

An anti-locality account of English subject/non-subject asymmetries*

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1 Introduction

In many languages, the extraction of *subjects* behaves differently from the extraction of *objects and other arguments*.¹ This paper offers a novel, unifying perspective on a set of subject/non-subject asymmetries in English. The first is the *that*-trace effect in (1). Subjects cannot \bar{A} -extract from an embedded clause introduced by the complementizer *that*, while non-subjects can.

(1) *That*-trace effects:

- a. *Who does Bill think that _ saw John? (subject extracted)
- b. Who does Bill think that John saw _? (object extracted)

The second asymmetry involves extraction from infinitival clauses, as in the *tough*-construction in (2). Subjects of infinitives often resist \bar{A} -extraction, while objects can extract.

(2) *Tough*-constructions:

- a. *Anneke is tough _ to see Ian. (subject gap)
- b. Ian is tough for Anneke to see _ . (object gap)

Finally, we look at a number of asymmetries between subject and non-subject matrix *wh*-questions. One example is given in (3): subject questions do not allow *do*-support, while non-subject questions require it (Koopman (1983)).

(3) Matrix *wh*-questions and *do*-support:

- a. Who talked/*did talk to Bill? (subject question)
- b. Who did John talk to _? (object question)

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¹Cross-linguistically, subject/non-subject asymmetries manifest in complementizer realization, Koopman & Sportich (2008) on French; (anti-)agreement morphology, Diercks (2010) on Lubukusu, Ouhalla (1993) on Berber; and more restricted extraction possibilities for subjects, Cole (1985) on Quechua, Borer (1984) on Hebrew. For an overview, see Rizzi & Shlonsky (2007).

Although (1)-(3) all share a common pattern where subjects behave differently from non-subjects, the literature has not succeeded in providing a uniform analysis for these effects. Extending a suggestion in Erlewine (2014) for *that*-trace effects, this paper aims to show that the exceptional status of subjects in each of (1)-(3) can be traced to the same source: a restriction that prohibits \bar{A} -movement whose origin and landing site are in too close structural proximity.

Locality constraints prohibiting movement whose path is too long have been proposed in different contexts. Our analysis draws upon an *anti*-locality constraint prohibiting movement that is too *short* (Abels 2003, Grohmann 2003, Bošković 2005, Erlewine to appear, 2014). Because subjects are higher in the structure than other arguments, the constraint limits their extraction possibilities, while the extraction possibilities of other arguments are generally unaffected.

The particular anti-locality constraint we discuss was originally proposed in Erlewine (to appear) to account for a superficially distinct subject/non-subject asymmetry in a different language: Agent Focus in Kaqchikel (Mayan, Guatemala). Section 2 introduces the constraint and its original motivation. Sections 3-5 survey the English subject/non-subject asymmetries and argue that each asymmetry can be unified with Agent Focus and each other as anti-locality effects. Section 3 is devoted to *that*-trace effects, Section 4 to infinitival constructions, and Section 5 to matrix questions. Section 6 concludes the paper.

2 Agent Focus and Anti-locality

In Kaqchikel, matrix questions (and other \bar{A} -movement constructions) show an asymmetry in verbal agreement that depends on whether a subject or non-subject is extracted. The canonical agreement pattern in regular transitive clauses is shown in (4), where the subject controls agreement on the verb.²

- (4) Iwír x-u-tëj ri wäy ri a Juan
 yesterday ASP-A_{3sg}-eat the tortilla Juan
 ‘Yesterday, Juan ate the tortilla.’
- = Subject Agreement

Non-subject questions show the same canonical pattern as (4), with the subject the agreement controller:

- (5) Achike x-u-tëj ri a Juan?
 what ASP-A_{3sg}-eat Juan
 ‘What did Juan eat?’

²For clarity, the examples in this section do not gloss Kaqchikel object agreement (which is null in all examples given).

The pattern in subject questions is, however, different. Rather than the subject controlling agreement, there is a special verb form, marked with what is called an *Agent Focus* morpheme, and canonical agreement is ungrammatical:

- (6) Achike *x-tj-tj-ö / ✓ x-tj-ö ri wäy?
 who ASP-A_{3sg}-eat / ASP-eat-AF the tortilla
 ‘Who ate the tortilla?’

