have argued 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 Ā-constructions. In this section, I discuss how we can account for such selectivity under my approach to these effects.

    The Spec-to-Spec Anti-Locality constraint adopted and advocated for here predicts that the addition of just a single projection is enough to make subject movement "long enough," and thereby neutralize the subject/non-subject asymmetry. And indeed, in the case studies above, we have seen that the addition of a single adjunct or moved phrase is enough to obviate the special behavior of 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 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 selectivity.

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 in the literature on Main Clause Phenomena and their relation to the organization of clauses. In this section, I show how such independently-motivated differences in clause structure can productively explain the selectivity of subject extraction asymmetries.

We first consider variability in whether subjects behave 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 between the canonical subject position (Spec,TP) and its (successive-cyclic) Ā-landing site (Spec,CP) — we predict the same subject/non-subject differentiation to apply at embedded clause edges as well. 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 & Cordin 1989).

However, it is also possible for a language to have embedded clauses within a long-distance Ā-construction that are structurally richer than its topmost clause. I illustrate this idea in (72) below, with the topmost clause of the Ā-construction labeled CP_1 and embedded clauses labeled CP_2. If CP_2 includes an additional functional layer between its subject and clause edge, long-distance subject movement will not be restricted by 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.

(72) **Embedded clauses with more structure $\Rightarrow$ no asymmetry for long-distance movement:**
    a. Anti-locality differentiates subject versus non-subject extraction, at the top:
        * $[_{CP_1}$ *subject* $[_{TP}$ _____ ...
    b. Extraction of embedded subjects and non-subjects are not differentiated:
        ✓ $[_{CP_1}$ *subject* $[_{TP}$ ... $[_{CP_2}$ _____ $[_{XP}$ ... $[_{TP}$ _____ ...

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.

Similarly, there are languages where subject anti-agreement only holds of local Ā-extractions but not their long-distance variants, including Tarifit Berber, Breton, and Turkish, all discussed in Ouhalla (1993). Here too, it may be that their topmost clauses 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. 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.

Different, related Ā-constructions within a single language may also vary in the amount of functional material projected, leading to selectivity. Consider the fact that restrictive and non-restrictive (appositive) relatives differ in the availability of certain high adverbs:

(73)   ***Frankly* in non-restrictive vs 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* is 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 explains the contrast in (73), and serves to account for other Main Clause Phenomena available in non-restrictive relatives but not in restrictive relatives (Emonds 1979).

Let's relate this contrast in (73) to our subject extraction asymmetries. Suñer (1992) notes that anti-agreement behavior in the Northern Italian dialects of Fiorentino and Trentino, described in section 3, differs between restrictive and non-restrictive relatives. Specifically, whereas restrictive subject relatives trigger default, third singular masculine agreement (anti-agreement), non-restrictive subject relatives retain full agreement:

(74)   **Selective anti-agreement in Fiorentino subject relatives:**
    a. Restrictive relative ⇒ anti-agreement: (Brandi & Cordin 1989: 126)
        le   ragazze [$_{RC}$ che { ***le   hanno,** ✓**gli   ha**   } parlato
        the girls   C   3PL has.3PL   3SGM has.3SG   spoken
        ieri   alia   riunione]
        yesterday at the gathering
        'the girls who spoke yesterday at the gathering'

    b. Non-restrictive relative ⇒ no anti-agreement: (Suñer 1992: 669)
        La   Maria, [$_{RC}$ che { ✓**l'   ha,**   ***gl'   ha**   } preso
        the Maria   C   3SGF has.3SG 3SGM has.3SG   received
        quattro in matematica], …
        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 (74) may be explained by the anti-locality approach to anti-agreement. The projection of additional functional material in non-restrictive relatives allows for subject extraction to proceed via the agreeing Spec,TP position in the non-restrictive (74b) but not in the restrictive (74a).

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 Ā-extractions. For example, suppose that all clauses under discussion in a language include a projection XP between TP and CP, but that one type of Ā-extraction targets Spec,XP
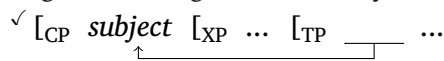
(75a), whereas another type targets Spec,CP (75b). This too would lead to a kind of selectivity: we predict a subject/non-subject extraction asymmetry for Ā-movement in (75a), but not in (75b).

