BEYOND MAXELIDE

A′-extraction from ellipsis sites

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1. Introduction

(1) JOHN thinks that Sue kissed Bob, and MARY [$_{VP}$ *thinks that she did* [$_{VP}$ kiss him]], too.

SMALL CAPS = pitch accent associated with focal prominence
italics = deaccented domain
greyout = elided phrase

(2) *A′-extraction from the elided phrase*
* John kissed someone, but I don't know WHO$_1$ [*he did* [$_{VP}$ kiss t_1]]. (Merchant 2001, 2008)

(3) *A′-extraction from the deaccented domain*
a. Someone kissed John, but I don't know WHO$_1$ [t_1 *did* [kiss John]].
b. ABBY asked when he'd quit, but BETH [*didn't ask when*$_1$ *he had* [$_{VP}$ t_1 [$_{VP}$ quit]]].

(4) *A-extraction from the elided phrase*
ABBY knew that he had quit, but BETH [*didn't know that he*$_1$ *had* [t_1 quit]].
(Merchant 2001:58)

(5) *A-extraction from the deaccented domain*
I KNOW that John is likely to win the election, but I am not allowed to REVEAL [*that he*$_1$ *is likely* t_1 *to* [win the election]]. (Fox & Takahashi 2005:263)

	from the elided phrase	from the deaccented domain
A′-extraction	✖	✓
A-extraction	✓	✓

(6) John kissed someone, but I don't know WHO$_1$ [he did [$_{VP}$ kiss t_1]]. (sluiced version of 2)

(7) I know who JOHN kissed and also who$_1$ [$_{TP}$ MARY did [kiss t_1]].

(8) **MaxElide:** Let XP be an elided constituent containing an A′-trace. Let YP be a possible target for ellipsis. YP must not properly contain XP (XP ⊄ YP). (Merchant 2008:141)

(9) "… at this point, a satisfying reduction of MaxElide remains elusive." (ibid.:143)

- MaxElide has been hugely influential
  - Mentioned in ~150 articles on google scholar

- MaxElide has been used to make significant claims
  - Every type of movement is interpreted as a variable-binding chain at LF (Hartman 2011)
  - MaxElide provides a window into computational economy (Messick & Thoms 2016)

Empirical problems:
- Many MaxElide configurations that are acceptable
- There are many MaxElide configurations in which removing the potential to do higher ellipsis does not restore acceptability

Solution 1: Keep MaxElide and supplement it with an additional constraint.
Solution 2: Discard MaxElide and adopt an analysis with broader reach. [favoured option]

Structure of talk

§2 Demonstrate MaxElide's limited empirical coverage.

§3 Advance a novel analysis that has a broader reach than MaxElide.

2. The limitations of MaxElide

2.1. Acceptable MaxElide configurations

- Acceptability is restored in a number of MaxElide configurations simply by shifting focal prominence within the A′-moved phrase from the operator to the restrictor (compare 10 to 11 and 12). The MaxElide rule in (8) incorrectly predicts that (11) and (12) remain unacceptable.[1]

(10) a. * John kissed someone, but I don't know [WHO Ø]$_1$ [$_{TP}$ *he did* [$_{VP}$ kiss t_1]]. (from 2)
b. * John kissed a girl, but I don't know [WHICH girl]$_1$ [$_{TP}$ *he did* [kiss t_1]].

[1] Hereafter, an underlined syntactic label (e.g. "…[$_{TP}$…") denotes that the phrase in question is a possible target for ellipsis.

c. * Joe wants to fire a manager, but he's unsure [WHICH manager]$_1$ [$_{TP}$ *to* [fire t_1]].

(11) a. I know which GIRL he kissed, but I don't know [which BOY]$_1$ [$_{TP}$ *he did* [kiss t_1]].
b. I know which DOGSBODY to fire and also [which MANAGER]$_1$ [$_{TP}$ *to* [fire t_1]].
c. I know every GIRL John kissed, and I also know [every BOY]$_1$ [$_{TP}$ *he did* [kiss t_1]].