Thus, Kaqchikel shows a subject/non-subject asymmetry.

Erlewine’s insight is that the occurrence of Agent Focus relates to the structural proximity between spec-TP and spec-CP. He observes that subject extraction triggers Agent Focus only when TP and CP are adjacent in the structure; when there is a maximal projection intervening between TP and CP, Agent Focus does not occur. This is shown in (7):

- (7) Achike kanqtzij ✓ x-tj-tj-ö / *x-tj-ö ri wäy?
 who **actually** ASP-A_{3sg}-eat / ASP-eat-AF the tortilla
 ‘Who actually ate the tortilla?’

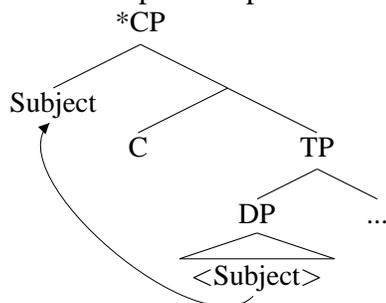
Erlewine assumes that adverbs are housed in dedicated projections on the clausal spine (Cinque (1999)), and that *kanqtzij* attaches as an AdvP between TP and CP. In (7), Agent Focus is ungrammatical, and canonical agreement is observed.

Comparing (6) and (7), Agent Focus seems less like a subject movement phenomenon, and more like a *short* subject movement phenomenon. To capture this, Erlewine proposes the constraint in (8):

- (8) **Spec-to-Spec Anti-Locality (Erlewine, to appear)**
 \bar{A} -movement of a phrase from the specifier of XP must *cross* a maximal projection other than XP. Movement from position α to β *crosses* γ if and only if γ dominates α but does not dominate β .

The constraint in (8) rules out subject movement from spec-TP to spec-CP when no projection intervenes between TP and CP. In (9), the subject DP crosses only TP – a single maximal projection – on its path to spec-CP.

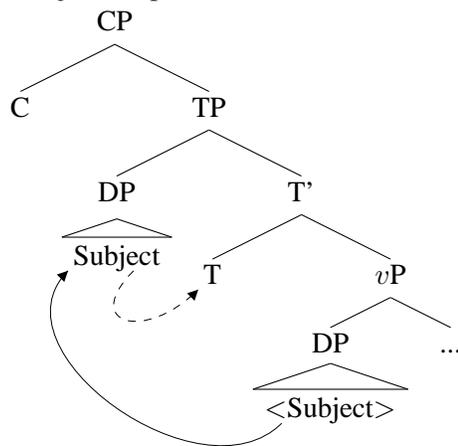
- (9) Violates Spec-to-Spec Anti-Locality



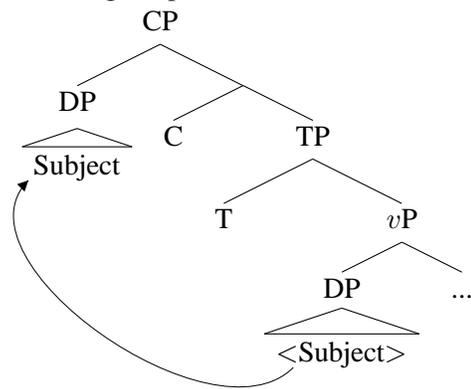
Agent Focus thus surfaces in subject questions when movement from spec-TP to spec-CP would violate anti-locality. This is the case in (6)—but is not the case in (7). The presence of AdvP obviates the anti-locality configuration by lengthening the path of movement from spec-TP to spec-CP. Movement from spec-TP to spec-CP in (7) crosses *both* TP and AdvP, so (8) is respected.

Given that (6) is grammatical, there must be ways of obviating anti-locality even when no projection intervenes between TP and CP. Erlewine proposes that the EPP in Kaqchikel is violable, and that the subject in (6) moves to spec-CP directly from its thematic position in spec-*v*P. Movement then crosses (at least) *v*P and TP, respecting (8). To account for the occurrence of Agent Focus, Erlewine argues for an interaction between the movement path of the subject, and the mechanics of Agreement. He claims that normal verbal agreement is triggered when the subject is in spec-TP, as schematized in (10), while Agent Focus surfaces when the subject has not moved through spec-TP, as in (11). It follows that canonical verbal agreement is impossible in (6) because the subject was never in a position where it could trigger canonical agreement.

