'Else'-modification as a diagnostic for Pseudosluicing*

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1 What is the structure of ellipsis sites?

Much work on ellipsis focuses on ascertaining what the E-site would sound like were it overt. The standard assumption is that E-sites are, to a large degree, syntactically isomorphic to their antecedents. In sluicing, the ellipsis of TP in a Wh-question leaving a Wh-phrase overt, the identity condition is loosened just enough to allow the E-site in (1) to count as isomorphic to its antecedent (e.g. ignoring traces and copies, and perhaps added structure derived by successive cyclic movement).

(1) Jack likes someone, but I don't know who$_{\mathrm{i}}$ [$_{\mathrm{TPE}}$ ~~Jack likes t_{i}~~]

Some authors have proposed *pseudosluicing* as a possibility, where the E-site hides a cleft, non-isomorphic to the antecedent (Erteschik-Shir 1977, Rodrigues *et al.* 2009, van Craenenbroeck 2010 among many others):

(2) Jack likes someone, but I don't know who$_{\mathrm{i}}$ [$_{\mathrm{TPE}}$ ~~it is t_{i}~~]

Merchant (2001) provides ten empirical arguments against the notion that all sluicing can be reduced to pseudosluicing. This is consistent with a 'sometimes pseudosluicing' approach, where both isomorphic and non-isomorphic E-sites exist. I focus here on one of Merchant's diagnostics, 'else-modification'. In some cases a pseudosluice can be ruled out in favor of an isomorphic parse. These are cases when the *remnant*, the Wh-phrase left overt in sluicing, is modified by *else*. The paradigm in (3) allows us to conclude that the sluice in (3) must stem from an isomorphic source, since cleft Wh-phrases are incompatible with *else*-modification.

(3) Jack likes *Sally*, but I don't know who *else*.
  a. . . . but I don't know who *else* he likes.
  b. * . . . but I don't know who *else* it is.

Here, I show that in some contexts, only a pseudosluice parse is available. In sluicing, remnants usually correspond, in an intuitive sense, to an XP in the antecedent (usually an indefinite). This is referred to as the remnant's *correlate*. When the correlate is modified by *else*, only a cleft continuation for the sluice is possible:

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(4) Jack likes Sally, and he likes someone *else* too, but I don't know who.
   a. # . . . who he likes.
   b. . . . who it is.

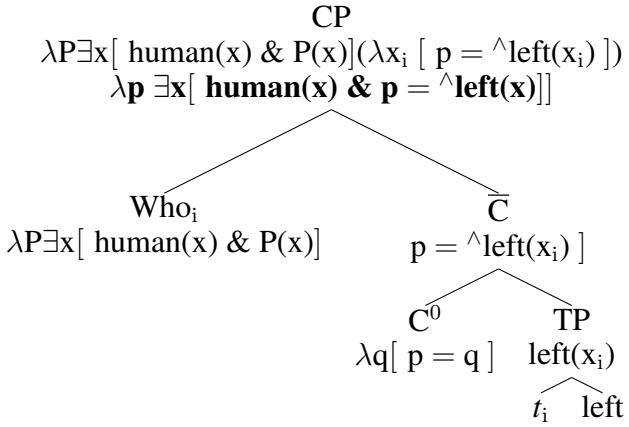
Since the isomorphic parse in (4a) is infelicitous, we conclude that only the pseudosluice parse is available in (4). In the rest of the paper, I provide a pragmatic and semantic account for the data paradigms just illustrated. The main claim defended is that clefts assert identity between an anaphoric argument and non-anaphoric argument (the focused element in a cleft). This much, as we will see, gets us the incompatibility of clefting with *else*-modification in Merchant's (2001) paradigm, in addition to the pattern in (4).

2 Why the non-cleft is unacceptable

I begin by addressing the question of why a non-cleft continuation in (4) is infelicitous. Here, I follow Romero (1998) in assuming that not standing in the 'know' relation to a question, Q, implies not standing in the 'know' relation to any partial answer to Q. In (4), the speaker is committed to standing in the know relation to the proposition 'That Jack left'. This proposition counts as a partial answer to the question 'who left', in a context where other people besides Jack left, thus, the discourse in (4) is inconsistent with respect to the beliefs of the speaker.

