Ellipsis in DP

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1 Introduction

There are at least four cases in which an NP in DP can be elided or reduced. Bare genitives, most quantifiers, the deictics, and adjectives are able to act as DPs, without the presence of an actual noun within the DP.

(1) *[John's chocolates] are good, but [Mary's _] are too sugary.*
(2) *[Some chocolates] are good, but [most _] are too expensive.*
(3) *[These chocolates] are good, but [those _] are too expensive.*
(4) *[Milk chocolate] is great, but [dark _] is too rich.*

The observation that one of these structures, the bare genitive, is somewhat parallel to VP Ellipsis goes back at least as far as a paper by Jackendoff (1971) which notices that both VP Ellipsis and Gapping have nominal parallels. However, despite the extensive exploration of the nuances of VP Ellipsis, Sluicing, Gapping, and other ellipsis processes, this observation remains largely uninvestigated.

This paper will determine to what extent these structures have anything in common with ellipsis in the clausal domain. I will argue several points: that the type of reduced DP in (1), which I will call NP Ellipsis, is parallel to VP Ellipsis, that the type of reduced DP in (2) is not, perhaps instead being parallel to Null-Complement Anaphora, or another "pragmatically controlled" ellipsis, and finally that the same identity condition on VP Ellipsis applies to NP Ellipsis. I leave the reduced DPs in (3)[1] and (4) for later research.

[1] It is interesting to note that the bare adjective cases only work with a restricted set of adjectives.
(5) *I like cold beer but I don't like warm.*
(6) *I like the big hat but I don't like the small.*
(7) **I like helping pleasant customers but I don't like helping angry.*
(8) **I like the pretty hat but I don't like the ugly.*
More work needs to be done to determine what limits the adjectives which can appear in this class of reduced DPs.

After presenting an overview of previous work bearing on my analysis, and briefly sketching its import in larger theoretical contexts, I will cover the following points. The pragmatic/syntactic control distinctions of Hankamer & Sag (1976) will be revisited in section 3. I will show evidence in section 4 that NP Ellipsis has internal structure and the bare quantifier constructions do not, by showing that pronominal antecedents can be found inside the NP Ellipsis sites. Section 5 introduces the identity condition of Merchant (1999), and shows that it accounts for the facts of NP Ellipsis. I will cover the relation between deaccenting and these ellipsis processes, a parallel to the insensitivity to morphological form and to negation that VP Ellipsis displays, strict/sloppy ambiguity, and several other patterns. Lobeck's (1995) account covering NP Ellipsis is presented and argued against in Section 6. Finally, section 7 concludes.

2 Previous work

2.1 Previous work on the nominal-clausal symmetry

Abney (1987) argued for an inflectional head above NP, which came to be called D°. This inflectional head realizes possessor agreement, is a functional projection which takes a possessor in its specifier, is a landing position for N to D raising (if such raising exists), and takes VP complements in gerundive constructions. It is effectively a parallel to I or T in the clausal domain.

Szabolcsi (1994) argued for a landing site of WH-Movement above the lexical N head, based on evidence from Hungarian which shows a range of WH-words moving to a left-peripheral position within DP. This position is effectively a parallel to the Spec CP position in the clausal domain.

If these parallels between nominal and clausal syntax hold, then it is important to determine how far the parallel extends. The symmetry must break down somewhere; otherwise there would be no syntactic distinction between nouns and verbs at all, and thus no need for two distinct categories. Finding this break in the symmetry might tell us something about how UG divides up things in the world into different lexical categories.

2.2 Previous work on clausal ellipsis

One of the most important early works on VP Ellipsis, Hankamer & Sag (1976), noticed a distinction between VP Ellipsis and many other anaphoric processes. VP Ellipsis needs to find its antecedent somewhere in the surrounding syntactic environment, while other types of anaphors (pronouns, *do it* anaphors) can find their antecedents in the surrounding non-linguistic context as well.

Sluicing, noticed by Ross (1969) in 'Guess who?', was found to adhere to the same syntactic constraints as VP Ellipsis; specifically, there needs to be a valid antecedent somewhere in the preceding syntactic environment to license Sluicing.

There has been a great deal of research devoted to the correct formulation of the identity condition that holds between the antecedent and the ellipsis site in Sluicing and VP Ellipsis. It is agreed in general that the identity condition must hold of some level of representation beyond surface structure, for example, at logical form. I'll explore how the identity condition of Merchant (1999), a condition on LF implemented at PF, generalizes to NP Ellipsis.

The correct identity condition may tell us something about how UG handles redundancy; if we think of ellipsis as the outcome of a drive to say as little as possible and still be comprehensible, then the different kinds of ellipsis and anaphora give us hints as to the information structure of the discourse (see H&S 1984), and ultimately to the design of UG.

2.3 Previous accounts of NP Ellipsis

2.3.1 Jackendoff 1971

Jackendoff (1971) notices a parallel between ellipsis processes in DP(NP) and CP(S). In his account, both Gapping and VP Ellipsis(VP Deletion) have corresponding processes in DP(NP).