(75)   **Varying the landing site of movement:**
    a.   Lower landing site ⇒ subject extraction asymmetry:
        * [$_{CP}$ ... [$_{XP}$ *subject* [$_{TP}$ _____ ...
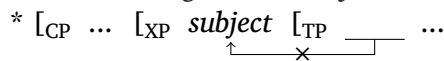
    b.   Higher landing site ⇒ no asymmetry:
        ✓ [$_{CP}$ *subject* [$_{XP}$ ... [$_{TP}$ _____ ...

This is, in effect, the outline of my explanation for why the Irish ban on subject resumption only holds of local relatives, presented in the Appendix. Following independent work on Irish morphosyntax, there is an intermediate head between T and C: Σ. I propose that resumptive pronouns move to Spec, ΣP (75a), explaining the ban on local subject resumption. In contrast, long-distance movement involves movement through intermediate Spec,CP (75b) and thus exhibits no subject/non-subject contrast. See the Appendix for further details.

    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 (75a), whereas long-distance movement moves through intermediate Spec,CP, as in (75b). 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 final versus intermediate *wh*-movement in Hebrew.

    Variation in the landing site of movement could also account for selectivity between different Ā-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. D-linked *wh*-phrases do not trigger anti-agreement. This difference is illustrated in (76) below:

(76)   **Selective anti-agreement in Fiorentino subject *wh*-fronting:**
    a.   Non-D-linked *wh* ⇒ subject anti-agreement: = (29)
        Quante   ragazze {***le hanno,** ✓**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* ⇒ 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 between the syntax of D-linked and non-D-linked *wh*-movement structures in Italian. Whereas *wh*-movement in Italian regularly triggers obligatory subject inversion (77a), D-linked *wh*-phrases are allowed to cooccur with preverbal subjects (77b).

(77)   **Another effect of D-linking in Italian:**   (Brunetti 2002: 107)
    a.   Non-D-linked *wh* ⇒ 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* ⇒ 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 such observations, Rizzi (2001), Brunetti (2002), Cecchetto (2004), and Poletto & Pollock (2004) propose that D-linked *wh*-phrases have different possible landing sites in Italian. For concreteness, following Brunetti's discussion, D-linked *wh*-phrases may target a higher landing site than non-D-linked *wh*-phrases. We then 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 (75b), whereas the movement of non-D-linked *wh*-subjects requires the "skipping" derivation discussed in section 3 above. This explains the selectivity of subject anti-agreement observed in (76) above.

5.3 Summary

In this section I discussed the analysis of "selective" extraction asymmetries, which only apply to particular Ā-extraction constructions, or only to their local variants. Following the anti-locality-based analysis of these effects, I sketched two possible syntactic manipulations which could lead to such sensitivity: varying the structure of different types of clauses and varying the landing site of different movements. Each of these forms of variation has been independently proposed for various languages and constructions, and we have seen their correct predictions for the modeling of selective extraction asymmetries.

 The discussion here not only offers an approach to such selective reflexes 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 behavior 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 Ā-extraction, 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, where 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.

 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 Ā- 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 correct 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.

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 is neutralized — for example, by adding higher projections, or in an embedded clause or a particular Ā-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 normally 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 argued 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 (78):

(78)   **The anti-locality signature of subject extraction asymmetries:**   = (5)
       Suppose behavior α is associated with the extraction of subjects, but not of non-subjects. If α is due to Spec-to-Spec Anti-Locality (2), we may expect:
       a.   obviation of α with additional material 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.

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 (Ouhalla's Generalization), and also extend 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 Ā-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

& Torrego (2001) and Abels (2003) argue against movement from the complement of X to Spec,XP (*Comp-to-Spec*). Saito & Murasugi (1999) argues against the adjunction of Spec,XP to XP (*Spec-to-Adj*). Bošković (1994; 1997) and Saito & Murasugi (1999) also 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 these formulations from the 90's and 2000's, see Grohmann (2011).

Of these, the behavior reflected in subject extraction asymmetries reviewed here is best accounted for by the Spec-to-Spec formulation of anti-locality (Erlewine 2016). 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.

Note that I do not claim that all such 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 (78). In contrast, prominent alternative proposals attribute such asymmetries to other "subjecthood" properties, such as a relationship with T/Subj (Pesetsky & 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.

In distinguishing between those subject extraction asymmetries that are due to anti-locality and those which do not, the Spec-to-Spec Anti-Locality constraint advocated for here has a methodological advantage. As Baier (2017) notes, Spec-to-Spec Anti-Locality is *fragile*: It only takes a single extra projection to affect the behavior of subject extraction, and we have indeed observed such effects in a range of languages. This quality of Spec-to-Spec Anti-Locality helps us determine whether or not a particular extraction asymmetry should be attributed to it. 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). I wholeheartedly agree.