I adopt a Hamblin/Karttunen style semantics for questions, where questions denote a set of propositions that are possible answers. For instance, the denotation for the embedded question 'who left' in (4) would be derived as follows:

(5)



In a model with two individuals, this is a set of propositions of the form '^left(x)', for instance { ^left(Jack), ^left(Sally), ^left(Sally+Jack)} (or more colloquially '{Jack left, Sally left, Jack and Sally left }).[1] I model complete answers to questions by adopting Dayal (1996)'s answerhood operator *Ans*, given in (6) below, which selects the unique proposition in the question's denotation that is both true and entails all other true propositions in the question's denotation.

(6) **Complete Answer:**
Ans(Q)= ιp [Q(p) & ∨p & ∀p' ∈ Q [[∨p' & Q(p')]→ p ⊆ p']]

[1] I assume the domain includes atomic as well as plural individuals, following Dayal (1996).

Applied to the question (4), Ans returns the proposition in (7), in a model where both Jack and Sally left:

(7) Ans(λp [$\exists$x[human(x) & p = $^\wedge$left(x)]) = $^\wedge$left(Jack+Sally)
'Jack and Sally left.'

A partial answer can be defined as any true proposition in the question denotation that is entailed by the complete answer:

(8) **Partial Answer:**
$\text{Ans}_{\text{partial}}(Q) = \lambda p\ [\ Q(p)\ \&\ {}^\vee p\ \&\ \text{Ans}(Q) \subset p\ ]$

Any proposition in the set returned by $\text{Ans}_{\text{partial}}$(Q) counts as a partial answer to Q. The proposition 'Jack left' is in Q, and since 'Jack left', '$^\wedge$left(Jack)' is entailed by Ans(Q) in (7), 'Jack left' counts as a partial answer to the question in (4) (i.e. '$^\wedge$left(Jack)' is a proposition in the set returned by $\text{Ans}_{\text{partial}}$).

The speaker commits him or herself to standing in the 'know' relation to the proposition 'Jack left' in the discourse in (4), by virtue of uttering *Jack left*, and cannot subsequently assert that they do not know the question 'who left'. This is behind the sense of inconsistency in (4). This is a very general property of discourses, as the infelicity of the discourses in (9) illustrates:

(9) a. # (I know that) Jack likes Sally, and that he likes other people, but I don't know who he likes.
b. # (I believe that) Sally was arrested, along with several others, but I don't know who was arrested.
c. # (I saw that) Chris bought a new car recently, and someone else did too, but I don't know who bought a new car recently.

Crucially, this is not a property of sluicing per se, so much as a property of discourse coherence more generally.

3 Why the cleft is acceptable

In the preceding section, we saw that denying knowledge of a non-cleft question was ruled out in contexts where the speaker is committed to knowing a partial answer to the question. It must be the case that there is no partial answer available for the cleft question in (4), accounting for its felicity. Intuitively, the cleft question asks for the identity of the non-Jack individual, the value for the discourse referent (in the sense of Karttunen 1976) introduced by the correlate *someone else* in the antecedent, so that the cleft question can be paraphrased as in (11).[2] Indeed, there is no partial answer to this question available in the discourse.

(10) Jack left, and someone else left too, but I don't know who it was.
(where *it* = the non-Jack individual that also left).

[2]In using the term, 'discourse referent', I do not intend to imply the sort of formal object in discourse representation theory, such as in Kamp & Reyle (1993). Karttunen's (1976) characterization of the term is sufficient: "Let us say that the appearance of an indefinite noun phrase establishes a 'discourse referent' just in case it justifies the occurrence of a coreferential pronoun or a definite noun phrase later in the text."