Gapping in nominal syntax (Jackendoff 1971:27):
(9) *Bill's story about Sue and Max's _ about Kathy both amazed me.*
Ellipsis in nominal syntax (Jackendoff 1971:28):
(10) *I like Bill's wine, but Max's _ is even better.*

Jackendoff argues convincingly that the two ellipsis processes are distinct from each other and consistent across the nominal/clausal domains. He shows that nominal (N') Gapping, like VP Gapping, is limited to coordinate structures, and that NP Ellipsis(N' Deletion), like VP Ellipsis(VP Deletion), is possible in a much wider range of configurations.

It is interesting to note that bare possessors can accompany material right-adjoined to the NP, even in non-coordinated environments.

(11) *What picture did you see?*
(12) *I saw Bob's _ of Mary.*
(13) *I saw Bob's _ that he took last week.*
(14) *I saw Bob's _ from the Polaroid.*
(15) *I saw Bob's _ of him in front of the Justice Department.*

Notice that even *of Mary*, which is most likely a semantic argument of *picture*, is strandable. This is in line with various proposals (Grimshaw, 1990) that non-deverbal Ns do not have any true syntactic arguments. The process at work in these examples may be an analogue of Pseudogapping.

2.3.2 Lobeck 1995

Lobeck (1995) examines the structures I will call NP Ellipsis, and those I will call bare quantifiers. Her account, however, makes several different choices than mine, relying on a null *pro* in the ellipsis site and strong agreement features. I will return to it for comparison after giving my analysis.

2.3.3 Kizu 1994

Kizu (1994) presents an account of NP Ellipsis in Japanese, in a government & binding/relativized minimality theory. She considers stranded possessors of the following type:

(Kizu 1994, p. 2 no. 4)

John-no	peepa-wa	nagakatta	ga,	[Mary-no [e]]	-wa	mijikakatta.
John-GEN	paper-TOP	was-long	though	[Mary-GEN [e]]	-TOP	was-short

"John's paper was long, but Mary's e was short." (e = paper)

She analyzes both the syntactic facts and the identity condition on these ellipsis processes as parallel to VP Ellipsis and Sluicing. Although her analysis is strongly linked to government

& binding/relativized minimality, the analysis hints that this Japanese construction may be the analogue of NP Ellipsis in English.

3 Pragmatic vs. syntactic control

The most basic question to consider about NP Ellipsis is the issue of whether the antecedent for the ellipsis can be any sufficiently salient entity in the context, or whether it must be a linguistic antecedent. Hankamer & Sag (1976) argue that *do it* can be pragmatically controlled, but VP Ellipsis, including VP Ellipsis stranding *do*, must be syntactically controlled.

(H&S 1976 p. 392 exx. 6)

a. [Sag produces a cleaver and prepares to hack off his left hand]
Hankamer: *# Don't be alarmed, ladies and gentlemen, we've rehearsed this act several times and he never actually does.*

b. [same context]
Hankamer: *... he never actually does it.*

Example (a) shows that VP Ellipsis cannot have even a very salient event in the context as its antecedent, if that event has not been explicitly (linguistically) mentioned. Example (b) shows that this is not the case for the sentential *it.* Pronouns in general can find antecedents in the context. We can see that the presence of a linguistic antecedent is crucial for VP Ellipsis here, by looking at perfectly grammatical examples like this:

(16) Sag: *I'm going to hack my hand off.*
Hankamer: *... he never actually does _.*

We can now look for similar situations within the noun phrase.(In the following examples, I will notate what may or may not be an ellipsis site with _, and enclose the entire DP with brackets. However, in cases where there appears to be pragmatically controlled anaphora there may not be an ellipsis site after all.)

First, notice that bare quantifiers are amenable to pragmatic control:

(17)

a. [Matt snatches an egg from Ian on stage, and smashes it on the floor]
Matt: *Don't worry folks, he has [several/many/more/some more _].*

b. [Matt reaches into the cookie jar, and gives a cookie to Ian]
Matt: *No one will ever know if we eat [some/several/a few _].*

c. [John and Matt show Ian a room full of obsolete computers]
John: *[some/three _] are operational. The rest are broken.*

The ellipsis is interpreted in (a) as *eggs*, in (b) as *cookies* and in (c) as *obsolete computers*.

However, in exactly the same contexts, a bare possessor is ungrammatical, indicating that bare possessors are not amenable to pragmatic control:

(18)

a. [Matt snatches an egg from Ian on stage, and smashes it on the floor]
Matt: *#You know folks, I've always hated [Ian's _].*

b. [Matt reaches into the cookie jar, and gives a cookie to Ian]
Matt: *#No one will ever know if we eat [Afton's _].*

c. [John and Matt show Ian a room full of obsolete computers]
John: *#[Matt's _] are operational.*

These examples are infelicitous exactly if the words *eggs*, *cookies* and *obsolete computers* are not present anywhere in the preceding discourse. They become completely grammatical, however, if the necessary linguistic antecedent – an NP – is provided.

(19)

a. [Matt snatches an egg from Ian on stage, and smashes it on the floor]
Matt: *You know folks, I've always hated eggs, and now I've broken [Ian's _].*

b. [Matt reaches into the cookie jar, and gives a cookie to Ian]
Matt: *I've always liked cookies. Let's eat [Afton's _].*

c. [John and Matt show Ian a room full of obsolete computers]
John: *Look at our computers. [Jeremy's _] are operational.*

So DPs consisting of bare possessors are ellipsis of the kind that requires syntactic control. There's no obvious reason why possessed DPs should require syntactically controlled anaphora, while DPs headed by quantifiers should allow pragmatic control.