(10) Verbal agreement
(subject in spec-TP)



(11) Agent Focus
(nothing in spec-TP)



As Kaqchikel illustrates, (8) does not constitute a ban on \bar{A} -movement of subjects. Subjects can be \bar{A} -moved, so long as the derivation does not involve short movement. We have seen two ways in which (8) can be obviated: either an XP can intervene between TP and CP, licensing movement of the subject from spec-TP to spec-CP, as in (7); or the subject can move to spec-CP from lower in the clause (e.g. spec-*v*P), as in (6).

There are two additional logical possibilities for obviating anti-locality, which we will discuss in subsequent sections. First, when the subject of an embedded clause is \bar{A} -extracted to spec-CP in the matrix clause, the subject could move to the matrix clause directly from the embedded spec-TP without passing through an embedded spec-CP. Long distance \bar{A} -extraction that is not successive cyclic respects anti-locality. Second, the subject

could be left in situ, trivially satisfying anti-locality.

Our goal in this paper is to show that the constraint in (8) operates in English, offering a unified analysis for at least three subject/non-subject asymmetries. For each asymmetry, we show that ungrammaticality arises when anti-locality is violated, and disappears when the anti-locality violation is obviated. Indeed, we argue that the English data give evidence not only for the obviation strategies seen in Kaqchikel, but also for the two additional obviation strategies noted.

3 That-trace effects

We begin our look at English subject/non-subject asymmetries with the *that*-trace effect, repeated in (12) from (1):

- (12) *That*-trace effects:
- a. *Who does Bill think that _ saw John? (subject extracted)
 - b. Who does Bill think that John saw _? (object extracted)

3.1 An anti-locality account

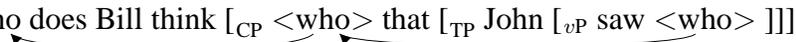
The contrast between (12a) and (12b) is predicted if the anti-locality constraint in (8) is operative in English, as anticipated in Erlewine (2014).

Assuming that movement in (12) is successive cyclic, the derivation for (12a) is (13):

- (13) *Who does Bill think [_{CP} <who> that [_{TP} <who> saw John]]
- 

The subject moves from spec-TP in the embedded clause to spec-CP in the embedded clause, before proceeding to spec-CP in the matrix clause. The first movement step from spec-TP to the local spec-CP violates anti-locality, and (12a) is rendered ungrammatical.

The derivation for (12b), on the other hand, is (14):

- (14) Who does Bill think [_{CP} <who> that [_{TP} John [_{vP} saw <who>]]]
- 

The object moves to the local spec-CP from lower in the clause in (14), so more than one maximal projection is crossed; anti-locality is respected, and (12b) is grammatical.

3.2 Neutralization

The contrast between subject extraction and non-subject extraction in (12) is consistent with anti-locality. However, to argue that the ungrammaticality of (12a) is in fact an anti-locality effect, we need to show that subjects *can* grammatically extract when their movement path does not violate anti-locality. We discuss three cases which confirm this prediction.

3.2.1 Case 1: An intervening projection (anti-*that*-trace effects)

The first way of obviating anti-locality is to insert an XP into the structure intervening between TP and CP. There is evidence that obviating anti-locality in this way enables subject extraction when otherwise a *that*-trace effect would be observed. This comes from the so-called anti-*that*-trace effect. As observed in Bresnan (1977) and Culicover (1993), (15b) with *for all intents and purposes* is improved over the baseline example in (15a).

- (15) a. *Who does John think [CP _ that [TP _ served as president?]]
b. Who does John think [CP _ that [AdvP **for all intents and purposes** [TP _ served as president?]]]

