Anti-reconstruction, anti-agreement and the dynamics of A-movement

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1. Introduction

- Empirical focus of this paper: *A-reconstruction*, i.e. reconstruction in A-chains, typically for scope.

  (1)   An Austrian is likely to win the race.

    a.   there is an Austrian that is likely to win the race: $\exists > likely$
    b.   it is likely that an Austrian will win the race: $likely > \exists$

- (1a) is the surface scope reading which we (presumably) get for free. (1b) is the narrow scope reading, which requires the subject to scope under the raising predicate; numerous authors have proposed this is done by **reconstructing** the subject to a trace position in the A-chain (also called *total reconstruction*).

- Much discussion in the literature about what is involved to derive this effect. Some proposals:

- **LF lowering**: May (1977), Barss (1986), Fox (2000). Lowering in the LF branch, rule like QR.

  (2)   is likely <u>an Austrian</u> to win the race.

- **Semantic reconstruction**: Cresti (1995), Chierchia (1995), Lechner (1998). Trace in reconstruction position of quantifier type $< et,t >$, lambda calculus ensures DP binder is reconstructed to that position.

  (3)   <u>An Austrian</u>$_{<et,t>}$ is likely t$_{<et,t>}$ to win the race.

- **Lower copy interpretation**: Chomsky (1993), Bobaljik (1995), Hornstein (1995), Fox (1999), Bobaljik and Wurmbrand (2012). Movement is copying, and reconstruction involves pronouncing the higher copy and deleting the lower one at PF, but interpreting the lower copy and deleting the higher one at LF.

  (4)   PF: <u>An Austrian</u> is likely ~~an Austrian~~ to win the race.
        LF: ~~An Austrian~~ is likely <u>an Austrian</u> to win the race.

- **PF movement**: Sauerland (1998), Sauerland and Elbourne (2002). A-reconstruction derived by leaving DP in lower position until PF, with PF-movement deriving surface position (DP in low position at LF).

  (5)   Narrow syntax/LF: is likely <u>an Austrian</u> to win the race.
          PF: <u>An Austrian</u>   is likely ~~an Austrian~~ to win the race.

- Focus today: an argument brought in favour of the PF movement theory by Sauerland and Elbourne (2002) (S&E): an *anti-reconstruction* effect which occurs in context of a certain agreement configuration.

- **The phenomenon**: in British English (BrE), group noun DPs like *a* can trigger either plural or singular subject agreement on the verb, unlike e.g. American English (AmE).

  (6)   a.   The Government {is / are} ruining the country.   *BrE*
          b.   The Government {is / *are} ruining the country.   *AmE*

- With the plural-agreeing configuration, A-reconstruction doesn't seem to be possible.

  (7)   a.   A Spanish team **is** likely to win the Champions League. $\exists > likely$, $likely > \exists$
          b.   A Spanish team **are** likely to win the Champions League. $\exists > likely$, <u>$*likely > \exists$</u>

- Descriptively, we may call this **agreement-related anti-reconstruction** (aRaR). Indicates A-reconstruction is syntactically conditioned, and so we should be able to learn something about the syntax of A-movement and reconstruction more generally from closer inspection.

- I will argue against S&E's account of aRaR in BrE: it not only fails to account for an expanded BrE paradigm, but it also fails to generalise to other aRaR phenomena, e.g. Nevins and Anand (2003).

- I propose a general account of aRaR in BrE and beyond, combining a copy-theoretic approach to A-reconstruction with a particular model of locality e.g. Richards and van Urk (2012, this morning).

2.   S&E's account

2.1   *Some more on TDPs*

- Some important facts about BrE group noun DPs, which I'll just call *team DPs* (TDPs in type) for short.

- **First**, the core NP is syntactically singular, resisting plural demonstratives (S&E p.290).

  (8)   {This/*these} team are going to reach the final.

- The core cases of TDPs with indefinite *a* go the other way: a determiner that typically (though not always) heads a singular DP agrees in the plural.

- Other determiners that resist plural NPs are happy with group nouns agreeing plural, e.g. *(not) every*.

  (9) a. Not every team are going to be as good as Barcelona.
       b. Not every {person / *people} will agree with that statement.

- **Second**, they can license plural anaphors, even when verbal agreement is singular (Smith 2012).

  (10) a. [The government]$_i$ have offered [each other]$_i$ up for criticism.
        b. [The government]$_i$ has offered [each other]$_i$ up for criticism.

- Such data indicate that TDPs may be simultaneously singular and plural in some sense.

- S&E: in addition to the [Number: singular] feature, group nouns also bear a **mereology** feature which can be valued plural, i.e. [Mereology: plural]. It is the latter which verbs agree with to get plural agreement.

- Important for S&E: mereology and number are different feature categories which so happen to allow for the same set of values. Mismatches of value within one category on one XP are disallowed.

- **Third**, TDPs also cannot scope under QPs in lower clauses, or within a single clause.

  (11) a. An English team is likely to win every European trophy. $\exists > \forall, \forall > \exists$
        b. An English team are likely to win every European trophy. $\exists > \forall, *\forall > \exists$

  (12) a. An English team is playing against every German team tonight. $\exists > \forall, \forall > \exists$
        b. An English team are playing against every German team tonight. $\exists > \forall, *\forall > \exists$

- These explained as further instances of reconstruction failure if object>subject scope in monoclausal cases requires subject reconstruction to base position in Spec,*v*P, as proposed by Hornstein (1995), Johnson and Tomioka (1998), Fox (2000), Nevins and Anand (2003), Thoms (2010) a.o.

- **Finally**, S&E note that TDPs cannot occur as the associate of an existential, cf. regular plurals.

  (13) a. There is/was a Spanish team in the final.
        b. *There are/were a Spanish team in the final.

  (14) There were several Scottish managers in the Premier League.

- This mysterious property of TDPs is crucial to their analysis.

2.2 *Details of S&E's theory of total reconstruction*

- Core of their proposal: to derive "total reconstruction" in A-chains, the subject is left in its base position throughout the syntax. It only occurs in Spec,TP in PF after PF-movement.

(15)   Narrow syntax/LF: is likely <u>an Austrian</u> to win the race.
        PF: <u>An Austrian</u>   is likely ~~an Austrian~~ to win the race.

- Here there is no actual reconstruction, rather just non-movement; literal reconstruction in A-chains dispensed with, a good result since other options face a number of outstanding theoretical questions.

- Interaction of scope and binding observed by Lebeaux (2009) and Fox (1999) (trapping) handled well by this account (unlike semantic reconstruction).

- Non-reconstructing A-movement is just regular A-movement: it occurs in the narrow syntax, so it derives wide scope. DP interpreted and spelled out in same position.

(16)   Narrow syntax: <u>An Austrian</u>   is likely ~~an Austrian~~ to win the race.

- Reconstruction is thus a matter of the timing of movement to Spec,TP: if it happens in narrow syntax, we get surface scope; if it delays until PF, we get total reconstruction.

- S&E claim a number of results for the PF movement theory:

    1. Barrs' generalization: A-reconstruction into A$'$-moved XPs not possible.
    2. some constraints on reconstruction in Japanese scrambling.
    3. an account of the aRaR effects in BrE.

- On the first point, see Thoms (2012) and Appendix 1. On the second point, see Miyagawa (2006) and Bobaljik and Wurmbrand (2012) for relevant objections and issues. On the third point, coming up...