3.1 The boundaries of the pragmatic/syntactic control distinction

Many speakers report that it is very easy for them to imagine contexts where examples like those in (18) are perfectly grammatical. There are also cases of VP ellipsis which seem to be easily controlled by pragmatic antecedents:

(20) [A man runs towards Matt waving a knife]
Matt: *Don't!*

In these situations, the antecedent is somehow super-salient, and is a valid antecedent for what is normally syntactically controlled ellipsis. We can control for this effect in a number of ways. First, we can be careful to consider the examples in (9) as if the antecedent were a bit distant, not the center of the discourse.

Or we can restrict ourselves to purely abstract entities with no clear, obvious correspondent in the context. Purely abstract nouns seem to be unable to have pragmatic antecedents, even when they are the focus of the discourse at hand.

(21)

a. [A student asks several questions]
Teacher: *Interesting questions. [Some _] are worth pursuing.*

b. [Same context]
Teacher: #*[Some _] are worth pursuing.*

(22)

a. Employee: *Can I make some suggestions/comments?*
Boss: *I'm sure [most _] will be worth listening to.*

b. Employee: *Can I speak my mind?*
Boss: #*I'm sure [most _] will be worth listening to.*

Notice that the same pattern holds for an abstract verb, like *think*, describing an event which may happen and be totally non-evident from context:

(23)

a. Matt: *I'm thinking about dinner.*
Ian: *I am _ too.*

b. [Matt scratches his head, rubs his stomach, strokes his beard, and stares off into space, in the kitchen.]
Ian: #*I am _ too.*

The distinction between pragmatic/syntactic control then becomes a distinction which holds only for real-world objects. But the distinction still holds between syntactically and pragmatically controlled ellipsis. Real-world objects can *always* be antecedents for pragmatically controlled ellipsis. But syntactically controlled ellipsis still requires a linguistic antecedent, except in these strange cases of super-salience.

3.2 Summary

So with caveats about a kind of super-salience which crosses the boundary between syntactic and pragmatic anaphora, we can establish a distinction between pragmatically and syntactically controlled ellipsis of the noun phrase within the DP. Stranded possessors appear to license syntactically controlled ellipsis, and bare quantifiers appear to license pragmatically controlled anaphora.

4 Does the ellipsis site have internal structure?

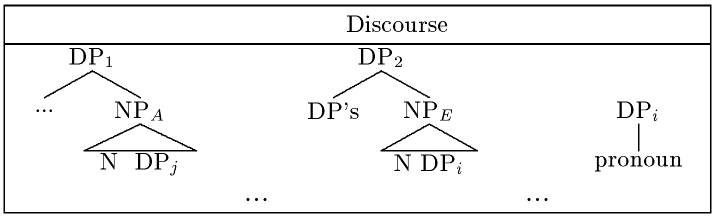
If NP Ellipsis is really syntactically controlled, we would expect to be able to find evidence of internal structure in the ellipsis site. There are at least two ways this could be done: finding anaphors which are bound from within the ellipsis site, and finding WH-words or other moved elements which must have a trace within the ellipsis site.

In addition, we might expect the pragmatically controlled instances of quantifiers and deictics to pattern with other pragmatically controlled ellipsis processes; there should be no evidence that these ellipsis sites have internal structure.

4.1 Antecedent in the ellipsis site

Grinder & Postal (1971) argued that VP Ellipsis must involve a syntactic deletion rule, on the basis of sentences containing ellipsis and a pronoun which (apparently) had no antecedent on the surface. The pronoun found its antecedent inside the VP Ellipsis site; this process is known as the "missing antecedent" phenomenon.

To test whether a DP can find its antecedent within an elided NP, we need a very particular type of structure. We must have an elided DP and a suitable antecedent; the elided DP must itself contain a DP which can serve as the "missing antecedent" for the pronoun; and so the antecedent for ellipsis must also contain a DP. But we must be careful to construct the antecedent for ellipsis so that it contains a DP which is not a good antecedent for the pronoun. We will need a structure like the following:



NP_E is the elided NP, and NP_A is its antecedent. A pronoun takes DP_i, within the ellipsis site, as its antecedent. Crucially, DP_j must not be a valid antecedent for DP_i. I will now construct a test example. First, a DP_1 is established containing a DP_j which is not an available antecedent for a following pronoun.

(24) *I believed no one's claim that he had ridden a camel.*
 # It$_i$ was the two humped variety.
 # We saw someone on it$_i$ in the park.

Next, a second DP with an elided NP, DP$_2$, is added. The ellipsis site presumably contains a DP$_i$ which may be a valid antecedent. The pronoun can now find DP$_i$ as its antecedent.

(25) *I believed no one's claim that he had ridden a camel, except for [John's _]. (_ = claim that he had ridden a camel$_i$)*
It$_i$ was the two humped variety.
We saw him on it$_i$ in the park.

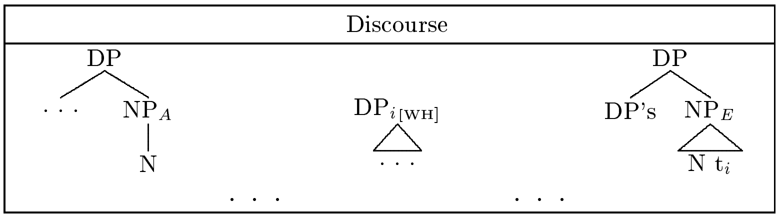
These data are consistent with the hypothesis that the ellipsis site in NP Ellipsis has internal structure.