We assume that *for all intents and purposes* is an AdvP intervening between the embedded TP and the local CP. The first step of subject movement from spec-TP to spec-CP in (15b) thus crosses TP and AdvP, so respects anti-locality. The grammaticality of (15b) parallels the neutralization of the Kachikela agreement asymmetry in (7).³

Crucially, our analysis predicts that not every adverbial linearly intervening between *that* and the subsequent verb should obviate *that*-trace effects – only an adverbial like *for all intents and purposes* that structurally intervenes between TP and CP. The contrast between (16b) and (16c) is consistent with this prediction:

- (16) a. *Who did John say [CP that [TP _ ran to the store]]?
b. Who did John say [CP _ that [AdvP **fortunately** [TP _ ran to the store]]?
c. *Who did John say [CP _ that [TP _ [AdvP **quickly** [vP ran to the store]]]]?

Fortunately and *quickly* occur linearly in the same position in the pronounced string, and are of comparable prosodic weight. *Fortunately*, as a speaker-oriented adverb, can attach high in the structure, plausibly between TP and CP. *Quickly*, as a manner adverb, occurs lower in the structure, just above vP. The *that*-trace effect in (16a) obviates in (16b) with *fortunately*, but not in (16c) with *quickly*.

3.2.2 Case 2: Movement of the subject from lower in the clause

The second way of obviating anti-locality is to move the subject to spec-CP not from spec-TP, but from a position lower in the clause. This occurs in (17b), which is grammatical, contrasting the baseline example in (17a):

- (17) a. *How many horses does John think [CP _ that [TP _ are in the barn?]]
b. How many horses does John think [CP _ that [TP there [PredP are _ in the barn?]]]

³Examples like (15) have been taken in Kandybowicz (2006) as evidence for a prosodic account of *that*-trace effects: a PF constraint prohibits a sequence of C and adjacent gap at the left edge of a prosodic phrase. The structural analysis presented here is also viable (and, we believe, can capture the rest of Kandybowicz's data, as well). For space reasons, we leave further comparison of the two approaches to future work.

Because expletive *there* is in the embedded spec-TP in (17b), the EPP is satisfied without the subject moving through this position. The subject thus moves to the local spec-CP directly from a lower position such as spec-*v*P, and the longer movement respects anti-locality. The way anti-locality is obviated in (17b) parallels the Kaqchikel example in (6) under Erlewine’s analysis⁴.

3.2.3 Case 3: No (movement through embedded) spec-CP

Subject extraction in a counterpart to (12a) with *that* unpronounced is grammatical:

(18) Who does Bill think _ saw John?

To account for the contrast between (12a) and (18), we suggest that movement of the subject in (18) can follow a different path than movement of the subject in (12a) – a path which respects anti-locality. Rather than *who* moving successive cyclically through the local spec-CP as shown in (14) for (12a), *who* in (18) can move to the matrix clause directly from spec-TP in the embedded clause. The movement path for (18) is (19):

(19) [_{CP} Who does Bill think [_(CP) [_{TP} <who> saw John]]]

Without an intermediate landing in a local spec-CP, there is no short movement from spec-TP to spec-CP; anti-locality is respected, and the grammaticality of (18) is predicted.

Two distinct, independently proposed theories suggest that the presence of *that* in (12a) vs. its absence in (18) interacts with the path of movement. The first, Doherty (1997), states an embedded clause may not necessarily have a CP layer at all when *that* is absent. If there is no CP in the embedded clause in (18), then clearly there is no movement through spec-CP.

If there is a CP layer, Erlewine (2014), building on Fox & Pesetsky’s (2005) system of cyclic linearization, proposes that movement through spec-CP is not required when C lacks overt exponence. In (12a), *who* must move to the local spec-CP in order to be linearized to the left of *that* in C when the embedded clause is spelled-out. Because linearization requirements are imposed at PF, C is irrelevant for linearization when it lacks overt exponence, and successive cyclic movement is not similarly required in (18). Due to space limitations, we refer the reader to Erlewine (2014) for details of his proposal.

Our data do not adjudicate as to whether or not there is a CP layer in the embedded clause in (18). What is crucial is that a derivation like (19)—with no movement through an intermediate spec-CP position—can be available for (18) either way, and that the grammaticality of (18) is then consistent with anti-locality.

⁴It was also part of Rizzi’s (1990) account for why *that*-trace effects are not observed in Italian that Italian subjects can move to spec-CP directly from a position within the verbal domain; though, Rizzi’s proposal was based on the Empty Category Principle, rather than anti-locality.