Abbreviations

ACC = accusative, DAT = dative, NOM = nominative, OBL = oblique, AUX = auxiliary, COP = copula, DECL = declarative, INF = infinitive, NEG = negation, NFUT = nonfuture, PRED = predicate marker (Welsh), PRES = present, PROG = progressive, DEM = demonstrative, PRT = particle, a$^{\text{L}}$, a$^{\text{N}}$ = Irish complementizers (see Appendix), C = complementizer, PART = participle, REL = relative clause

Competing Interests

The author has no competing interests to declare.

References

Abe, Jun. 2015. The EPP and subject extraction. *Lingua* 159. 1–17. DOI: https://doi.org/10.1016/j.lingua.2015.03.001

Abels, Klaus. 2003. *Successive cyclicity, anti-locality, and adposition stranding*. University of Connecticut dissertation.

Aissen, Judith. 1975. Presentational-*there* insertion: A cyclic root transformation. In *Proceedings of CLS 11*, 1–14.

Amaechi, Mary & Doreen Georgi. 2019. Quirks of subject (non-)extraction in Igbo. *Glossa* 4(69). 1–36. DOI: https://doi.org/10.5334/gjgl.607

Baier, Nico. 2017. Antilocality and antiagreement. *Linguistic Inquiry* 48(2). 367–377. DOI: https://doi.org/10.1162/LING_a_00246

Baier, Nico. 2018. *Anti-agreement*. University of California Berkeley dissertation.

Baier, Nico & Michelle Yuan. 2017. Anti-agreement with bound variables. In William G. Bennett, Lindsay Hracs & Dennis Ryan Storoshenko (eds.), *Proceedings of WCCFL 35*, 96–103.

Belletti, Adriana. 2004. Aspects of the low IP area. In Luigi Rizzi (ed.), *The structure of CP and IP*, 16–51. Oxford University Press.

Bianchi, Valentina. 2004. Resumptive relatives and LF chains. In Luigi Rizzi (ed.), *The structure of CP and IP*, 76–114. Oxford University Press.

Boeckx, Cedric. 2009. *Understanding minimalist syntax: Lessons from locality in longdistance dependencies*. John Wiley & Sons.

Boef, Eefje & 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. DOI: https://doi.org/10.1007/BF00133282

Borsley, Robert D., Maggie Tallerman & David Willis. 2007. *The syntax of Welsh*. Cambridge University Press. DOI: https://doi.org/10.1017/CBO9780511486227

Bošković, Željko. 1994. D-structure, θ-theory, and movement into θ-positions. *Linguistic Analysis* 24(3–4). 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(3). 351–383. DOI: https://doi.org/10.1162/002438902760168536

Bošković, Željko. 2009. On relativization strategies and resumptive pronouns. In Gerhild Zybatow, Uwe Junghanns, Denisa Lenertova & Petr Biskup (eds.), *Studies in formal Slavic phonology, morphology, syntax, semantics, and information structure: Proceedings of FDSL* 7, 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(1). 27–89. DOI: https://doi.org/10.1162/LING_a_00148

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(1). 17–66. DOI: https://doi.org/10.1515/tlr-2015-0013

Bossi, Madeline & Michael Diercks. 2019. V1 in Kipsigis: Head movement and discourse-based scrambling. *Glossa* 4(65). 1–43. DOI: https://doi.org/10.5334/gjgl.246

Branan, Kenyon. 2020. Locality and anti-locality: The logic of conflicting requirements. Manuscript, National University of Singapore.

Branan, Kenyon & Michael Yoshitaka Erlewine. 2020. Ā-probing for the closest DP. Manuscript, National University of Singapore. https://ling.auf.net/lingbuzz/005211/current.pdf.

Brandi, Luciana & Patrizia Cordin. 1989. Two Italian dialects and the null subject parameter. In Osvaldo Jaeggli & Ken Safir (eds.), *The null subject parameter*, 111–142. Kluwer. DOI: https://doi.org/10.1007/978-94-009-2540-3_4

Branigan, Phil. 2005. The Trace-Fin effect. Manuscript, Memorial University.

Bresnan, Joan. 1977. Variables in the theory of transformations. In Peter Culicover, Thomas Wasow & Adrien Akmajian (eds.), *Formal syntax*, 157–196. Academic Press.