If quantifiers and deictics license pragmatically controlled ellipsis, then their ellipsis sites should have no internal structure, and thus we will not expect them to be able to host antecedents for pronouns. This does in fact seem to be the case.

(26) *I believed no claim that a camel had been ridden, except for [some/a few _]. (_ = claims that a camel$_i$ had been ridden)*
 # It$_i$ was the two humped variety.
 # We saw someone on it$_i$ in the park.

4.2 Trace in the ellipsis site

If the ellipsis site has internal structure, then it should be able to host a trace of WH-Movement as well. For these the structure we want is the following:



We require the DP with a trace in its ellipsis site to be possessed; and in almost all cases the possessor blocks WH movement out of the DP. In the cases where extraction is merely questionable, ellipsis then seems ungrammatical.

(27) *I know Bob sold a picture of the mountains, but I don't know what Mary sold a picture of t.*
(28) **I know Bob sold his picture of the mountains, but I don't know what Mary sold her picture of t.*
(29) *I don't understand fear of dogs. ?What don't you understand fear of t?*

(30) *I don't understand Bob's fear of dogs. *What don't you understand Bob's fear of t?*
(31) *I don't understand Bob's fear of dogs. ?What don't you understand anyone's fear of?*
(32) *I don't understand Bob's fear of dogs. *What don't you understand anyone's _ ?*

So we may not be able to test for internal structure of the ellipsis site in this way. Extraction from a quantified DP is similarly ungrammatical, with or without ellipsis.

(33) *I don't know what Mary sold [a picture of t.]*
(34) **I don't know what Mary sold [some/several/a few/many pictures of t.]*
(35) **I know Bob sold some pictures of the mountains but I don't know what Mary sold [some/several/a few/many/those _].*
(36) *I don't know who Mary told [a rumor about t].*
(37) *?I don't know who Mary told [some/several/a few/many rumors about t].*
(38) **I know Bob told rumors about Fran, but I don't know who Mary told [some/several/a few/many _].*

So we can conclude nothing about the internal structure of the ellipsis sites from cases of extraction from quantified and possessed DPs with missing NPs.

This data raises a final interesting point. Sluicing is well known to repair island violations (Merchant 2001, among others) while VP Ellipsis does not. This difference between two similar ellipsis processes has generally been approached with the burden of explanation on what aspect of VP Ellipsis explains its failure to repair island violations. This data shows that NP Ellipsis patterns with VP Ellipsis, potentially shifting the burden of explanation onto the task of finding what aspect of Sluicing allows island violation repair instead.

4.3 The Phrase Structure of Bare Quantifiers and NP Ellipsis

For these two types of reduced DPs, I propose the following phrase structures. The structure I want to propose for the bare quantifiers consists only of a quantifier which has no NP complement in the syntax.

(39)
DP
|
$\bar{\text{D}}$
|
D
|
some

I have proposed that bare quantifiers are instances of Null-Complement Anaphora, meaning that the quantifier's semantic argument is recoverable from the context.

It is important not to confuse this analysis with another possible analysis, that of considering the quantifiers optionally transitive D°s (in the same way that intransitive *eat* has no syntactic complement and no semantic argument). H&S point out that there are two pitfalls in this analysis. First, if *some* were optionally transitive like *eat*, then it would be infinitely ambiguous between *some*, *some disgusting chocolates*, *some Belgian chocolates*, *some Belgian waffles*, and so on. This is clearly undesirable. Second, Null-Complement Anaphora obeys the Backwards Anaphora Constraint, like other anaphora:

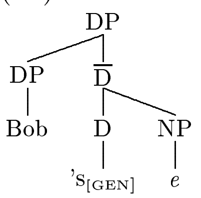
(40) *Most chocolates are tasty, although some are disgusting.*
(41) *Although some are tasty, most chocolates are disgusting.*
(42) **Some are tasty, although most chocolates are disgusting.* (where *some* is interpreted as *some chocolates*)
(43) *Bob$_i$ is dead, although I didn't kill him$_i$.*
(44) *Although I didn't kill Bob$_i$, he$_i$ is dead.*
(45) **He$_i$ is dead, although I didn't kill Bob$_i$.*

So this structure, although it may look like a quantifier's intransitive use, is actually a quantifier with no syntactic complement, but with a semantic argument, the restrictor for the quantification, provided by the context. Better analogs of this in the verbal domain are the verbs *approve, volunteer, refuse, succeed,* and so on.

(46) *I asked Bill to leave, but he refused. (= refused to leave) (*from H&S*)*

For NP Ellipsis, I will propose that the DP consists of the possessor DP in the spec of D°, and some genitive D° head. I will remain agnostic as to whether this genitive D° head is realized by *'s* or whether it is null and requires *'s* on its spec. What is important is that the NP was present at some point, for example to provide an antecedent for "missing antecedent" anaphora, and then was elided under identity with some other NP.