3.3 Conclusion

Comparing the original ungrammatical case of subject extraction in (12a) to the grammatical cases of subject extraction in Sections 3.2.1-3.2.3, it is clear that the *that*-trace effect, like Agent Focus, is a phenomenon associated with *short* subject movement from spec-TP to spec-CP – the signature of Erlewine’s notion of anti-locality.

4 *Tough*-constructions and gapped degree phrases

There is a well-known restriction on \bar{A} -movement from the subject position of infinitives, demonstrated in (20a), which contrasts with fully grammatical object extraction in (20b).

- (20) a. *Who is it possible _ to see Mary? (subject extraction)
b. Who is it possible for Mary to see _? (object extraction)

Since Chomsky (1981), it is common to understand the ungrammaticality of (20a) for case reasons. Because the subject of an infinitive is not a case position and *who* does not move to any other case position, *who* is not valued for case and (20a) is ungrammatical.

We argue that a case-based analysis cannot account for at least some cases of ungrammaticality involving extraction of infinitival subjects, and that independent effects of anti-locality can be isolated. One such case is (21), a minimal pair to (20a), with a case-assigning complementizer *for*:

- (21) *Who is it possible for _ to see Mary?

Who can be valued for case in the embedded spec-TP in (21), so (21) cannot be ruled out for case reasons. Rather, we argue that the ungrammaticality of (21) has the same source as the *that*-trace effect: its derivation involves a first step of movement from the embedded spec-TP to the local spec-CP that violates anti-locality⁵.

- (22) *Who is it possible [_{CP} _ for [_{TP} _ to see Mary]]

We further argue that anti-locality plays a role in restricting subject extraction from infinitival clauses through an extended comparison of *tough*-constructions (TCs) and gapped degree phrases (GDPs). Whereas the TC in (23) shows the same subject/non-subject asymmetry as (20), the GDP in (24) does not.

- (23) a. *Anneke is tough _ to talk to Ian . (subject gap TC)
b. Ian is tough for Anneke to talk to _ . (object gap TC)

⁵Unlike with *that*-trace effects, it is not possible to show obviation with insertion of a maximal projection intervening between TP and CP; *for*, as a case assigner to spec-TP, cannot be separated from TP by any intervening projection.

- (24) a. Anneke is too smart _ to talk to Ian (subject GDP)
 b. Ian is too smart for Anneke to talk to _ . (object GDP)

There are currently two prominent competing views of the syntax of *tough*-constructions. In one approach, a null operator is \bar{A} -moved from spec-TP to spec-CP in the clause embedded by 'tough', (25), and in the other, the surface matrix subject itself undergoes improper movement from the embedded subject position (26).

- (25) He is tough [_{CP} OP [_{TP} t to see Ian]] (26) He is tough [_{CP} t [_{TP} t to see Ian]]

GDPs have been argued in Nissenbaum & Schwarz (2011, henceforth N&S) to involve a movement chain similar to the one in TCs under the null operator analysis. N&S argued that for semantic reasons a null operator must move from its base position in the embedded clause to spec-DegP, as in (27) for object GDPs, and (28) for subject GDPs. Brillman (to appear) provides syntactic evidence for this movement step, as well⁶.

- (27) Anneke is [_{AP} savvy [_{DegP} OP enough [_{CP} for [_{TP} Ian to admire <OP>]]]]

- (28) Ian is [_{AP} savvy [_{DegP} OP enough [_{CP} [_{TP} <OP> to admire Anneke]]]]

One source of support that GDPs are movement, rather than control constructions is their ability to license parasitic gaps, as in (29a). Though somewhat degraded, (29a) is clearly improved over the example with a control construction in (29b), which is as deviant as the baseline example of an unlicensed parasitic gap in (29c).

- (29) a. ?This student is too young _ to take the bar exam [without us talking to *pg*]
 b. *This student is eager PRO to take the bar exam [without us talking to *pg*]
 c. *This student took the bar exam [without us talking to *pg*]

The traditional approach to account for the ungrammaticality of (23a) has again been case-based. In particular, a restriction on A'-movement has been posited which states that A'-movement can only occur from a case position⁷. This cannot, however, account for the contrast between (23a) and (24a). The structures in (25) or (26) for (23a) and (28) for (24a) both involve \bar{A} -movement from a non-case position, so both should be ruled out if \bar{A} -movement must originate in a case position⁸.