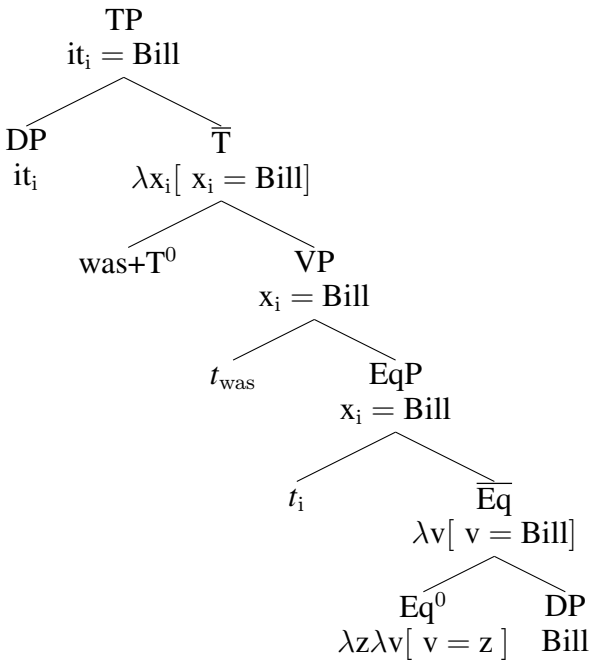
(11) Who the non-Jack human that left was.

In short, the proposition 'Jack left' does not count as a partial answer to the question in (11) or to the cleft question in (4). Some evidence in support of this hypothesis comes from the infelicity of non-cleft answers to cleft questions:

(12) A: Jack left, and someone else left too, who was it?
B: #Sally left.
B′: It was Sally/The other human that left was Sally.

The tree in (13) shows the structure I adopt for clefts. Following Reeve (2010), I assume clefts have an equative semantics that asserts identity between the copula clause arguments (the cleft pronoun *it* and the focused, clefted constituent). In (13), we have a declarative cleft, which could, for instance, be an answer to a Wh-question like 'who left?'. Eq contributes Partee (1987)'s IDENT, and *it* picks up a salient discourse referent as its value (in answer to the question 'who left', this would be a the leaver). I ignore the contribution of the copula and tense (we can treat them as identity functions on their sisters for our purposes).

(13) It was Bill.



3.1 The cleft pronoun

Hedberg (2000) notes that clefts are licensed in the same contexts that license cross sentential anaphora with descriptively impoverished pronouns, in support of the claim that the cleft pronoun *it* is referential. Cleft questions show the same pattern.

(14) * They served the guests. It was aromatic.
(Here, 'it' cannot refer to the food that was served)

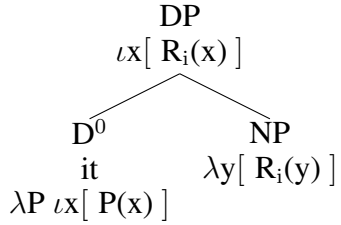
(15) They served the guests a French dish. It was aromatic.
(Here, 'it' can refer to the French dish served to the guests)

(16) * They served the guests, but I don't know what it was.

(17) They served the guests something aromatic, but I don't know what it was.

I follow Percus (1997), Heim & Kratzer (1998), Elbourne (2001) in assuming that definite determiners with phonetically contentless NP complements are spelled out as *it*. The structure for the pronoun *it* is given below in (18). I follow Cooper (1979) in adopting a property type variable in NP denotations, $R_{\langle e,t\rangle}$. With contentless NP complements to definite determiners, $R_{\langle e,t\rangle}$ is assigned a salient property as a value.

(18)



In a context like that in (4), repeated below, there are at least three plausible salient properties assignable to $R_{\langle et\rangle}$, namely, the property of not being Jack (contributed by *else* modification of the correlate), the property of being a leaver (contributed by the antecedent's main clause predicates), and the property of being a human (contributed by the implicit restriction on *someone*).

(19) Jack left, and someone else left too, but I don't know who it was.

As I will show, it is crucial that the salient property assigned to $R_{\langle e,t\rangle}$ in the denotation of the pronoun include the property of being a non-Jack entity (the property contributed by *else*). I discuss the semantics of *else* in the next section.