(12) A: Which colours does John like?
B: Well, BLUE he likes, and [*Op* GREEN]$_1$ [*he does* [like t_1]], too.
(cf. Schuyler 2001, Fox & Takahashi 2005)

- Cross-clausal A′-extraction from the elided phrase often results in MaxElide configurations. Provided that the pronounced copy of A′-movement c-commands a focussed phrase (or has a focussed NP restrictor), these configurations are acceptable, contrary to the predictions of the MaxElide rule in (8).[2]

(13) a. I know who MARY thinks he'll kiss and also who$_1$ SUE [$_{VP}$ *thinks he will* [kiss t_1]].
b. I know who JOHN's likely to kiss and also who$_1$ POLLY is [$_{VP}$ *likely to* [kiss t_1]].
c. I know who BILL hopes to kiss and also who$_1$ BOB [$_{VP}$ *hopes to* [kiss t_1]].

2.2. Removing the potential to do higher ellipsis does not restore acceptability

- When the presence of contrastive focus on the lexical verb removes the possibility for higher VP ellipsis, acceptability is often not restored, contrary to the predictions of the MaxElide rule in (8). (Compare the *a*- and *b*-examples in 14 and 15.)[3]

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[2] Takahashi & Fox (2005:233) report that A′-extraction from an elided VP is impossible when the deaccented *to*-infinitival clause that contains the elided VP is the complement of certain verbs (their example uses *agree*, see (i) below). As Messick & Thoms (2016:325) note, *agree* therefore patterns dissimilarly to raising predicates such as *likely* (see 13b) and control verbs like *hope* (see 13c). From a random selection of 12 control verbs presented to them, my consultants reported that most pattern with *hope* (these include *afford*, *can't stand*, *decide*, *need*, *offer*, *prepare*, *refuse*, *try*), while the remainder are slightly degraded (this set includes *ask*, *beg*, *begin*). Thus, it seems that the unacceptability of (i) is somewhat exceptional. I suggest that reanalysis is responsible for this anomaly: speakers prefer to incorrectly parse the silence that follows *agree to* in (i) as a DP-gap, rather than a VP ellipse. In other words, they reanalyse *agree to* as a particle verb.

(i) * I don't know which puppy you SHOULD agree to adopt, but I know [which one]$_1$ you should NOT [agree to [$_{VP}$ adopt t_1]].

[3] Romero (1998) claims that *wh*-remnants of English sluicing **can** be deaccented, in contradiction to Merchant (2001). The examples adduced for this claim are provided in (i) to (iii) below. While Romero concedes that (i) is unacceptable for some speakers, the remaining examples are presented as unequivocally acceptable. My British English consultants and I find each example to be completely unacceptable, however. The source of these differing judgements is unknown to me.

(i) WE know that Meg's married to Harry but THEY *don't know to who.*

(14) a. * Ben SHOULD know who she kissed, but he DOESN'T [$_{\underline{VP}}$ *know who*$_1$ [$_{TP}$ she kissed t_1]].
b. * I FORGOT who she kissed, but Ben [$_{VP}$ REMEMBERS *who*$_1$ [$_{TP}$ she kissed t_1]].

(15) a. * Ben SHOULD like Jo's boyfriend, but he DOESN'T [$_{\underline{VP}}$ *like Jo*$_1$*'s* [t_1 boyfriend]].
b. * Ben HATES Beth's boyfriend, but Charlie [$_{VP}$ LOVES *Beth*$_1$*'s* [t_1 boyfriend]].

- German doesn't have VP ellipsis. The MaxElide rule in (8) therefore predicts that the German equivalents to (14a) and (15a) are acceptable, as no higher ellipsis is available. Nonetheless, unacceptability is still observed.

(16) * MAX weiβ wen Maria eingeladen hat, aber BILL weiβ nicht wen
Max knows who.ACC Maria invited has, but Bill knows not who.ACC
'MAX knows who Maria has invited, but BILL *doesn't* [$_{VP}$ *know who*$_1$ [$_{TP}$ she has invited t_1]].

