Subject co-reference in Antecedent Contained Deletion

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1 Introduction

- Antecedent Contained Deletion (ACD): ellipsis inside the ellipsis site's antecedent, (1)

(1) a. Sue likes every boy that Mary does [~~VP like *t*~~].
b. Mary has read every book that June couldn't [~~VP read *t*~~].

- In Dutch, French, Italian(, Spanish?), ACD is also possible, but only if the **subject of the relative clause is co-referent with the main subject**, (2).

(2) a. Olaf$_i$ heeft elk boek gelezen dat hij$_i$ moest.
Olaf has every book read that he must.PST
"Olaf read every book that he had to."
b. *Olaf heeft elk boek gelezen dat David moest
Olaf has every book read that David must.PST
(*Dutch*, Aelbrecht 2010:139)

(3) a. Lea$_i$ lit tous les livres qu'elle$_i$ peut.
Lea reads all the books that-she can
"Lea reads all the books she can."
b. *Lea lit tous les livres que Tom ne peut pas.
Lea reads all the books that Tom can not
(*French*, Dagnac 2010:159,166)

- This kind of subject co-reference is only restricted to ACD in these languages, and not found in elliptical constructions generally (Aelbrecht 2010, 142, Dagnac 2010; Gruet-Skrabalova 2020).

Claim

The different behavior of English and Dutch/Romance can be explained with general differences between these languages:

- the sizes of **ellipsis sites** (*v*P *vs.* VP)
- the lengths of **quantifier raising** (QR) (low *vs.* high)

If these criteria are mismatched in a certain way, obligatory subject co-reference arises. Concretely, I analyze it as a **bound pronoun effect** in the sense of Grano & Lasnik (2018).

Generalization

If an elided phrase contains the canonical landing site for QR in a given language L, L can only allow ACD with subject co-reference.

Roadmap:

1. Introduction
2. The Basics: Modal Complement Ellipsis, Antecedent Contained Deletion, Quantifier Raising
3. Bound Pronoun Effects
4. Towards an Analysis
5. Conclusion

2 The Basics

2.1 Modal Complement Ellipsis

- English and Dutch/Romance both show types of verbal projection ellipses.
- English: VP-ellipsis

(4) Kirsten ate a whole bag of chips but Marina didn't [~~VP eat a whole bag of chips~~].

- Dutch, Romance: ellipsis of the complement of a modal verb (= Modal Complement Ellipsis = MCE)
- In all languages, the subject in the antecedent conjunct and the subject in the ellipsis site may be **non-identical**.

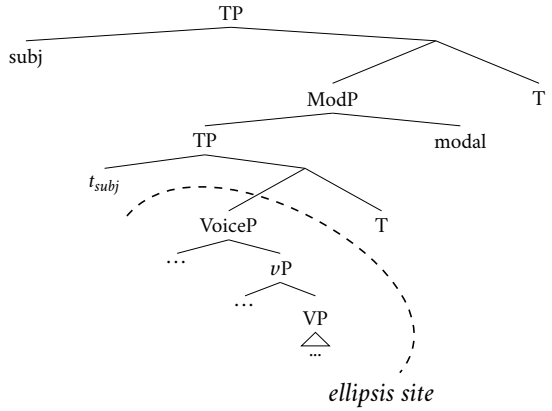
(5) Jessica mocht nog niet gaan werken, maar Jella moest ~~gaan werken~~
Jessica was.allowed still not go work but Jella must.PST
"Jessica was still not allowed to work, but Jella had to work." (*Dutch*, Aelbrecht 2010)

(6) Tom a pu voir Lee, mais Marie n'a pas pu ~~voir Lee~~.
Tom AUX.PST can see Lee but Marie NEG-AUX.PST NEG can
"Tom could see Lee but Marie couldn't." (*French*, Dagnac 2010:158)

Aelbrecht (2010): MCE in Dutch is ellipsis of VoiceP

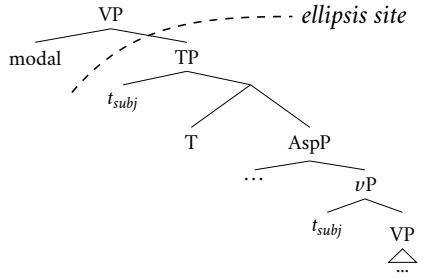
- Modal verbs are subject-raisers that select a TP.
- Antecedent and ellipsis site may not mismatch in voice ⟶ VoiceP (≈ *v*P) is included in deletion
- Ellipsis licensing at a distance

(7) *Dutch Modal Complement Ellipsis* (Aelbrecht 2010)



- Dagnac (2010): MCE in Romance is ellipsis of TP
  - The entire TP is deleted.
  - no voice mismatches, no overt voice auxiliaries

(8) *Romance Modal Complement Ellipsis* (Dagnac 2010)



