

I suppose the canonical examples of what people have in mind when they talk about “ellipsis,” are the constructions in (1).

- (1) a. *VP Ellipsis*:  
Sally likes natto but Jerry doesn't  $\Delta$ .
- b. *Sluicing*:  
Sally likes something but God only knows what  $\Delta$ .
- c. *NP Ellipsis*:  
Sally likes Sam's meatloaf, but I like Joan's  $\Delta$ .

There are differences in these constructions, and it's conceivable that the hypothesis that the same operation underlies all three is mistaken. I'll forge forward as if they do have the same source, however, and where possible I'll include examples illustrative of properties from each of these construction types.

The excitement for a semanticist in Ellipsis is in its anaphoricity. Some of what's involved in understanding how Ellipses invoke anaphoricity is figuring out how the antecedents to the ellipses are found. The central question for this project is determining which of a variety of potential antecedents are the ones that are prominent enough to serve in that capacity. This won't be the aspect of the question that I focus on today, but it does interact with my topic. What I will focus on instead is the question of what the anaphoric connection between ellipsis and antecedent consists of. A classical way of thinking about this issue was formulated by Sag and Hankamer (1984). They suggested that there is a central distinction between what they called “deep anaphora” and “surface anaphora.” Deep anaphora, they suggested, is the same kind that is illustrated by definite, personal pronouns. We can point to a variety of properties of how personal pronouns work for which present treatments are designed to account for.

(2) DEEP ANAPHORA

- a. Discourse antecedents possible:  
A: Janice is one of the longest serving board members.  
B: I doubt if she'll resign now.
- b. Contextual antecedents possible:  
i. <My father and I walk into a reception room. The woman at the reception desk continues looking at the appointment book on her desk, showing no sign that she's perceived our entrance. Looking at my father, I say> “I wonder if she's heard us.”
- c. Situation defined antecedents marginally possible:  
i. Twelve mice have gone into this cabinet, but I only chased out 11. I can't understand what happened. ??It can't have escaped the cabinet.
- d. Bound Variable Interpretations available:  
i. Every woman<sub>1</sub> revealed that she<sub>1</sub> had read the assignment.

- e. Other kinds of bound interpretations available:
- i. Every man met a woman that had reviewed his case. She worked in the Registrar's office.
- f. No "missing antecedent effect" (see Grinder and Postal 1971, Bresnan 1971):
- i. \* I've never ridden a camel, but Ivan has done it, and he says it stank horribly.  
(Grinder and Postal 1971, (17a): 278)
  - ii. ?\* I haven't met any presidents of a Fortune 500 company. They're rich, unless this economy has destroyed its profits.  
*compare:*
  - iii. I've met the president of a Fortune 500 company. He has to be rich, unless this economy has destroyed its profits.
- g. Can't be moved out of:
- i. \* About what have you bought some books? By whom did you file them?
  - ii. \* A different student brought a book by each linguist. A different teacher also brought it.  
each linguist >> a different teacher
  - iii. \* I read a book that Jill couldn't do it.
  - iv. \* I read a different book by every linguist that wrote it.
- (3) SURFACE ANAPHORA
- a. Discourse antecedents possible:
 

A: Janice is one of the longest serving board members.  
B: Sally is  $\Delta$  too.

A: I met someone nice last night.  
B: I suppose you can't remember who  $\Delta$ ?

A: I read Sally's book.  
B: I prefer Joan's  $\Delta$ .
  - b. Contextual antecedents marginally possible:
    - i. <My father and I walk into a reception room, talking loudly to each other. The receptionist says:> Please don't  $\Delta$ .
    - ii. <Julie is eating mom's meatloaf, when she looks at me and says:> I prefer dad's  $\Delta$ .
    - iii. *not possible for sluices. see below.*
  - c. Situation defined antecedents not possible:
    - i. \* The garbage can is full. I hope that *you* will  $\Delta$  for a change.  
(Elbourne 2008, (29): 198)
    - ii. \* That's John and Sally getting married up there. Can you tell me who  $\Delta$ ?
    - iii. \* We here at Amherst Bookstore have devoted a whole table to Pullman. Next week we'll take a look at Stephenson's  $\Delta$ .
  - d. Bound variable Interpretation: unknown.

- e. Other kinds bound variable interpretations possible (see Hardt 1999 and Schwarz 2000):
- i. When I whistle, you say I shouldn't  $\Delta^1$ . But when I sing, you don't  $\Delta^2$ .  
 $\Delta^1$  = whistle  
 $\Delta^2$  = say I shouldn't sing
- f. Missing Antecedent Effect:
- i. I haven't visited a Fortune 500 company, but Sally has  $\Delta$ , and it was impressive.
  - ii. I've seen no proof of a solution to this problem, but Roger's seen several  $\Delta$ , and apparently it's really simple.
  - iii. *haven't found a sluicing example.*
- g. Can be moved out of:
- i. <About what did you buy some books?> And by whom will Mary  $\Delta$ ?
  - ii. <A different student introduced every speaker.> A different teacher did  $\Delta$  too.  
every speaker >> a different teacher
  - iii. I read a book that Mary had  $\Delta$ .
  - iv. I ate something, but I won't say what  $\Delta$ .
  - v. I visited John's former house, but I haven't yet visited Sally's  $\Delta$ .  
 $\approx$  I visited the house that formerly belonged to John, but I haven't yet visited the house that formerly belonged to Sally

Here's a simple, rough, stab at capturing this difference.

- (4) a. Deep Anaphora arises by way of the value given to a referential index. Deep anaphors, then, are expressions that have a referential index as part of their makeup.
- b. Surface Anaphora arises when the semantically interpreted content of a term has been given by the linguistic content of something uttered elsewhere. Surface anaphors, then, are expressions whose content is found in the surrounding linguistic context.

Phenomena that go along with this characterization of Surface Anaphora are what go by the name of "form matching." There are cases of ellipsis in which material that survives outside the surface anaphor seems have its morphological form determined by material within the anaphor. When this form is thought to be determined by syntactically arranged items, we have evidence for the existence of this structure in surface anaphors.

- (5) a. We can't prove that there are such rules, but there are  $\Delta$ .
- b. \* We can't prove that there are such rules, but there is  $\Delta$ .  
(from Ross 1967b)
- c. Er will jemandem schmeicheln, aber sie wissen nicht wem.  
he wants someone.dat flatter, but they know not who.dative  
(He wants to flatter someone, but they don't know who.)
- d. \* Er will jemandem schmeicheln, aber sie wissen nicht wen.  
he want someone.dative flatter, but they know not who.accusative  
(He wants to flatter someone, but they don't know who.)  
(from Ross 1969)

But there are possible counter-examples, and problems.

- Sloppy identity (from Ross 1967a)

(6) John likes his theory and Jane does  $\Delta$  too.  
 $\Delta$  = likes her theory

- Verbal inflection mismatches (see Potsdam 1997a,b and Lasnik 1995)

(7) Jane hasn't eaten natto because John won't  $\Delta$ .  
 $\Delta$  = eat natto

- Indefinite determiners can trade (from Sag 1976)

(8) We haven't decided to blacklist any firms. But there's a chance we might  $\Delta$ .  
 (Hardt 1993, (68): 22)

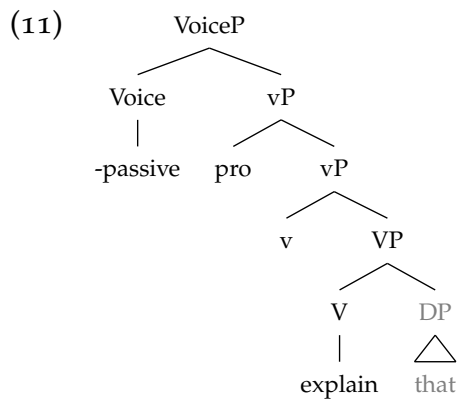
- Category mismatches?

(9) Ensign: This can all be explained.  
 Spock: Please do  $\Delta$ .

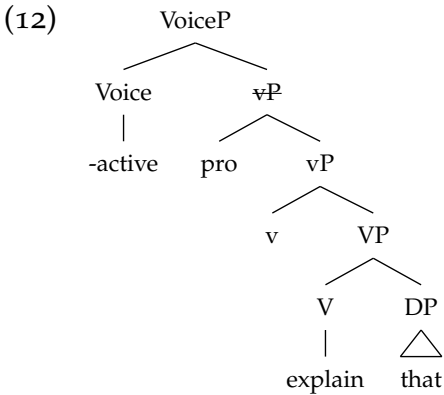
(from Sag 1976)

(10) David Begelman is a great laugher, and when he does  $\Delta$ , his eyes crinkle at you the way Lady Brett's did in *The Sun Also Rises*. (Hardt 1993, (111): 34)

A working hypothesis is that in these cases, the form of the item in the antecedent is not what it appears to be. It is, instead, a plainer form and it is this plainer form is what exists in the antecedent for the anaphor. In the case of the passive/active alternation, for instance, we can imagine that underlying form of the passive something like (11).



(I have put into a shaded font the “copy” left by movement of the direct object. It shows up in the elided VP.) The VP that is elided, by contrast, might be embedded in a structure like (12).



The elided VP matches exactly the antecedent VP in these representations. The passive particle arises from (9) by way of the syntax-to-morphology interface that is responsible for spelling out voice+v+*explain*. The active morphology would show up in the ellipsis case, if there weren't ellipsis, through a similar means. A similar account can be given for the inflectional mismatches (see Lasnik 1995) and for cases involving noun vs. verb cases (see Fu, Roeper, and Borer 2001). The alternation between *any* and *some* might have a parallel source, if these items are involved in a concord relationship with negation, as is often argued.

The case of sloppy identity is a little trickier. To account for the different  $\phi$  features, we would have to imagine that the pronoun in the antecedent clause doesn't have  $\phi$  features at some level of representation, and that the  $\phi$  features it shows up with is derived from its binder, perhaps by agreement. Something of this sort has been argued for in Kratzer (to appear).

We must also worry about the index on the pronoun in this case too, however, and this presents special problems. We want to make sure that we get a sloppy reading for the pronoun only when the antecedent pronoun is bound, as (13) indicates.

- (13) a. Mary<sub>1</sub> likes her<sub>1</sub> kids but Mark<sub>2</sub> doesn't like ~~his<sub>2</sub>~~ kids.  
 b. \*Mary<sub>1</sub> likes her<sub>3</sub> kids but Mark<sub>2</sub> doesn't like ~~his<sub>2</sub>~~ kids.  
 c. Mary<sub>1</sub> likes her<sub>3</sub> kids but Mark<sub>2</sub> doesn't like ~~his<sub>3</sub>~~ kids.

To employ the strategy I've adopted for the other cases, then, we'd have to carefully segregate two kinds of indices. Those that come with features along with the pronoun. Presumably these are the sort that allow pronouns to refer to discourse antecedents and the like. This is the "3" that is found in (13b,c), for instance. These kinds of indices would have to be kept separate from those indices that arise in binding contexts and, perhaps, come with the  $\phi$  features assigned by a binder. This is what the sloppy reading would require. A system like this is something like what one finds in Fiengo and May (1994). It will not be enough, as we will see, because there are conditions on the sloppy interpretations of pronouns that do not trace back to how we might imagine the indices to be assigned to them. Here is an example from Sag's dissertation.

- (14) a. John<sub>1</sub> said that Mary hit him<sub>1</sub> and Bill<sub>2</sub> did say that Mary hit him<sub>1</sub> too.  
 b. \*John<sub>1</sub> said that Mary hit him<sub>1</sub> and Bill<sub>2</sub> said that she did hit him<sub>2</sub> too.  
 (Sag 1980, (30), (31):94-5)

If assigning features and an index to the pronouns in the antecedent and elided clause of (14b) is possible, it is hard to see why it wouldn't be in (14a). We'll have to come back to the indices problem for sloppy identity, then.

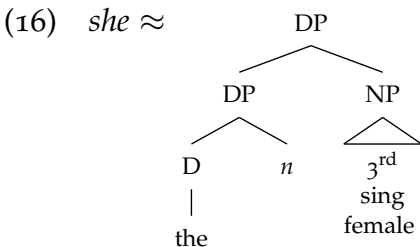
There is one form mismatch case, however, that doesn't seem amenable to such a treatment. And this is Vehicle Change.

- (15) Vehicle Change (from Fiengo and May 1994)
- a. \* Mary likes John<sub>1</sub>'s parents and he<sub>1</sub> likes John<sub>1</sub>'s parents too.
  - b. Mary likes John<sub>1</sub>'s parents and he<sub>1</sub> does  $\Delta$  too.
  - c. ?\* Mary likes John<sub>1</sub>'s parents and he<sub>1</sub> likes John<sub>1</sub>'s parents too.
  - d. Mary likes John<sub>1</sub>'s parents and he<sub>1</sub> likes his<sub>1</sub> parents too.
  - e. \* Mary likes John<sub>1</sub> and he<sub>1</sub> likes John<sub>1</sub> too.
  - f. \* Mary likes John<sub>1</sub> and he<sub>1</sub> does  $\Delta$  too.
  - g. \* Mary likes John<sub>1</sub> and he<sub>1</sub> likes him<sub>1</sub> too.

The way Fiengo and May described these data was as follows: An r-expression in the antecedent can be matched with a pronoun in the ellipsis. That is why Principle B effects show up, rather than the Principle C effects we would expect. Let's set this aside. I'll come back with a suggestion later.

Let's turn now to seeing how in detail this trial account captures the effects we listed above as diagnostic of the surface/deep anaphora divide.

I'll start by adopting an overly concrete characterization of personal pronouns. I'm building this on Elbourne (2005), which has Postal (1969) as its inspiration. Personal pronouns, of the type that are in my illustration of deep anaphora above, are definite. Let us imagine that they have a part to them that is synonymous with the definite determiner *the*. An other part will be a referential index. Referential indices refer to entities, let us assume, by way of an "assignment function." And, finally, personal pronouns have  $\phi$  features, which I will assume express a presupposition. Elbourne's syntax for a personal pronoun is something like (16).



The denotation for *the* is (17), which can be paraphrased as (18).

$$(17) \lambda x. \lambda P. x, \text{ if } \exists! x P(x)$$

- (18) *the* has the value given to the index it combines with, if the value given to that index is the unique individual that the predicate expressed by the NP holds of.

The uniqueness part of the presupposition is necessary to account for the fact that there is something wrong should I say something like "The chair is wobbly." On the other hand, there is nothing wrong with my saying "The speaker is wobbly." This is because in the situation of utterance, there is a unique speaker, but not a unique chair. This requires that the uniqueness presupposition be contextually narrowed. One way of modeling this contextual narrowing is with "events" or "situations." I'll use *s* to designate situations. To build this in to the system, I'll incorporate reference to situations in the denotation of *the*.

$$(19) \lambda x. \lambda P. x, \text{ if } \exists! x \text{ in } s P(x)$$

- (20) *the* has the value given to the index it combines with, if the value given to that index is the unique individual in the situation that satisfies the predicate expressed by the NP.

How the values are given to situations I will largely remain vague about. For many of our cases it will be sufficient to think of sentences, or discussions, to be about a situation. This situation is what *s* will normally refer to.