Bresnan, Joan. 1994. Locative inversion and the architecture of universal grammar. *Language* 70(1). 72–131. DOI: https://doi.org/10.2307/416741

Brillman, R. J. & Aron Hirsch. 2016. An anti-locality account of English subject/nonsubject asymmetries. In Ross Burkholder, Carlos Cisneros, Emily R. Coppess, Julian Grove, Emily A. Hanink, Hilary McMahan, Cherry Meyer, Natalia Pavlou, Özge Sarıgül, Adam Roth Singerman & Anqi Zhang (eds.), *Proceedings of CLS 50*, 73–88.

Browning, Margaret A. 1996. CP recursion and *that-t* effects. *Linguistic Inquiry* 27. 237–255.

Brunetti, Lisa. 2002. On the differences between two focus positions in Italian. In *Quaderni del Dipartimento di Linguistica – Università di Firenze* 12. 97–111.

Campos, Héctor. 1997. On subject extraction and the antiagreement effect in Romance. *Linguistic Inquiry* 28(1). 92–119.

Cecchetto, Carlo. 2004. Remnant movement in the theory of phases. In Luigi Rizzi (ed.), *The structure of CP and IP,* 166–189. Oxford University Press.

Cheng, Lisa Lai-Shen. 2006. Decomposing Bantu relatives. In *Proceedings of NELS 36*.

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(3). 557–561.

Deal, Amy Rose. 2017. Syntactic ergativity as case discrimination. In Aaron Kaplan, Abby Kaplan, Miranda K. McCarvel & Edward J. Rubin (eds.), *Proceedings of WCCFL 34*, 141–150.

Deal, Amy Rose. 2019. Raising to ergative: Remarks on applicatives of unaccusatives. *Linguistic Inquiry* 50(2). 388–415. DOI: https://doi.org/10.1162/ling_a_00310

Demirdache, Hamida. 1997. Dislocation, resumption, and weakest crossover. In Elena Anagnostopoulou, Henk van Riemsdijk & Frans Zwarts (eds.), *Materials on left dislocation*, 193–231. John Benjamins. DOI: https://doi.org/10.1075/la.14.12dem

Demirdache, Hamida Khadiga. 1991. *Resumptive chains in restrictive relatives, appositives, and dislocation structures*. Massachusetts Institute of Technology dissertation.

Diercks, Michael. 2017. Locative inversion. In Martin Everaert & Henk van Riemsdijk (eds.), *Blackwell Companion to Syntax*. Wiley-Blackwell 2nd edn.

Diesing, Molly. 1990. Verb movement and the subject position in Yiddish. *Natural Language & Linguistic Theory* 8(1). 41–79. DOI: https://doi.org/10.1002/9781118358733.wbsyncom082

Douglas, Jamie. 2017. Unifying the that-trace and anti-that-trace effects. *Glossa* 2(60). 1–28. DOI: https://doi.org/10.1007/BF00205531

Douglas, Jamie Alexander. 2016. *The syntactic structures of relativization*: University of Cambridge dissertation. DOI: https://doi.org/10.5334/gjgl.312

Emonds, Joseph. 1979. Appositive relatives have no properties. *Linguistic Inquiry* 10(2). 211–243.

Erlewine, Michael Yoshitaka. 2014. Anti-locality and Kaqchikel Agent Focus. In Robert E. Santana-LaBarge (ed.), *Proceedings of the 31st West Coast Conference on Formal Linguistics*. 150–159. http://www.lingref.com/cpp/wccfl/31/paper3017.pdf.

Erlewine, Michael Yoshitaka. 2016. Anti-locality and optimality in Kaqchikel Agent Focus. *Natural Language & Linguistic Theory* 34(2). 429–479. DOI: https://doi.org/10.1007/s11049-015-9310-z

Erlewine, Michael Yoshitaka. 2017. Why the null complementizer is special in complementizer-trace effects. In Claire Halpert, Hadas Kotek & Coppe van Urk (eds.), *A pesky set: Papers for David Pesetsky*, 371–380. MIT Working Papers in Linguistics.

Erlewine, Michael Yoshitaka. 2018. Extraction and licensing in Toba Batak. *Language* 94(3). 662–697. DOI: https://doi.org/10.1353/lan.2018.0039

Ernst, Thomas. 2002. *The syntax of adjuncts*. Cambridge University Press. DOI: https://doi.org/10.1017/CBO9780511486258

Fox, Danny & David Pesetsky. 2005. Cyclic linearization of syntactic structure. *Theoretical Linguistics* 31. 1–45. DOI: https://doi.org/10.1515/thli.2005.31.1-2.1

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*. University of Southern California dissertation.