2.3   *The account of anti-reconstruction with TDPs*

- **Crucial detail** not mentioned earlier: in cases of A-reconstruction, *something* must move to Spec,TP in the syntax. Agreement between the DP's ϕ-features and T is still obligatory with reconstruction.

- S&E do not assume an Agree-based formalism; rather, they propose that the relevant operation is **feature movement** (Chomsky 1995, Roberts (1998), Pesetsky 2000, Aoun and Nunes 2007).

- Chomsky (1995): feature movement (or Move F) involved in expletive-associate relations, i.e. the associate's ϕ-features move to Spec,TP, where spec-head configuration holds and agreement is possible.

(17)   There F$_\phi$ are$_\phi$ [several Scottish managers] in the Premier League.
                feature movement

- For total reconstruction: feature movement in narrow syntax then movement of the phon-features at PF.

(18)   Narrow syntax: F_ϕ is_ϕ likely <u>an Austrian</u> to win the race.

PF: <u>An Austrian</u>   is likely ~~an Austrian~~ to win the race.

- Without feature movement there would be no ϕ-agreement, hence a crash. Without PF movement, a violation of the EPP (which is presumed to be phonological; Landau 2007, Richards 2013).

- S&E's analysis of TDP anti-reconstruction is crucially dependent upon this component. The claim: team DPs fail to reconstruct because **the mereology feature cannot undergo feature movement**.

- Recall the plural agreement is not possible in existentials:

(19)   *There are/were a Spanish team in the final.

- S&E: this is because the feature responsible for plural with TDPs, Mereology, is not able to undergo feature movement (for reasons that are not clear).

(20)   *There $F_{mer:plural}$ are_{plural} [a Spanish team] in the final.

- If feature movement fails, reconstruction is not possible with plural agreeing TDPs: this would require moving just the [Mereology:plural] feature in syntax and then moving the DP's phon-features at PF.

(21)   A Spanish team are likely to win the Champions League. $\exists > likely$, *likely $> \exists$

- For narrow scope:

(22)   *Narrow syntax: $F_{mer:plural}$ are_{plural} likely <u>a Spanish team</u> to win the CL.

PF: <u>A Spanish team</u>   are likely ~~a Spanish team~~ to win the CL.

- The only option for TDPs is phrasal movement in narrow syntax (which can presumably pied-pipe the Mer feature that cannot move on its own). This will always derive surface scope.

3. Problems for S&E

3.1 Empirical problems with the BrE paradigm

- S&E's account predicts that TDPs will always fail to undergo A-reconstruction. This isn't right: they can scope under negation, just like regular-agreeing DPs.

(23)   a.   An English team has not won in Europe this season. $\exists > \neg, \neg > \exists$
       b.   An English team have not won in Europe this season. $\exists > \neg, \neg > \exists$

- This is even clearer with clitic negation *n't*, which for some speakers strongly favours the $\neg > \exists$ reading.

  (24) a. An English team hasn't won away in Europe this season. $\exists > \neg, \neg > \exists$
          b. An English team haven't won away in Europe this season. $\%\exists > \neg, \neg > \exists$

- NPIs in the subject can be licensed by clausal negation:[1]

  (25) a. A people with any tradition of trepanning hasn't been discovered in Scotland yet.
          b. A people with any tradition of trepanning haven't been discovered in Scotland yet.

- TDPs can also interact scopally with higher adverbs like *rarely* and *usually*.

  (26) a. An English team has rarely seemed so certain to win the Champions League. *rarely*$> \exists$
          b. An English team have rarely seemed so certain to win the Champions League. *rarely*$> \exists$

- Note that even when the subject scopes below negation, it still scopes over the object.

  (27) a. An English team hasn't scored in every round.
            $\neg > \exists > \forall, \neg > \forall > \exists$
          b. An English team haven't scored in every round.
            $\neg > \exists > \forall, ?*\neg > \forall > \exists$

- Strong QP objects like *every NP* typically can't scope above negation (Beghelli and Stowell 1997, Fintel and Iatridou 2003), so results aren't incoherent.

- Evidence against proposal in Sauerland (2004) that TDPs are just be hidden definites.

- That neg>subject scope is derived by A-reconstruction is argued for by Sauerland (2003) (see also McCloskey 1997); it can't be covert raising of negation.

- Technical argument: if negation QRd, it would leave a trace of the same type and reconstruct obligatorily.

- Empirical argument: if negation QRd to outscope subject, it would outscope modals, adverbs. Not so.

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[1]S&E report data in which NPIs in the subject position fail to be licensed, where then negative element is the adverb *never*.

(i) a. A people with any tradition of trepanning have never been discovered.
    b. *A people with any tradition of trepanning have never been discovered.

The data do not seem so clear-cut to me (few speakers I have consulted share the judgments, and those that get a contrast seldom find it so strong), but it is certainly true that TDPs cannot scope below all adverbs, i.e. lower adverbs. I won't give an account of why TDPs can't scope under some low adverbs, as this would require an excursus into the syntax of adverbs in English.

(28)   Every student usually doesn't follow. (In fact, half of them usually don't.) *usually*$> \neg >$ $\forall$

- Scope of negation and adverbs is fixed in English; not predicted if we allow covert neg-movement.

- Additional argument: reconstructed subjects fail to bind into temporal adjuncts (Hornstein 1995).

(29)   Someone$_i$ serenaded every woman before he$_i$ left the party.
$\exists > \forall$, *$\forall > \exists$ (wide scope OK on disjoint indexation)

- Same happens with neg>subject scope: binding makes inverse scope degraded/unavailable.

(30)   [Every worker]$_i$ won't get his$_i$ paycheck on time (but some will). $\neg > \forall$

(31)   [Every worker]$_i$ won't get paid before he$_i$ goes on holiday (#but some will). ?*$\neg > \forall$

- In sum: neg>subject scope must be derived by reconstruction. Data in (23)-(26) is therefore a significant challenge to S&E's account.

- What's the difference between the different kinds of reconstruction? One set of cases seem to require reconstruction into *v*P, and these aren't allowed.

- Reconstruction below negation and high adverbs might not necessitate reconstructing this far down; could involve "short" A-reconstruction to an *intermediate adjunction position* above Spec,*v*P, where it can scope under negation.

- Descriptive generalisation: with TDPs, **short A-reconstruction below negation is possible, "long" A-reconstruction impossible**.

3.2   *Related facts elsewhere in English*

- The aRaR facts in BrE are paralleled with related phenomena which are attested across English dialects, i.e. with **partitive indefinites**.

- Partitive indefinites of different kinds show different agreement patterns.

- Indefinite partitives in which the matrix NP is a light noun like *lot* or *number* agree only in the plural, at least when the NP complement of the PP is a bare indefinite (Selkirk 1977 calls these "pseudopartitives").

(32)   a.   A lot of dogs {are/*is} barking outside.
         b.   A number of dogs {are/*is} barking outside.[2]
         c.   A bunch of dogs {are/*is} barking outside.

Presumably these light nouns are underspecified for number, with the number features of the lower NP providing the goal for agreement.

- Other partitives headed by group nouns or similar NPs show variable number agreement.

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[2]This is degraded on the reading which is paraphrasable as "some indeterminate amount of dogs"; it's more or less OKish on the reading where I know the number of dogs outside.