This way of treating pronouns is motivated by donkey anaphora, an example of which is (21).

- (21) Every man who has a wife is sitting next to her.

Here the value given to *her* varies with the values given to *a wife*. Definite descriptions can vary in a similar way, and in contexts that are parallel. Like (21) is (22).

- (22) Every man who has a wife is sitting next to the/that wife.

The way that Heim (1990) suggested accounting for these cases was to let the expressions *the wife* and *her* refer to unique individuals in situations, and allow the quantification expression *every man* cause these situations to vary. Elbourne (2005) picks up that idea, and formalizes it in the way that I am building upon here. Very roughly speaking, a sentence like (22) will get a semantics that allows it to mean something like (23).

- (23) Every situation that is made up of a man who has a wife can be extended minimally into a situation that contains the man sitting next to the wife.

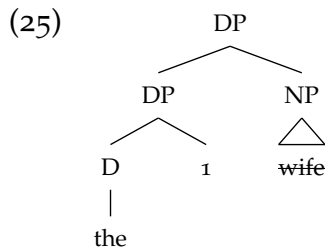
Here, then, is the reason for letting both definite determiners and definite personal pronouns have an situation variable in their meaning. In contexts of donkey anaphora, we see that variable getting bound, and the referent of the definite determiner or pronoun varying as a consequence.

But the approach to definite pronouns in Elbourne and Postal goes further than merely letting both be definite determiners whose referents are picked out relative to a situation. They argue too that they have elided NPs within them as well, as this will complicate our account of the Surface/Deep anaphora contrast. The reason for believing that definite personal pronouns have elided NPs in them is, among other things, because of contrasts like that in (24).

- (24) a. Every man who has a wife is sitting next to her.  
 b. \*Every married man is sitting next to her.

(Elbourne 1999, (56):64, originally from Heim (1982))

Elbourne argues that this difference traces back to (the version of) Hankamer and Sag's characterization of surface anaphora, laid out above. In the good example, (24a), Elbourne would assign the following structure.



In place of the  $\phi$  features, we have an elided NP, whose antecedent is found in the previously occurring linguistic material. This elided NP also has the singular, feminine, third person features associated with it, and so the form of the definite determiner is the same here as it is with a plainer pronoun. We'll have to puzzle out why the determiner's form is different when the NP bearing the  $\phi$  features is spoken. I'm not sure how to start that project.

The ungrammatical example in (24b), cannot have the representation in (25) because there is nothing previously spoken that serves as antecedent for *wife*, or *woman*, etc. Moreover, because the expression *every married man* does not describe a situation with a female individual in it, *her* has nothing to refer to. Compare an example like (26), which both introduces an individual in the situation to be expanded, and refers to that individual in a non-direct way.

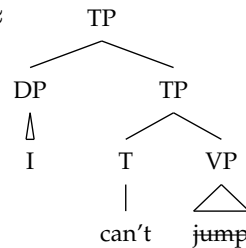
(26) When John calls at a house, he rings the bell twice.

(Elbourne 1999, (52):62)

Pronouns, then, are another case of ellipsis, if this is correct.

The anaphoric behavior personal pronouns can therefore be seen as a function of how values are given to the referential index, and the situation to which the value give to that index is relativized, as well as how an elided NP (when there is one) narrows that reference. By contrast, we can think of an elided X as always nothing more than simply unpronounced versions of otherwise vanilla, regular occurring, Xs. Thus, in the instances of VP Ellipsis, like those listed above, we can imagine that they are regular occurring VPs whose material is found elsewhere in the discourse. There are a couple of ways of executing this idea. In one, the representation has a command embedded in it that instructs the relevant phrase to go without a pronunciation. This is the “deletion” view of ellipsis, updated to a non-rule-based view. Merchant (2001) is a recent presentation of the idea. The other view is that the phrase that is elided is merged into the syntactic representation only after the syntactic representation is pronounced. This is the “copying” view of ellipsis, a recent exponent of which is Chung, Ladusaw, and McCloskey (1995). I’ll come back to these details later. For now, let’s simply represent elided phrases by striking out the material they contain. So:

(27) <Can you jump?> I can’t  $\Delta \approx$



So with this machinery, let’s see how each of the attributes of deep anaphora can be captured.

(28) Deep Anaphora Properties, Derived:

- a. Discourse Antecedents are available to deep anaphors because the assignment function can map indices onto individuals introduced into the discourse by names (and other such terms).
- b. Contextual antecedents are available to deep anaphors because the situations in which sentences are uttered can serve to fix the reference of *s*
- c. Situation defined antecedents are marginally available to deep anaphors because it is marginally possible to fix the value of *s* by describing it in a discourse.
- d. Bound variable interpretations are available to deep anaphors because certain quantificational terms can manipulate how the assignment function produces values for the referential index.
- e. Other kinds of bound readings are available to deep anaphors because certain quantificational terms can manipulate how the values to *s* are given.



- f. The missing antecedent effect is missing from the deep anaphor in the Hankamer and Sag example because nothing it contains introduces an entity into the discourse. But in my example – (2f-ii) – this is not so clear.

(2f-ii) \* I haven't met any presidents of a Fortune 500 company. They're rich, unless this economy has destroyed its profits.

Here we should expect an ellipsis analysis of the pronoun to be possible, which would make this example essentially equivalent to (28).

(28) I haven't met any presidents of a Fortune 500 company. Those presidents of a Fortune 500 company are rich, unless this economy has destroyed its profits.

There is something wordy about (28), but I think it is grammatical. My judgements are shaky. So there is something left to be explained about the absence of the Missing Antecedents effect in cases such as these.

- g. Things can't move out of deep anaphors in many cases because there is nothing in them that is moveable. But, again, in contexts where a personal pronoun can support an ellipsis, there may well be. Some of my examples fall into this category, so let's look at them:

- (29) a. \* About what have you bought some books? By whom did you file them?  
 b. A different student brought a book by each linguist. A different teacher also brought it.  
 a different teacher >> each linguist

On an ellipsis analysis of these examples, these will have be roughly equivalent to (30).

- (30) a. \* About what have you bought some books? By whom did you file those books?  
 b. A different student brought a book by each linguist. A different teacher also brought that book by each linguist.  
 a different teacher >> each linguist

I don't know why, but we get the same ban against extraction in these cases too.

(31) Surface Anaphora Properties, Derived:

- a. Discourse Antecedents are available to surface anaphors because discourse antecedents are linguistic material that can be repeated.
- b. ! Contextual antecedents are not expected to be available to surface anaphors.
- c. Situation defined antecedents are not available to surface anaphors because there is no linguistic material that can be repeated.
- d. ! Bound variable interpretations for surface anaphors are not expected to be possible.
- e. ! Other kinds of bound readings are not expected to be available to surface anaphors.
- f. The missing antecedent effect is available to surface anaphors because surface anaphors can have material in them that introduces entities into the discourse.

- g. Things can move out of surface anaphors because surface anaphors can contain moveable things.

There are two, possibly three, problems with how this characterization of surface anaphora works. One problem is that we have examples where there is no linguistic material present that corresponds to what has been elided. Interestingly, these examples involve contextually rich environments, but not examples in which the spoken material describes sufficiently a possible antecedent. So we have contrasts in the following.

- (32) a. <My father and I walk into a reception room, talking loudly to the other. The receptionist says:> Please don't  $\Delta$ .  
 b. <Sag approaches me with a knife raised> For god sakes: don't  $\Delta$ .  
 c. <Your child is struggling to tie her shoes while you wait to take her to school. With a glance at your watch, you say:> Here, let me  $\Delta$ .  
 d. <I walk into a room, and gesturing at the empty chair, say:> May I  $\Delta$ ?  
 e. <I walk up to a woman standing alone and looking at the dancers on the floor, and say:> Would you like to  $\Delta$ ?
- (33) a. \* The garbage can is full. I hope that *you* will  $\Delta$  for a change.  
 b. \* I know my bike is filthy, but I can't seem to find the time to  $\Delta$ .  
 c. \* I think this is the key to my car; that is, I think it should  $\Delta$ .  
 d. \* He is my husband, but I now wish I hadn't  $\Delta$ .  
     *compare:* He's the guy I married, but I now wish I hadn't  $\Delta$ .

We need something that explains this contrast: why is context capable of furnishing a non-linguistic antecedent, but descriptions of situations not about to? A first observation we can make is that none of the examples in (32) are grammatical if the ellipsis is replaced by *do so*.

- (34) a. \* <My father and I walk into a reception room, talking loudly to the other. The receptionist says:> Please don't do so.  
 b. \* <Sag approaches me with a knife raised> For god sakes: don't do so.  
 c. \* <Your child is struggling to tie her shoes while you wait to take her to school. With a glance at your watch, you say:> Here, let me do so.  
 d. \* <I walk in a room, and gesturing at the empty chair, say:> May I do so?  
 e. \* <I walk up to a woman standing alone and looking at the dancers on the floor, and say:> Would you like to do so?

On the other hand, many of these examples sound perfectly fine with *do that* or *do this* in place of the ellipsis.

- (35) a. <My father and I walk into a reception room, talking loudly to the other. The receptionist says:> Please don't do that.  
 b. <Sag approaches me with a knife raised> For god sakes: don't do this.  
 c. <Your child is struggling to tie her shoes while you wait to take her to school. With a glance at your watch, you say:> Here, let me do that.  
 d. \* <I walk in a room, and gesturing at the empty chair, say:> May I do this?  
 e. <I walk up to a woman standing alone and looking at the dancers on the floor, and say:> Would you like to do that?

And, by contrast, none of the examples in (33) improve with *do that* or *do this* in place of the ellipsis.

- (36) a. \* The garbage can is full. I hope that *you* will do this for a change.  
 b. \* I know my bike is filthy, but I can't seem to find the time to do that.  
 c. \* I think this is the key to my car; that is, I think it should do that.  
 d. \* He is my husband, but I now wish I hadn't do that.

This, of course, isn't surprising. *this* and *that* are expressions which require a rich context to deliver their semantic values. In (36), that context is not available. A first-pass description, then, might be that contextually supported ellipsis is ellipsis of *do that* or *do this*. This would also explain why context doesn't license sluices.

- (37) a. \* <A clergyman in an elaborate, and obscuring, costume just finishes pronouncing the two individuals in front of him "man and wife." A woman in the back row of the gathering turns to her neighbor and utters:> "Do you know who he is?"  
 b. \* <My sister and I had a ritual around getting to drive the family car. We'd flip a coin to see which of us got to decide who would drive. Upon revealing that she'd one the coin-toss, I say sarcastically:> "I wonder who  $\Delta$ ."  
 c. \* <Hankamer points in the distance at something, and says:> I can't tell what  $\Delta$ .

There are places where *do so* and *do that* cannot occur, but contextually determined ellipses are possible. Stative predicates, for instance:

- (38) a. ? <Scully and Mulder walk into a room with two men lying unconscious on the floor. Mulder checks for a pulse on one of them, shakes his head, and looking at Scully who is leaning over the other, says:> Is he  $\Delta$  too?  
 b. \* <Scully and Mulder walk into a room with two men lying unconscious on the floor. Mulder checks for a pulse on one of them, shakes his head, and looking at Scully who is leaning over the other:> Is he done that/this too?

And NP Ellipsis too:

- (39) a. <I look at my sister while eating the meatloaf mom has made for dinner, and whisper:> I like dad's  $\Delta$  better.  
 b. \* <I look at my sister while eating the meatloaf mom has made for dinner, and whisper:> I like dad's done that/this better.

But in each of these cases there are likely alternatively demonstrative expressions that might be the source for the ellipses.

- (40) a. ? <Scully and Mulder walk into a room with two men lying unconscious on the floor. Mulder checks for a pulse on one of them, shakes his head, and looking at Scully who is leaning over the other:> Is he this too?  
 b. ? <I look at my sister while eating the meatloaf mom has made for dinner, and whisper:> I like dad's one of these better.

Perhaps something along these lines is the source for the ellipsis in (32d).

- (32d) <I walk into a room and, gesturing at the empty chair, say:> May I be here?

If this is the right direction, then what we need is a way of eliding *do that, do this, be this, be that, be here* and *one of these* that does not require a linguistic antecedent. It's conceivable, I suppose, that the function of the demonstrative could be present without the demonstrative's overt presence. After all, the following are possible.

- (41) a. <Gesturing to an empty seat, I say:> Sit!  
 b. <Mom puts a plate of meatloaf in front of me, and says:> Eat!

If this is the case for our examples, then what we seek is a way of letting ellipsis remove: *do, be* and *one*. Interestingly, in one of our examples, we can see, I think, that this process is not what is normally available to ellipsis. Compare:

- (42) a. <Your child is struggling to tie her shoes while you wait to take her to school. With a glance at your watch, you say:> Here, let me  $\Delta$ .  
 b. \*She let Sam eat candy, but she won't let Jill  $\Delta$ .

And, similarly:

- (43) a. <Mom slides a plate of her meatloaf in front of me. I say:> You'll have to make me  $\Delta$ .  
 b. \*I can make Kyle eat my meatloaf, but I can't make Julie  $\Delta$ .

Here's my proposal, then.

- (44) The ellipsis in situations where a context alone provides an antecedent are ellipses of the bare "empty" expressions *do, be* and *one* with a silent demonstrative.

There are still cases of contextual licensing that I doubt can be folded into this story. One of these is the famous example from Schachter (1977):

- (45) Doe she  $\Delta$  or doesn't she  $\Delta$ ? Only her hairdresser knows for sure.

I suspect the point about these examples is that they are artful violations of the antecedence condition for ellipsis.

I've tried to make plausible the view that ellipsis is a kind of surface anaphora, and that surface anaphora finds antecedence by "copying" linguistic material. We've run into four problems, though, and they are:

- (46) a. The absence of a Missing Antecedent effect is not entirely derived for personal pronouns.  
 b. The indices in sloppy identity sometimes seem capable of not matching in antecedent and ellipsis.  
 c. Vehicle Change: r-expression in the antecedent seem to be able to match pronouns in the ellipsis.  
 d. The variable readings found in the Hardt/Schwarz examples.

There is additional problem that I should mention. It is too hard for me. The problem is that sometimes, VP ellipsis can find an antecedent in more than one other occurring VP. These cases were discovered by Webber (1978), and are discussed by Fiengo and May (1994), Hardt (1993) and given a treatment in Elbourne (2008). One of Webber's examples is:

- (47) Bob wants to sail round the world and Alice wants to climb Kilimanjaro, but neither of them can  $\Delta$ , because money is too tight.

Elbourne suggests giving these a treatment that resolves the ellipsis roughly as shown in (48).<sup>1</sup>

- (48) Bob wants to sail round the world and Alice wants to climb Kilimanjaro, but neither of them can sail round the world or climb Kilimanjaro respectively, because money is too tight.

The *or* and *respectively* are not found in the previously occurring linguistic material, and so violate the view of antecedent conditions on ellipsis we are reviewing.