(47)



In line with the DP hypothesis, this structure leaves open the possibility of an eventual unification of the structures involved in VP Ellipsis, Sluicing, and NP Ellipsis. Lobeck (1995), among others, has observed that each of these structures involves a overt specifier agreeing with a functional head, and has hypothesized that this configuration licenses ellipsis. If this configuration did license ellipsis, it would explain why bare quantifiers do not pattern with NP Ellipsis, and why NP Ellipsis demonstrates the same patterns as VP Ellipsis. I will return to this hypothesis when I discuss Lobeck's account of NP Ellipsis.

Finally, if (possibly cross-linguistic) evidence exists for a third separate functional projection in DP, between D° and N°, which hosts quantification or number, then the quantifiers likely sit in this projection and not in D°, making the split more clear; the overt D° *'s* licenses ellipsis, and the non-overt D°s which appear with quantifiers do not, just as VP Ellipsis is only permitted in the presence of an overt auxiliary.

4.4 Summary

There is evidence for internal structure in the site of NP ellipsis in precisely those cases of NP ellipsis involving a stranded possessor, which seem to be syntactically controlled. Surprisingly, there is not evidence for internal structure in those cases of NP ellipsis involving a stranded or lone quantifier or deictic, which seem to be pragmatically controlled. The phrase structure I propose for the two different processes is compatible with the observed facts and points to a future unification of three syntactically controlled ellipsis processes.

5 The Identity Condition of Merchant 1999

It is well known that the identity condition on VP Ellipsis is not a condition on the phonological form or even the surface structure; rather it operates at some more abstract level. What this level is exactly has been debated in depth; I will adopt here the proposal in Merchant (1999) that the identity condition is a condition on LF.

I will first give a brief overview of Merchant's identity condition. Then I will show how it is compatible with NP Ellipsis. Finally, I will present a previously undescribed pattern, sensitivity to plurality/aspect, and show how it follows from the identity condition, given the right assumptions.

5.1 Background

Fiengo & May (1994)[2] were the first to propose that the identity condition on VP Ellipsis was a two part relation, consisting of a syntactic identity condition on antecedent and elided VPs, and a semantic identity condition between the first VP and the second.

Rooth (1992a) refines this analysis, drawing a connection between the processes of deaccenting and ellipsis. In his account, a phrase cannot be deaccented or elided unless the XP containing the antecedent entails something contained in the Focus-closure of the XP containing the elided phrase.

This hinges on Rooth's definition of Focus-closure. The Focus-closure or "alternative semantics" interpretation of a YP containing a focused XP is constructed as follows. First the "ordinary semantics" interpretation for that YP is constructed. Then the part of the interpretation corresponding to the focused XP is lambda extracted and allowed to range over all possible elements of the same semantic type[3]. For example, if the ordinary semantics and "alternative semantics" for $[_{N'}\ American_F\ farmer]$ is as follows:

(48) **Ordinary semantics**:

[2] In press at the time of Rooth's writing.

[3] This "alternative semantics" interpretation might also be defined recursively. The interpretation of a focused lexical item would be the set of lexical items of the same semantic type. Composition would proceed as it does in "ordinary semantics," unless one of the phrases to be combined was a set of interpretations. In this case, the interpretation would then be a new set obtained by combining each member in the set of alternatives with the other constituents. If the phrase contained two sets of alternatives, the new set could be constructed with pairs of members of each set.

$[\![[_{N'} American_F farmer]]\!]^0 = \lambda x[American(x) \wedge farmer(x)]$
(49) **Alternative semantics**:
Let P be the set of all functions from entities to propositions.
$[\![[_{N'} American_F farmer]]\!]^f = \{\lambda x[p(x) \wedge farmer(x)] | p \in P\}$

In other words the "alternative semantics" for $[_{N'}$ *American*$_F$ *farmer*$]$ is a set of interpretations corresponding to *Canadian farmer*, *Mexican farmer*, and so on.[4] The set returned by Focus-closure has an element for each intersective adjective, combined with *farmer*.

The operation of Focus-closure only returns this set of constituents for focused elements. The Focus-closure of a non-focused element (including deaccented and elided elements) is the same as the "ordinary semantics" interpretation.

Building on this, Rooth shows that the condition on deaccenting is simply that the XP containing the antecedent entail something that is contained in the focus-closure of the XP containing the deaccented phrase. (Rooth does his calculations at the level of sentences. Merchant adds $\exists$-type shifting to allow Focus-closure to be used for other phrases as well.) This allows a "specific" IP to antecede a deaccented, more general IP (the italicized phrase is deaccented):
(50) Mary called Frank a Republican, but I don't know who else *she insulted*[5].

The IP *she insulted* can be deaccented, because its focus closure contains something entailed by the antecedent *Mary called Frank a Republican*:
(51) $call(Mary, Frank, Republican) \rightarrow insult(Mary, Frank)$
(52) $insult(Mary, Frank) \in \{\lambda x[insult(Mary, x)] | x \in D\}$

Rooth then argues that this condition is exactly the semantic condition on ellipsis proposed by Fiengo & May.

5.2 Merchant 1999

Merchant further refines Rooth's identity condition on ellipsis. While the interpretation of the antecedent must be or entail an element of the Focus-closure of the elided phrase, just

[4] While Rooth is not explicit about excluding, for example, *short farmer* from this set of alternatives, it is not clear that this should be done. There may be contexts where *American*$_F$ is focused and meant to contrast with *short farmer*:
Americans are tall. So while farmers in the Pygmy nation of Falabala have to let the fruit in the tops of their trees rot, AMERICAN$_F$ *farmers can pick it all.*

[5] Under the assumption that calling someone a Republican is an insult.

as in Rooth's account, Merchant also requires the elided phrase to be or entail an element of the Focus-closure of the antecedent. This second condition, making the relation between antecedent and elided phrase completely symmetric, replaces the syntactic surface condition of Rooth (and Fiengo & May).