(33) a. A team of experts {are/is} looking into this problem.
     b. A pack of dogs {are/is} barking outside.
     c. A group of students {are/is} learning Welsh.

- Some AmE speakers still prefer the singular, but for many both options are freely available, as with BrE speakers with bare team DPs.

- These DPs show the same sort of anti-reconstruction effects as TDPs, with the plural version failing to reconstruct below raising predicates and QP objects but managing to scope under negation.

(34) a. A team of scientists is likely to solve this problem.   *likely*> ∃
     b. A team of scientists are likely to solve this problem.   ?**likely*> ∃

(35) a. A (different) team of scientists is working on every one of these problems. ∀ > ∃
     b. A (#different) team of scientists are working on every one of these problems. *?∀ > ∃

(36) a. A team of scientists isn't working on this particular problem, unfortunately. ¬ > ∃
     b. A team of scientists aren't working on this particular problem, unfortunately. ¬ > ∃

- Plural version is also dispreferred in existentials.

(37) a. There is a team of scientists downstairs.
     b. ??There are a team of scientists downstairs.

- Judgments are not as categorial as they are with BrE TDPs,[3] but they go the same way: with variable agreement DPs, the plural one is degraded wrt long A-reconstruction and existentials.

- Problem for S&E: what is the analysis for such DPs? It surely can't be that AmE group nouns can bear [Mereology: plural] just when they are in partitives. Rather, the plural agreement must be coming from the complement of P. This is regular [Number].

- S&E's approach fails to capture the generality of the phenomenon.

3.3   *The generality of aRaR*

- Looking beyond English (why not?), we find more aRaR effects with the same character: Nevins and Anand (2003), Anand and Nevins (2006) (N&A) propose *PEPPER* (**P**urely **EPP E**liminates **R**econstruction)"

(38)   PEPPER: A-movement only for EPP never reconstructs.

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[3]Speculation about variability with the data: for some speakers or in some configurations, the matrix NP can be interpreted as a sort of light/amount noun (i.e. "team" as "whole bunch"), allowing them to get analysed like the non-variable agreement NPs in (32). If it's the syntax of variable agreement that is key for the scope facts, then a non-variable agreement analysis may allow these DPs to scope like regular DPs, as the ones in (32) do.

- Motivation: non-agreeing subjects failing to reconstruct; data from Hindi, Greek, Russian, English.[4]

- <u>Hindi ergative subjects.</u> Hindi has split ergativity: ergative case on the subject and object agreement in the perfective aspect, nominative subjects and subject agreement in imperfective.

- Ergative subjects don't allow inverse scope, differing from nominative subjects in imperfective.

(39)   a.   kisii šaayer-ne har   ghazal   lik^{h}ii
         some poet-ERG every song-NOM write.f-PERF
         "Some poet wrote every song." ($\exists > \forall$, *$\forall > \exists$)   ergative subject, unambiguous

         b.   koi   šaayer   har   ghazal   lik^{h}taa   hair
         some poet-NOM every song-ACC write.m-IMPF be-PRES
         "Some poet writes every song." ($\exists > \forall$, $\forall > \exists$)   nominative subject, ambiguous

- N&A: scope rigidity because the non-agreeing ergative subject can't reconstruct (other explanations ruled out carefully). A-movement to Spec,TP driven solely by EPP, i.e. not driven by case or agreement.

- But ergative subjects *can* scope below negation, e.g. NPI ergative subjects OK.

(40)   kisii   vidyart^{h}ii b^{h}ii-ne   ye   kitaab nahii naR^{h}ii
         some student   EVEN-ERG this book   NEG read-PERF
         "No student read this book." $\neg > \exists$ subject scopes below negation

- But in sentences with QP subject and object and negation, the reading derived by reconstructing all the way to Spec,*v*P is still not available.

- Problem for PEPPER. N&A: inverse scope in (40) might not be derived by A-reconstruction, i.e. position of negation not obviously below TP; they present some indirect evidence indicating that negation may scope over auxiliaries. Maybe so (question for future research).

- <u>Greek promoted goals.</u> In passivised distransitives, either the theme of goal may be promoted; themes bear nominative and trigger agreement, while goals show up genitive and do not trigger agreement.

- PEPPER correctly predicts promoted themes interact scopally with objects, but promoted goals don't.

(41)   a.   Kapjo vivlio   tu stalthike kathe ekdhoti
         some book-NOM CL was-sent every reviewer-GEN
         "Some book was sent to every reviewer." ($\exists > \forall$, $\forall > \exists$)   nom subject, ambiguous

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[4]I focus on Greek and Hindi here. The English cases involve "double raising" (Aoun 1982) and locative inversion. I won't discuss these here as I don't actually think they should be unified as cases of aRaR; rather, they should have independent explanation. Regarding double raising, I proposed an alternative explanation in Thoms (2010). Regarding locative inversion, I think it's likely that the PP "subject" in these cases is in Spec,CP, with a null expletive in Spec,TP (Postal 1977, 2004, Bruening 2010), in which case scope rigidity there could be part of a more general effect where A′-moved XPs are scopally frozen.

   As for Russian, my own investigation into the relevant phenomena ("unaccusative accusatives") indicate that non-agreeing subjects in this language were not so scopally rigid as they seem, though there are still different from non-acc configurations (i.e. there are special intonation requirements). Exploring these complications would take me too far afield here. I'm indebted to Igor Yanovich for discussion of this point.

    b.   Enos ekdhoti   (tu) stalthike kathe vivlio
            some reviewer-GEN CL was-sent every article-NOM
            "Some reviewer was sent to every article." ($\exists > \forall$, $*\forall > \exists$)   genitive subject,
            unambiguous

- But genitive subjects *can* scope below modals in Greek (Sabine Iatridou p.c.):[5]

    (42)   kapiu ekdhoti   prepi na   tu stalthike afto to vivlio
            some publisher-GEN must INFL CL was-sent this the book
            "Some publisher must have been sent that book." *must*$> \exists$

- If low scope below modals is derived by reconstruction, this is another problem for PEPPER. Indicates non-agreeing subjects can reconstruct a little, below modals, but not to the base position in *v*P.

- **But all of these facts are a problem for S&E**: shows that aRaR is a general phenomenon, begging a unified account. But this doesn't follow from S&E's theory.

- Crucial part of their account is failure of feature movement (of mereology feature) to Spec,TP; when this isn't possible, a reconstruction derivation fails.

- But the PEPPER subjects don't agree at all, so they wouldn't require feature movement to Spec,TP. "Purely EPP-driven movement" should reconstruct freely on their account.

- See Johnson (2009) for more discussion of the incompatibility of PEPPER and S&E's theory.

3.4 Interim summary

- TDPs can reconstruct below negation but not into *v*P or lower; the same is seen with other subjects that don't agree with the verb in a straightforward fashion.

- Could be described as this: reconstruction of TDPs to an intermediate adjunction position is possible, but reconstructing to the base position in Spec,*v*P isn't.

- The different ways in which subjects fail to agree straightforwardly:

    1. syntactically singular NP agrees as plural (TDPs)
    2. syntactically singular head NP allows plural NP in complement to control agreement (partitives)
    3. fail to agree entirely (PEPPER)

- Two distinct but surely related puzzles:

    1. why would it be possible to reconstruct to an intermediate adjunction position but not into Spec,*v*P?
    2. why would non-standard agreement affect reconstruction?

