1 Introduction

• Many languages treat **subjects** differently from **objects** and other arguments, in particular with respect to extraction.

• This talk focuses on three subject/non-subject asymmetries in English:

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

(2) *Tough*-movement
   a. *Anneke was tough _ to talk to Ian.* (subject gap)
   b. Ian was tough for Anneke to talk to _ (object gap)

(3) Matrix questions (multiple asymmetries, e.g. *do*-support)
   a. Who saw John? (subject question)
   b. Who did John see _? (object question)

Main Claim: These asymmetries follow from an anti-locality constraint prohibiting short subject movement from spec-TP to spec-CP, as proposed in Erlewine (to appear).

Organization:

• Introduce anti-locality, and its original motivation to account for a seemingly unrelated subject/non-subject asymmetry (Agent Focus) in a different language (Kaqchikel, Mayan). (§2)

• Survey the English asymmetries, and argue that they can each be unified with Agent Focus and each other as anti-locality effects (§3-5)
  o *That*-trace effects (§3)
  o *Tough*-movement (§4)
  o Matrix subject *wh*-questions (§5)
# 2 Agent Focus and Anti-locality

## 2.1 Kaqchikel Agent Focus alternations

Erlewine (to appear) notes the following subject/non-subject asymmetry in Kaqchikel (Mayan):

- regular transitive clauses—and clauses with extracted objects—show regular verbal agreement (4)\(^1\)

(4) a. Iwır x-\textit{u-tēj} ri wāy ri a Juan
   ‘Yesterday, Juan ate the tortilla.’

b. Achike x-\textit{u-tēj} ri a Juan?
   ‘What did Juan eat?’

- subject extraction triggers “special agreement” called Agent Focus (5)

(5) Achike *x-\textit{u-tēj} / √x-∅-tj-ō ri wāy?
   who ASP-\textit{A\textsubscript{3sg}}-eat / ASP-eat-AF the tortilla
   ‘Who ate the tortilla?’

- **But** Agent Focus really isn’t a subject-movement phenomenon
  - it’s a **short subject movement** phenomenon
- when an XP intervenes between CP and TP, Agent Focus does not occur
  - this is shown in (6) with an AdverbP (assuming that adverbs are in projections on the clausal spine, Cinque 1999)

(6) Achike \textit{kanqtzij} √x-\textit{u-tēj} / *x-tj-ō ri wāy?
   who actually ASP-\textit{A\textsubscript{3sg}}-eat / ASP-eat-AF the tortilla
   ‘Who actually ate the tortilla?’

(7) **Erlewine’s Generalization:**
   Subjects in Kaqchikel never short-move from spec-TP to spec-CP

- What’s going on in (5)?
  - Normal verbal agreement is triggered when the subject is in spec-TP (8)
  - Agent Focus surfaces when the subject has not moved through spec-TP (9)
  - In (5), the subject moves to spec-CP directly from lower in the clause

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\(^1\)For clarity, the examples in this section do not gloss Kaqchikel object agreement (which is null in all examples given).
2.2 Ruling out short subject movement: Anti-locality

- Erlewine proposes an anti-locality constraint on Ā-movement (distinct from the anti-locality of Abels 2003 and Bošković 2005)

(10) **Spec-to-Spec Anti-Locality**
A movement of a phrase from the specifier of XP must *cross* a maximal projection other than XP. Movement from position $\alpha$ to $\beta$ *crosses* $\gamma$ if and only if $\gamma$ dominates $\alpha$ but does not dominate $\beta$.

(11) **Violates Spec-to-Spec Anti-Locality**

\[ *YP \]

\[ \begin{array}{c}
  Y \\
  \hspace{1cm} X \ldots \\
  \end{array} \]

(12) **Satisfies Spec-to-Spec Anti-Locality**

\[ \checkmark YP \]

\[ \begin{array}{c}
  Y \\
  \hspace{1cm} Z \ldots \\
  \end{array} \]

- We focus on short subject movement from spec-TP to spec-CP, a special case of (10):

(13) **Violates Spec-to-Spec Anti-Locality**

\[ *CP \]

\[ \begin{array}{c}
  DP \\
  \hspace{1cm} \text{Subject} \\
  \end{array} \]

\[ \begin{array}{c}
  C \\
  \hspace{1.5cm} \text{TP} \\
  \end{array} \]

\[ \begin{array}{c}
  DP \\
  \hspace{1.5cm} \ldots \\
  \end{array} \]

\[ \begin{array}{c}
  \text{<Subject>} \\
  \end{array} \]

- Anti-locality violations are obviated for subjects if ...
  1. an XP intervenes between TP and CP (6)
  2. the subject moves to spec-CP from lower in the clause than spec-TP (5)
iii. in the case of extraction from embedded clauses, if the subject moves to the matrix clause directly from spec-TP, skipping the local spec-CP

iv. the subject is left in situ

2.3 On to English

- Can English subject/non-subject asymmetries be understood as anti-locality effects?
- Do they neutralize when anti-locality violations are obviated?