This can be seen in the following example. The elided IP in the sentence below can only be interpreted as *she called t a Republican*, not as *she insulted t*. However, both of those phrases are valid deaccented phrases.

(53) Mary called Frank a Republican, but I don't know who else _ (_ = she called a republican, _ $\neq$ she insulted.
(54) Mary called Frank a Republican, but I don't know who else *she called* t *a Republican.*
(55) Mary called Frank a Republican, but I don't know who else *she insulted.*

Merchant gives a general identity condition on ellipsis, intended to work for VP Ellipsis and Sluicing:

The Identity Condition on Ellipsis

1. **e-Givenness** (Merchant 1999, p. 36)
   An expression E counts as e-given if E has a salient antecedent A and, modulo $\exists$-type shifting,
   (a) A entails F-clo(E) and
   (b) E entails F-clo(A)[6]
2. **Focus condition on Ellipsis** (Merchant 1999, p 44)
   A constituent α can be deleted only if α is e-Given

I retain the Focus-closure aspect of Merchant, because it captures the empirical similarity between deaccenting and ellipsis, but this is not crucial to my account. In fact, my account would be simpler if the identity condition could simply be logical equivalence ($NP_E \iff NP_A$) between the antecedent and the ellipsis, modulo $\exists$-type shifting.

I will now turn to some data that shows this identity condition suffices for NP Ellipsis.

5.3 Strict/Sloppy Ambiguity

Strict/sloppy ambiguity is available in NP ellipsis. This is predicted by Merchant's identity condition. The relevant examples to consider are ones like the following:

[6]"Entails" should be replaced here with "entails element in."

(56) *Mary's pictures of herself won the photography contest, and [Bob's _] got second place. (_ = pictures of himself/pictures of Mary,* $\neq$ *pictures)*
(57) *Lisa's disappointment in herself was unreasonable , and so was [Bob's _]. (_ = disappointment in himself/disappointment in Lisa,* $\neq$ *disappointment)*

An account of (56) would go as follows. For the strict reading, the elided NP would have been *picture of Mary*.

(58) Strict reading:
$NP_A = \lambda y \lambda x \left[picture(y, Mary) \wedge own(x, y) \right]$
$NP_E = \lambda y \lambda x \left[picture(y, Mary) \wedge own(x, y) \right]$
modulo existential type-shifting,
$NP_A \Leftrightarrow NP_E$, so
$NP_A \Rightarrow$ F-Clo(NP_E), and
$NP_E \Rightarrow$ F-Clo(NP_A),

For the sloppy reading, the elided NP is interpreted to have been *picture of him/her* where the pronoun is bound by the owner of the picture.

(59) Sloppy reading:
$NP_A = \lambda y \lambda x \left[picture(y, x) \wedge own(x, y) \right]$
$NP_E = \lambda y \lambda x \left[picture(y, x) \wedge own(x, y) \right]$
modulo existential type-shifting,
$NP_A \Leftrightarrow NP_E$, so
$NP_A \Rightarrow$ F-Clo(NP_E), and
$NP_E \Rightarrow$ F-Clo(NP_A),

Note that this account assumes that at least some possessors (those of deverbal nouns, for example) are semantic arguments to their nouns.

5.4 The connection between ellipsis and deaccenting in DP

A specific noun phrase can antecede a deaccented, more general noun phrase. But a specific noun phrase can only antecede an identical elided one, just as is predicted by Rooth.

(60) Bob's Schwinn is in the shop, so he is riding SAM's *bicycle*.
(61) Bob's Schwinn is in the shop, so he is riding SAM's _ (_ = Schwinn, _ $\neq$ bicycle)
(62) Bob Dylan's songs about politics are good , but D.R. Goettel's *songs* are better.
(63) Bob Dylan's songs about politics are good , but D.R. Goettel's _ are better. (_ = songs about politics, $\neq$ songs)

A Focus-closure-based account will work as follows. The general NP, *bicycle*, can be deaccented. *Schwinn* entails *bicycle*, which is in the Focus-closure of *bicycle*.

(64) Deaccenting:
$NP_A = \lambda y \lambda x [Schwinn(y) \wedge own(x, y)]$

$NP_D = \lambda y \lambda x[bicycle(y) \wedge own(x, y)]$
F-Clo(NP_A) $= \lambda y \lambda x[Schwinn(y) \wedge own(x, y)]$
F-Clo(NP_D) $= \lambda y \lambda x[bicycle(y) \wedge own(x, y)]$
$\exists x[Schwinn(x)] \Rightarrow \exists x[bicycle(x)]$
$NP_A \Rightarrow$ F-Clo(NP_D) so NP_D can be deaccented.

However, ellipsis of the NP *bicycle* is not allowed. *Bicycle* does not entail anything in F-Clo($Schwinn$), and thus cannot be elided[7].