3.2 Else-modification

I assume, following von Fintel (1993), Sato (2001), Culicover & Jackendoff (1995), that *else* is an anaphoric exceptive modifier. Exceptive modification in DP's excludes a set of elements from the domain of quantification for that DP. For instance, in (20), *Jack* is in the 'exception set', and is removed from the domain of quantification for 'every', so that the scope property for the quantifier only holds of non-Jack individuals:

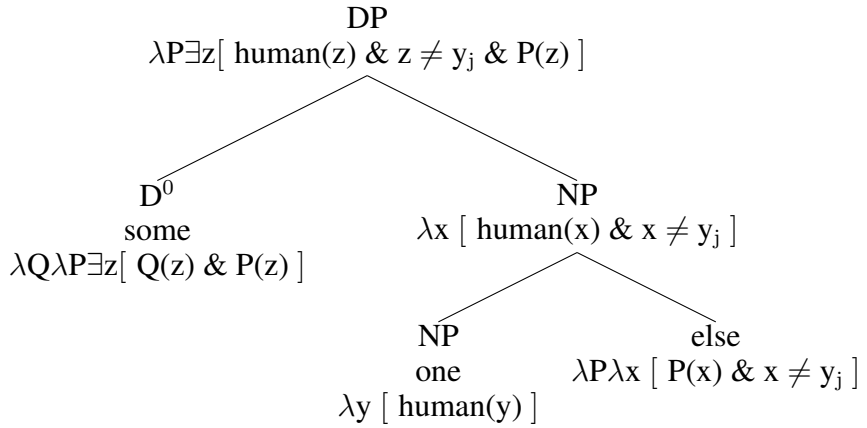
(20) Everyone but Jack left.

In (20), the 'but'-phrase explicitly supplies the contents of the exception set. With *else*, on the other hand, the exception set is determined anaphorically. In the context in (4), the antecedent for *else* is *Jack*, which is removed from the domain of quantification for the indefinite *someone*:

(21) Jack_j left, and someone else_j left too.

We can compositionally derive the contribution of *else* in (4) by treating *else* as an NP modifier, contributing an exception clause. The structure in (22) illustrates this for the exceptively modified correlate *someone else*:

(22)



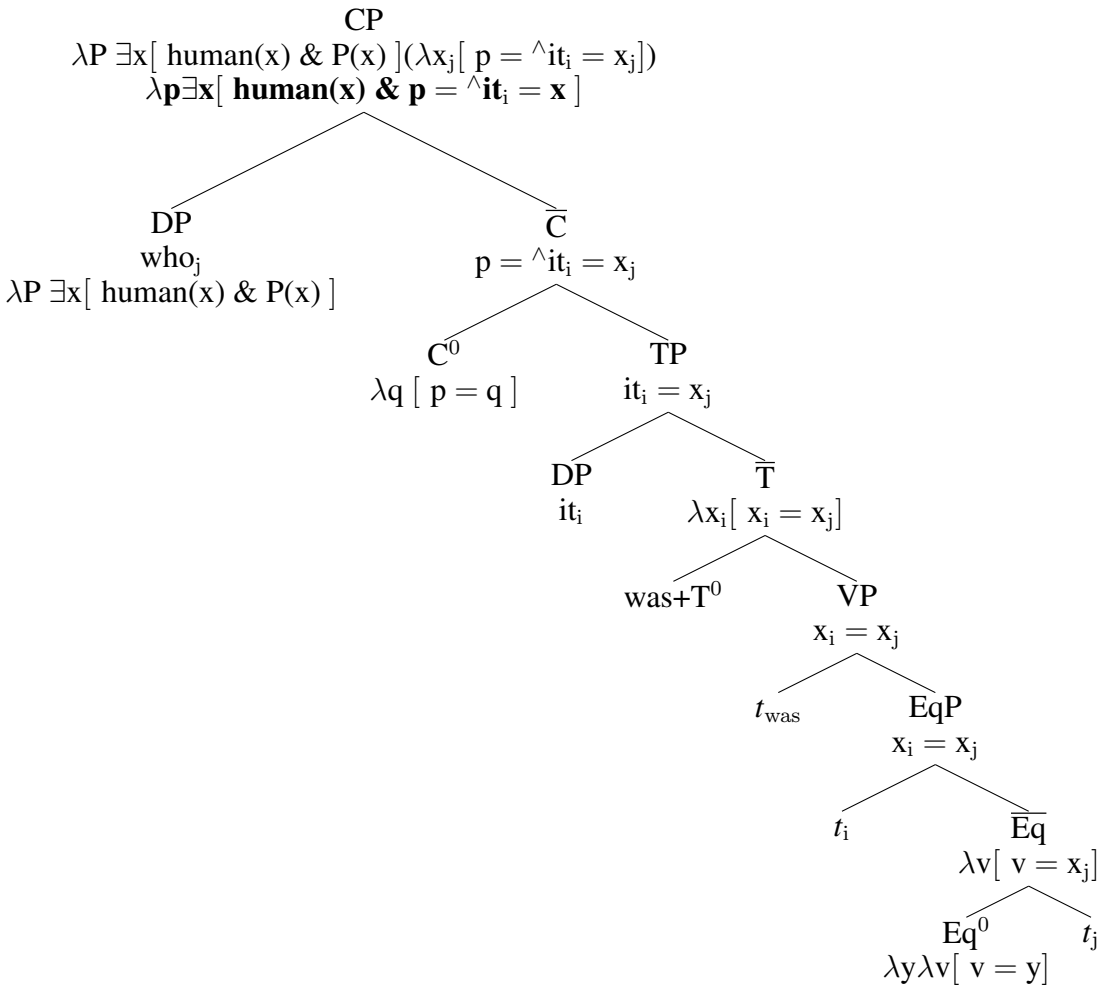
An assignment function assigns the entity 'Jack' to the variable 'j', subsequently restricting the discourse referent introduced by the correlate to non-Jack entities.