(17) * ICH mag Marias Freund aber DU magst Marias nicht
I like Maria's boyfriend but you like Maria's not
'I like Maria's boyfriend, but YOU [*don't like Maria*$_1$*'s* [t_1 boyfriend]].' (Messick 2015)

- Recall from §1 that A′-extraction from an elided VP is prohibited when higher sluicing is available:

(18) a. * John kissed someone, but I don't know WHO$_1$ [$_{\underline{TP}}$ *he did* [kiss t_1]]. (repeated from 2)
b. * Rachel would sew something if she could just figure out WHAT$_1$ [$_{\underline{TP}}$ *to* [sew t_1]].
(Schuyler 2001)

- Sluicing is prohibited in English relative clauses (Lobeck 1995). Therefore, MaxElide predicts that A′-extraction from elided VPs inside relative clauses is permitted. This is incorrect:

(19) a. * Sue KNOWS the girl who Joe kissed, but she doesn't LIKE [*the girl who*$_1$ *he did* [kiss t_1]].
b. * Sue KNOWS the person Op$_1$ to ask, but she doesn't LIKE [*the person Op*$_1$ *to* [ask t_1]].
c. * John will STEAL what Susan is selling: he'd never BUY [*what*$_1$ *she is* [selling t_1]]!
d. * John EATS whatever Susan eats, but he doesn't COOK [*whatever*$_1$ *she does* [cook t_1]].
e. * John should KISS [[*every girl*]$_1$ *he should* [kiss t_1]].[4]

(ii) WE know how many papers this reviewer has read but THEY *don't know how many.*
(iii) WE know which papers this reviewer has read but THEY *don't know which ones.*

[4] It is worth comparing (19e) to its acceptable non-elliptical counterpart *'he should kiss every girl he should kiss'*, which, while tautologous, can be used as an evasive answer to *'which girls should John kiss?'* (Schuyler 2001: fn. 6).

Summary of §2. MaxElide under- and overgenerates. It incorrectly rules out the examples in §2.1 and incorrectly rules in the examples in §2.2.

3. A′-extraction from elided phrases: a semantic analysis

3.1. Initial observations

- The constraint on A′-extraction from elided phrases doesn't seem to be syntactic. Minimal pairs can be formed in which the syntax of the elliptical clause remains constant:

(20) a. * Joe wants to fire a manager, but he's unsure [WHICH manager]$_1$ [$_{TP}$ *to* [fire t_1]].
b. I know which DOGSBODY to fire and also [which MANAGER]$_1$ [$_{TP}$ *to* [fire t_1]].
(repeated from 10c and 11b respectively)

Hypothesis: A′-extraction from elided phrases sometimes generates an ellipsis site which is not semantically recoverable.

Q: What is the LF structure for these ellipsis sites?

(21) *Interpreting movement chains at LF*
a. A′-chains are interpreted at LF as λ-expressions in which a copy the A′-moved operator's restrictor remains low, accompanying the bound variable (Fox 2002)
b. Intermediate A′-copies are invisible at LF [5] (Kotek 2016)
c. Only A′-chains are interpreted as λ-expressions at LF (Fox 2002)

(22) a. <which boy>$_1$ … <which boy>$_1$ … <which boy>$_1$ (A′-chain in syntax)
b. which boy λx … … the boy x (A′-chain at LF)

- Once Fox's (2002) conception of how A′-chains are interpreted at LF is adopted, a simple generalisation about A′-extraction from elided phrases emerges:

(23) **A′-extraction of α from an elided phrase is permitted only if the head of the A′-chain(α) asymmetrically c-commands an F-marked item at LF.** (cf. Schuyler 2001)

[5] Previous research by e.g. Agüero-Bautista (2007) suggests that A′-movement is successive-cyclic in all environments, including elliptical ones (*contra* Fox & Lasnik 2003, Messick & Thoms 2016). This observation does not entail that multiple variable-binding chains are present in the same LF representation, however, as one may adopt a purely semantic (rather than a syntactic) conception of scopal reconstruction (cf. Cresti 1995, Rullman 1995).