2.2 Antecedent Contained Deletion

- Problem: the antecedent for the ellipsis (= VP_1) *contains* the ellipsis site (= VP_2) ⇒ the *identity* or *parallelism* requirement of ellipsis cannot be met ⇒ ellipsis should not be possible

(9) Sue [$_{VP_1}$ like every boy Op_k that Mary does ~~[$_{VP_2}$ like t_k]~~]

a. *infinite regress*: Sue likes [every boy Mary likes [every boy Mary likes [every boy Mary likes ...]]]
b. antecedent VP: [likes every boy Op_k that Mary does [like t_k]]
c. elided VP: [like *t*]

- Standard solution: parallelism is created via **Quantifier Raising** (QR, e.g., Sag 1976; May 1985; Larson & May 1990; Fiengo & May 1994; Kennedy 1997)
- The object DP, including the relative clause is adjoined to VP at LF:

(10) [$_{vP}$ Sue [$_{VP_1}$ [$_{DP}$ every boy *Op* that Mary does [$_{VP_2}$ like *t*]]$_j$ [$_{VP_1}$ like t_j]]

- There are problems with the QR-account: mainly, under the copy theory of movement QR doesn't lead to parallelism (see e.g. Baltin 1987; Sauerland 1998; Fox 2002 for discussion and alternative accounts). I will **ignore** this problem for now.
- It has sometimes been argued that QR can reach higher landing sites in ACD than it can usually (Hornstein 1994; Fox 2002; Wilder 2003; Cecchetto 2004; Syrett 2015), i.e., QR can go as high as it needs to to create parallelism for ACD. For instance, QR seemingly crosses a clause boundary in (11) (which usually is not allowed).

(11) John [$_{VP}$ thought [$_{CP}$ that the fire destroyed x]]
every book that Bill did ~~[$_{VP}$ think [$_{CP}$ that the fire destroyed y]]~~

- This has recently come into question: Overfelt (2020) shows that this view makes wrong predictions about the distribution of sloppy pronouns. Instead, QR can reach exceptionally high landing sites, if this is **triggered by something else**, and can then also license ACD. ACD is a by-product of this movement, not the cause for it.
- My proposal today provides additional support for the latter view.

2.3 Quantifier raising and scope rigidity

- QR = covert adjunction of a quantificational constituent
- QR is **restricted**: it is clause-bound and obeys island constraints (e.g., Kratzer & Heim 1998; Hackl 2013, although the actual empirical picture is very complicated, see e.g. Abusch 1993; Reinhart 2006)
- Different quantifiers seem to have different QR options.
- QR can **shift scope**: double-quantifier structures can have two interpretations:

(12) A shark nibbled on every pirate.

a. a single shark ate multiple pirates *surface scope*
b. every pirate was eaten by a different shark *inverse scope*

- Inverse scope is brought about by raising the universal Q above the existential Q.

- Languages differ in whether/how much they allow inverse scope. Broadly speaking, **English** allows inverse scope quite freely. **Dutch** is more scope-rigid (Zwart 1993, 2011; De Hoop & Krämer 2006).[1]
- **Rigid vs. free scope**: in scope-rigid languages, QR obligatorily goes to a position beneath the subject (Huang 1982; Aoun & Li 1993).

(13) *The Isomorphic Principle*
Suppose A and B are Quantifier Phrases. Then if A c-commands B at S(urface)-Structure, A c-commands B at LF.

- Observation: languages with free word order don't show scope ambiguities, languages with rigid word order allow inverse scope (e.g. Bobaljik & Wurmbrand 2012). One explanation for this is that scope-rigid languages lack QR altogether. This has been contested for Polish by Abels & Grabska (2022).
- I will assume, with Kratzer & Heim (1998); Hackl (2013), that object quantifiers must **undergo QR obligatorily**, for type-reasons (but see Reinhart 2006; Keenan 2016 for different views). QR is restricted according to (13). In languages like English, (13) can be violated, and QR can cross another quantifier, leading to inverse scope.

Assumptions about QR
- QR is restricted covert movement that happens obligatorily.
- Languages differ in how much they restrict QR:
  - English: crossing allowed
  - Dutch, Romance: crossing not allowed

3 Bound Pronoun Effects

- A number of syntactic phenomena that are generally clause-bound can **exceptionally** allow **crossing of clause-boundaries** if the embedded subject is **bound** by the matrix subject (Grano & Lasnik 2018).
- Example: Multiple Sluicing (sluicing with more than one wh-remnant)
- In general the remnants of Multiple Sluicing have to be clause-mates, (14-a) vs. (14-b).

(14) a. Maria claimed [that some student talked to some professor] but I don't know which student to which professor ~~Maria claimed [that *t* talked to *t*]~~.