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<sup>1</sup> This paraphrase does considerable violence to Elbourne’s proposal, but is roughly equivalent from a semantic point of view and equally at odds with the view I am promulgating at the moment. He forms conjoined VPs out of the antecedent VPs, and then builds in a choice function that chooses one or the other of these VPs in a way that is keyed to the subject argument. The conjunction and the choice function would have to be invoked, so far as I can see, by ellipsis itself. They aren’t present, in other words, among the linguistic material that is serving as antecedent.

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We saw yesterday that there is evidence that the kind of anaphora – surface anaphora – that ellipsis is, is the kind that finds its antecedents on the basis of matching linguistic material. We left with a few problems for that view, however.

- (1) a. Missing Antecedent effect should appear in some uses of personal pronouns:
- i. \*I haven't met any presidents of a Fortune 500 company. They're rich, unless this economy has destroyed its profits.
  - ii. I haven't met any presidents of a Fortune 500 company. Those presidents of a Fortune 500 company are rich, unless this economy has destroyed its profits.
- b. Sloppy Identity:
- i. Jerry<sub>1</sub> likes his<sub>1</sub> car and Sarah<sub>2</sub> does like her<sub>2</sub> car too.
- c. Vehicle Change:
- i. Jerry likes Sarah's<sub>2</sub> car and she<sub>2</sub> does like her<sub>2</sub> car too.
  - ii. \*Jerry likes Sarah<sub>2</sub> and she<sub>2</sub> does like her<sub>2</sub> too.
- d. Bound cases
- i. When you whistle, you say I shouldn't  $\Delta$ , but when I sing, you don't  $\Delta$ .

I want to discuss the first three of these problems today. I will review a way of understanding the problem posed by sloppy identity that originates with Williams (1977) and Sag (1976). I'll start, though, with Vehicle Change, and try to sketch a new solution. That solution, I hope, will give us a handle on why the Missing Antecedent effect is missing in all uses of pronouns.

What vehicle change describes is the fact that a name-like, Principle C triggering type, DP in the antecedent for an ellipsis "matches" something that obeys Principle B in the ellipsis site. This is what explains the contrast in (1c). I will have nothing to say about Principle B, but for concreteness sake, let us adopt a view of it like that in Reinhart and Reuland (1993).

(2) *Principle B* (formulated for English)

A reflexive predicate must be reflexive-marked.

- a. A REFLEXIVE PREDICATE is a vP (or NP) that contains coreferent arguments.
- b. A REFLEXIVE-MARKED predicate is one whose coreferent arguments includes a reflexive.

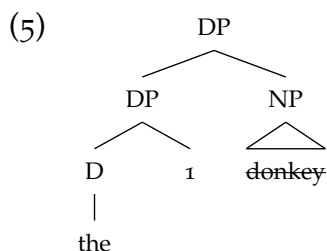
Now, we can see that there already exists a problem in formulating Principle C, as it needs to distinguish definite descriptions from pronouns:

- (3) a. \*He<sub>1</sub> said that the man<sub>1</sub> had left.  
b. He<sub>1</sub> said that he<sub>1</sub> had left.

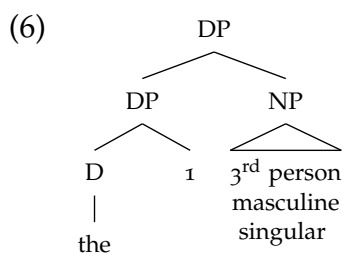
and yet, our treatment of pronouns is that they *are* definite descriptions. That, recall, is required to give a treatment of "donkey" uses of pronouns, like that illustrated in (4).

- (4) a. Every woman who brought a donkey, knows it's name.  
 b. Every woman who brought a donkey, knows the donkey's name.

The pronoun in (4a) has the representation in (5).



The pronoun in (3b) should have the representation in (6).



The only difference between pronouns and the referential expressions that Principle C regulates is the content of the NP that follows the determiner. We need an understanding of Principle C that is sensitive to this difference.

Fortunately, there is a treatment of Principle C on the market that does make this distinction. It is a paper – unpublished so far as I know – by Philippe Schlenker entitled *Minimize Restrictors!*. The paper can be found on the semantics archive, and I have a copy if anyone is interested. Let me sketch his proposal.

Schlenker's paper is aimed at explaining a variety of exceptions to Principle C. One of those is epithets, as the contrast in (7) illustrates.<sup>1</sup>

- (7) a. \*John<sub>1</sub> is so careless that the man<sub>1</sub> will get killed in an accident one of these days.  
 b. John<sub>1</sub> is so careless that the idiot<sub>1</sub> will get killed in an accident one of these days.

Another are cases of equation, or assertion, that Reinhart is famous for pushing. For example:

- (8) A: Who is that man over there?  
 B: He is Colonel Weisskopf. (from Grodzinsky and Reinhart 1993)

And, finally, there are cases of Schlenker's creation:

- (9) a. A linguist<sub>1</sub> working on Binding Theory was so devoid of any moral sense that he<sub>1</sub> forced a physicist [working on particles] to hire the linguist<sub>1</sub>'s girlfriend in his lab.  
 b. \*A linguist<sub>1</sub> working on Binding Theory was so devoid of any moral sense that he<sub>1</sub> forced me to hire the linguist<sub>1</sub>'s girlfriend in his lab.

<sup>1</sup> This example, and all of those in this section, are either in Schlenker's paper, or are closely modeled after them.



In each of these exceptional cases, Schlenker suggests that the NP part – the restrictor of the definite description – is adding useful information. In the case of epithets, it is adding expressive content. In the case the equation in (8), the name is providing the answer to the question. (Note that names are being treated as definite descriptions. The semantics of a name like *Colonel Weisskopf* will be essentially be something like *the one named Colonel Weisskopf*, see Burge 1973. For arguments that proper names are syntactically definite descriptions, see Longobardi 1994.) In the case in (9), Schlenker argues that *linguist* plays a disambiguating function in the first example that is absent in the second example. His proposal, then, is that restrictors for DPs are disallowed unless they bring some non-redundant information. He formulates it, informally, this way:

(10) Minimize Restrictors!

A definite description *the A B* [where order of *A* and *B* is irrelevant] is deviant if *A* is redundant. *A* is redundant if:

- a. *the B* is grammatical and has the same denotation as *the A*, and
- b. *A* does not serve another purpose.

As independent support for *Minimize Restrictors!*, Schlenker points to contrasts like those in (11).

- (11) a. The small American President made important mistakes.
- b. The small boy made important mistakes.
- c. The stupid American President made important mistakes.

(NB: The paper was written during George W. Bush’s tenure.) In (11b), *small* can be used restrictively. But it has only an appositive meaning in (11a), and in fact sounds a little odd. This oddness is absent in (11c), where *stupid* is a clear evaluative adjective. What is odd about (11a)? Schlenker suggests that it violates *Minimize Restrictor!*, since *small* does not change what *the American President* refers to and does not seem to serve any other purpose.

For *Minimize Restrictors!* to really capture Principle C effects, it would have to be embedded in a system that stages how it operates so that the well-known c-command requirement follows. Schlenker does that with a procedure that dynamically changes the set of referents that indexes get related to by the assignment function as the tree is traversed. I don’t think those details matter here.

Okay, so our first step is this: Principle C is a condition that requires restrictors to be informative. This gives us a handle on why pronouns, then, do not invoke Principle C effects. If we assume that definite determiners must combine with NPs, then the most minimal NPs/restrictors they can have are the ones that are expressed by  $\phi$  features.

We might need one more ingredient before Vehicle Change can be derived. That ingredient is Late Merge, which is the name given to those instances of Merge that introduce material in an embedded position in the phrase marker. Late Merge was first postulated to account for the ability of certain instances of movement to bleed Principle C effects. See Lebeaux (1988, 1990), Sauerland (1998) and Fox (1999) among others. Late merge is responsible, for instance, for the contrast in (12).

- (12) a. \* Whose kissing of Jane<sub>1</sub> does she<sub>1</sub> now object to?
- b. Whose kissing that Jane<sub>1</sub> witnessed does she<sub>1</sub> object to?

The Copy Theory of movement gives these examples the representations sketched in (13).

- (13) a. \* [Whose kissing (of) Jane<sub>1</sub>]<sub>2</sub> does she<sub>1</sub> object to [[the<sub>2</sub> kissing of Jane<sub>1</sub>]]?  
 b. [Whose kissing that Jane<sub>1</sub> witnessed]<sub>2</sub> does she<sub>1</sub> object to [[the<sub>2</sub> kissing]]?

Late merge puts the relative clause in (13b) in the highest copy, after movement has created it. This still leaves a semantically complete copy in the lowest copy, and so the question is interpretable and avoids a Principle C effect. By contrast, in (13a) *Jane<sub>1</sub>* must be part of the lowest copy because otherwise the transitive *kissing* will go without an argument and that copy will be semantically incomplete. The definite determiners left in the lower copy of these representations have the function of making this lower copy a variable. They arise through a special rule invoked by the movement operation; see Sauerland (1998) and Fox (2003).

There are some kinds of movement that always seem capable of bleeding Principle C. Argument movement is like this, for instance.

- (14) a. His kissing (of) Jill<sub>1</sub> now seems to her<sub>1</sub> to be unfortunate.  
 b. A picture of her<sub>1</sub> didn't seem to any girl<sub>1</sub> to be flattering.

(14b) teaches us that there can be a lower copy in A movement – *her* can be understood as a variable bound to *any girl*. Why is A Movement capable of circumventing Principle C effects? Takahashi (2006) argues that it arises because A movement is capable of late merging the whole restrictor. This would allow (14a) to have a representation like that in (15).

- (15) [His kissing (of) Jill<sub>1</sub>]<sub>2</sub> now seems to her<sub>1</sub> [<sub>TP</sub> to be [the<sub>2</sub>] unfortunate]

What's left in the lower copy position is just a definite determiner, the one produced by the movement operation. It must have a slightly different semantics than what we have been entertaining for the “regular” definite determiners that we speak because it can go without a NP restrictor and still be semantically complete.

Vehicle change can now, perhaps, be seen as a combination of these two factors. I can think of a number of ways of executing an account.

- Let covert movement bring the restrictor out of the antecedent VP and leave a restrictor-less DP behind, much as in (15). This “trace” of movement will behave like a pronoun, whose index causes it to refer to the same object that the antecedent DP does. This has the problem that some of the instances of covert movement that would be necessary are not otherwise attested. (For example: *Sally said that John<sub>1</sub> likes rutabagas, and he<sub>1</sub> did Δ.*) It would also have to negotiate how it is that QR isn't capable of bleeding Principle C effects.
- Let an antecedent VP with a r-expression in it be built up without the restrictor for that r-expression. Then let the elided VP see that restrictor-less VP as its antecedent. Finally: Late Merge the restrictor. This has the problem that it would force the process of resolving ellipsis to have access to the derivational history of previously occurring sentences. That is because Vehicle Change can occur across sentences: *A: Sally visited John's mother. B: But has he<sub>1</sub> Δ?*
- Let an elided VP be manufactured from a proper subset of the terms that reside within the antecedent VP. We might do that with:

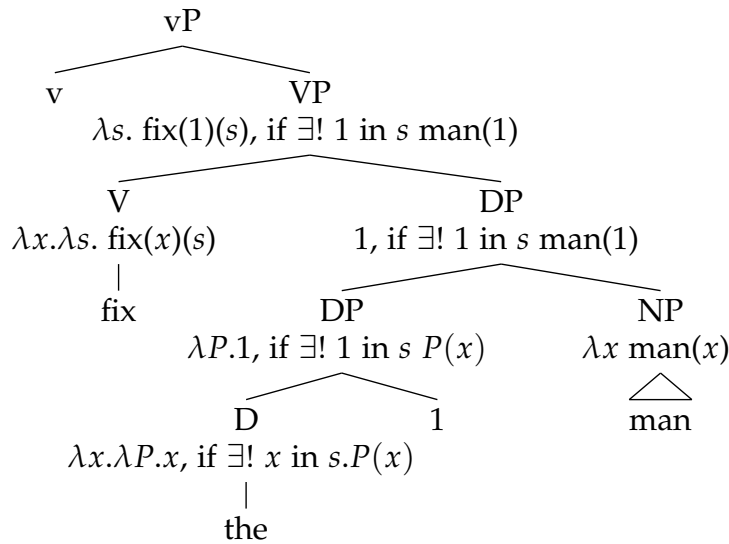
- (16) Antecedence Condition for Ellipsis

Every node in an elided phrase must have the same semantic value as a node in its antecedent.

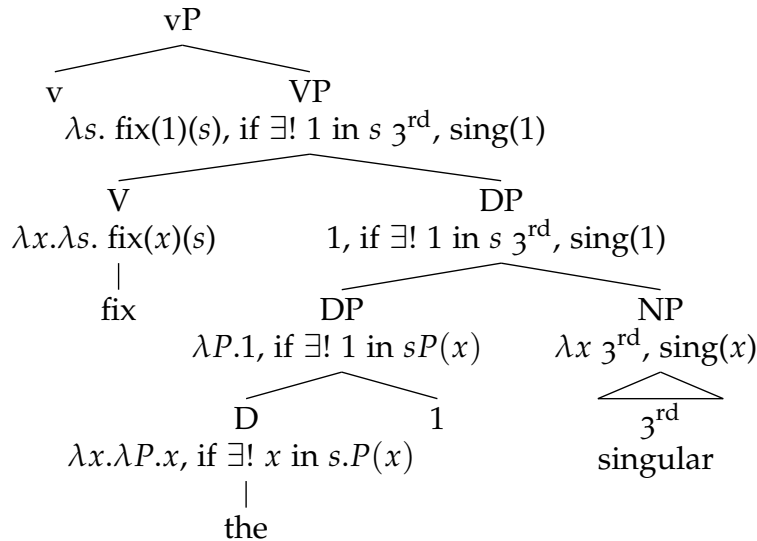
By the term “semantic value,” I mean to exclude that part of the denotation of terms that expresses their presupposition. Because this is just what the restrictors of definite descriptions do, they will be allowed to go missing in the ellipsis. I think this might be problem-free. It would require, however, that the definite determiners which underlie regular definite descriptions, and personal pronouns, can go without restrictors. Or we could let the restrictor that is associated with a determiner in the ellipsis be a minimal collection of features. Here, then, how this last idea would pan out.

- (17) Sally can’t fix the man<sub>1</sub>’s bicycle. He<sub>1</sub> can’t  $\Delta$  either.

*Antecedent:*



*Ellipsis:*



The presuppositional information is expressed in these denotations with the “if” clauses. If that information is ignored, then one can see that the denotations for every node in the antecedent VP and the elided VP are identical. Because the index is the same on the object in both antecedent and ellipsis, it will get interpreted so that it refers to the same individual. For this

reason, the features that are collected in the restrictor of the DP in the ellipsis will have to be consistent with whatever information is present in the restrictor of the DP in the antecedent. For this reason, there is also a constraint on how far the presuppositional material may differ.

*Minimize Restrictors!* might arm us now with a way of blocking the Missing Antecedent effect in those pronouns in which ellipsis might take place. Our exemplar of this problem is (1a-i) and (1a-ii).

- (1a-i) \* I haven't met any presidents of a Fortune 500 company. They're rich, unless this economy has destroyed its profits.
- (1a-ii) I haven't met any presidents of a Fortune 500 company. Those presidents of a Fortune 500 company are rich, unless this economy has destroyed its profits.