- In acceptable constructions, the top-copy of A′-extraction either c-commands an independent focussed item (24a), or c-commands its own focussed restrictor (24b).[6]

(24) a. $[_{CP}\ [_{DP}\ \textit{Op}\ \text{restrictor}]_1 \quad [\lambda x\ [_{TP}\ \ldots\ \textbf{FOCUS}\ \ldots\ [_{E}\ \ldots\ \text{the restrictor}\ x\ \ldots]]]]$
b. $[_{CP}\ [_{DP}\ \textit{Op}\ \text{RESTRICTOR}]_1 \quad [\lambda x\ [_{TP}\ \ldots \qquad\qquad [_{E}\ \ldots\ \text{the}\ \textbf{RESTRICTOR}\ x\ \ldots]]]]$

- In unacceptable constructions, the focus is either structurally higher than the entire A′-chain (25a), or the operator in the top-copy of the A′-chain is focussed (25b).

(25) a. * $\ldots\ \textbf{FOCUS}\ \ldots\ [_{CP}\ [_{DP}\ \textit{Op}\ \text{restrictor}]_1\ [\lambda x\ [_{TP}\ \ldots\ [_{E}\ \ldots\ \text{the restrictor}\ x\ \ldots]]]]$
b. * $\ldots \qquad\qquad [_{CP}\ [_{DP}\ \textbf{\textit{OP}}\ \text{restrictor}]_1\ [\lambda x\ [_{TP}\ \ldots\ [_{E}\ \ldots\ \text{the restrictor}\ x\ \ldots]]]]$

3.2. Analysis: a sketch

Hypothesis: A′-extraction from elided phrases sometimes generates an ellipsis site which is not semantically recoverable. (repeated from §3.1)

- *Recoverability condition on elided phrases containing A′-traces* (see appendix 2)
  - To determine whether ellipsis is recoverable in an elided phrase that contains an A′-trace E, one must look to the smallest phrase that contains both E and an F-marked item (i.e. the *F-phrase*).
  - One must then compare the F-phrase to its equivalent phrase in the antecedent clause.

(26) I know who$_1$ [JOHN will kiss t_1] and also who$_2$ [MARY will [$_E$ kiss t_2]].
A *F-phrase*

- The ellipsis site is recoverable iff:

(27) $[\![A]\!]^o \in [\![\text{F-phrase}]\!]^F$
The ordinary semantic value of A is an element of the focus semantic value of the F-phrase. (Rooth 1992)

- The phrase which includes both the focus and the ellipsis site (the *F-phrase*) doesn't contain λ-binder in (24) (see 28), but does contain the λ-binder in (25) (see 29).

[6] See Erlewine (2014) for a detail exposition of how focus semantic values are calculated in phrases that contain F-marked A′-chains.

(28) a. $[_{CP}\ [_{DP}\ Op\ \text{restrictor}]_1$ $[\lambda x\ \boxed{[_{TP}\ \ldots\ \textbf{FOCUS}\ \ldots\ [_{E}\ \ldots\ \text{the restrictor}\ x\ \ldots]]}\ ]]$

b. $[_{CP}\ [_{DP}\ Op\ \text{RESTRICTOR}]_1$ $[\lambda x\ [_{TP}\ \ldots$ $\boxed{[_{E}\ \ldots\ \text{the}\ \textbf{RESTRICTOR}\ x\ \ldots]}\ ]]]$

(29) a. * $\ldots\boxed{\textbf{FOCUS}\ \ldots\ [_{CP}\ [_{DP}\ Op\ \text{restrictor}]_1\ [\lambda x\ [_{TP}\ \ldots\ [_{E}\ \ldots\ \text{the restrictor}\ x\ \ldots]]]]}$

b. * $\ldots$ $\boxed{[_{CP}\ [_{DP}\ \textbf{\textit{OP}}\ \text{restrictor}]_1\ [\lambda x\ [_{TP}\ \ldots\ [_{E}\ \ldots\ \text{the restrictor}\ x\ \ldots]]]]}$

(30) **No focus semantic value can be returned for phrases that include a λ-expression derived from A′-movement.**