- S&E cannot account for either puzzle sufficiently.

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[5]Indefinite subjects in this configuration also scope under negation, but they show up as n-words due to negative concord. One might contend that such cases don't actually involve A-reconstruction, as the $\neg > \exists$ scope might be determined by n-marking alone.

- Surely important: the agreement in question is *verbal agreement*, mediated by T.

- Idea: positions like Spec,*v*P are not possible reconstruction sites because the agreement on the verb doesn't properly match the element to be reconstructed there. But how to model this?

4. An account of aRaR

- **Proposal**: anti-agreeing subjects cannot be interpreted in "agreement positions" due to a conflict in interpretable features between DP and the specifier-projecting head.

- I get the notion of "agreement positions" from an implementation of Richards & van Urk's (2012, this morning; R&vU) and Rackowski & Richards' (2005; R&R) theory of locality, extended to A-movement.

4.1 Richards and van Urk's theory of locality

- R&R and R&vU's theory of locality: *to move an XP to Spec,YP out of a phase ZP, the probe on Y must Agree with the phase head Z.*

- I generalize these as one here for the most part, with differences spelled out when relevant. Most of the details are from R&R; R&vU-specific modifications marked "R&vU."

- Background assumptions (shared widely, mainly from Chomsky 2000):

  - phase theory, with (at least) all *v*Ps and finite CPs as phases; no strong/weak phase distinction

  - Phase Impenetrability Condition (PIC), means all Move and Agree is through phase edge (R&vU, to be revised)

  - Agree-based theory of feature dependencies; standard "downward" Agree

  - an Agreeing probe must target the closest possible goal[6]

- The more specific assumptions about the theory of locality (motivated in that work):

- **Possible goals**: R&R propose that XP is a *possible goal* for a probe if XP is (i) capable of moving and (ii) "it dominates the feature the probe is seeking."

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[6]The definition that R&R give is as follows:

(i)   "a goal α is the *closest* one to a probe if there is no distinct goal β such that for some X (X a head or maximal projection), X c-commands α but not β" (R&R: 582).

The parenthesis excludes X' projections; hence on this definition a phrase ZP and a WP in its specifier are equidistant from any c-commanding probe.

   (i) won't do for my purposes, as it makes base-generated specifiers eminently available for movement (regardless of what's going on with the phase head), so instead I adopt the definition of Shortest in Richards (1997, 98):

(ii)   A pair P of elements $\{\alpha, \beta\}$ obeys Shortest iff there is no well-formed pair P' which can be created by substituting γ for either α or β and the set of nodes c-commanded by one element of P' and dominating the other is smaller than the set of nodes c-commanded by one element of P and dominating the other.

This version makes maximal projections closer to higher goals than that maximal projection's specifier(s). The parenthesis in (i) was required in R&R because they were trying to do without a hard version of the PIC, but this position is rejected on empirical grounds by R&vU; the definition of closeness/Shortness in (ii) is compatible with their proposals.

- Regarding (i), they furthermore assume that only phases can move (following Chomsky 2000), but this isn't important here; it's sufficient here to say that phases can in principle always move.

- Combined with (ii), this has the effect of ensuring that a movable MP is always an intervener for movement of the minimal constituent within it containing a probed feature F.

- Note (ii) is necessary since otherwise there would be no pied-piping (open question as to how a probe "knows" that the goal contains relevant features in embedded position).

- Key result: phases are interveners for movement of XPs they contain, even XP at the edge (R&vU): a phaseP can move, and the phase head dominates all probeable features the phase contains, so it is a possible goal and it is closer than anything it contains.

CP
C$_{[+wh]}$ TP
T′
T   vP   ← dominates *wh*-feature and can move = **intervener**
v′
v   *wh*P
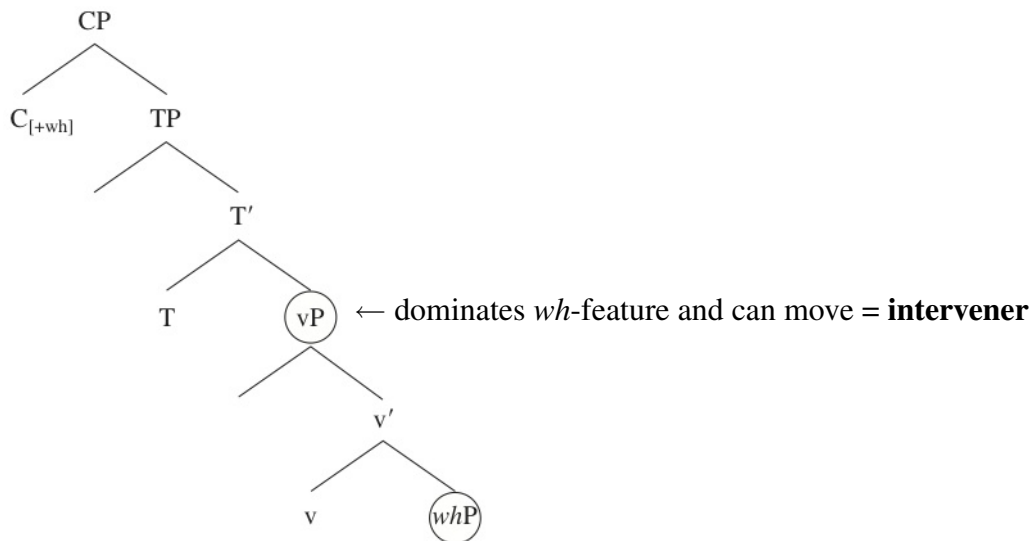
- **Circumventing intervention**: intervention effects like this can be circumvented if the probe first Agrees with the MP/phase, due to a generalized version of Richards' *Principle of Minimal Compliance* (Richards 1997, Richards 1998, Hiraiwa 2001), as in (43).
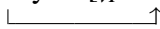
(43)   Once a probe P is related by Agree with a goal G, P can ignore G for the rest of the derivation.

- Toy example of (43) in action: in multiple *wh*-questions, C must be able to probe past lower copies of the higher *wh*P once it's been moved to Spec,CP. (43) allows this: lower copy of *what* no longer "active."

(44)   a.   C   you gave what to whom

        b.   what C   you gave ~~what~~ to whom

- Extraction from phase: probe first Agrees with phase head, then Agrees with and moves XP in Spec. Example: *wh*-movement of a *wh*P in the edge already.

(45)   a.   C   you [$_{vP}$ what [$_{v′}$ bought ~~what~~]]   vP is intervener for *wh*P
        b.   C   you [$_{vP}$ what [$_{v′}$ bought ~~what~~]]   C Agrees with phase vP, "opens up" phase
        edge

    c.   C   you [$_{vP}$ what [$_{v'}$ bought ~~what~~]]   C can now Agree with *wh*P

- Tagalog provides evidence for *v*-C Agree (extraction from CP complements); Dinka provides evidence for all C-*v* and *v*-C, as well as EPP effects at all levels. den Dikken (2009) provides more evidence from Hungarian (but quite different theory). All data from A′-extraction.

- R&vU's striking evidence from Dinka shows that cyclic movement through phase edges is still necessary, i.e. the PIC holds whether or not there is Agree between the probe and a phase head.

- Important outcome: **all extraction from a phase mediated by features on the phase head**, i.e. Move/Agree with an object necessarily involves intermediate Move/Agree with *v*.