As mentioned above, Schlenker's system guides *Minimize Restrictors!* so that it derives the familiar c-command condition on Principle C effects. But as the *small President* example indicates, its effects are felt outside the domain of Principle C effects. It would proscribe a representation like (1a-ii), for this reason, and perhaps that is why this example sounds wordy. Perhaps it is sufficient to bias the representation that is assigned to (1a-i) so that it does not include ellipsis. This would block the Missing Antecedent effect.

This is all I have to say about the problems posed by Vehicle Change and the Missing Antecedent effect. Let's look now at the problem posed by indices and sloppy identity. One problem posed by sloppy identity is the violation of form matching that it appears to produce – this, in fact, is what Ross had in mind when he named the phenomenon.

- (18) Jerry<sub>1</sub> likes his<sub>1</sub> children and Sally<sub>2</sub> does ~~like her<sub>2</sub> children~~ too.

I suggested that the solution to this problem could come from the idea that pronouns are capable of getting their  $\phi$  features from their antecedent through some sort of Agreement process. We now have another way of capturing this effect. Because the  $\phi$  features are part of the restrictor of pronouns, they will be ignored in the antecedence condition on ellipsis. The restrictors of the pronouns must be consistent with the values given to their indices, and in this case that will mean that the elided pronoun's restrictor will have to be consistent with the values given to the index 2. Because this index refers to the individual named *Sally*, and because parents are generally careful about obeying the gender conventions when naming their children, we will tend to understand the  $\phi$  features associated with the elided pronouns as feminine.

So let's now turn our attention to the other problem posed by sloppy identity: how is it that the indices on the two pronouns are allowed to differ in cases such as (18). We should keep in focus too that it isn't always the case that indices can change in antecedent and elided clause. The pronouns in (19), for instance, are given the same evaluation in both antecedent and ellipsis.

- (19) a. \* Jerry<sub>1</sub> likes his<sub>3</sub> children and Sally<sub>2</sub> does ~~like her<sub>2</sub> children~~ too.  
b. \* John<sub>1</sub> said that Mary<sub>3</sub> hit him<sub>1</sub> and Bill<sub>2</sub> said that she<sub>3</sub> did ~~hit him<sub>2</sub>~~ too.

An old fashioned way of capturing these differences is to embrace something like (20).

- (20) When a constituent contains a variable and its binder, the index used to express the binding is identical to any other index used to express the binding.

Williams (1977) and Sag (1976) propose something along those lines. Sag did that by way of a notion of "alphabetic variants" that Quine discussed and which expresses (20). Here is his formulation:

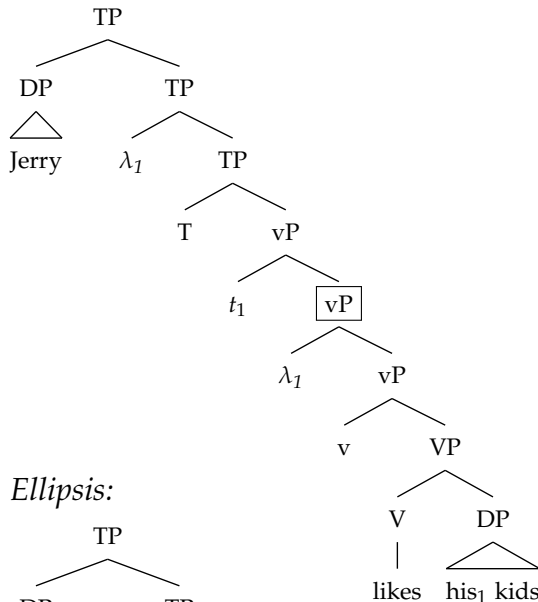
- (21) With respect to a sentence  $S$ , VP Deletion can delete any VP in  $S$  whose LF is a  $\lambda$ -expression that is an alphabetic variant of another  $\lambda$ -expression present in the LF of a previously uttered sentence.

(Sag 1980, roughly (2.1.14): 74)

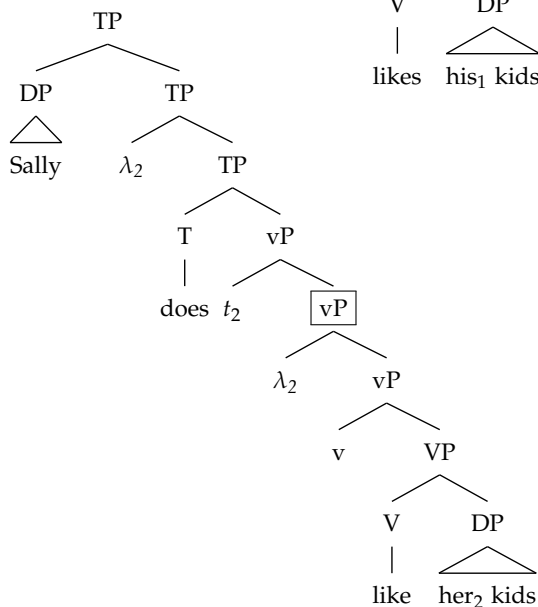
- (22) Formulae  $\phi$  and  $\phi'$  are **alphabetic variants** if there are formulae  $\phi_0, \phi_1, \dots, \phi_n$  such that  $\phi$  is  $\phi_0$  and  $\phi'$  is  $\phi_n$ , and for each  $i$  from 1 to  $n$ ,  $\phi$  is formed from  $\phi_{i-1}$  by replacing some constituent  $\lambda$ -expression  $[\lambda\alpha_i\psi_i]$  by an immediate alphabetic variant  $[\lambda\alpha'_i\psi'_i]$  thereof.
- (23)  $[\lambda\alpha_i\psi_i]$  and  $[\lambda\alpha'_i\psi'_i]$  are **immediate alphabetic variants** if  $\psi$  and  $\psi'$  are alike except that  $\psi'$  contains free occurrences of  $\alpha'$  at all and only those places where  $\psi$  contains free occurrences of  $\alpha$ .

This will capture the difference between (18) and (19). In (18), the pronouns are bound by  $\lambda$ -expressions in both the antecedent and elided VP, and so the difference in index is immaterial. This requires a particular syntax for these cases; something along the lines of (24).

- (24) a. *Antecedent:*



- b. *Ellipsis:*



These representations assume that every binder comes with a  $\lambda$ -expression. So, movement has created a  $\lambda$ -operator adjoined to TP as part of moving the subjects into Specifier of TP. And the trace residing in Specifier of vP, left by moving this subject, also comes with a  $\lambda$ -operator. These  $\lambda$ -operators bind the variables coindexed with them, and the indices the *lambda*-operators have comes from the binder they are related to. The boxed vPs are alphabetic variants, and therefore can meet the antecedence condition on ellipsis.

By contrast, the examples in (19) do not have alphabetic variants in them, and there is a mismatch in index that disallows ellipsis as a consequence. In (19a), the pronouns are not bound by anything, and so the definition of alphabetic variants is not invoked. In (19b), the VP that is elided is too small to contain the binding  $\lambda$ -operator, and so it too does not meet the criterion for alphabetic variants.

There are problems from two directions, and they both have invoked solutions that involve looking at focus. The problems are:

- (25) There are situations in which a bound variable is in a constituent that is deleted but its binding  $\lambda$ -operator is not.
- a. I know which book Max read, and which book Oscar didn't  $\Delta$ .
  - b. I know who Mary promised to see, and who Sally promised not to  $\Delta$ .
  - c. This is the book of which Bill approves, and this is the one of which he doesn't  $\Delta$ .  
from (Lappin 1984)
  - d. Philby, who Angleton suspected, but who Dulles didn't  $\Delta$ , was a mole.
  - e. What John knows is minimal, and what he doesn't  $\Delta$  is vast.  
(Fiengo and May 1994, (99): 229)
  - f. John<sub>1</sub> wanted Mary to kiss him<sub>1</sub> and Bill<sub>2</sub> wanted Sam to ~~kiss him<sub>2</sub>~~.
- (26) Sloppy identity is possible even when the "variables" are not bound.
- a. Max<sub>1</sub>'s mother loves him<sub>1</sub>, and Oscar<sub>2</sub>'s mother does ~~love him<sub>2</sub>~~ too.
  - b. Everybody in Tokyo<sub>1</sub> rides it<sub>1</sub>s subways, but nobody in New York<sub>2</sub> does ~~ride it<sub>2</sub>s subways~~.
  - c. The policeman who arrested John<sub>1</sub> read him<sub>1</sub> his<sub>1</sub> rights, and the one who arrested Bill<sub>2</sub> did ~~read him<sub>2</sub> his<sub>2</sub> rights~~ too.  
from Dalrymple, Sheiber, and Pereira (1991)
  - d. If Tom<sub>1</sub> was having trouble in school, I would help him<sub>1</sub>. On the other hand, if Harry<sub>2</sub> was having trouble, I doubt that I would ~~help him<sub>2</sub>~~.  
from Hardt (1993)  
(Fiengo and May 1994, (39a,b): 108, (41a): 109, (15): 100)

But there is some constraint on the relationship between the pronoun and the expression it is coindexed with that governs whether sloppy identity is possible or not. Cases like (27), for example, don't allow sloppy readings.

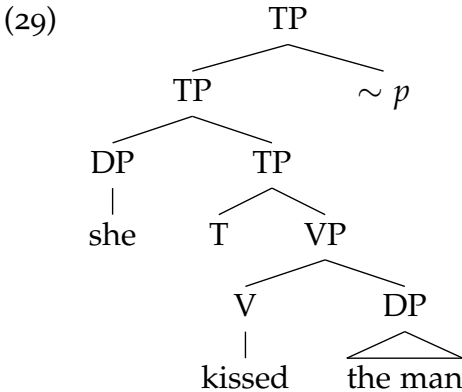
- (27) a. \* Max<sub>1</sub>'s mother saw him<sub>1</sub> and Oscar<sub>2</sub> said that Mary did see ~~him<sub>2</sub>~~ too.  
b. \* Max<sub>1</sub> saw his<sub>1</sub> mother, and Oscar<sub>2</sub> said that Harry did see ~~his<sub>2</sub> mother~~ too.  
(Fiengo and May 1994, (28): 104, (31): 105)

Let's look at this second problem first because it is the one that initiated the investigation in the relationship between the interpretation of focus and the antecedence conditions on ellipsis.

Rooth (1985) argued that the proper description of where sloppy anaphora is possible is part of a more general condition on phonological reduction. That condition is a reflex of the proposal in Rooth (1985) for the interpretation of focus. I'll illustrate it with a slightly modified version of his example.

(28) Sue kissed the man because she kissed the man.

Let the smallest clause that contains a focus marked constituent be the first argument of a silent operator, indicated by  $\sim$  (the "squiggle operator"), the second argument of which is an anaphor whose denotation is derived from the first argument. For (28), we would get a representation like (29).

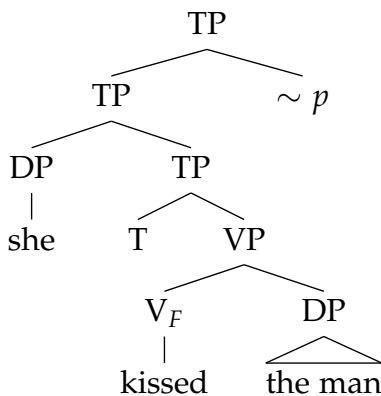


In this context, " $p$ " is a surface anaphor, requiring that the discourse contain something with its meaning. The  $\sim$  operator places constraints on the meaning that  $p$  has/seeks. In general, that constraint is arrived at by replacing all focused material in the first argument of  $\sim$  with a variable that ranges over alternatives to the focused material. Alternatives to the focused material should be understood to be (at least) of the same semantic type as the focused material and to be distinct from the focused material. In the case of (29), then, we can understand  $p$  to require a discourse that provides (30).

(30) The set of propositions:  $x$  kissed the man, where  $x$  ranges over terms of type  $\langle e \rangle$  (i.e., "entities," the same semantic type that *Sue* is), and  $x \neq \text{Sue}$ .

Because *Sue kissed the man* is one of these propositions,  $p$  finds an antecedent in the discourse of the requisite sort. This contrasts with (31), whose  $p$  does not find a discourse antecedent.

(31) Sue kissed the man because she kissed the man.

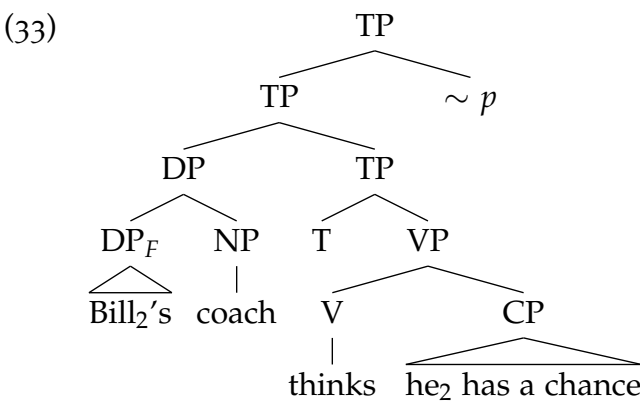


$p$  = the set of propositions: she  $R$ 'd the man, where  $R$  ranges over terms of the type that transitive verbs are, and  $R \neq \text{kiss}$ .

Okay, this is the set-up for interpreting clauses with focus-marked material in them. They invoke an anaphor,  $p$ , that is exactly like the clause except that in place of the focus-marked material there are variables that range over alternatives to that focus-marked material. This  $p$  is something that certain terms have access to – the interpretation of focus sensitive operators like *only* make reference to it, for instance – but it also gives antecedence conditions for the de-accented material around the focus-marked stuff. Kratzer (1991) argued that one of the things that can happen in forming  $p$  from the clause that it is appended to is to let coindexed material be interpreted as the same, coindexed, variables ranging over alternatives in  $p$ . (If we’ve time, and you’re interested, I can step through the example from which this argument comes.) This means that if a pronoun, for instance, is coindexed with a focus-marked term, both the pronoun and the focus-marked term will get translated into the same variable in  $p$ . This, Rooth (1992) argued, is what is responsible for governing sloppy identity. Thus, if we look at the requirements imposed by  $p$ , the cases of sloppy identity in (26) will fall out. I’ll illustrate that with (32).

(32) John<sub>1</sub>’s coach thinks he<sub>1</sub> has a chance and Bill<sub>2</sub>’s coach does ~~think he<sub>2</sub> has a chance~~ too.

This has the representation in (33).



$p$  = the set of propositions: “ $x$ ’s coach thinks that  $x$  has a chance,” where  $x$  ranges over things of type  $e$ , and  $x \neq \text{Bill}$ .