⁶N&S and Brillman (2014) take DegP, rather than CP to be the embedded clause boundary in GDPs. We assume a phase-extension mechanism allows the null operator to skip spec-CP in (27) and (28).

⁷Under an Erlewine (2014) analysis where successive cyclic movement is motivated by linearization considerations, it is not clear what would motivate movement to the intermediate spec-CP in (26), which lacks a phonological complementizer. This perhaps suggests that Doherty's (1997) analysis may better explain examples like (12).

⁸For space concerns, we do not address the question of how case is assigned in (25)/(26) or (28).

Rather, we argue that the contrast is straightforwardly accounted for by anti-locality. Both (25) and (26) involve short movement from spec-TP to spec-CP, in (25) of the null operator and (26) of *Anneke*, so are ruled out by anti-locality. Because movement in (28) goes from spec-TP directly to spec-DegP skipping spec-CP, movement in (28) crosses TP and CP, so respects anti-locality.

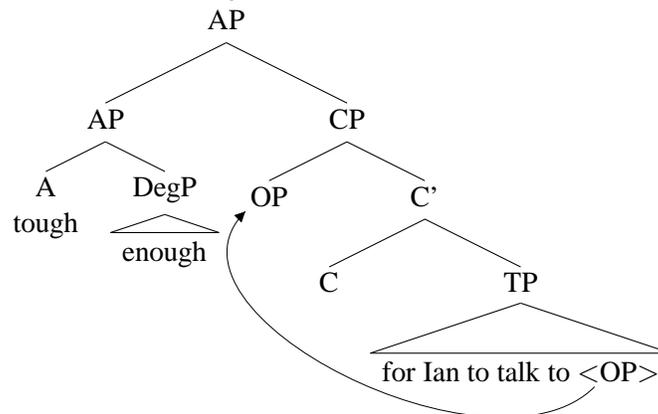
4.1 Degree words, gaps, and *tough*-predicates

A particularly clear way of seeing the effects of anti-locality is to look at the interpretation of sentences which combine a *tough*-predicate and a degree word, such as (30). (30) is ambiguous between a TC (where *Anneke* does not receive a Θ -role from *tough*, (30a)) and GDP (where *Anneke* does receive a Θ -role from *tough*, (30b)) interpretation.

- (30) Anneke is tough enough for Ian to talk to _.
- a. It is difficult enough for Ian to talk to Anneke (any more serious interaction would be unthinkable) (TC reading)
 - b. Anneke herself is tough enough for Ian to talk to (he prefers intimidating women) (GDP reading)

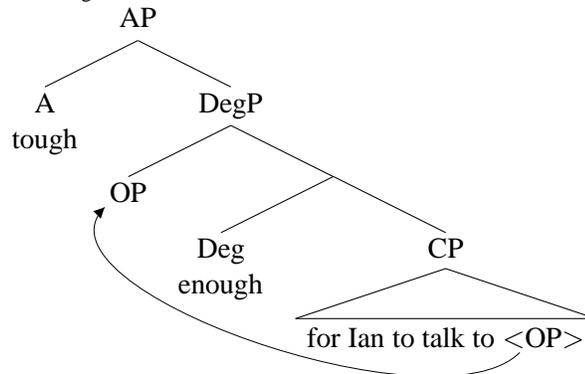
The ambiguity in (30) is structural. In (30a), the DegP adjoins to the AP, schematized in (31). Despite containing a DegP, the (30a) interpretation of (30) corresponds to a TC structure, where the DegP adjoins to and modifies the *tough*-predicate itself, (31).

- (31) Anneke is [_{AP} [_{AP} tough [_{DegP} enough]] [_{CP} for Ian to talk to ___]]



In (30b), the DegP instead adjoins to the CP layer, schematized in (32). This is a GDP structure. Importantly, in (32), the null operator, which originates as the complement to V in the embedded clause, moves to spec-DegP.