4.2 An implementation for A-movement

- How to do A-movement in R&vU's framework? Basic idea: **T will Agree with *v* before it Agrees the subject in Spec,*v*P**.

- Idea that T should probe *v* unremarkable: dependency between two positions typically reflected in the form of the heads (i.e. fused by verb movement or lowering, or agreement on verb etc).

- *v* must bear interpretable ϕ-features that are probed for by T; in standard case, the ϕ-features borne by subject in Spec,*v*P.[7]

- Basic case of moving an subject in Spec,*v*P to Spec,TP.

(46)   a.   T [$_{vP_\phi}$ DP$_\phi$ [$_{v'}$ VP]]   *v*P is intervener for DP$_\phi$
          b.   T [$_{vP_\phi}$ DP$_\phi$ [$_{v'}$ VP]]   T Agrees with phase *v*P, "opens up" phase edge
          c.   T [$_{vP_\phi}$ DP$_\phi$ [$_{v'}$ VP]]   T can now Agree with DP$_\phi$

- I assume that the EPP on T can in principle be satisfied by any X(P) that it probes; in some languages, this derives "spec-pied-piping" for EPP-satisfation, others verb movement (Alexiadou and Anagnostopoulou 1998, Biberauer and Richards 2006). In English cases like (46c) this derives raising of the subject DP.

- Successive-cyclic A-movement: ϕ-features on *v* probe for lower phase head and then the DP in its spec, not significantly different.

- Finite CPs opaque for A-extraction since C typically does not bear ϕ-related features (unlike *v*).[8] Halpert (2012, ch.6): when C and *v* do enter into ϕ-Agree relation, ban on A-extraction from finite CP is lifted (Zulu). Halpert explains this in terms of R&R's theory of locality.

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[7]If the idea of interpretable features on the verb makes you feel uneasy, you can replace these with uninterpretable features; this requires reformulation of the key constraint in (49), but this can be done without losing key results. I'll mark further developments of this alternative throughout with footnotes marked *iF alert*.

  For what it's worth, I think the idea of *un*interpretable features on the verb is even more problematic, as they would then just be formal features of the kind we want to purge from any Minimalist theory (cf. Pesetsky and Torrego 2001). It seems to me to be perfectly natural for iFs to appear on syntactically related heads, so long as we can assume that principles that reduce movement chains to coherent objects may help with any problems that would be caused by putting iFs on other heads, i.e. we need *some* mechanisms for making sense of distributed interpretable pieces of the same basic element.

[8]See Haegeman and Koppen 2012 for skeptical remarks about complementizer agreement as a diagnostic (at least in Germanic) of T's ϕ-features being on C.

- Important outcome: for T to Agree with a subject, it must Agree with *v* first. Hence ***v* will bear the interpretable ϕ-features probed by T**.

4.3   *Reconstruction and positions*

- How does reconstruction fit in? I assume the copy-theoretic approach to reconstruction in Chomsky (1993), Bobaljik (1995), Hornstein (1995), Fox (1999), Bobaljik and Wurmbrand (2012): reconstruction is done by interpreting the lower copy in a syntactic movement chain and deleting the higher one at LF.

- What sort of operation is involved? In effect an instruction that says "don't interpret top copy," an instruction to defy the default. If it applies twice, you reconstruct two steps. So:

(47)   RECONSTRUCT: at LF, delete the top copy in a given sequence of copies.

- Technical details of implementation not hugely important here (see Thoms 2011 for a concrete proposal) but what is important is that it applies cyclically. Thus if reconstruction to one position fails, **reconstruction to another position below it won't be possible**.

- Hence lack of reconstruction to Spec,*v*P will result in lack of reconstruction into *v*P i.e. below raising predicates.

- Standard A-reconstruction from Spec,TP to Spec,*v*P:

(48) $[_{TP}$ DP $[_{T'}$ T $[_{vP}$ DP $[_{v'}$ v VP]]]]   RECONSTRUCT
         $[_{TP}$ ~~DP~~ $[_{T'}$ T $[_{vP}$ DP $[_{v'}$ v VP]]]]   only lower DP available for interpretation→
         reconstruction

- Crucial proposal here: for reconstruction to work, the DP must be interpretable in the lower position. I propose that this is subject to the following constraint, which ensures that a reconstructed XP and the specifier it sits in match up:

(49)   POSITION COHERENCE: for a head H to project an interpreted specifier, H and the XP in the spec must match with respect to the visible interpretable features (iFs) that project that specifier.

Unpacking this socratically:

  – **Q:** What does it mean for features to project a specifier?
    A: Specifiers are only produced when there is a feature-dependency between host XP and the hosted YP, so we may say that the features on the head X are instructions to project the specifier.
  – **Q:** What features will count?
    A: Non-lexical features that project specifiers, i.e. features added to the head. Thus the categorial feature on *v* won't matter as it doesn't project a specifier, but *wh*-attracting *wh*-features and subject-marking ϕ-features will.
  – **Q:** Visible? **A:** By "visible" I mean relevant to the syntax, available for Agree.
  – **Q:** Matching? **A:** Across category, i.e. number will match number.

– **Q:** Interpreted specifier? **A:** A phrase is interpreted at LF in that position.

- For instance, *v* bears ϕ-features corresponding to subject; these features are non-lexical on *v*, and they are in effect instructions to project a specifier to host an element bearing corresponding features. For *wh*-extraction, *v* will also bear a *wh*-feature this projects a separate specifier which the *wh*P will land in.

- *Position Coherence* is understood to be a representational constraint of sorts. A position is "incoherent" if matching of iFs between Spec and XP could go wrong.[9]

- We may propose that precise matching of iFs is required to ensure iFs on intermediate heads are deleted accordingly (and without confusion).

- It's a stipulation, but not a particularly disturbing one. Some speculations on its status:

    – it may be a natural reflex of a maximally transparent relation between syntax and semantics, i.e. an iF on a verbal projection may state precisely how it composes with the specifier; non-matching values may lead to conflict

    – could be important for ensuring that multiple specifiers are composed with verb in the right order

    – perhaps a reflex of a fairly general LF-coherence condition ensuring that linked object match in features that count at the interfaces

    – may give us a clue as to the nature of the A/A$'$-distinction: A$'$-positions like final landing Spec,CP will be "incoherent," since C and the *wh*P don't match for any iFs; A-positions will typically be coherent, with Spec,*v*P corresponding in ϕ features

- <u>Reconstruction in regular A-chains</u> has no problems: lower position had to match for ϕ-features since it only managed to move out of the base position by virtue of Agree with those features.

(50)   a.   T $[_{vP_\phi}$ DP$_\phi$ $[_{v'}$ VP]]   *v*P is intervener for DP$_\phi$

         b.   T $[_{vP_\phi}$ DP$_\phi$ $[_{v'}$ VP]]   T Agrees with phase *v*P, "opens up" phase edge

         c.   T $[_{vP_\phi}$ DP$_\phi$ $[_{v'}$ VP]]   T can now Agree with DP$_\phi$

         d.   DP$_\phi$ T $[_{vP_\phi}$ ~~DP$_\phi$~~ $[_{v'}$ VP]]   DP moves to Spec,TP

(51) $[_{TP}$ DP$_\phi$ $[_{T'}$ T $[_{vP_\phi}$ DP$_\phi$ $[_{v'}$ v VP]]]]   RECONSTRUCT

        $[_{TP}$ ~~DP~~ $[_{T'}$ T $[_{vP_\phi}$ DP$_\phi$ $[_{v'}$ v VP]]]] ϕ-features match, coherent reconstruction position

4.4 *Reconstruction and aRaR*

- Key idea: the theory of locality from R&vU derives certain kinds of representations which in some cases may preclude reconstruction; **aRaR effects due to anti-agreeing positions being "incoherent" with reconstruction**.