(65) Ellipsis:
$\exists x[bicycle(x)] \not\Rightarrow \exists x[Schwinn(x)]$
$NP_D \not\Rightarrow$ F-Clo(NP_A) so NP_D cannot be elided.

Deaccenting is allowed, since the antecedent entails an element of the Focus-closure of the deaccented phrase. However, ellipsis is disallowed, since the deaccented phrase does not entail an element of the Focus-closure of the antecedent.

5.5 Plurality/Tense/Aspect Sensitivity

VP Ellipsis is well known to be insensitive to the morphological form of the elided verb. Since the auxiliary preceding the ellipsis site determines the form of the verb in its complement, the morphological form of the ellipsis is recoverable.

(66) *Mary has already gone to the store, but Bob won't _. (= go to the store)*
(67) *Mary ate with us today, and tomorrow, no one will _. (= eat with us)*
(68) *Bob won't sing the national anthem, but Mary is _. (= singing the national anthem)*
(69) *Bob can't clean the living room because Mary already has _. (= cleaned the living room)*

Similarly, NP Ellipsis is insensitive to the morphological form of the elided noun. Since, in the usual case, there is no overt marker of the plurality of the DP outside of the NP, an elided NP will be ambiguous between singular and plural interpretations.

(70) *Bob's car is in the shop, but I prefer driving [Mary's _] anyway. (= car, cars)*
(71) *Bob's cars are in the shop, but I prefer driving [Mary's _] anyway.(= car, cars)*
(72) *Mary's picture won the photography contest, and [Bob's _] got many small prizes (= picture, pictures)*
(73) *Mary's pictures won the photography contest, and [Bob's _] got many small prizes (= picture, pictures)*

This makes perfect sense. NPs denote properties, not entities. Whether the DP refers to a singular entity or a plurality of entities should be calculated at the level of the DP, not the NP. The identity condition is satisfied for examples like (70)/(71) then:

[7] This predicts that *bicycle* can be elided exactly when *Schwinn* is focused, which of course cannot be right.

$NP_A : \lambda x[car(x)]$
$NP_E : \lambda x[car(x)]$
F-Clo(NP_A) $= \lambda x[car(x)]$
F-Clo(NP_E) $= \lambda x[car(x)]$
modulo existential type-shifting,
$NP_A \Rightarrow NP_E$ and
$NP_E \Rightarrow NP_A$, so NP_E can be elided.

5.5.1 Singularity in vanilla contexts

There seems to be a preference for the singular interpretation in the absence of anything to push the interpretation in the direction of the plural interpretation. For example, (70) and (72), at the beginning of a discourse, would probably be interpreted as ellipsis sites in singular DPs. With plural antecedents, both interpretations seem equally available. So it seems that this preference is for singulars absent anything to indicate a plural, not for an ellipsis matching the antecedent in number.

However, if we know that Mary is a car collector, or that Bob entered many pictures in the contest, the plural interpretation is suddenly available. Even though one interpretation of the ellipsis site is more salient or preferred, both are available in the appropriate context, so the grammar should not rule out either interpretation.

5.5.2 Eliminating the ambiguity

There are, however, a range of exceptional circumstances in which the plurality/singularity ambiguity of the elided DP is eliminated.

Partitives, for example, mandatorily take a DP complement which is plural or denotes a group. So an elided NP in a DP complement to a partitive is only interpretable as a plural.

(74) *Bob's car is in the shop, but I would prefer to drive [one of [Mary's _]] anyway. (= cars, ≠ car)*
(75) *Mary's picture won the photography contest, and [some of [Bob's _]] got several lesser prizes. (= pictures ,≠ picture)*

But an elided NP in a DP complement to a partitive which has a group noun as its antecedent remains ambiguous, since both the plural and the singular are possible complements to the partitive:

(76) *Mary's team left, but [one of [Sam's _]] didn't. (_ = team, teams)*

(77) *Frank's research group were all fired, but [some of [Mary's _]] might still work here. (_ = research group, research groups)*

Subject-verb agreement also seems capable of eliminating this ambiguity. Although speakers vary on their judgments somewhat, no one judges these kinds of examples to be completely ungrammatical.

(78) *Mary's brother has graduated, but Bob's _ haven't graduated. (_ = brothers)*
(79) *Bob's brothers have graduated, but Mary's _ hasn't graduated. (_ = brother)*
(80) ?*Mary's single submission has won the grand prize, but Bob's _ have won several lesser prizes. (_ = submissions)*
(81) *Bob's several submissions have won many small prizes, but Mary's _ has won the grand prize. (_ = submission)*

We should not attempt a syntactic or even a semantic analysis of these facts because context or knowledge about the world can interfere to limit the available interpretations as well.

(82) *Jack's got blue eyes. Bart's _ might have been blue or green. (_ = eyes)*
(83) *Mary's wedding was beautiful, but I didn't enjoy Cindy and Tina's _. (_ = weddings)*

Since most people have two eyes, and since two women don't ordinarily get married, there is a tendency to assume that these ellipsis sites are in plural DPs. But if we know, for example, that Bart was a battle-scarred pirate, or that Cindy and Tina were gay, then the singular interpretations suddenly become available interpretations.

So NP Ellipsis is insensitive to the morphological form of the noun, allowing ambiguity between plural and singular interpretations of the ellipsis site. There seems to be a preference for a singular ellipsis site in the absence of information to the contrary. And syntactic and contextual factors can interfere and push the interpretation in one direction or the other. But in general, this insensitivity to plurality parallels the insensitivity of VP Ellipsis to the morphological form of the verb in the ellipsis site.