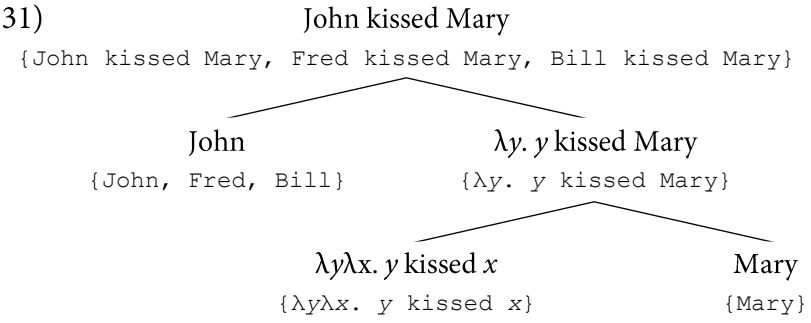
- Assuming (30), a focus semantic value cannot be returned for constructions that fit (25a-b). Such constructions will therefore never satisfy the recoverability condition in (27).
- Assuming (30), a focus semantic value can be returned for constructions that fit (24a-b). Such constructions may therefore satisfy the recoverability condition in (27).

3.3. Analysis: in greater detail

Q: What motivates the constraint in (30)?

- The interpretation of (e.g.) contrastive focus involves association with the ~ operator, which associates the contrasted phrase with a salient antecedent α (Rooth 1992)
- One prominent way of associating an F-marked item with the ~ operator is via alternative semantics, which involves pied-piping of alternatives through a pointwise Function Application mechanism (Hamblin 1973; Rooth 1985, 1992)
- Alternative semantics involves ubiquitous type-shifting, which creates "sets all the way down" (Rooth 2016: 11)

(31) (for [[John$_F$ kissed Mary]~α])

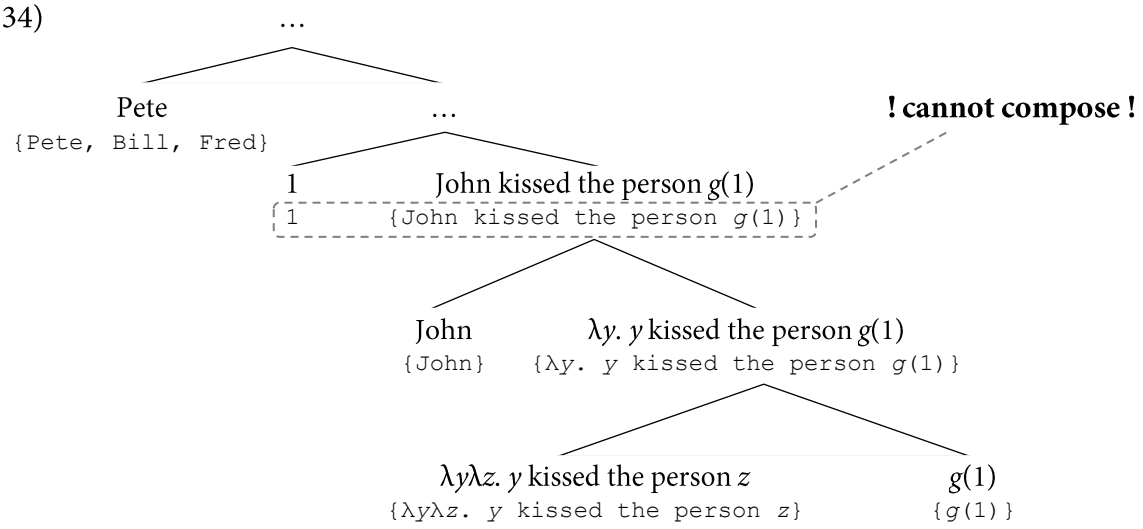


- No Predicate Abstraction rule can be defined for alternative semantic composition: λ-binders derived from A′-movement are **interveners**[7]

(32) * [… ◄λ…]

(33) a. * MARY knows who$_1$ John kissed t_1, but [$_{FP}$ PETE *doesn't know who$_2$ he did* [$_E$ kiss t_2]].
b. … but [[$_{FP}$ PETE doesn't know who λ*x* John kissed the person $g^{[x/1]}(1)$]~α] (at LF)