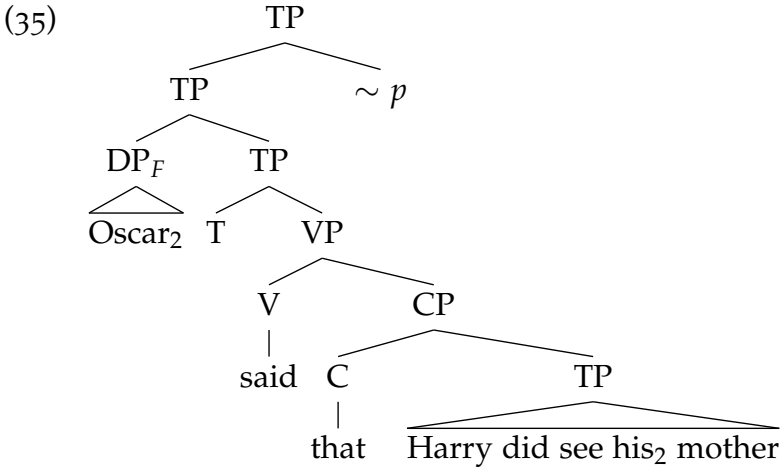
Because *John<sub>1</sub>’s coach thinks he<sub>1</sub> he has a chance* is in  $p$ , the condition on redundancy is met. The simple cases of sloppy identity we looked at will also emerge.

Compare this to a case like (34), where a sloppy reading is not possible.

(34) \*Max<sub>1</sub> saw his<sub>1</sub> mother, and Oscar<sub>2</sub> said that Harry did see ~~his<sub>2</sub> mother~~ too.

This gets the representation in (35).





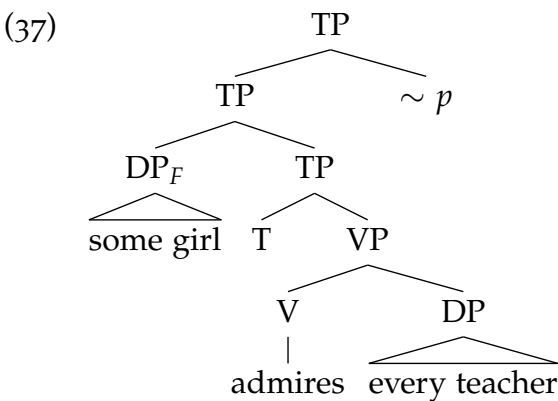
$p$  = the set of propositions:  $x$  said that Harry saw  $x$ 's mother, where  $x$  ranges of things of type  $\langle e \rangle$  and  $x \neq \text{Oscar}$ .

This representation for the sentence  $Max_1$  saw  $his_1$  mother is not in  $p$ , and so there is no proper antecedent for  $p$  in this case.

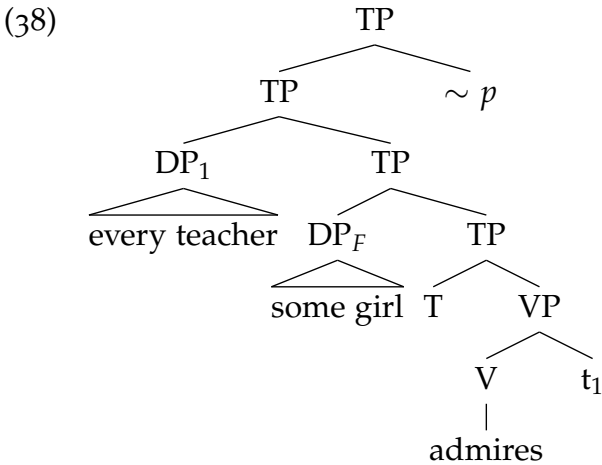
Rooth's condition can also capture the parallelism of scope found in many cases of elided and antecedent clause, at least if we let the condition invoked by  $p$  be computed over sentences to which QR has applied. (I'll call the representations that QR creates "Logical Forms" (LFs).) (36) is one such example.

(36) Some boy admires every teacher. Some girl does ~~admires every teacher~~ too.

The intonation in the second clause must be understood as marking the whole subject, *some girl*, as focused. If that can be achieved, then we have one of the following two LF representations for the second sentence.

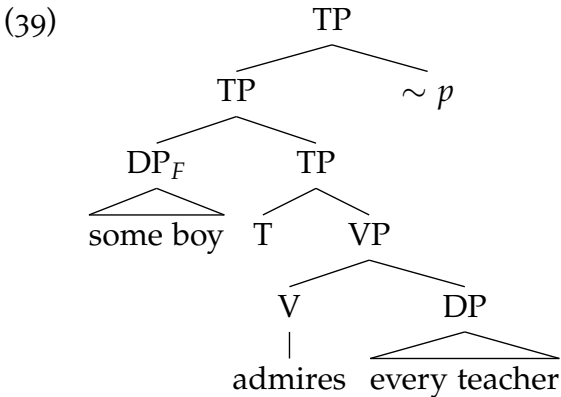


$p$  = the set of propositions:  $x$  admires every teacher, where  $x$  ranges over things of type  $\langle e, t \rangle$ ,  $t$  (the semantic type of quantificational noun phrases) and  $x \neq \text{some girl}$ .

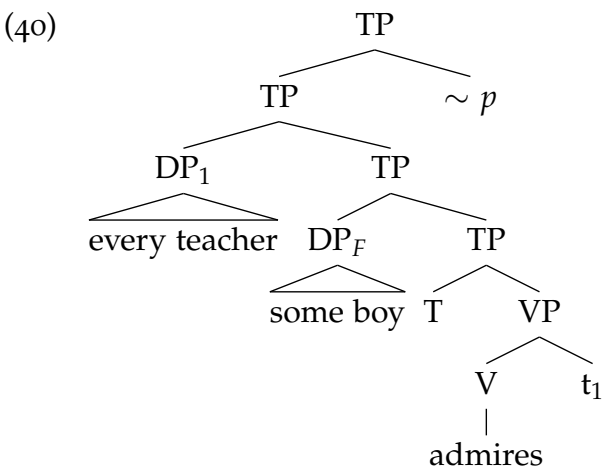


$p$  = the set of propositions: every teacher  $\lambda y.x$  admires  $y$ , where  $x$  ranges over things of type  $\langle \langle e,t \rangle, t \rangle$  (the semantic type of quantificational noun phrases), and  $x \neq$  some girl.

When (37) is the LF, then  $\sim p$  is satisfied by an LF of the first sentence like:



When (38) is the LF, then  $\sim p$  will be satisfied if the LF of the first sentence is:



So, we could explain the fact that the indices need not match in sloppy identity contexts between elided phrase and antecedent phrase, if we transited to an account that let the identity condition hold of  $p$  and something uttered in the context.

(41) Antecedence Condition for Ellipsis (final version a)

Every node in the  $p$  formed by  $\sim$  from an elided phrase must have the same semantic value as a node in its antecedent or be among the alternatives expressed by the alternative-variables.

I'm remaining vague about where in the syntactic representations  $\sim p$  is appended, but for it to work in these cases of sloppy identity it will have to be on a constituent that is big enough to contain the binder for the sloppy variable. That means that in these cases, at least, it will have to append to something larger than the ellipsis itself.

This creates problems. (41) may be an accurate statement for how  $\sim p$  would match elided material with antecedents, but it is too strong for cases where ellipsis hasn't applied. Rooth knew this, and suggested that the antecedence conditions on ellipsis were different from those that  $\sim p$  invoke. Because elided material can be part of a clause that has  $\sim p$  adjoined to it, and because the elided material will necessarily be free of focus-marked material, it will also be subject to whatever antecedence requirements  $\sim p$  invokes. On Rooth's view, then, different indices can count as the same for the purposes of ellipsis. Whether not sloppy readings arise is controlled by  $\sim p$ . This is one way we might go, then.

(42) Antecedence Condition for Ellipsis (final version b)

Every node in an elided phrase must have the same semantic value as a node in its antecedent, ignoring indices.

Another direction is to derive the difference between the material that is spoken in the constituent that  $\sim p$  adjoins to and the material that is elided in this constituent. Tancredi (1992), for instance, suggested that the condition on ellipsis should be seen as merely a stronger version of the condition invoked by  $\sim p$ , and this idea is also raised in the Preface to Sag's dissertation. The spoken material is subject to a weaker version of the antecedence condition because it can be used to accommodate to different antecedent, Tancredi suggests. I'll review here a proposal along these lines found in Fox (2000), which is a close approximation of the proposal in Tancredi, but built upon Rooth (1992).

The idea is aimed at explaining cases of s-called "implicational bridging" like that illustrated in (43). The proposal is that the real antecedent for the  $\sim p$  anaphor need not be spoken, but can be constructed from what is spoken. The difference between (43a) and (43b) is that the constructed antecedent in (44) can be derived by considering the information in (43a).

- (43) a. John called Sue<sub>1</sub> a Republican and then Bill<sub>F</sub> <insulted her<sub>1</sub>>.  
 b. \*John called Sue<sub>1</sub> a Republican and then Bill<sub>F</sub> did ~~insult her<sub>1</sub>~~.  
*presupposition: calling X a Republican → insulting X*

(44) John insulted Sue<sub>1</sub>.

Here's the way that Fox formulates the proposal.

- (45) Let  $\beta_A$  be the sentence from which an antecedent to  $\sim p$  will be derived, and  $\beta_E$  be the sentence to which  $\sim p$  is attached.  $\beta_{AC}$  is an LF derived from  $\beta_A$  when inferences or presuppositions are added.

$\beta_{AC}$  must be minimal, given  $\alpha$ , the accommodation seeking material in  $\beta_E$ .

- a.  $\alpha$  cannot be focus marked but must be spoken.
- b.  $\beta_{AC}$  is minimal given  $\alpha$ , if there is no alternative to  $\beta_{AC}$ ,  $\beta'$ , such that  $\beta'$  contains  $\alpha$  and  $\beta'$  is closer to  $\beta_A$  than  $\beta_{AC}$  is.
- c.  $\beta'$  is closer to  $\beta_A$  than  $\beta_{AC}$  is, when the accommodated material of  $\beta'$  is a proper subset of the accommodated material in  $\beta_{AC}$ .

(adapted from Fox 2000, (35)–(36): 98–9)

Evidence that focus marked material should not be part of the accommodation seeking material is provided by the contrast in (46).

- (46) First John convinced Mary<sub>1</sub> that I was bad-mouthing her<sub>1</sub> and then [Sue<sub>2</sub>]<sub>F</sub> <came to believe that I was> ~~bad-mouthing her<sub>2</sub>~~.

*presupposition:* convincing X that P → X comes to believe that P.

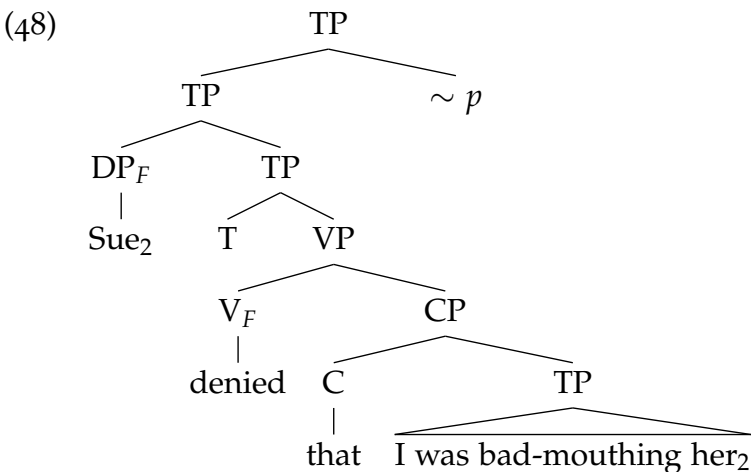
- a.  $\beta_{AC} = \text{Mary}_1 \text{ came to believe I was bad-mouthing her}_1$ .

- (47) \* First John convinced Mary<sub>1</sub> that I was bad-mouthing her<sub>1</sub> and then [Sue<sub>2</sub>]<sub>F</sub> denied<sub>F</sub> <that I was> ~~bad-mouthing her<sub>2</sub>~~.

*presupposition:* convincing X that P → X comes to believe that P.

- a.  $\beta_{AC} = \text{Mary}_1 \text{ came to believe I was bad-mouthing her}_1$ .
- b.  $\beta' = \text{John convinced Mary}_1 \text{ that I was bad-mouthing her}_1$ .

The representation for (47) is (48).



$p = \text{the set of propositions: } x R'd \text{ that I was bad-mouthing } x, \text{ where } x \text{ ranges over things of type } \langle e \rangle \text{ and } R \text{ ranges over things of type } \langle P, \langle s, t \rangle \rangle \text{ (the semantic type of verbs like } deny), \text{ and } x \neq \text{Sue and } R \neq \text{deny.}$

(47a) is in  $p$  and so if it were available, it would satisfy the condition placed by  $\sim p$ . But (47a) is blocked because it is not minimal: (47b) is closer to the spoken sentence.

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We left yesterday with one of the following two versions of an antecedence condition for ellipsis.

(1) Antecedence Condition for Ellipsis (final version a)

Every node in the  $p$  formed by  $\sim$  must have the same semantic value as a node in its antecedent or be among the alternatives expressed by the alternative-variables in  $p$ . An antecedent can differ from what is spoken if it is minimally constructed from the accommodation seeking material.

(2) Antecedence Condition for Ellipsis (final version b)

Every node in an elided phrase must have the same semantic value as a node in its antecedent, ignoring indices. An elided phrase is also subject to the antecedence conditions invoked by  $\sim p$ .

Which of these we choose hinges, in part, on how the differences in antecedence conditions for elided and non-focused material ends up being handled. If something like Fox's method is successful, then we can give elided and non-focused material the same antecedence conditions, and the differences will boil down to how the procedure for accommodating mismatches between the antecedent and the ellipsis/non-focused material is handled. This would put us in world in which something like (1) is correct. If Fox's direction ends up failing, then we need to let there be two antecedence conditions: one for non-focused material and one for elided material. Because the stuff that makes up elided material is non-focused, it will be subject to both conditions. This would put us in a world where something like (2) is correct.

Each of these possibilities has something discomfoting about it. If (2) is what we end up with, we should wonder why indices can be ignored when so little else can be. And we should wonder too, I think, why there are two antecedence conditions which feel very similar: the one on non-focused material and the one on ellipsis. If we are in a world in which (1) is correct, however, we should worry about the procedure for accommodating mismatches between antecedent and ellipsis. Is there really a way of formulating this procedure that is both testably clear and deterministic and also successful with all the cases it must deal with. Rooth did not feel there would be a successful procedure and, along with the implicational bridging cases we looked at yesterday, he had other problems. Here's one of those:

- (3) Yesterday the guy John<sub>1</sub> works for told him<sub>1</sub> to shape up, and [today]<sub>F</sub> [Bill<sub>2</sub>'s]<sub>F</sub> boss did ~~tell him<sub>2</sub> to shape up~~.

(Rooth 1992, (33b): 18)

Fox's method of accommodating mismatches goes something like:

- (4) Let  $\beta_A$  be a sentence in the discourse,  $\beta_E$  be the sentence to which  $\sim p$  is attached, and  $\alpha$  ('the accommodation seeking material') be nonfocused, spoken, meaningful material in  $\beta_E$  that is not in  $\beta_A$ . A sentence,  $\beta_F$ , is FOXED from  $\beta_A$  when  $\beta_F$  contains just the linguistic material in  $\beta_A$  plus the minimal amount of  $\alpha$  necessary to get something that follows from  $\beta_A$  plus inferences and presuppositions.