Giorgi, Alessandra & 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(1). 25–49. DOI: https://doi.org/10.1515/tlr-2013-0002

Grohmann, Kleanthes K. 2003. *Prolific domains: On the anti-locality of movement dependencies*. John Benjamins. DOI: https://doi.org/10.1075/la.66

Grohmann, Kleanthes K. 2011. Anti-locality: Too close relations in grammar. In Cedric Boeckx (ed.), *Oxford handbook of linguistic minimalism*, 260–290. Oxford University Press.

Hladnik, Marko. 2015. *Mind the gap: Resumption in Slavic relative clauses*. Utrecht University dissertation.

Hsu, Brian. to appear. Coalescence: A unification of bundling operations in syntax. *Linguistic Inquiry*.

Issah, Samuel A. & Peter W. Smith. 2020. Subject and non-subject *ex-situ* focus in Dagbani. *Glossa* 5. 4. DOI: https://doi.org/10.5334/gjgl.664

Kandybowicz, Jason. 2008. *The grammar of repetition: Nupe grammar at the syntaxphonology interface*. DOI: https://doi.org/10.1075/la.136

Kandybowicz, Jason. 2009. Embracing edges: syntactic and phono-syntactic edge sensitivity in Nupe. *Natural Language & Linguistic Theory* 27. 305–344. DOI: https://doi.org/10.1007/s11049-009-9064-6

Kayne, Richard & Jean-Yves Pollock. 2001. New thoughts on stylistic inversion. In Aafke C. J. Hulk & Jean-Yves Pollock (eds.), *Subject inversion in Romance and the theory of Universal Grammar*, 107–162. Oxford University Press.

Kenstowicz, Michael. 1983. The null-subject parameter in modern Arabic dialects. In Charles Jones & Peter Sells (eds.), *Proceedings of NELS 14*, 207–219.

Kenstowicz, Michael. 1989. The null subject parameter in modern Arabic dialects. In Osvaldo Jaeggli & Ken Safir (eds.), *The null subject parameter*, 263–275. Kluwer. DOI: https://doi.org/10.1007/978-94-009-2540-3_9

Kotek, Hadas. 2014. Wh-fronting in a two-probe system. *Natural Language & Linguistic Theory* 32(4). 1105–1143. DOI: https://doi.org/10.1007/s11049-014-9238-8

Lohndal, Terje. 2009. Comp-t effects: Variation in the position and features of C. *Studia Linguistica* 63(2). 204–232. DOI: https://doi.org/10.1111/j.1467-9582.2009.01159.x

Löwenadler, John. 2012. Form deviation and constraints on productivity: A study of comp-gap intervention effects in English and Swedish. *Constructions and Frames* 4(2). 186–230. DOI: https://doi.org/10.1075/cf.4.2.03low

Martinović, Martina. 2015. *Feature geometry and head-splitting: Evidence from the morphosyntax of the Wolof clausal periphery*. University of Chicago dissertation.

McCloskey, James. 2002. Resumption, successive cyclicity, and the locality of operations. In Samuel David Epstein & T. Daniel Seely (eds.), *Derivation and explanation in the minimalist program*, 184–226. Blackwell. DOI: https://doi.org/10.1002/9780470755662.ch9

Messick, Troy. 2020. The derivation of highest subject questions and the nature of the EPP. *Glossa* 5(13). 1–12. DOI: https://doi.org/10.5334/gjgl.1029

Ó Baoill, Dónall P. & Hideki Maki. 2012. On the Highest Subect Restriction in Modern Irish. *English Linguistics* 29(2). 357–368. DOI: https://doi.org/10.9793/elsj.29.2_357

Ouhalla, Jamal. 1993. Subject-extraction, negation, and the anti-agreement effect. *Natural Language & Linguistic Theory* 11. 477–518. DOI: https://doi.org/10.1007/BF00993167

Perlmutter, David M. 1968. *Deep and surface constraints on syntax*: Massachusetts Institute of Technology dissertation.