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[9]*iF alert*: this matching could just be across categories, if features on verbs are not iFs.

4.4.1 *BrE team DPs*

- Position Coherence an issue with these since TDPs bear visible iFs that don't match those on *v*, i.e. [sg].

- <u>Lack of reconstruction into *v*P</u>. These DPs bear not one but *two* visible specifications for number: [Plural], which Agrees with T, and [Singular], which (in these cases) does not.

- *v* bears plural Num features, T probes *v*, it probes Spec,*v*P, finds TDP and A-moves it to Spec,TP.

(52) An English team are likely to win.

(53) a. T $[_{vP_{[pl]}}$ DP$_{[pl][sg]}$ $[_{v'}$ VP]]   *v*P is intervener for DP$_{[pl][sg]}$
      b. T $[_{vP_{[pl]}}$ DP$_{[pl][sg]}$ $[_{v'}$ VP]]   T Agrees with phase *v*P, "opens up" phase edge
      c. T $[_{vP_{\phi}}$ DP$_{[pl][sg]}$ $[_{v'}$ VP]]   T can now Agree with DP$_{[pl][sg]}$
      d. DP$_{[pl][sg]}$ T $[_{vP_{[pl]}}$ ~~DP$_{[pl][sg]}$~~ $[_{v'}$ VP]]   DP moves to Spec,TP

- Interpreting the TDP in Spec,TP is OK since this position does not bear interpretable ϕ-features.[10] But reconstructing is out:

(54)

[sg] and [pl] but only [pl] on position → incoherent
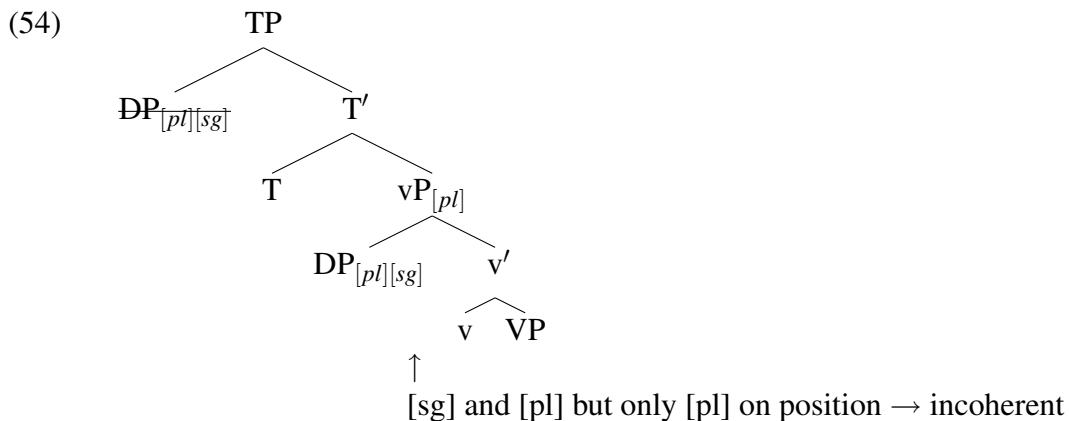
- Hence interpreting the non-agreeing DP in this "agreement position" is not possible. Importantly: this does not derive a categorial ban on reconstructing.

- <u>Scoping below negation</u>: I propose that it is always possible to adjoin to intermediate projections in the course of moving from one position to another.

---

[10]*iF alert*: on a reformulated version of (49) which constrains matching between corresponding uF-iF pairs, we would need to say something more. One option would be to say that such subject obligatorily reconstruct to a nearby intermediate adjunction position; this was what I proposed in the baby version of this paper (Thoms 2009), a process I called *Rejection*. This was motivated in part by the observation above that with *n't*, many speakers report that TDP subjects need to scope below negation in the absence of focus on the subject. I've retreated from this since the data aren't clear enough to motivate this strongly enough; moreover it requires a quite strict cartography of the clause, which I'm not so sure about. Still, interpretation in an adjoined position would still work for this story.

An alternative would be to say that T doesn't really bear uFs at all; rather, it's just a probe that is looking for an element to fill its spec. uFs may then be the sole preserve of intermediate landing sites and phase heads. This would be consonant in many ways with the key proposals in Preminger (2011), where the idea that uFs are "timebombs" on probing heads is rejected.

- To scope below negation, this could be adjunction to an Aspect projection, or perhaps adjunction to NegP itself if neg is a specifier which may interact scopally with adjoined XPs. The former:

(55)

```
                         TP
                    ┌─────┴─────┐
              DP_[pl][sg]        T′
                            ┌────┴────┐
                            T        NegP
                                 ┌────┴────┐
                                        Neg′
                                   ┌─────┴─────┐
                                  not         AspP
                                         ┌─────┴─────┐
                                    DP_[pl][sg]      AspP
                                               ┌─────┴─────┐
                                             AspP        vP_[pl]
                                                     ┌─────┴─────┐
                                               DP_[pl][sg]       v′
                                                            ┌────┴────┐
                                                            v        VP
```
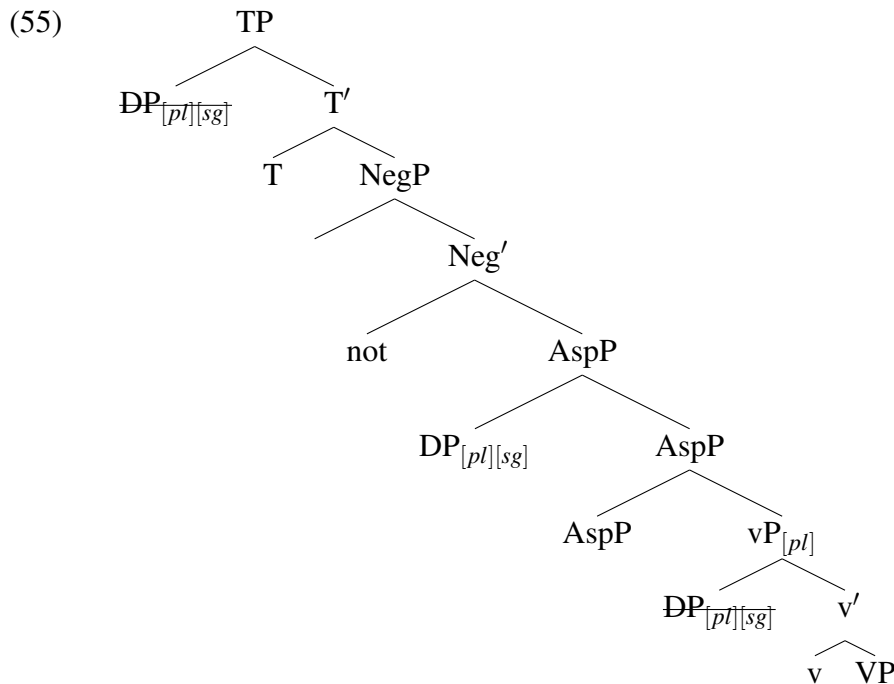
- Adjunction involves no feature valuation/checking relation between head and position, so there are no "coherence" issues with such positions, i.e. there's no attempt to match features on the head to ones on the DP, so conflict never becomes an issue.