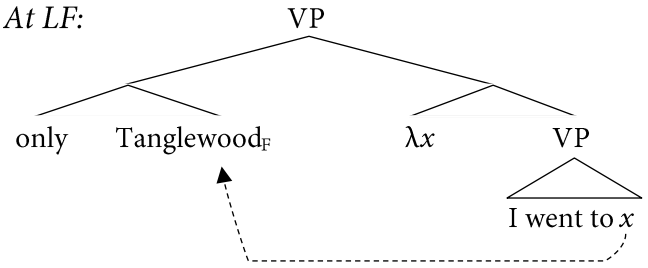
(34)



- **Covert focus movement: a complication?**
  - F-marked items can also associate with focus operators via covert focus movement
    (Chomsky 1976, Wagner 2006, Erlewine & Kotek, to appear)

- Covert focus movement involves *undermerge* (Erlewine & Kotek, to appear)

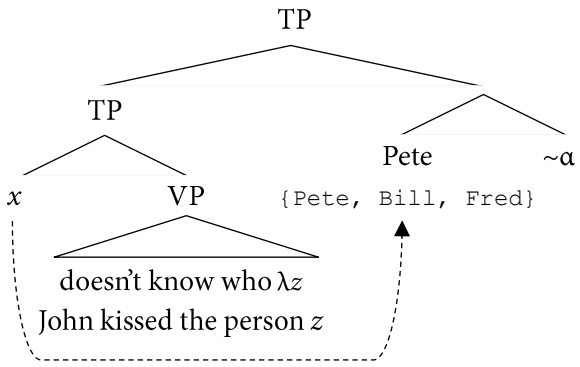
(35) *At LF:*



- For the case of contrastive focus, covert focus movement creates a configuration in which only the F-marked item associates with focus. Consequently, the entire F-phrase (i.e. *TP*) receives no focus semantic value:

[7] Shan 2004, Kotek 2016; *contra* Hagstrom 1998, Reich 2003, Novel & Romero 2010, Ciardelli et al. 2017.

(36)



Interim summary

- Because covert focus movement only provides a focus semantic value for the F-marked item, alternative semantic composition is required to return a focus semantic for the entire F-phrase
- No focus semantic value be returned for F-phrases that include λ-binders derived from A′-movement, due to the absence of a Predicate abstraction operation in alternative semantics

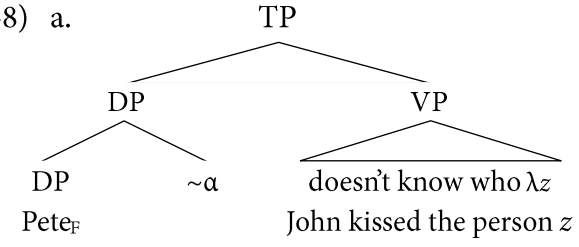
Q: Why is unacceptability only observed in elliptical constructions?

(37) a. * MARY knows who$_1$ John kissed t_1, but PETE *doesn't know who$_2$ he did* [$_E$ kiss t_2].
b. MARY knows who$_1$ John kissed t_1, but PETE *doesn't know who$_2$ he kissed* t_2.

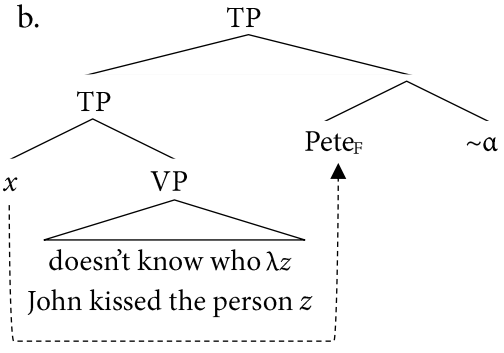
- In non-elliptical constructions, obtaining a contrastive interpretation does not require that a focus semantic value be returned for the phrase that includes both the F-marked item and the deaccented domain (the *F-phrase*).