Pesetsky, David. 2017. Complementizer-trace effects. In Martin Everaert & Henk van Riemsdijk (eds.), *Blackwell Companion to Syntax*. Wiley-Blackwell 2nd edn. DOI: https://doi.org/10.1002/9781118358733.wbsyncom108

Pesetsky, David & Esther Torrego. 2001. T-to-C movement: Causes and consequences. In Michael Kenstowicz (ed.), *Ken Hale: A life in language*, 355–425. MIT Press.

Poletto, Cecilia & Jean-Yves Pollock. 2004. On the left periphery of some Romance whquestions. In Luigi Rizzi (ed.), *The structure of CP and IP*, 251–296. Oxford University Press.

Preminger, Omer. 2010. Nested interrogatives and the locus of wh. In E. Phoevos Panagiotidis (ed.), *The complementizer phase: subjects and operators*, 200–235. Oxford University Press. DOI: https://doi.org/10.1093/acprof:oso/9780199584352.003.0009

Rizzi, Luigi. 1982. *Issues in Italian syntax*. Dordrecht: Foris. DOI: https://doi.org/10.1515/9783110883718

Rizzi, Luigi. 1997. The fine structure of the left periphery. In Liliane Haegeman (ed.), *Elements of grammar*, 281–337. Kluwer Academic Publishers. DOI: https://doi.org/10.1007/978-94-011-5420-8_7

Rizzi, Luigi. 2001. Reconstruction, weak island sensitivity, and agreement. In *Semantic interfaces*, 145–176. CSLI Publications. DOI: https://doi.org/10.1515/9783110197723.5.341

Rizzi, Luigi. 2006. On the form of chains: Criterial positions and ECP effects. In Lisa Lai-Shen Cheng & Norbert Corver (eds.), *Wh-movement: Moving on*, 97–133. MIT Press.

Rizzi, Luigi & Ur Shlonsky. 2006. Satisfying the subject criterion by a non subject: English locative inversion and heavy NP shift. In Mara Frascarelli (ed.), *Phases of interpretation*, 341–361. Walter de Gruyter.

Rizzi, Luigi & Ur Shlonsky. 2007. Strategies of subject extraction. In Uli Sauerland & Hans-Martin Gärtner (eds.), *Interfaces + recursion = language? Chomsky's minimalism and the view from syntax-semantics (Studies in Generative Grammar 89)*, 115–160. Mouton de Gruyter.

Roberts, Ian. 2010. A deletion analysis of null subjects. In Theresa Biberauer, Anders Holmberg, Ian Roberts & Michelle Sheehan (eds.), *Parametric variation: Null subjects in Minimalist theory*. Cambridge University Press.

Saito, Mamoru & Keiko Murasugi. 1999. Subject predication within IP and DP. In Kyle Johnson & Ian Roberts (eds.), *Beyond principles and parameters*, 167–188. Springer. DOI: https://doi.org/10.1007/978-94-011-4822-1_7

Salzmann, Martin. 2011. Towards a typology of locative inversion – Bantu, perhaps Chinese, and English – but beyond? *Language and Linguistics Compass* 5(4). 169–189. DOI: https://doi.org/10.1111/j.1749-818X.2011.00270.x

Schneider-Zioga, Patricia. 2007. Anti-agreement, anti-locality, and minimality. *Natural Language & Linguistic Theory* 25. 403–446. DOI: https://doi.org/10.1007/s11049-006-9014-5

Sells, Peter. 1984. *Syntax and semantics of resumptive pronouns*. University of Massachusetts Amherst dissertation.

Shlonsky, Ur. 1992. Resumptive pronouns as a last resort. *Linguistic Inquiry* 23(3). 443–468.

Sichel, Ivy. 2014. Resumptive pronouns and competition. *Linguistic Inquiry* 45(4). 655–693. DOI: https://doi.org/10.1162/LING_a_00169

Storto, Luciana. 1997. Verb raising and word order variation in Karitiana. In *Boletim da Associacao Brasileirade Linguistica (ABRALIN)*.

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*. Massachusetts Institute of Technology dissertation.

Stowell, Timothy Agnus. 1981. *Origins of phrase structure*. Massachusetts Institute of Technology dissertation.

Suñer, Margarita. 1992. Subject clitics in the Northern Italian vernaculars and the matching hypothesis. *Natural Language & Linguistic Theory* 10. 641–672. DOI: https://doi.org/10.1007/BF00133332

Vargas Pereira, Haroldo & José Vargas Pereira. 2013. Matsigenka text corpus. Compiled by Lev Michael, Christine Beier, and Zachary O'Hagan. Berkeley: Ms., University of California.