- The ban on occurring in existentials: arguments stay in their agreement positions in existentials.

- Agree happens but no movement. This means that anti-agreeing DPs *will always be in incoherent position in existentials*, hence their ungrammaticality. Derivation:

(56)   *There are an English team in the final.

(57)   a.   T   [$_{vP_{[pl]}}$ DP$_{[pl][sg]}$ [$_{v'}$ PP]] vP is intervener for DP$_{[pl][sg]}$
       b.   T   [$_{vP_{[pl]}}$ DP$_{[pl][sg]}$ [$_{v'}$ PP]]   T Agrees with phase vP, "opens up" phase edge
       c.   T   [$_{vP_{\phi}}$ DP$_{[pl][sg]}$ [$_{v'}$ PP]]   T can now Agree with DP$_{[pl][sg]}$
       d.   there T [$_{vP_{[pl]}}$ DP$_{[pl][sg]}$ [$_{v'}$ PP]]   expletive inserted
                                                              do not match, incoherent

(58)

```
                    TP
                  /    \
              there     T′
                      /    \
                   are      vP[pl]
                          /      \
                 DP[pl][sg]        PP
                  /    \          /   \
            an English team   in the final
```
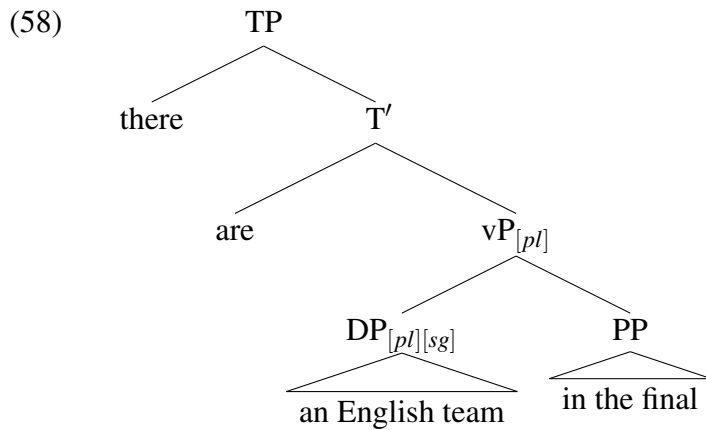
- **Variable-agreement partitives** have exactly the same explanation: the matrix NP is syntactically [sg] but allows percolation to matrix position of [pl] features from complement PP. Two features of same kind on DP means that they will always conflict in Spec,*v*P, which will be marked plural.

4.4.2 *Accounting for PEPPER effects*

- Proposal can also account for the aRaR effect attributed to PEPPER, with some relevant modifications.

- Basic point: **non-agreeing subjects won't match the phase edge's probed features, so the phase edge position will be incoherent with A-reconstruction of the subject**

- Core cases involve Agree between T and lower object, over subject, where the object does not move overtly. Seems to require long distance Agree probing XP not in phase edge, in violation of strict PIC.

- For concreteness I'll assume this is possible, in effect following Bošković (2007) in assuming that only movement is bound by the PIC; this may be achieved with something like Fox and Pesetsky 2005's linearization-based theory. Bošković (2007) presents long distance agreement as an argument for this.[11]

- This is still compatible with the approach to locality adopted here: the probe still must Agree with *v* before probing to find the object (as we'll see).

- Consider Hindi ergative subjects. Anand and Nevins (2006) propose the following:

  - the *v* in ergative clauses is defective (v_{def}), i.e. it does not assign object Case, so the object needs Case; the candidate assigner is T

  - v_{def} probes and values the ϕ features on the object[12]

  (59) a. T $[_{vP_{def}}$ DP$_{erg}$ $[_{v'}$ v$_{def}$ $[_{VP}$ V DP$_{\phi}$ $]]]$ v_{def} probes ϕ-features on DP object

       b. T $[_{vP_{def}}$ DP$_{erg}$ $[_{v'}$ v$_{def}$ $[_{VP}$ V DP$_{\phi}$ $]]]$

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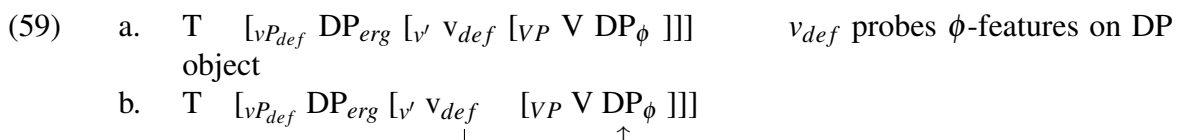
[11]One could of course conceive of alternatives; for instance, the agreeing objects may get to the phase edge by covert movement, with valuation of features on the covert higher copy being sufficient for licensing of Case on the whole chain. See Chandra (2007) for a movement-based approach to long distance agreement and Keine (2012) for arguments that some instances of LDA involve at least some degree of movement to circumvent the PIC.

[12]*iF alert*: Anand and Nevins propose that the features on *v* are uFs, presumably by convention. I'll assume the relevant feature is an iF, for the sake of keeping things consistent, but our modified version would handle the facts in a similar way.

- ergative is an inherent Case, so the subject does not need to be licensed syntactically

- since the subject is inactive, its ϕ-features cannot value probe; hence it is a *defective intervener* when T probes

(60)   T $[_{vP_{def}}$ DP$_{erg}$ $[_{v'}$ v$_{def}$ $[_{VP}$ V DP$_{\phi}$]]]

- a crash is averted by what A&N call *punting*: the subject moves to Spec,TP to check the EPP and "get out of the way" for further Agreeing[13]

(61)   DP$_{erg}$ T $[_{vP_{def}}$ $\overline{\text{DP}_{erg}}$ $[_{v'}$ v$_{def}$ $[_{VP}$ V DP$_{\phi}$]]]

- once subject is punted, T can probe again to find the object; it assigns nominative Case, but its EPP has been satisfied by the ergative subject so it doesn't move

(62)   DP$_{erg}$ T $[_{vP_{def}}$ $\overline{\text{DP}_{erg}}$ $[_{v'}$ v$_{def}$ $[_{VP}$ V DP$_{\phi}$]]]

- It doesn't takes a lot to alter this to fit the present system. Here's a derivation:

  - T probes for ϕ-features and it finds *v*P

  - *v*P is a *potential goal* because it is movable and it dominates the ϕ features sought by the probe

  - thus in R&vA system, T must Agree with *v*P first; hence *v* must bear relevant ϕ-features

  - T Agrees with *v*P, removing it as an intervener

(63)   T $[_{vP_{def}}$ DP$_{erg}$ $[_{v'}$ v$_{def}$ $[_{VP}$ V DP$_{\phi}$]]]

  - T then Agrees with the next possible goal, which is the ergative subject

(64)   T $[_{vP_{def}}$ DP$_{erg}$ $[_{v'}$ v$_{def}$ $[_{VP}$ V DP$_{\phi}$]]]

  - The subject can move, and it dominates an instance of the relevant feature (it has ϕ-features), so it qualifies as a possible goal; therefore it moves to Spec,TP to satisfy the EPP requirement there.