3.3 A semantics for cleft questions

In (24), is the derivation for the denotation of a cleft question. The property variable in the denotation of the cleft pronoun picks up the join of the salient properties: '$\lambda x[\ x \neq y_j\ ]$', '$\lambda x[\ \text{left}(x)\ ]$', and '$\lambda x[\ \text{human}(x)\ ]$', which is in (23):

(23) '$\lambda x[\ x \neq y_j \ \&\ \text{left}(x) \ \&\ \text{human}(x)\ ]$'.

(24)



Factoring in the contribution of the cleft pronoun in a context like that in (4), we end up with the question denotation in (25), paraphrasable as 'Who the unique non-Jack human that left is'.

(25) $\lambda p \exists x[\ \text{human}(x)\ \&\ p = {}^\wedge \iota z[\ z \neq y_j\ \&\ \text{left}(z)\ \&\ \text{human}(z)\ ] = x\ ]$

If there are three individuals in the domain, say, Matt, Jack, and Mark, the question denotes the set of propositions corresponding to possible answers in (26):

(26) { $^\wedge \iota z[\ z \neq y_j$ & left(z) & human(z)] = Matt,
$^\wedge \iota z[\ z \neq y_j$ & left(z) & human(z)] = Jack,
$^\wedge \iota z[\ z \neq y_j$ & left(z) & human(z)] = Mark,
$^\wedge \iota z[\ z \neq y_j$ & left(z) & human(z)] = Mark+Matt,
$^\wedge \iota z[\ z \neq y_j$ & left(z) & human(z)] = Mark+Jack,
$^\wedge \iota z[\ z \neq y_j$ & left(z) & human(z)] = Jack+Matt,
$^\wedge \iota z[\ z \neq y_j$ & left(z) & human(z)] = Matt+Jack+Mark}

The answerhood operator, in a model where Jack and one other human left, say Matt, would return the singleton set in (27), since that is the only true proposition

in the set (e.g. all propositions equating the cleft pronoun's reference with 'Jack' or some join containing Jack would be false because of the exception clause).

(27) $\{^\wedge\iota z[\ z \neq y_j$ & left(z) & human(z) $] = \text{Matt}\ \}$

It should be clear by now that the proposition contributed by the antecedent, 'Jack left' does not constitute a partial answer to the cleft question, since it is not entailed by the complete answer in (27).

4 Why clefting is incompatible with *else*-modification

The semantics for clefts provided also accounts for the data in Merchant's (2001) paradigm, where Wh-phrases in clefts are incompatible with *else* modification.