3 That-trace effects

- Subjects cannot extract from an embedded clause with complementizer *that* (14a)
- Objects and adjuncts can (14b)

(14) a. *Who does Bill think that _ saw John?*
b. Who does Bill think that John saw _?

3.1 An anti-locality account

- Anti-locality predicts the contrast in (14) (c.f. Erlewine 2014)
- Extraction proceeds successive cyclically through spec of the embedded CP
- In (14a), the subject moves to spec-CP from spec-TP—anti-locality is violated (15)

(15)

```
CP
  /\  \\
|  /
| /\  \\
|/  C\      ..
|/   /\ CP    CP
|/   /  /\  \\
|/   /   /\  \\
|/   /    /\  \\
|/   /     /\  \\
|/   /      /\  \\
|/   /  who <who> TP
|/   C   <who> VP
|/   DP  T
|/   DP
|/   VP

saw John
```
• When an object or adjunct moves from lower in the clause, anti-locality is respected (16)

(16) CP
    └── DP
        └── C
             └── who

3.2 Neutralizing the asymmetry

3.2.1 Case #1: intervening material

• That-t violations are obviated when an XP intervenes between TP and CP
  o Anti-that-trace effects (Bresnan 1977, Cullicover 1993)

(17) a. *Who does John think that \textsc{who} served as president?
b. Who does John think [\textsc{CP that [AdvP for all intents and purposes [TP \textsc{who} served as president]]]?}

• Not any adverb that linearly intervenes between that and the following verb obviates that-trace effects—only those that structurally intervene between TP and CP
  o Fortunately (speaker-oriented) can attach between TP and CP, (18a); quickly (manner) attaches lower, (18b)

(18) a. John said that \textsc{fortunately} Mary ran to the store.
b. *John said that \textsc{quickly} Mary ran to the store.
  o \textsc{Fortunately} obviates that-t, (19b); \textsc{quickly} does not, (19c).

(19) a. *Who did John say [\textsc{CP that [TP \textsc{who} ran to the store]]}?
b. Who did John say [\textsc{CP that [AP \textsc{fortunately TP \textsc{who} ran to the store?]}]}]
c. *Who did John say [\textsc{CP that [TP \textsc{who [AP \textsc{quickly ran to the store]}]}]}]

2Some of the data in this section 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 t at the left edge of a prosodic phrase. The structural analysis presented here is also viable. We leave further comparison of the two approaches to future work (or question period).
Similarly, *rudely*, which is ambiguous in (20c) between agent-oriented (20a) and manner (20b) readings (Jackendoff 1972) has only an agent-oriented reading in (20d)\(^3\).

\begin{enumerate}
  \item a. Rudely, Mary left. (it was rude of Mary to leave – *agent-oriented*)
  \item b. Mary left rudely. (Mary left in a rude way – *manner*)
  \item c. Mary rudely left. (ambiguous)
  \item d. Who did John say that rudely \_ left? (unambiguous – *agent-oriented*)
\end{enumerate}

### 3.2.2 Case #2: Subject “skips” spec-TP

- *That*-trace violations are obviated when the subject moves to spec-CP from lower in the clause than spec-TP
  - in (21b), *there* sits in spec-TP so the subject does not need to pass through spec-TP to satisfy the EPP (Rizzi 2006)

\begin{enumerate}
  \item a. *How many horses does John think \_ that \_ are in the barn?*
  \item b. How many horses does John think \_ that there are \_ in the barn?
\end{enumerate}

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

- Why can subjects extract from embedded clauses when there is no overt complementizer?

\begin{enumerate}
  \item Who does Bill think \_ saw John?
\end{enumerate}

- The contrast between *that* and \(\emptyset\) may be consistent with anti-locality
  - When there is no overt \(C\), extraction does not have to proceed through an embedded spec-CP; movement from spec-TP directly to the matrix spec-CP respects anti-locality.

\begin{enumerate}
  \item \[\text{[CP}\ \text{Who does [TP Bill [\_P think [TP <who> saw John]]]]}\]?
\end{enumerate}

- **Possibility \#1**: There is an available parse of (22) with no CP layer (Doherty 1993, recently Wurmbrand 2013 and references therein).

- **Possibility \#2**: There is a CP layer in (22), but the subject can still extract from the embedded clause directly from spec-TP.
  - An extracting subject must move to spec-CP when \(C\) is overt to be linearized to the left of \(C\) on the CP phase; when \(C\) is null, linearization requirements do not force movement to spec-CP, and extraction can proceed directly from spec-TP.