(65)   DP$_{erg}$ T $[_{vP_{def}}$ $\overline{\text{DP}_{erg}}$ $[_{v'}$ v$_{def}$ $[_{VP}$ V DP$_{\phi}$]]]

  - But since DP$_{erg}$ was *inactive* (its ϕ-features aren't available for Agree, and may not match the probed value[14]), T remains unsatisfied, and so it probes again (PIC-unimpeded). Since

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[13]Punting is of course not possible to evade the intervention effect induced by a phase head, since it would punt the desired goal out of the way (and hence Case features on the goal DP would remain unvalued).

[14]An important aspect of the R&R system is that the Agree relation between probe and phase head need not be for exactly the same set of feature values.

the subject has been punted, it finds the object, which it assigns Nominative; T is satisfied and hence all is well.

(66)   DP$_{erg}$ T   [$_{vP_{def}}$ ~~DP$_{erg}$~~ [$_{v'}$ v$_{def}$ [$_{VP}$ V DP$_\phi$]]]

- This is one way to do anti-Agreeing/defective intervention-evading A-movement in R&vU system.

- Upshot of such a derivation: in the LF-representation, vP will bear iFs that do not correspond to visible iFs on the ergative subject (its ϕ-features are not visible, indicated by gray in an embedded position below), so there is a mismatch of the kind which induces "incoherence" under reconstruction.

(67)   LF (strikethrough indicates RECONSTRUCT has applied)
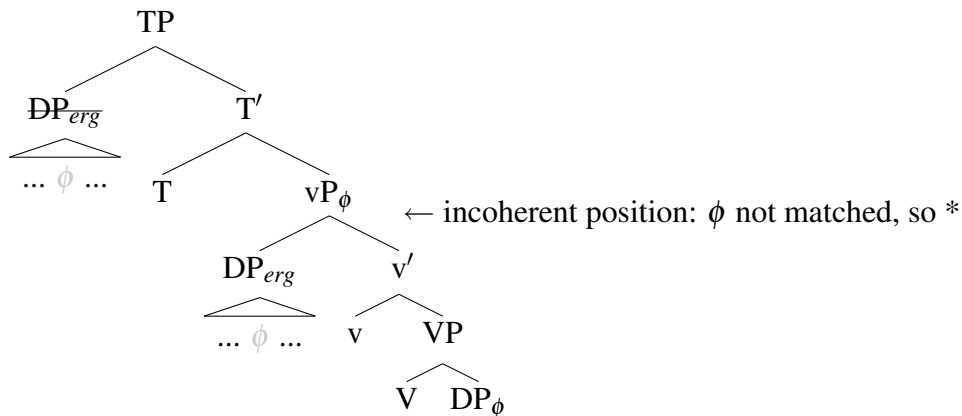
So we can't reconstruct the anti-agreeing subject into Spec,vP. PEPPER effect derived.

- But as with TDPs, interpreting a copy in an intermediate adjoined position is possible, hence these DPs *can* reconstruct under negation, adverbs or some modals.

5.   Conclusion

- I began by showing that Sauerland Elbourne's account of aRaR effects with British team DPs is problematic, as it was too restrictive (failing to rule out some instances of reconstruction) and too permissive (failing to give an account of very similar aRaR effects).

- Instead I proposed an alternative based on the **lower copy interpretation** approach to reconstruction, in cahoots with a particular theory of the locality of extraction.

- The approach to the locality adopted here derives certain kinds of representations where phase heads bear features that tell its extraction history.

- I proposed a constraint which dictates that reconstructing to phase edges is only possible if the features tracking extraction history match neatly with corresponding features; if not reconstruction is confused and not possible.

- Derived the pattern of reconstruction with anti-agreeing DPs across configuration and languages

- Takehome lessons:

- A-reconstruction is syntactically conditioned, interacting with agreement in an intricate fashion.

- Lower copy interpretation approach to reconstruction has the right ingredients to capture such facts. PF movement, semantic reconstruction and lowering not so much.

- A different (indirect) sort of evidence for R&vU's theory of movement and locality

Appendix 1: Barss' generalization

An impressive result of S&E's theory of total reconstruction is that it seems to derive *Barss' generalization*, which states that A-reconstruction into an A′-moved constituent is not possible. Some data that motivates this:

(68) a. [Some politician]$_i$ is likely to t$_i$ win.   *likely*> ∃, ∃ >*likely*
      b. How likely to t$_i$ win is [some politician]$_i$?   **likely*> ∃, ∃ >*likely*

S&E argue that this follows from rule ordering. The logic is as follows: on their theory, A-reconstruction is derived by leaving the subject in situ in syntax and then moving it to Spec,TP. If A′-movement is syntactic movement, A-reconstruction of something in the A′-moved XP should be impossible, since PF movement (A-reconstruction) occurs after syntactic movement since, by assumption, the A-moving argument must move before the A′-moving XP moves.

A crucial assumption in this analysis is that PF movement does not allow for *lowering*: if it did, then we could move the XP containing the subject in syntax, leaving the argument in situ in XP until PF, and then moving it to Spec,TP. Thus something like this (ignoring T-to-C).

(69) a. C T is [$_{DegP}$ how [$_{AP}$ likely [$_{IP}$ to [$_{vP}$ [$_{DP}$ some politician] win]]]]   subject in situ,
      b. [$_{DegP}$ how [$_{AP}$ likely [$_{IP}$ to [$_{vP}$ [$_{DP}$ some politician] win]]]] C T is t$_{degP}$

                                    move whP to Spec,CP in syntax

      c. [$_{DegP}$ how [$_{AP}$ likely [$_{IP}$ to [$_{vP}$ t$_{subj}$ win]]]] C [$_{DP}$ some politician] T is t$_{degP}$

          move subject to Spec,TP at PF

However, it's not clear what actually rules this out, as PF movement is often used for the purposes of lowering (see e.g. Adger 2006, Embick and Noyer 2001). A related point made by Matushansky (2006) is that we do not have an explicit theory of what is and is not possible at PF, so it is hard to claim any sort of restrictiveness in the absence of explicitness.

Even granting this, there are some other problems for the theory and indeed the generalization. While it's true that VP-preposing creates scope rigidity between subject and object (70), not all predicate movement rules have this effect, as shown by the example of *participle preposing* in (71) (term from Samko 2013; such examples have a sort of journalese feel), where the universal object can distribute over the subject.

(70)   Sitting at every table, a (#different) bottle of wine was indeed.

(71)   Sitting at every table was a (different) bottle of wine hand-chosen by the sommelier...

This counter-exemplifies Barss' generalization and problematizes S&E's claimed result. In Thoms (2013) (and related work in progress with George Walkden) I propose an account of this contrast which effectively accounts for the anti-reconstruction facts in the same way as Lasnik and Saito (1992): VP-preposing and most instances of predicate movement don't involve movement of an XP containing a trace, but rather movement of an XP containing PRO in the relevant position, since a trace would be remnant movement, which is banned in most but not all configuration. We provide an account of this which lets in the right cases, i.e. (71), and it all follows

from independent properties of how chains are linearized. Importantly, this theory allows A-reconstruction into A′-moved XPs, since there's no good reason to ban it and examples like (71) require it.

All facts considered, there are few reasons to still believe in PF movement, despite its intuitive appeal.

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