(heavily redacted Fox 2000, (35)–(36): 98–9)

Employing this for (3), might go as follows:

- (5)  $\beta_A$  = Yesterday, the guy John<sub>1</sub> works for told him<sub>1</sub> to shape up.  
If  $\sim p$  is attached to the entire second conjunct, then
- (6)  $p$  = Y, X<sub>2</sub>'s boss told him<sub>2</sub> to shape up, Y an alternative to *today* and X an alternative to *John*, and
- (7)  $\alpha$  = boss
- (8)  $\beta_F$  = Yesterday, John<sub>1</sub>'s boss told him<sub>1</sub> to shape up.
- (9)  $p$  = (something in)  $\beta_F$  !

That might be successful.

In what follows today, I'll pretend like we are in a world in which (1) is true. I feel more comfortable in that world, partly because I have a clearer notion of how one of the other problems involving sloppy identity is solved in it. But I'm far from certain that I'm in the real world.

We've got two running problems left over from yesterday. One concerns how to give a characterization of the apparent ability of elided and antecedent phrase to have differing indices. This arises in cases of sloppy identity, for which we have now give a solution based on the semantics of focus. That solution says that it is a function of how the semantics of focus is resolved that gives rise to sloppy identity. Under either antecedence condition, the elided constituent can have indices that vary from the antecedent. If this makes the focus anaphor,  $p$ , also have indices that differ from the antecedent – modulo any bridging that might arise – then the result is ungrammatical unless those differences reside in focus-marked material or the terms they bind. This gives us a handle on the fact that the relationship between a term and the pronoun it binds must be parallel in both the antecedent and elided phrase for sloppy identity to be licensed. But it has not yet given us a handle on why cases like those in (10) are grammatical, but those in (11) are not.

- (10) a. I know which book Max read, and which book Oscar didn't  $\Delta$ .
- b. I know who Mary promised to see, and who Sally promised not to  $\Delta$ .
- c. This is the book of which Bill approves, and this is the one of which he doesn't  $\Delta$ .
- d. Philby, who Angleton suspected, but who Dulles didn't  $\Delta$ , was a mole.
- e. What John knows is minimal, and what he doesn't  $\Delta$  is vast.
- f. John<sub>1</sub> wanted Mary to kiss him<sub>1</sub> and Bill<sub>2</sub> wanted Sám to kiss him<sub>2</sub>.
- (11) a. \* They attended a lecture about a Balkan language, but I don't know which they did  $\Delta$ .

(from Merchant 2008)

- b. \* John<sub>1</sub> said that Mary<sub>3</sub> hit him<sub>1</sub> and Bill<sub>2</sub> said that she<sub>3</sub> did ~~hit~~ him<sub>2</sub> too.

All of these examples should be grammatical according to the antecedence conditions in (1) and (2).

Our other left-over problem is fitting the Schwarz/Hardt cases of "bound" elided VPs to the antecedence conditions. We should not expect the last ellipsis of (12) to be grammatical at present.

- (12) When you whistle, you say I shouldn't  $\Delta$ , but when I sing, you don't  $\Delta$ .

Let's take these problems in order.

The first has been given a treatment by Merchant (2008) that builds on ideas in Schuyler (2001) and Lasnik (2001). I'll present the version of this solution found in Takahashi and Fox (2006), though I'll modify it slightly so that its details fit what we've done up to now. The central idea is that there is a condition which mandates that ellipsis be as large as possible. Merchant calls this condition "MaxElide." We can formulate this as follows:

(13) MaxElide

Let  $Q$  be a constituent that meets the licensing condition on ellipsis. If deletion applies, then it must elide the largest elidable portion of  $Q$ .

This type of solution is motivated by the minimal contrasts in (14).

- (14) a. \* They attended a lecture about a Balkan language, but I don't know which they did  $\Delta$ .  
 b. They attended a lecture about a Balkan language, but I don't know which  $\Delta$ .  
 c. They attended a lecture about a Balkan language, but I don't know which YOU did  $\Delta$ .  
 d. \* John<sub>1</sub> said that Mary<sub>3</sub> hit him<sub>1</sub> and Bill<sub>2</sub> said that she<sub>3</sub> did ~~hit him<sub>2</sub>~~ too.  
 e. John<sub>1</sub> said that Mary<sub>3</sub> hit him<sub>1</sub> and Bill<sub>2</sub> did ~~say that she<sub>3</sub> hit him<sub>2</sub>~~ too.  
 f. John<sub>1</sub> said that Mary<sub>3</sub> hit him<sub>1</sub> and Bill<sub>2</sub> said that SALLY<sub>4</sub> did ~~hit him<sub>2</sub>~~ too.

The good examples differ from the bad ones either in involving a larger ellipsis, or in preventing the larger ellipsis by containing material that cannot be elided (because it is not part of the antecedent).

To see how this works, let's review our system of finding antecedents for ellipses. Here are its essential parts, with the antecedence condition a plugged in.

- (15) a. Append to the constituent,  $\delta$ , that needs an antecedent,  $\sim p$ .  
 b. Let  $p$  be a surface anaphor that is identical to  $\delta$  except that:  
 i. Every focused term in  $\delta$  is replaced in  $p$  by a variable that ranges over its alternatives, and  
 ii. Every expression coindexed with a focused term in  $\delta$  can be replaced in  $p$  by the same variable that replaces the focused term.  
 c. Every node in  $p$  must have the same semantic value as a node in its antecedent or be among the alternatives expressed by the alternative-variables. An antecedent can differ from what is spoken if it is minimally constructed from the accommodation seeking material.

This will derive the paradigm. To see how, it is worth keeping in mind the following points. First,  $\sim p$  can attach to the elided constituent itself, when that constituent is completely identical to its antecedent. Because elided material does not carry focus-marked material, it will not differ from  $p$  in any way. This is generally possible in situations where sloppy identity is not involved. In such cases, then, items that indices in them in the elided clause will get those indices valued in precisely the same way that they are valued in the antecedent clause. In such cases, MaxElide is easily satisfied, because the largest constituent holding  $\sim p$  that can elide is the constituent holding  $\sim p$ .



The only time that  $\sim p$  cannot attach to an elidable phrase is when a sloppy reading is being aimed for. In those contexts, the elided phrase will contain an item whose index differs from the index borne in the antecedent. The only way to overcome that mismatch is to use the magic of forming  $\sim p$ . Because  $\sim p$  can translate coindexed terms as the same variable, and when one of those terms is focus-marked this will allow those variables to range over alternatives, we are able to overcome the difference in indices. But to do that  $\sim p$  must attach to a constituent that contains the focus-marked item that the sloppy variable is coindexed with. That constituent can't be elided (because it contains a focus-marked) term. This is where MaxElide has an effect. It will then require that the largest sub-phrase to which  $\sim p$  is attached be deleted, so long as the following two conditions are met:

- (16) a. That phrase must contain no focus-marked material, and  
 b. That phrase must meet the licensing conditions on ellipsis.

This gives us just what we want. Let's work through the following cases on the board:

- (17) a. John<sub>1</sub> said Mary likes him<sub>1</sub>. Bill<sub>2</sub> also said she does like ~~him~~<sub>1</sub>.  
 b. \* John<sub>1</sub> said Mary likes him<sub>1</sub>. Bill<sub>2</sub> also said she does like ~~him~~<sub>2</sub>.  
 c. John<sub>1</sub> said Mary likes him<sub>1</sub>. Bill<sub>2</sub> also does say ~~she likes~~ ~~him~~<sub>2</sub>.  
 d. I know which puppy<sub>1</sub> you said Mary would adopt  $t_1$  and FRED said she would adopt  ~~$t_1$~~  too.

Okay, let's turn next to the problem posed by the Schwarz/Hardt cases of binding.

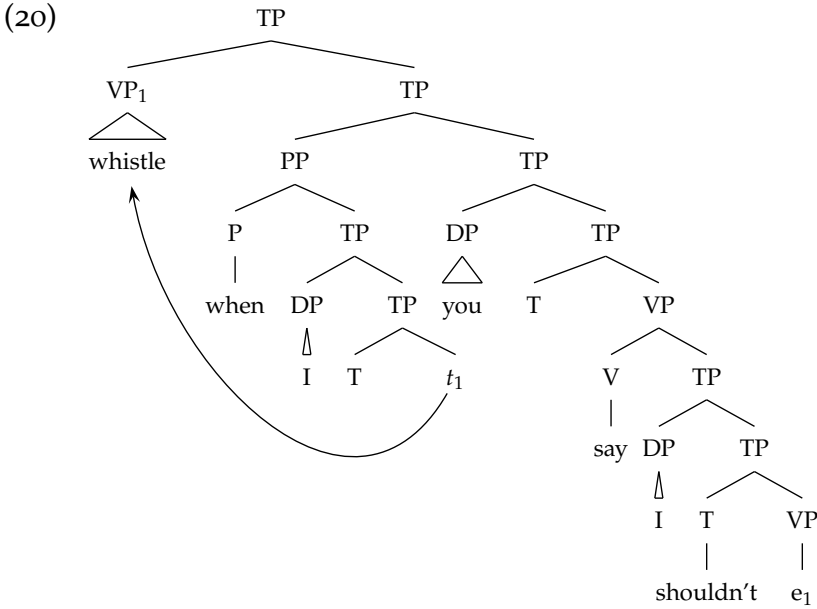
- (18) When I whistle, you say I shouldn't  $\Delta^1$ . When I sing, you don't  $\Delta^2$ .  
 $\Delta^1$  = whistle  
 $\Delta^2$  = say I shouldn't sing.

This example looks a bit like sloppy identity. One way of describing the case is that  $\Delta^1$  is bound by *whistle* and  $\Delta^2$  contains another  $\Delta^1$  in it that is sloppily bound to *sing*. One important ingredient in the problem is that the phenomena requires that the sloppily bound VP be silent. Examples like (19) do not have the same reading.

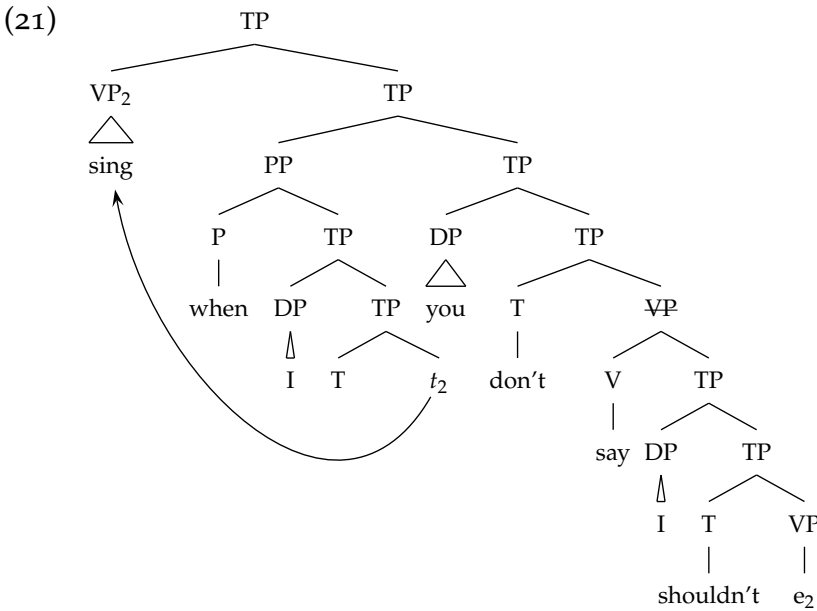
- (19) When I whistle, you say I shouldn't whistle. When I sing, you don't  $\Delta$ .  
 $\Delta$  = say I shouldn't whistle  
 $\Delta \neq$  say I shouldn't sing

So, there is something special about being unpronounced that permits this.

Schwarz's (2000) analysis was to avoid the conclusion that  $\Delta^1$  is an elided VP. Instead, he suggested that this gap was a kind of parasitic gap bound by *whistle*. This, in turn, requires that the VP *whistle* moves, silently, into a position in which it can bind that gap. So Schwarz posits a structure like (20).



The ellipsis will similarly have to involve silent VP movement, forming a representation like (21).



To these representations, our present story about sloppy identity will generate the readings. Because “ $e_2$ ” is bound by the focus marked *sing*, it will be able to be converted into the same variable over alternatives that *sing* is forming  $p$ . This will allow it to be matched against “ $e_1$ ” in the antecedent.

The putative movement in these representations is suspect, however, as Schwarz himself noted. It’s not expected that movement should be able to bring something out of these adjunct clauses, as these are typically islands for movement. And some of the diagnostics for covert movement do not detect the movement here. For instance, Tomioka (2008) argues that Weak Crossover does not obtain in the way expected.

- (22) a. If you tell me to, I will gladly quit drinking, but even if the Queen did  $\Delta$ , I would never quit smoking! ( $\Delta$  = tell me to quit smoking) (Tomioka 2008, (15))

*compare:*

- b. \* If he reads it<sub>1</sub>, Bobby criticizes [every paper]<sub>1</sub>. (Tomioka 2008, (17))

And, it is possible to manufacture examples of this sort that involve Sluicing or NP Ellipsis.

- (23) a. Everyone who arrested some murderers insulted a few [<sub>NP</sub>  $\Delta$ ], and everyone who arrested some burglars did  $\Delta^2$  too. ( $\Delta^2$  = insult a few (of the) burglars) (Elbourne 2001, (109))
- b. Speaking of syntacticians, of course Ken knows many [<sub>NP</sub>  $\Delta$ ], but semanticists... I don't know. My guess is that he doesn't  $\Delta^2$ . ( $\Delta^2$  = know many semanticists) (Tomioka 2008, (13b))
- c. If Fred IS marrying someone, we want to know who [<sub>TP</sub>  $\Delta$ ], but if he (just) MIGHT be marrying someone, we don't  $\Delta^2$ . We have had too many false alarms. ( $\Delta^2$  = want to know who he might be marrying) (Tomioka 2008, (14))

But neither NPs nor bare TPs – the two constituents that seem to be acted like bound variables in these examples – are known to be able to move at all.

Let's abandon this account, then.

Another possible direction would be to let the elided VP that seems to be behaving as a bound variable, have a bound variable in it. We might imagine, for instance, that (18) could have the source in (24).

(18) When I whistle you say I shouldn't  $\Delta$ , but when I sing, you don't  $\Delta$ .

(24) When I whistle you say I shouldn't do that, but when I sing, you don't  $\Delta$ .

But this doesn't seem to work either. First, it's not clear that (24) has the desired reading. But, more importantly, this doesn't seem to be a very promising idea for the examples involving sluicing and NP Ellipsis. Even for VP Ellipsis, it is possible for the elided VP to be able to host extraction – a classic diagnostic for a surface anaphor – at the same time that it functions as a variable.

- (25) A: John has a very indirect way of telling what he thinks. For instance, when he likes someone, he tells you who he DOESN'T  $\Delta$ . ( $\Delta$  = like *t*)
- B: Wait a minute. But, when he HATES someone, he doesn't  $\Delta$ . Instead, he tells you exactly who he hates. ( $\Delta$  = tell you who he doesn't hate *t*) (Tomioka 2008, (19))

This doesn't seem to be the solution either.