\(^3\)Thanks to Sabine Iatridou for bringing these facts to our attention.
4 Extraction from infinitivals

- Infinitivals often disallow subject extraction, but allow non-subject extraction, (24)

(24) For-trace effect
  a. *Who is it possible for \_ to see Mary. (subject extracted)
  b. Who was it possible for Mary to see \_ (through the bushes). (object extracted)

- The for-trace effect follows from anti-locality, parallel to the that-trace effect.

(25) a. *Who is it possible [CP \_ for [TP \_ to see Mary]]?
  b. Who it is possible [CP \_ for Mary [TP to see \_]]?

- It is not possible to test for neutralization of the for-trace effect with adverb insertion
  - adverbs that could be inserted in the clausal spine of a finite embedded clause cannot be inserted in infinitival clauses: for, as a case-assigner to spec-TP, cannot be separated from TP by an intervening projection, (26)

(26) *It’s possible for, for all intents and purposes, Mary to run the city.

- We argue that anti-locality obviation effects can be seen in infinitivals in a different way: by comparing tough-constructions (TCs) and gapped degree phrases (GDPs).

4.1 Tough-movement

- Subjects cannot undergo tough-movement (27a), but objects can (27b).

(27) a. *Anneke was tough \_ to talk to Ian. (subject TC)
  b. Ian was tough for Anneke to talk to \_. (object)

- Two major theoretical approaches to tough-movement
  - Tough-movement involves movement of an overt DP (Pesetsky 1987) (28)
  - Tough-movement involves movement of a null operator (Chomsky 1977) (29)

(28) *Anne is tough [CP tA [TP tA to visit Ian]]

(29) *Anne is tough [CP OP [TP top to visit Ian]]

- Both possible structures involve short subject movement from spec-TP to spec-CP, so are ruled out by anti-locality.
4.2 Gapped degree phrases

- A close relationship between TCs and GDPs was first noted in Lasnik & Fieno (1974), analyzed in Chomsky (1977), and expanded upon in Brillman (2014).
- Unlike TCs, GDPs allow subject gaps (30a), as well as non-subject gaps (30b).

(30) a. Anneke is tough enough to talk to Ian. subject GDP
b. Anneke is tough enough for Ian to talk to object GDP

- Nissenbaum & Schwarz (2011): GDPs are null operator constructions
- Following Nissenbaum (2000): OP must move to the highest specifier of the complement of the adjective; this movement creates a semantic context where the null operator can be bound to its matrix antecedent.

What we’ll show:

- object GDPs are structurally ambiguous: one structure involves movement to spec-CP.
- subject GDPs are unambiguous: the structure involving movement to spec-CP is unavailable.

4.2.1 Object GDPs

- Recall (30b): GDPs can appear with object gaps

(31) Anneke is tough enough for Ian to talk to

- Object GDPs are ambiguous: Deg can attach in two different positions, resulting in two different readings

Reading 1: DegP attaches on the clausal spine. (“Biker reading”)

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

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Nissenbaum & Schwarz (2011) and Brillman (2014) take DegP rather than CP to be the embedded clause boundary in GDPs. We assume that a phase-extension mechanism allows the null operator to skip spec-CP. Bobaljik & Wurmbrand (2005, 2013) and Wurmbrand (2013) pursue an idea where phasehood is contextually determined, and the highest projection in a domain, whatever it is, is the phase.
**Interpretation:** Ian only likes talking to intimidating women. Anneke is a biker, and is so herself tough enough for Ian to talk to.

**Reading 2:** DegP attaches to the AP\(^5\).

(33) \[ \text{Anneke is } [\text{AP tough } [\text{DegP enough}]] [\text{CP for Ian to talk to } \_\_] \]  

\[ \text{PredP} \]
\[ \text{DP} \]
\[ \text{Anneke} \]
\[ \text{Pred is} \]
\[ \text{AP} \]
\[ \text{AP} \]
\[ \text{A tough} \]
\[ \text{DegP enough} \]
\[ \text{OP} \]
\[ \text{C'} \]

for Ian to talk to \( t_{op} \)

**Interpretation:** Ian and Anneke are bitter enemies, making even a simple conversation extremely challenging.

### 4.2.2 Subject GDPs

- **Recall (30):** GDPs can appear with *subject gaps*\(^6\)
  - unlike *object* GDPs, subject GDPs are **unambiguous**
  - only the Biker Reading is possible; the Nemesis Reading is impossible
- **Recall:** the Biker Reading occurs when DegP adjoins directly to the clausal spine
  - Null operator moves directly to spec-DegP.

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\(^5\)To most clearly illustrate the parallels between GDPs and TCs, this paper has represented the *tough*-construction structures with degree words as null operator structures. This should not be taken as evidence that favors a null operator analysis of TCs over an improper movement approach.