(32) Anneke is [_{AP} tough [_{DegP} enough [_{CP} for Ian to talk to ___]]]

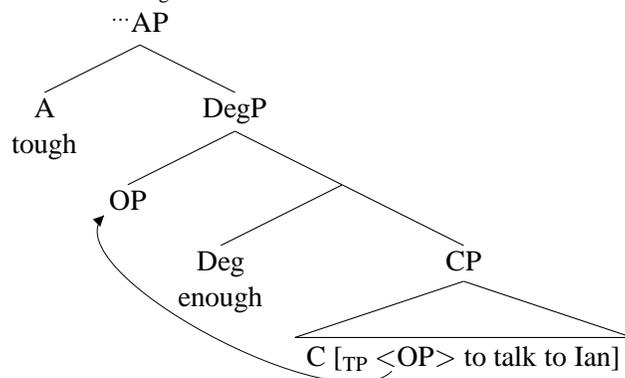


Now compare (33a) to (30), repeated in (33b):

- (33) a. Ian is tough enough _ to talk to Anneke.
 b. Anneke is tough enough for Ian to talk to _.

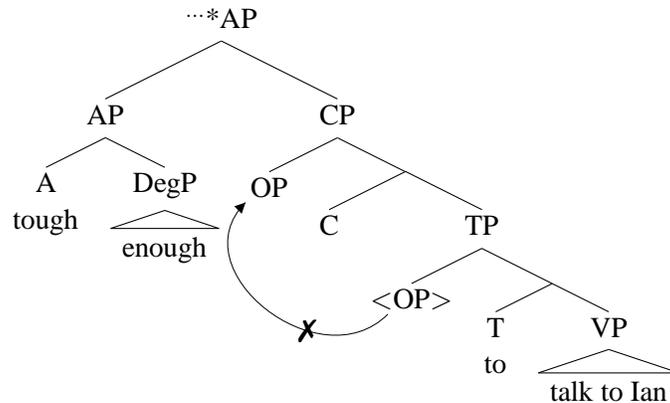
Unlike (33b) (an object gap construction), (33a) (a subject gap construction) is not ambiguous between a TC and GDP interpretation. Only the GDP reading of (33a)—where *Ian* receives a Θ -role from *tough*—is available; the TC reading is not.

(34) Anneke is [_{AP} tough [_{DegP} enough [_{CP} [_{TP} ___ to talk to Ian]]]]



The tree in (35) shows the (unavailable) TC reading structure of (33a). In (35), the DegP layer adjoins directly to AP, modifying the *tough*-predicate; it does not adjoin directly above the CP. TCs necessarily involve \bar{A} -movement through spec-CP (Chomsky 1977). However, in (35), the null operator would need to move from spec-TP to spec-CP, crossing no intervening material. This movement violates anti-locality.

(35) *Anneke is [_{AP} [_{AP} tough [_{DegP} enough]] [_{CP} ___ to talk to Ian]]



4.2 Conclusion

The contrast between subject TCs and GDPs shows the signature of anti-locality. The example that requires a short movement step from spec-TP to spec-CP, the subject gap TC, is ungrammatical. However, once the movement chain is lengthened, from spec-TP to spec-DegP in subject GDPs, the movement chain is licensed again, and the construction is grammatical. Additionally, this section shows that a case condition on \bar{A} -extraction cannot be solely responsible for why subjects often resist extraction from infinitival clauses.

5 Matrix subject *wh*-questions

Matrix subject questions and matrix non-subject questions differ in a number of ways. First, *do*-support is prohibited in subject questions, but required in non-subject questions:

- | | |
|-------------------------|------------------------|
| (36) Subject question: | (37) Object question: |
| a. Who saw John? | a. *Who John saw _? |
| b. *Who did _ see John? | b. Who did John see _? |

Second, parasitic gaps are not licensed in subject questions, but are licensed in non-subject questions (Engdahl (1983)):

- | |
|--|
| (38) a. *Who _ hired Mary [without her talking to <i>pg</i>]? (subject) |
| b. Who did Mary hire _ [without talking to <i>pg</i>]? (object) |

A third related difference comes from Chung & McCloskey (1983), who observe that subject relatives show weaker *wh*-island effects than non-subject relatives. The bracketed clause in (39a) is a subject relative, and in (40a) is a non-subject relative. In the (b) examples, *which* is extracted from the relative clause. Comparing (39b) and (40b), subject relatives do not give rise to *wh*-island effects where non-subject relatives do; extraction of *which* is grammatical in (39b), but ungrammatical in (40b)

- (39) a. Paul and Stevie were the only ones [*who* wanted to record that song].
 b. Isn't that the song which Paul and Stevie were the only ones [*who* wanted to record <which>]?
- (40) a. Paul and Stevie were the only ones [*who* George would let <*who*> record that song].
 b. *Isn't that the song which Paul and Stevie were the only ones [who George would let <*who*> record <which>]?