Tomioka (2008) makes a suggestion about how to think of these cases that I would like to explore. His suggestion is that these are indeed regular instances of surface anaphora – garden

variety ellipses – but that the identity conditions on ellipsis treat ellipses specially. In particular, when the final ellipsis in these examples gets resolved, what it sees as its antecedent is the relevant VP with an ellipsis in it. It doesn't see how the ellipsis in its antecedent gets resolved. In other words, in an example like (18), what the two ellipses “see” as their antecedents are what are indicated in (26).

(18) When I whistle, you say I shouldn't  $\Delta^1$ , but when I sing, you don't  $\Delta^2$ .

- (26) a.  $\Delta^1 \rightarrow \textit{whistle}$   
 b.  $\Delta^2 \rightarrow \textit{say I shouldn't } \Delta$

He speculates that once an ellipsis has been resolved, it is flagged as such, but what it has been resolved to is not necessarily part of what makes it up.

I understand Tomioka's idea to aim in the direction of an antecedence condition on ellipsis that would make it something like: repeat the spoken form of something occurring elsewhere. That can't quite be true, of course, because we want an ellipsis to match the meaning of the material it repeats. That is necessary for us to capture the constraints on sloppy identity, for instance. And it is necessary to ensure that homophonous expressions are not equated, as in (27).

(27) \* She can fix the watch, but she won't ~~fix the watch~~ to the table.

So we need something that allows the form of the antecedent to be sufficiently identical in resolving an ellipsis when an ellipsis itself is concerned, but for the meanings associated with the form of the antecedent to be part of the calculation everywhere else. Tomioka doesn't provide a mechanism for doing that, but he suggests that's what should be found.

Let's see how we might formulate such a mechanism in a framework that takes the antecedence condition on ellipsis to be something like what we've been exploring. Our antecedence condition says, roughly, that ellipses are unspoken repetitions of material found elsewhere in the discourse. “Repetition of material” has the specific sense, now, of meaning “repetition of a structure and all of its semantic values.” For the most part, the cases we have seen require only that the structure that is being repeated be one that corresponds to the spoken form of the expression that is being repeated. We've seen that the structure that is repeated can reflect the action of QR, but it has been argued that, though invisible, QR is an operation that contributes to the structure of the spoken form of a sentence. To capture these cases of bound ellipses, I suggest that we let the structures that serve as antecedents also be ones that don't correspond to the spoken form, but occur in the derivation leading up to that form. This might already be required by some of the cases of form mismatch that we looked at on the first day:

- (28) a. Jane hasn't eaten natto because John won't  $\Delta$ .  
 $\Delta = \textit{eat natto}$

see Potsdam (1997a,b) and Lasnik (1995))

- b. David Begelman is a great laughter, and when he does  $\Delta$ , his eyes crinkle at you the way Lady Brett's did in *The Sun Also Rises*

(Hardt 1993, (111): 34)

The analysis of these cases that I pushed on you says that the antecedent is a representation that separates the main verb from its inflectional ending or its nominalizing suffix. Those are representations that plausibly do not correspond to the surface, spoken, form. So let us let an elided VP find its antecedent not only among the structures that correspond to the spoken

forms, but also among the structures that are related derivationally to those spoken forms. In fact, let's let the structures that make up a derivation not only be possible antecedents for an ellipsis, let's also let the structures that make up a derivation be included among the things that can evoke the antecedence condition. That is, let's let the structures in the derivation that leads to a sentence with an ellipsis in it also be things that the antecedence condition on ellipsis can satisfy.

(29) Antecedence Condition for Ellipsis (final version a)

Let  $\{s_1, s_2, \dots, s_n\}$  be the structures in the derivation for  $S$ . Every node in the  $p$  formed by  $\sim$  from some  $s_i$  must have the same semantic value as a node in some  $s_i$  in the derivation for the antecedent or be among the alternatives expressed by the alternative-variables in  $p$ . An antecedent can differ from what is spoken if it is minimally constructed from the accommodation seeking material.

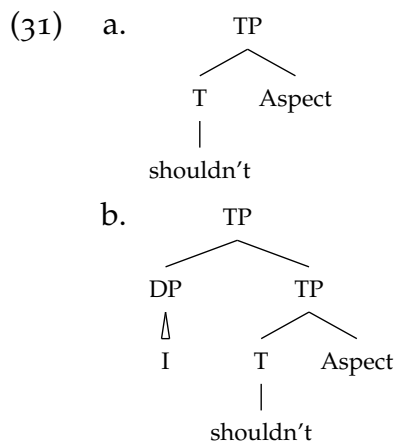
Okay, with this proviso, this is the hypothesis I would like to offer to account for the cases of bound ellipses. The licensing condition on ellipsis has the following consequence.<sup>1</sup>

(30) Those phrases that are allowed to elide are allowed to Late Merge.

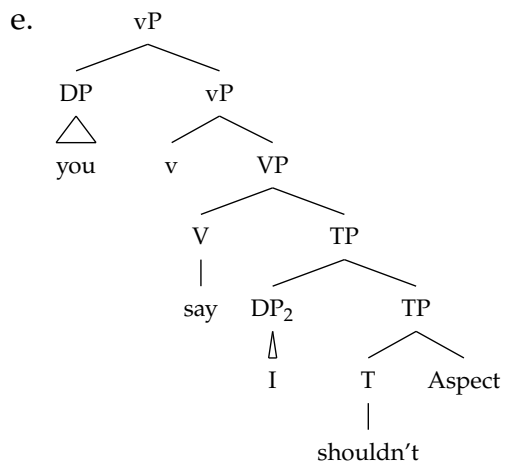
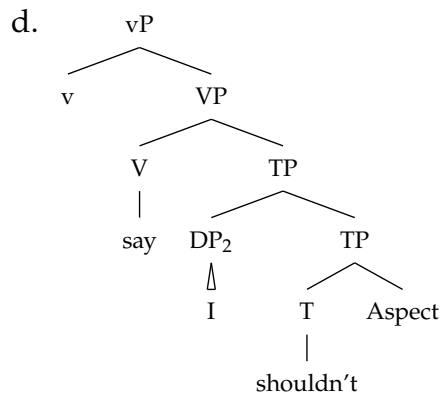
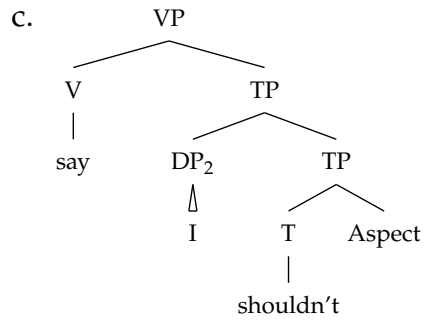
"Late Merge," recall, refers to cases where a phrase is added into a sentence in an embedded position. So the hypothesis in (30) is that elided phrases can be stuck into the sentences where they occur "after" the rest of that sentence has been created. So let's see what this means for our problematic cases of bound ellipses.

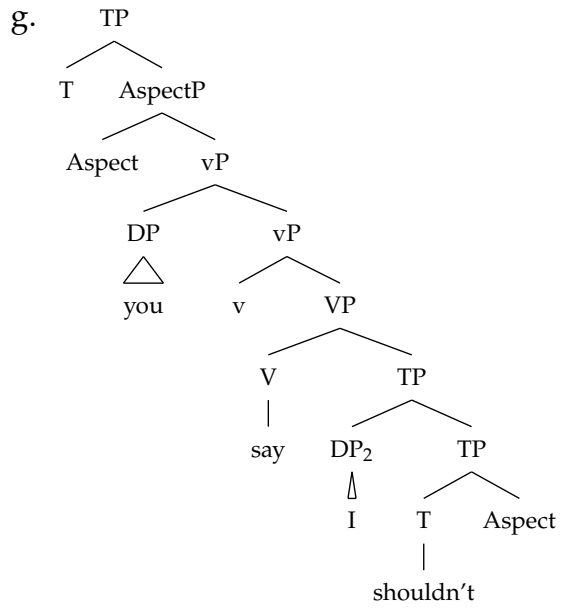
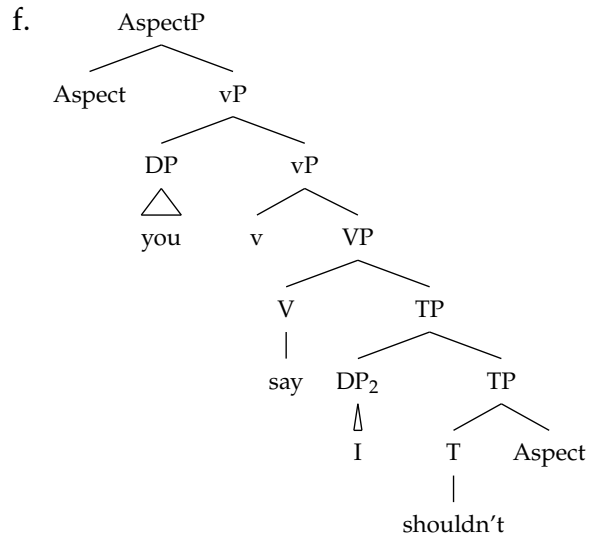
The derivation that is associated with the middle clause of (18) can be as indicated in (31).

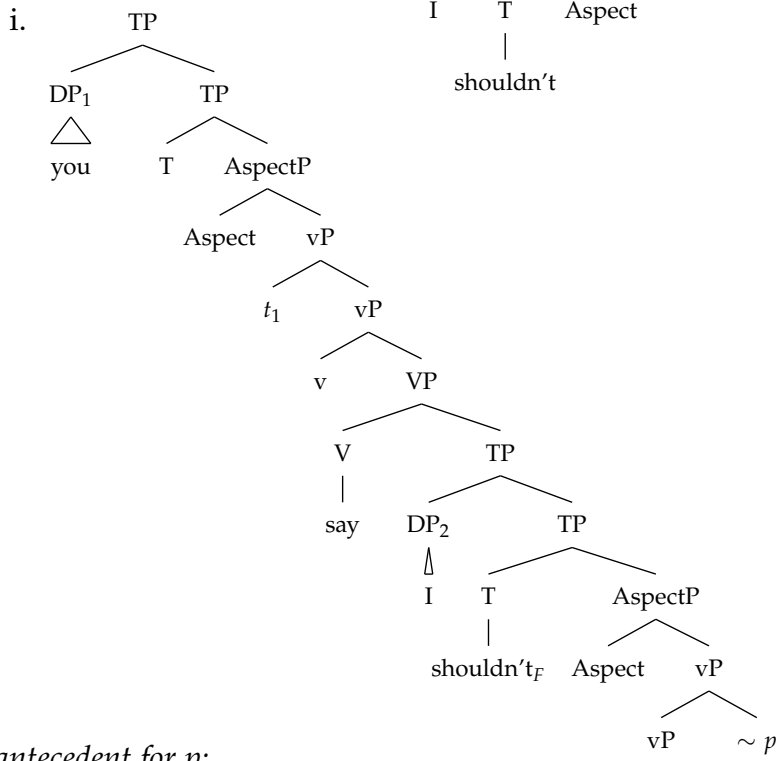
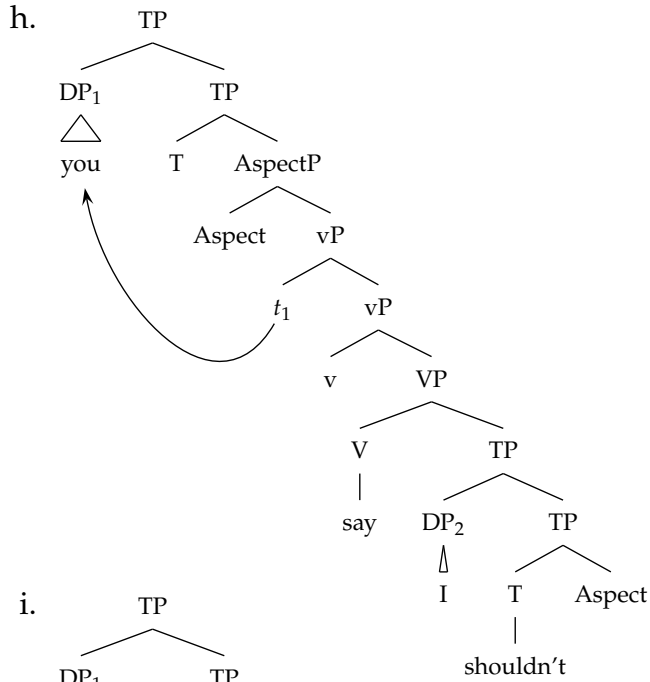
(18) When you whistle, you say I shouldn't  $\Delta$ . But when I sing, you don't  $\Delta$ .



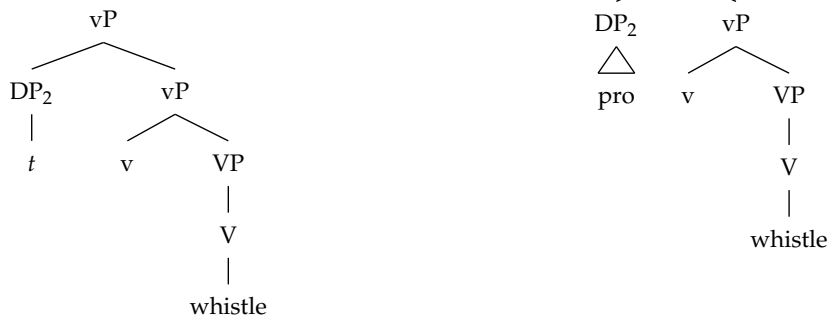
<sup>1</sup> The proposal I'm making is essentially the view that elided phrases are "copied" into empty parts of a phrase marker. This is a proposal that is found in several other places, including Wasow (1972), Fiengo and May (1994) and Chung, Ladusaw, and McCloskey (1995).







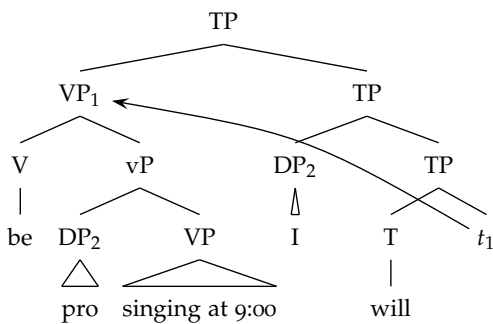
(32) antecedent for p:





I've introduced into these derivations the existence of an Aspect head, and its corresponding phrase. There may be even more functional material between T and the vP that corresponds to a verb, but I think there is evidence for at least the existence of an aspect head. Derivations are standardly thought to build up structures from their terminals – they are “bottom-up,” and that is reflected in how this derivation goes. The sole exception is the most embedded vP which corresponds to the elided phrase and in this derivation has been built up independently and then “late merged” in the final step of the derivation. Standard accounts of subjects has it that they are merged into the Specifier of vP position and move from there into their surface Specifier of TP position. This is what has happened with the subject *you* in the derivation. That can't happen with the subject *I*, however, at least not if what has been late merged here is vP (and movement prevents derivations in which the moved item is late merged in its original position). So I have instead put into the Specifier of vP a silent pronoun that *I* binds. That the relationship between a subject in Specifier of TP and the  $\theta$ -marked position in Specifier of vP can be one of pronominal binding like this – rather than movement – has been argued for independently. Saito (1985), for instance, suggests that this is how violations of the Proper Binding Constraint are overcome in examples like (33).