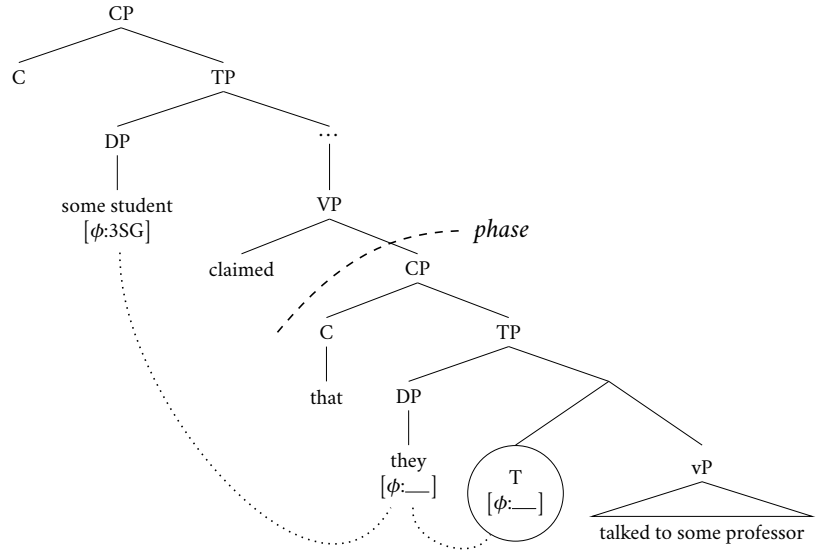
b. *Some student claimed [that Maria talked to some professor], but I don't know which student to which professor ~~*t* claimed [that Maria talked to *t*]~~.

- This clause-mate condition can be violated if the embedded subject is a pronoun bound by the matrix subject, (15).

(15) Some student$_1$ claimed [that they$_1$ talked to some professor], but I don't know which student to which professor ~~*t* claimed [that they$_1$ talked to *t*]~~.

(16) *Grano & Lasnik's (2018:482) Account of the Bound Pronoun Effect*
a. Unvalued features on the head of the complement to the phase head keep the phase open.
b. The locality domain for the phenomena that give rise to the bound pronoun effect is the phase.
c. Bound pronouns optionally enter the derivation with unvalued phi-features.

(17) *The bound pronoun effect in Multiple Sluicing*



- The embedded CP can't be sent to Spell-Out with an unvalued feature, since that is not interpretable for the interfaces.
- If the unvalued feature is on the head of the complement to the phase head, Spell-out is delayed until the element is merged that can provide a value.

[1] In this calculation of scope rigidity, I exclude all scenarios of exceptional wide scope of existentials, tacitly assuming that it doesn't stem from QR (e.g. Winter 1997; Reinhart 2006; Charlow 2014; Ruys & Spector 2017) and only look at "every": it can generally take wide scope in English, but not in Dutch (and Romance[?]). Note that inverse readings can be forced under certain prosodic conditions.

- The pronoun is bound and features are transmitted to it (Kratzer 2009, 195 *Feature Transmission under Binding*).
- In their account, only CPs are phases.

4 Towards an analysis

Basic Idea

Scope-rigid languages like Dutch/Romance need a pronoun with [ϕ:___] to prolong the phase to allow QR to reach a position above the ϕ-feature-value-provider, to create parallelism.

4.1 Sketch

- In languages like Dutch, there is a mismatch between the ellipis site (vP) and the canonical landing position for QR (VP).
- In general, QR to VP is not high enough to create parallelism between antecedent and ellipsis site, (18): the elided phrase is a vP.

⇒ The infinite regress problem still exists. ACD with non-co-referent subjects is (correctly) ungrammatical.

- Parallelism would require adjunction to vP, since that is the relevant ellipsis site, which is usually ruled out.

(18) *The ungrammatical case: non-co-referent subjects*

a. *Olaf heeft [$_{vP}$ *t* elk boek gelezen dat David moest ~~[$_{vP}$ *t t* lezen]~~]
Olaf has every book read that David must.PST read

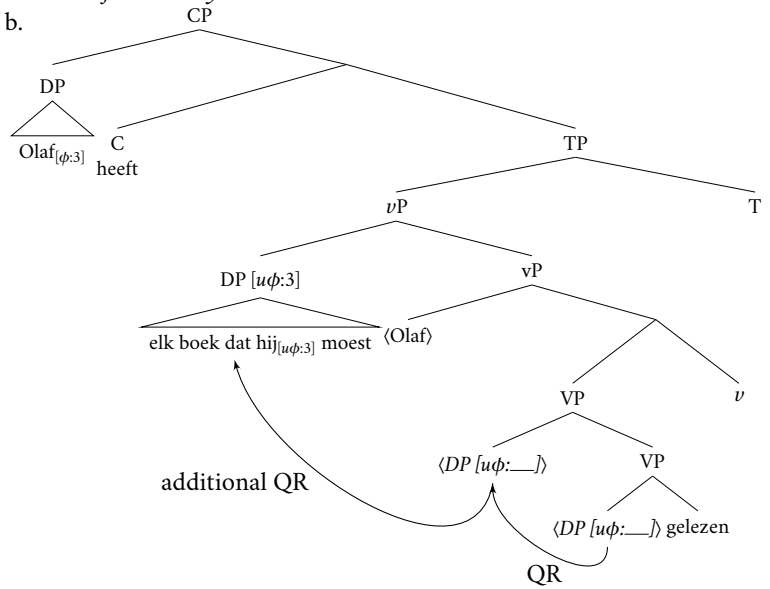
b. [$_{VP}$ [$_{DP}$ elk boek dat David moest [$_{vP}$ ⟨*subj*⟩ ⟨*obj*⟩ lezen]] [$_{VP}$ ⟨*obj*⟩ lezen]]