- A contrastive interpretation can be achieved for (37b) in two different ways:
  - By adjoining the ~ operator directly to the F-marked item (38a)
  - By adjoining the ~ operator to TP and covertly moving the F-marked item (38b)

(38) a.



b.



Summary of §3.

- Predicate abstraction is unavailable in alternative semantics. Typically, this problem is circumvented by covert focus movement.
- In the case of ellipsis, a focus semantic value must be generated for the F-phrase, i.e. the phrase that includes both the focus and the ellipsis site. As such, covert focus movement is unavailable.
- If no focus semantic value for the F-phrase is available, then the recoverability condition on ellipsis in (27) can never be satisfied.
- Consequently, ellipsis is prohibited in constructions that fit one of the schemata in (25a) or (25b).

4. Conclusion

- MaxElide provides limited empirical coverage and has little descriptive or explanatory utility.
- Focus semantic values can be generated in alternative semantics, in which no rule of Predicate abstraction is available.
- Overcoming this deficiency via covert focus movement (which is another means to associate with focus operators) is not possible in ellipsis contexts, because it conflicts with the need to satisfy the recoverability condition on ellipsis.
- Consequently, F-phrases cannot contain both an ellipsis site and a λ-expression derived from A′-movement.

IN SHORT: A′-extraction from ellipsis sites sometimes creates an ellipsis site which is not semantically recoverable.

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Appendices

Appendix 1: A′-extraction from the deaccented domain and subject-auxiliary inversion

- Typically, A′-extraction from the deaccented domain is unproblematic (see §1):

(A1) *A′-extraction from the deaccented domain* (repeated from 3)
  a. Someone kissed John, but I don't know WHO$_1$ [t_1 *did* [kiss John]].
  b. ABBY asked when he'd quit, but BETH [*didn't ask when*$_1$ *he had* [$_{VP}$ t_1 [$_{VP}$ quit]]].

- However, unacceptability <u>does</u> arise if subject-auxiliary inversion (SAI) also occurs (compare (A2) and (A3)).

(A2) John will win, but I don't know WHEN$_1$ [$_{TP}$ *he will* [$_{VP}$ t_1 [$_{VP}$ win]]].

(A3) A: Mary will win.
B: * But WHEN$_1$ [*will* [$_{TP}$ *she* [$_{VP}$ t_1 [$_{VP}$ win]]]]?

- Hartman (2011): sluicing is available in (A3B), so MaxElide must play a role in determining (A3B)'s unacceptability.

- Unacceptability persists even when sluicing is not available (*contra* Hartman 2011):

(A4) A: I'll go to lunch at noon on Sunday.
B: I can't do noon. * When$_1$ will [$_{TP}$ you [$_{VP}$ t_1 [$_{VP}$ [$_{VP}$ go to lunch] [$_{PP}$ on MONDAY]]]]?

- The interaction of A′-movement, SAI, and VP ellipsis often results in unacceptability in constructions to which a MaxElide analysis cannot be applied (cf. Evans 1988, Hardt 1999):

(A5) a. A: Which book will JOHN read?
B: * I don't know – which one will BILL? (Jacobson 1992:195)
b. A: What was JOHN able to take a picture of?
B: An elephant.
A: * What was HARRY to able to? (Sag 1976:63)

(A6)* Abby can play the flute better than can HER FATHER [THE TRUMPET$_1$ [play t_1]]. (Merchant 2003)

Conclusion. MaxElide cannot be invoked to explain the unacceptability of (A3B). Whatever is responsible for the unacceptability observed in this appendix, it is not a constraint on A′-extraction from an ellipsis site either, as (A3B) does not involve A′-extraction from an elided phrase.

Appendix 2: The recoverability condition on ellipsis

- In §3, a recoverability condition on ellipsis was advanced which only made reference to ellipsis sites that contain A′-traces.
- A more explicit characterisation of recoverability which covers all ellipsis sites is provided below:

(A7) *Disjunctive semantic licensing condition on ellipsis* (cf. Takahashi & Fox 2005)
An elided XP must either:
a. exhibit an ordinary semantic value which is identical to the ordinary semantic value of its antecedent YP for all assignments *g*, **or**
b. *contrast appropriately* with its antecedent YP (or be contained in a constituent that contrasts appropriately with a constituent that contains the antecedent YP).