\(^6\)Evidence that subject GDPs are movement constructions comes from their ability to license parasitic gaps (e.g., “?That student is too young \( t \) to take the bar-exam without us talking to \( pg \)” that, while slightly degraded, as notably improved from minimal pairs involving control predicates (e.g., “*That student is eager \( PRO \) to take the bar exam without us talking to \( pg \)”)).
(34) Anneke is \[ \text{AP tough [DegP enough [CP to talk to Ian]]} \] (Biker Reading)

\[
\begin{array}{c}
\text{PredP} \\
\text{DP} \\
\text{Anneke} \\
\text{Pred} \\
\text{is} \\
\text{AP} \\
\text{A} \\
\text{tough} \\
\text{DegP} \\
\text{OP} \\
\text{Deg} \\
\text{enough} \\
\text{CP} \\
\text{C} \\
\text{TP} \\
<\text{OP}> \\
\text{T'} \\
\text{to talk to Ian}
\end{array}
\]

- movement from spec-TP to spec-DegP doesn’t violate anti-locality
- the (impossible) Nemeisis Reading would require movement from spec-TP to spec-CP (over no intervening material; remember \textit{enough} is part of AP)
  - anti-locality rules out Nemesis Reading of subject GDPs

(35) \*Anneke is \[ \text{AP [AP tough [DegP enough]] [CP to talk to Ian]]} \] (Nemesis Reading)

\[
\begin{array}{c}
\text{*PredP} \\
\text{DP} \\
\text{Anneke} \\
\text{Pred} \\
\text{is} \\
\text{AP} \\
\text{AP} \\
\text{A} \\
\text{tough} \\
\text{DegP} \\
\text{OP} \\
\text{Deg} \\
\text{enough} \\
\text{CP} \\
\text{C} \\
\text{TP} \\
<\text{OP}> \\
\text{T'} \\
\text{to talk to Ian}
\end{array}
\]

**THE UPSHOT**

- Restriction on \textit{tough}-movement subjects is consistent with anti-locality
- Contrast between GDP and TCs is predicted by anti-locality
- Subject gaps are only possible when the subject can move to spec-DegP
5 Matrix subject *wh*-questions

- Subject and non-subject questions show a number of asymmetries
- **Asymmetry #1: *do*-support**
  - Subject questions cannot have *do*-support (36); non-subject questions require it (37).

  (36)  
  a. Who saw John?  
  b. *Who did see John?  

  (37)  
  a. *Who John saw ?  
  b. Who did John see ?

- **Asymmetry #2: islands** (Chung & McCloskey 1983)
  - Subject relatives show fewer island effects (38) than non-subject relatives (39)

  (38)  
  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>]?

  (39)  
  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>]?  

- **Asymmetry #3: parasitic gaps** (Engdahl 1983, i.a.)
  - Subject questions do not license parasitic gaps (40); non-subject questions do (41)

  (40) *Who hired Mary [without her talking to *pg]?  

  (41) Who did Mary hire [without talking to *pg]?

5.1 An anti-locality account

- Wh-movement in a subject question like (42) would violate anti-locality: if *who* moved to spec-CP in (42), it would be short movement from spec-TP.

  (42) Who saw John?

- Possibility: The anti-locality violation is obviated by leaving *who* in spec-TP
  - **Subject questions = *wh*-in-situ**

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7 Though, see Pesetsky & Torrego (2001) and Ginzburg & Sag (2001) for a counterargument 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?
• All of the asymmetries are consistent with an in situ analysis.

• **Asymmetry #1: do-support**
  ○ English is residual V2 (cf. Holmberg 2010)
  ○ Movement to matrix spec-CP in general licenses do-support.
  ○ True in non-subject questions, as well as other constructions like negative inversion (43).

(43) [On no day] does Mary check her e-mail.

  ○ If *who* does not move to spec-CP in matrix subject questions, it is not surprising that there is no *do*-support.

• **Asymmetry #2: wh-islands**
  ○ if matrix subject *wh*-questions are *wh*-in-situ, Chung & McCloskey’s island facts are predicted

• **Asymmetry #3: parasitic gaps**
  ○ *A*-movement is required to create a syntactic (Engdahl 1983) or semantic (Nissenbaum 2000) host for an adjunct containing a parasitic gap
  ○ if matrix subject questions are *wh*-in-situ, neither of these host sites are available

6 **Conclusions**

• 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
  ○ potentially sheds light on matrix subject *wh*-questions

• Connects English subject/non-subject asymmetries with a subject/non-subject asymmetry in Kaqchikel

• Helps us move towards a theory connecting and explaining the broader suite of subject/non-subject asymmetries more generally

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