- In the grammatical case with bound pronouns, there is a pronoun with unvalued ϕ-features inside the relative clause on the object.
- The pronoun needs a value that is provided by the matrix subject.
- After canonical QR adjoining to VP the pronoun is still unvalued. The subject hasn't been merged yet.
- This allows QR to continue to the next higher phrase, vP.
- The subject is merged, provides a value for the ϕ-probe, binds the pronoun. QR is stopped.
- At this point, QR has adjoined to the phrase that also creates an antecedent for ellipsis. Parallelism is achieved, ellipsis is licensed.

(19) *The grammatical case: bound pronoun*

a. Olaf$_i$ heeft elk boek gelezen dat hij$_i$ moest.
Olaf has every book read that he must.PST
"Olaf read every book that he had to."

b.



4.2 Problems

Is the phase the right locality domain for QR?

Yes!

- QR is covert movement and under the null hypothesis, should obey all movement restrictions (Legate 2003).
- QR obeys superiority (Bruening 2001).

☹ That raises the question of cross-linguistic variation wrt scope ambiguities: is VP, not vP, a phase in scope-rigid languages?

No!

- QR is not restricted by pure syntax, but rather by semantic constraints. QR *can* operate successive-cyclically, but only if it is semantically necessary (Fox 2000; Cecchetto 2004).
- Whatever derives variation in scope ambiguity is also at play here.

☹ Can Grano & Lasnik's account be adapted?

4.3 An alternative: Barros & Frank 2022

- Barros & Frank (2022) observe the same phase suspension effects *without* bound pronouns: clause-crossing Multiple Sluicing is grammatical when the embedded subject is either non-referential (e.g., expletive, *no NP*), or co-referent with the matrix subject (e.g., epithets).

(20) a. Some student claimed that *there* was a problem with some professor, but I can't recall which student with which professor ~~*t* claimed that there was a problem with *t*~~.
b. Some student lamented that no professor talked about a certain topic, but I can't recall which student about which topic ~~*t* lamented that no professor talked *t*~~.

- They propose a discourse-based account. Clause-boundedness only holds if the subjects refer to different salient referents (Attention Shift).
- If the embedded subject does not require a shift of attention, i.e., when it is non-referential or anaphoric, processes can cross the clause boundary.
- There is some *tentative* evidence that their proposal does not make the right predictions for Dutch ACD. If Dutch ACD is a bound pronoun effect, we would expect that it also allows parallels to (20). But that's not entirely the case. Co-referent subjects are ok, but non-referential ones are not:

(21) a. Olaf$_i$ kan (iedereen) uitnodigen wie [die idioot]$_i$ wil.
Olaf can anyone invite who the idiot wants
b. ??Olaf heeft de boeken gelezen die geen student/ niemand mocht.
Olaf has the books read that no student no.one was.allowed.to
(P. Fenger, p.c.)

⇒ Either Dutch ACD does not form a natural class with other bound pronoun phenomena, or it does and Barros and Frank's theory makes wrong predictions.

5 Conclusion

- Antecedent Contained Deletion has a curious restriction in certain languages: it is only possible if the subjects on both clauses are co-referent. There aren't many explanations for this on the market (Dagnac 2010 and basically the same idea in Sauerland 2017).
- I propose that this phenomenon can be viewed as a bound pronoun effect, and that cross-linguistic differences follow from the parametrization of two factors (size of the elided phrase and length of QR).

	VP-ellipsis	*v*P-ellipsis
short QR	English-type	subject restriction (Dutch)
long QR	English-type	no restriction (Czech)

- In the large-ellipsis/short-QR cell, ACD can only come about as a bound pronoun effect, and is ruled out in all other cases. The unvalued features on the pronoun enable QR to go higher than it usually can, making parallelism possible.
- This proposal supports the view that QR cannot apply as high as necessary to license ACD (Overfelt 2020, contra Cecchetto 2004): if this were the case, Dutch should allow mismatching subjects.

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