(A8) E *contrasts appropriately* with A iff: (cf. Rooth 1985, 1992)
a. E and A don't overlap, and
b. for all assignments *g*, the ordinary semantic value of A with respect to *g* is an element of the focus semantic value of E with respect to *g*.
c. for all assignments *g*, the ordinary semantic values of E and A are dissimilar.

- - Examples of how (A7) is applied - -

(A9) *A′-extraction from the deaccented domain*

a. Someone [$_A$ kissed John], but I don't know WHO$_1$ [t_1 *did* [$_E$ kiss John]].

b. A = ⟦λ*x*. *x* kissed John⟧^{o}
E = ⟦λ*x*. *x* kissed John⟧^{o}

A and E have matching ordinary semantic values for all assignments *g* (Sag 1976). Ellipsis is licensed because identity obtains between A and E (as per (A7a)).

(A10) *Acceptable A′-extraction from the elided phrase*

a. I know who$_1$ BILL [$_A$ kissed t_1] and also who$_2$ JOHN did [$_E$ kiss t_2].

b. A = ⟦λ*x*. *x* kissed the person *y*⟧^{o}
E = ⟦λ*x*. *x* kissed the person *z*⟧^{o} (⟦A⟧ isn't equal to ⟦E⟧ for all assignments *g*)

- If ellipsis cannot be licensed by straightforward identity, one must see if a relation of *appropriate contrast* can be established between E and A (as per (A7b)).

- **Stipulation:** when determining if a relation of *appropriate contrast* holds between A and E, existentially close free variables in A and E. (Schwarzschild 1999)

c. *Calculate identity over F-phrase (i.e. TP) for (A10a)*
A_{TP} = ⟦∃*y*. Bill kissed the person *y*⟧^{o}
E_{TP} = ⟦∃*x*. {John kissed the person *x*, Bill kissed the person *x*, Fred kissed the person *x*}⟧

⟦A_{TP}⟧^{o} ∈ ⟦E_{TP}⟧^{F}. Ellipsis is licensed in E.

(A11) *Unacceptable A′-extraction from the elided phrase*

a. * MARY knows who$_1$ John [$_A$ kissed t_1], but PETE *doesn't know who$_2$ he did* [$_E$ kiss t_2].

b. *Calculate identity over F-phrase (i.e. matrix TP)*
A_{TP} = ⟦Mary knows who λ*y* kissed the person *y*⟧^{o}
E_{TP} = **undefined** (see §3)
Ellipsis not licensed.

Appendix 3: Predicting the availability of sloppy readings

- The current analysis predicts that sloppy readings are available only if the restrictor of an A′-operator/quantifier is focussed.

(A12) Every girl thinks that JOHN will kiss her, while every boy thinks that BILL will.

a. … every boy λ*x* thinks BILL will [$_E$ kiss boy *x*]. (for the sloppy interpretation)

b. A = ⟦∃*y*. John will kiss the girl *y*⟧^{o}
E = ⟦∃*x*. {John will kiss the boy *y*, Bill will kiss the boy *y*, Fred will kiss the boy *y*}⟧

⟦A_{TP}⟧^{o} ∉ ⟦E_{TP}⟧^{F}. Ellipsis is <u>not</u> licensed in E.

(A13) Every GIRL thinks John will kiss her, and every BOY thinks he will, too.

a. … every BOY λ*x* thinks John will [$_{E}$ kiss BOY *x*]. (for the sloppy interpretation)

b. A = ⟦∃*y*. John will kiss the girl *y*⟧^{o}
E = ⟦∃*x*. {John will kiss the boy *x*, John will kiss the girl *x*}⟧

⟦A⟧^{o} ∈ ⟦E⟧^{F}. Ellipsis is licensed in E.

- The results of a preliminary study (5 native speakers of British English) suggest that only (A13) has a sloppy reading, as predicted.