5.1 An anti-locality account

As briefly discussed in Section 2, the analysis of subject *wh*-questions cannot be straightforward if anti-locality is correct. If *who* in (36a) underwent *wh*-movement, it would move from spec-TP to spec-CP with no intervening projection as in (41), and (36a) would not respect anti-locality, rendering it ungrammatical.

- (41) [_{CP} *who* C [_{TP} <*who*> saw John]]
-

We suggest that the anti-locality violation is obviated in a way not seen yet in the paper: by leaving subject *who* in situ. We argue that the ungrammaticality of (36b) and (38a), and the grammaticality of (39b) are then predicted.

With regard to *do*-support, English is a residual V2 language Holmberg (2010), where movement of an element to spec-CP in matrix clauses is typically accompanied by T-to-C movement. If subject *who* in (36) does not move to spec-CP, it is not surprising that T-to-C movement is not triggered, and *do*-support thus does not occur.

The parasitic gap data are similarly explained. It is well known that \bar{A} -movement is required for parasitic gaps to be licensed. In Nissenbaum's (2000) analysis, \bar{A} -movement is involved in creating a host for the adjunct containing the parasitic gap that is of an appropriate semantic type to compose with the adjunct. If *who* does not undergo \bar{A} -movement in (38a), semantic composition fails, and the sentence is ungrammatical.

In the relative clause data, (39)-(40), if *who* is in situ in (39b), the subject relative is not a *wh*-island, and (39b) is grammatical.⁹

5.2 Neutralization

When a projection intervenes between TP and CP, subject *who* can move from spec-TP to spec-CP without violating anti-locality, and the asymmetries in (36)-(40) are predicted to

⁹Though, see Pesetsky & Torrego(2001) and Ginzburg & Sag (2001) for a counterargument to subject questions being *wh*-in-situ from the distribution of *the hell*: *the hell* can generally attach to a *wh* only if has moved to spec-CP, e.g. (i) vs. (ii), and is possible in matrix subject questions, (iii).

- (i) What the hell did John steal _? (ii) *John stole *what the hell*? (iii) *Who the hell* stole the jewels?

neutralize. Focusing on *do*-support and parasitic gaps, there is evidence that this is borne out. In (42b), *for all intents and purposes* is inserted between TP and CP:

- (42) a. *Who does _ serve as president?
b. Who does **for all intents and purposes** _ serve as president?

Although the judgment is not clear for all speakers, several informants report that a non-emphatic reading of *do* is possible in (42b), unlike in (42a), indicating that when *for all intents and purposes* is present, the subject can undergo movement from spec-TP to spec-CP, and T-to-C movement is triggered.

Additionally, Longobardi (1985) observed that parasitic gap sentences like (43) are grammatical:

- (43) Who [without Mary talking to *pg*] _ hired Jill nonetheless?

The adjunct containing the parasitic gap is plausibly attached between TP and CP. The position of *who* to the left of the adjunct indicates that it has moved from spec-TP to spec-CP, and because the adjunct is present, this movement respects anti-locality. With \bar{A} -movement taking place, the parasitic gap in the adjunct is licensed. The grammaticality of (43) is thus consistent with our proposal.

6 Conclusions

This paper has argued that spec-to-spec anti-locality in the sense of Erlewine (to appear) offers a uniform account of a set of English subject/non-subject asymmetries: (anti-)*that*-trace effects, restrictions on *tough*-moving subjects, and (potentially sheds light on) matrix subject *wh*-questions. This analysis is desirable because it connects English subject/non-subject asymmetries with a subject/non-subject asymmetry in Kaqchikel, and helps us move towards a theory connecting and explaining the broader suite of subject/non-subject asymmetries more generally.

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