(28) Jack_i left, but I don't know who else_i (*it was)

(29) Jack_i left, but I don't know who else_i (left).

else-modification in (29) is possible, because *else*, in excluding Jack from the domain of quantification for the Wh-phrase, ensures that the proposition 'Jack left' will not count as a partial answer to the resulting question (since any proposition about non-Jack individuals leaving will not entail that Jack left). In (30), we have the denotation for the question in (29):

(30) $[\![\text{who else}_i \text{ left}]\!] = \lambda p \exists x[\ \text{human(x)} \ \&\ \mathbf{x} \neq \mathbf{y}_i \ \&\ p = ^\wedge \text{left(x)}\ ]$

In a model where an additional person left, say, Matt, Ans would apply to this question and yield the proposition $\{\ ^\wedge\text{left(Matt)}\ \}$.

When it comes to cleft questions in contexts like that in (28), however, else-modification on the Wh-phrase can only be incoherent. For instance, the only available antecedent for *else* in the discourse in (28) is 'Jack'; suppose the property variable in the cleft pronoun, R, picks up the 'leaving' property made salient in the antecedent, so that it denotes the unique entity in the discourse that bears the leaving property.

(31) $[\![\text{who else}_i \text{ it was}]\!] = \lambda p \exists x[\ \text{human(x)} \ \&\ x \neq y_i \ \&\ p = ^\wedge\iota z[\ \text{left(z)}\ ] = x\ ]$

The resulting question will ask for the identities of non-Jack individuals that uniquely have the leaving property. Since Jack also bears the leaving property, no such entity can obtain.

4.1 A word on full clefts vs. truncated clefts

The clefts treated in this paper so far are *truncated* clefts, so-called because on the surface, they appear to be transformationally related to their non-truncated counterparts. For instance, consider (32) and (33); (32), in the same context as (33), not only seems synonymous, but could conceivably be derived from (33) via some form of deletion operation on the cleft relative clause:

(32) A: Who broke the television?
B: It was Bill.

(33) A: Who broke the television?
B: It was Bill that broke it.

Unlike truncated clefts, full clefts *are* compatible with *else* modification:

(34) Jack left, but I don't know who else it was that left.

With respect to Merchant's (2001) diagnostic, data like that in (33) suggests that *else*-modified remnants do not rule out pseudosluicing parses altogether, just pseudosluices that stem from truncated clefts. An *else* modified remnant, as in (35) may hide a full cleft in the ellipsis site:

(35) Jack left, but I don't know who else ~~it was that left~~.

In this paper, I do not address the issue of why full clefts are compatible with *else* modification while truncated clefts are not, but would like to suggest, in line with Merchant (2001) and Mikkelsen (2006), that truncated and full clefts are not derivationally related. Some evidence in support of this comes from the fact that, with regard to *else*-modification, full clefts behave just like non-clefts in sluicing contexts, and unlike truncated clefts. Specifically, the same infelicity that arises in non-cleft questions in contexts like (4) arises with full clefts as well:

(36) Jack left, and someone else left too, but I don't know who it was.

(37) Jack left, and someone else left too, but I don't know #who it was that left.

(38) Jack left, and someone else left too, but I don't know #who left.

To complete the paradigm, we see that full clefts also pattern with non-clefts with respect to *else* modification:

(39) Jack left, and someone else left too, but I don't know #who else it was.

(40) Jack left, and someone else left too, but I don't know who else left.

(41) Jack left, and someone else left too, but I don't know who else it was that left.

5 Conclusion

We have discourse coherence facts that argue in favor of a pseudosluice parse, and it forces us to certain compositional conclusions about the structure of clefts; non-cleft propositions like 'Jack left' cannot count as answers to cleft questions, which I've argued here to be identity questions, with an equative semantics. Mikkelsen (2006) argues for an inverted predicational structure for clefts, treating them as specificational clauses (instead of equative), however Heycock & Kroch (1998) convincingly argue against an inverted predicational analysis for specificational clauses, concluding that they are a species of equative, so that the semantics given here is consistent with the claims in Heycock and Kroch (1998). Both pseudosluices and isomorphic parses are possible for sluicing. How might we state a syntactic identity condition that is consistent with the possibility of pseudosluicing?

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