(33) I said I would be singing at 9:00, and be singing at 9:00 I will.

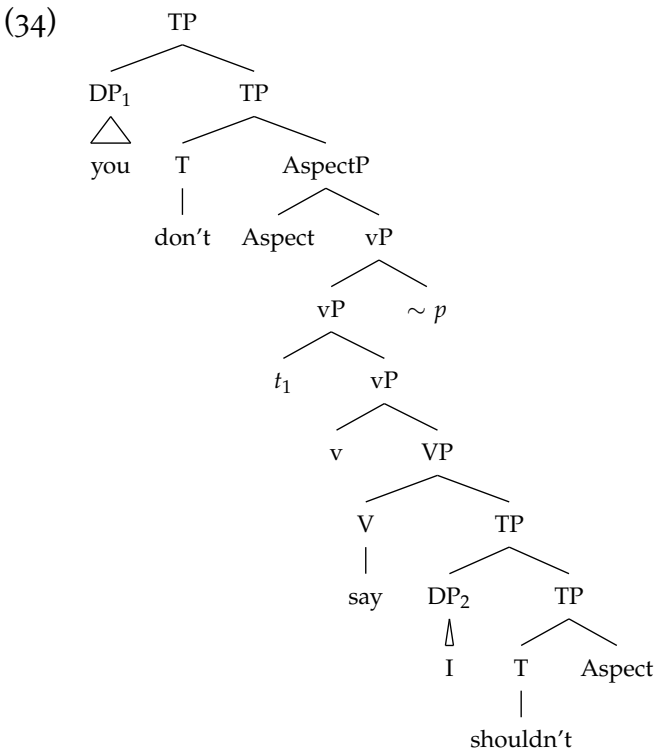


If Late Merging of elided material is possible, this is what a derivation that exploits that option would look like.

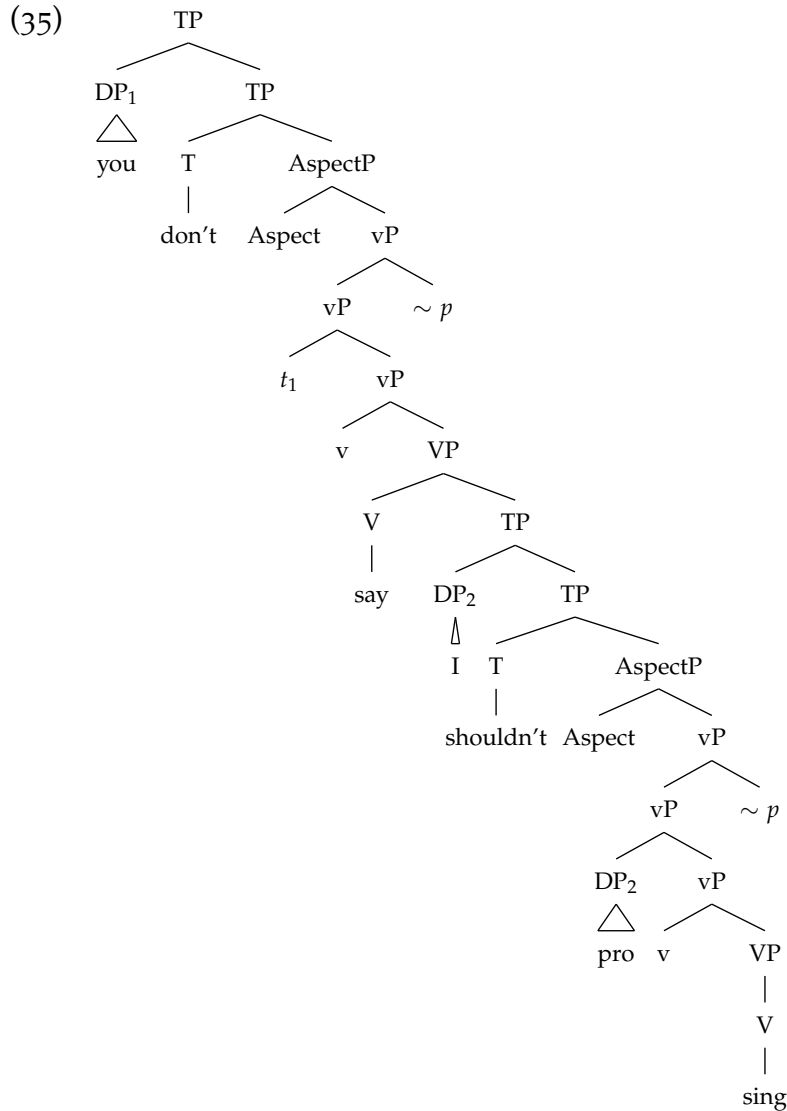
Notice that for the antecedence condition we have adopted to work successfully here, we would have to let the  $pro_2$  in the elided phrase have the same semantic value that the  $t_2$  does in the antecedent clause. I think that is reasonable.

When this is coupled with the idea that antecedents for elided phrases can be found among the structures that comprise a derivation, we have a solution to the puzzle posed by the Schwarz/Hardt examples. Using, again, the example in (18) as our demo, we can let the ellipsis in the final clause find its antecedent in (31h).

(18) When you whistle, you say I shouldn't  $\Delta$ . But when I sing, you don't  $\Delta$ .



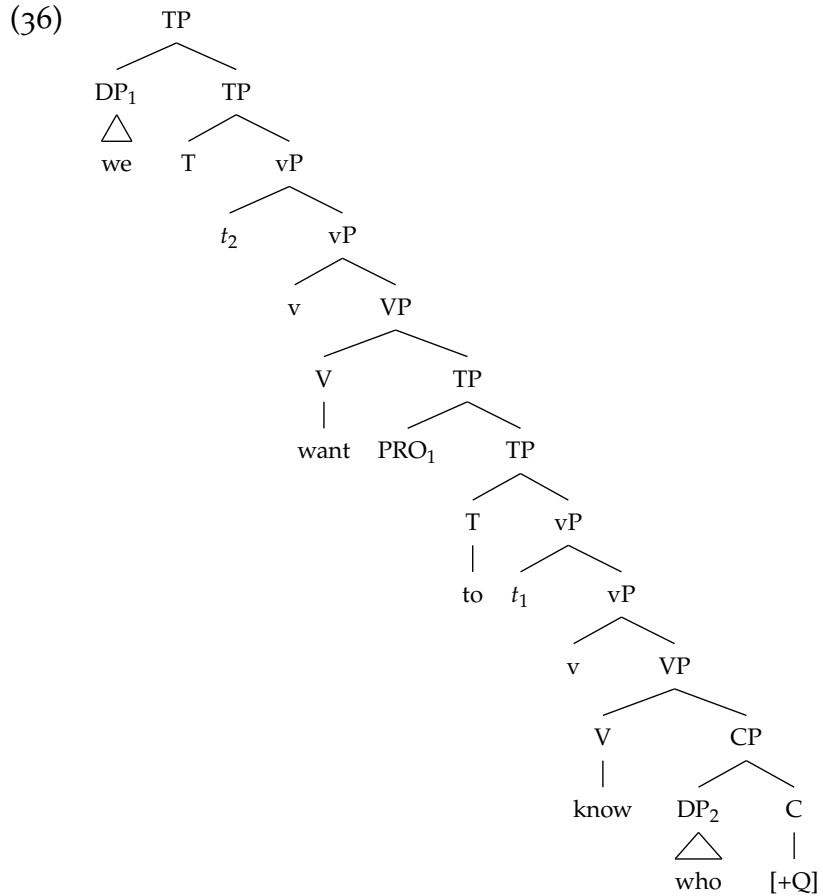
This representation can be seen as part of the derivation that leads up to the final clause in (18). To get to the representation that is semantically interpreted and, perhaps, corresponds to the spoken form, we need to put a vP in the lowest clause. That vP is constructed independently and late-merged into the structure. Because we are now downstream of the vP *sing*, the vP constructed at this point can take *sing* as its antecedent, giving us (35).



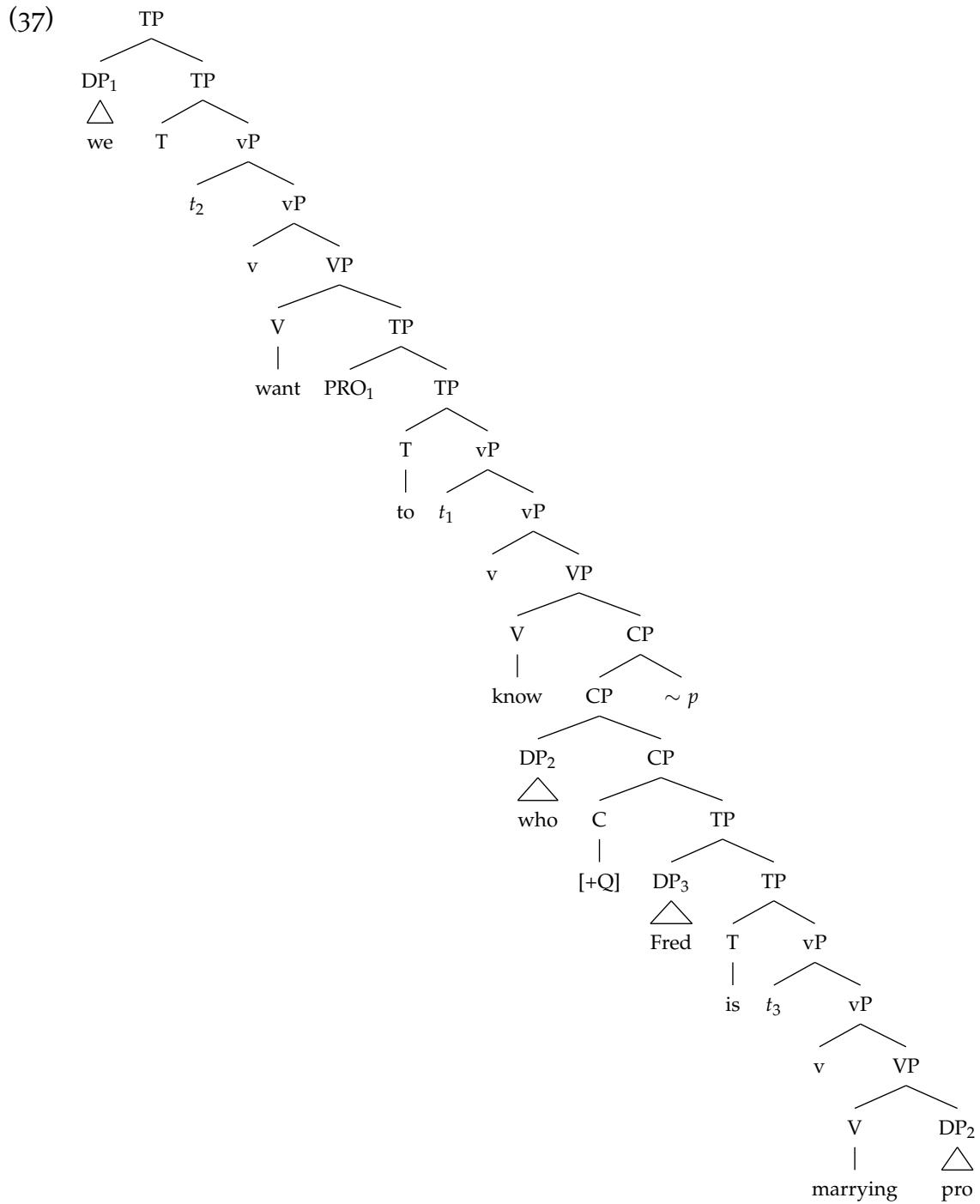
It's not clear to me that this account fits well the cases where something has moved out of the ellipses involved in this construction. One of these examples is (23c).

- (23c) If Fred IS marrying someone, we want to know who [<sub>TP</sub> Δ], but if he (just) MIGHT be marrying someone, we don't Δ<sup>2</sup>. We have had too many false alarms.  
 (Δ<sup>2</sup> = want to know who he might be marrying)

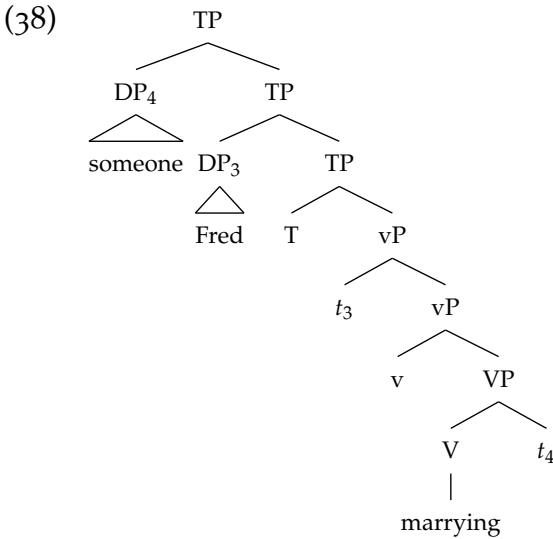
The first ellipsis in this example is a sluice. Under the proposal I am exploring, the clause holding the sluice will be associated with a derivation that includes (36).



This is the structure that forms the antecedent for the elided VP in the last clause of the first sentence in (23c). Consider how the rest of the derivation that (36) is a step in will go. It will involve building the TP that has been elided and Late Merging it to the C in (36). This TP will have to have a trace in it – the trace that is associated with *who*. But *who* evidently didn't move out of this TP, since it exists in (36) where that TP and its trace are absent. Instead, we have to see *who* as starting out in the Specifier of CP that we see it in in the surface. And in place of the trace, perhaps we have the silent pronoun that I suggested sits in subject position. So, this would give us a representation like (37).



The antecedent for  $p$  is found in the first clause after QR; it looks like (38).



The antecedent does not contain the [+Q] complementizer, and yet the constituent to which  $\sim p$  is attached does. So something's wrong here. There are a number of fixes, I think, but I'll be running out of time by now, and I want to focus on another problem now, so...

And that other problem, of course, is that in general it is not thought that wh-movement constructions can have the form in (37). If a wh-phrase could be generated in Specifier of CP and bind a silent pronoun, then we should not expect to find island effects on wh-movement. Pronominal binding is not subject to island conditions, as (39) indicates.

(39) Every linguist<sub>1</sub> reviewed [a claim that interested her<sub>1</sub>].

Movement of wh-phrases, of course, does obey islands:

(40) \* Which linguist<sub>1</sub> did you review [a claim that interested t<sub>1</sub>]?

Interestingly – and famously – Sluices do not obey islands.<sup>2</sup>

(41) They wanted to review [a claim that interested a certain linguist], but I'm not supposed to know who  $\Delta$

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<sup>2</sup> A fact discovered by Ross (1969) and thoroughly investigated in Merchant (2001). That this is because sluices involve pronominal binding rather than movement is the account that Chung et al. (1995) offer.

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