5.6 Negation

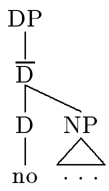
The identity condition on VP Ellipsis is insensitive to negation:

(84) *Bob finished his vegetables, but Mary didn't _. (_ = finish her vegetable(s))*
(85) *Bob didn't finish his vegetables, but Mary did _. (_ = finish her vegetable(s))*

We would expect the same thing in NP Ellipsis, and it does seem to happen:

(86) *Mary ate no vegetables, but [Bob's _] were all eaten. (_ = vegetables)*
(87) *Mary has no dogs, but [Bob's _] might have bit Frank. (_ = dogs)*

This is not surprising at all, given the pattern in VP Ellipsis. A naive account would simply insure that NP Ellipsis targeted some node below the negative morpheme, which would sit in a functional projection above NP:



5.7 Split Antecedents

Fiengo and May notice that elided VPs can have split antecedents. It is significantly more difficult to generate split antecedents for NP Ellipsis. With just a single noun in both antecedent NPs, there is no clear way to tell if the ellipsis site has both or only one of the possible antecedents.

(88) *Mary's brothers climbed Kilimanjaro, and Bob's brothers swam the English Channel, but [Elmer's _] did both these things. (_ = brother, brothers)*
(89) *Mary's brother climbed Kilimanjaro, and Bob's brother swam the English Channel, but [Elmer's _] did both these things. (_ = brother, brothers,)*

With two very semantically similar nouns, however, it is difficult to get NP Ellipsis to resolve to a split antecedent.

(90) *Mary's brother climbed Kilimanjaro, and Bob's sister swam the English Channel, but [Elmer's _] did both these things. (_ = brother, sister, brothers, sisters, ?= brothers and sisters)*
(91) *Mary's brothers climbed Kilimanjaro, and Bob's sisters swam the English Channel, but [Elmer's _] did both these things. (_ = brother, sister, brothers, sisters, ?= brothers and sisters)*

And even with a deverbal noun, it seems difficult to get a split antecedent:

(92) *Godzilla's destruction of Tokyo frightened me, Mothra's destruction of Osaka amused me, and Gamera's _ both amused and frightened me. (_ = destruction of Tokyo, destruction of Osaka, ?= destruction of Tokyo and Osaka)*

It seems that NP Ellipsis may not allow split antecedency at all.

5.8 Summary

I have shown that a great deal of the same patterns present in the syntax and semantics of VP Ellipsis are present in the syntax and semantics of NP Ellipsis, and that the identity condition of Merchant accounts for the data.

6 Lobeck's account of NP Ellipsis

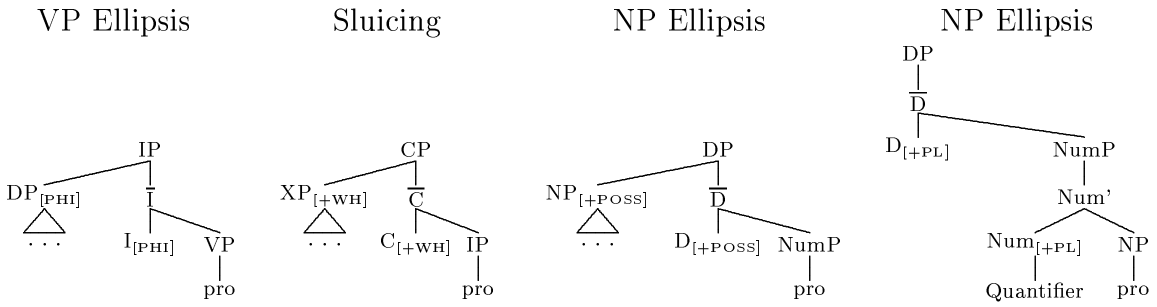
Lobeck (1995) takes an in-depth look at NP Ellipsis, and argues that it can be integrated into a larger framework including VP Ellipsis and Sluicing. I will briefly summarize her arguments here, and show why an account in terms of Merchant's identity condition is more complete.

First, Lobeck argues, unconvincingly I think, that all VP ellipsis, NP ellipsis, and Sluicing can be pragmatically controlled (p. 25). This claim includes those cases that Hankamer & Sag argue must be syntactically controlled. She argues this point on the basis of non-declarative sentences with VP Ellipsis which appear to be pragmatically controlled, the sort of super-salience mentioned in section 3, a point which Hankamer & Sag acknowledge. However, the distinction between pragmatically controlled and syntactically controlled ellipsis is robust enough that it should be accounted for, regardless of whether or not it is a universal, black-and-white process.

Next, Lobeck argues that all three kinds of ellipsis sites are filled with a silent *pro*, which is present from deep structure, and interpreted either at surface structure, or at LF. Finally, she argues that this *pro* must be properly governed by a head which exhibits strong agreement features.

Lobeck argues that it makes more sense to assume that these ellipsis sites are filled with a *pro* than deleted, because deletion is an operation at PF, interpretation of ellipsis sites is an operation at LF, and these levels have no access to each other. However, this is exactly the problem addressed by Merchant (1999), and as I have already shown, the identity condition developed there works for NP Ellipsis.

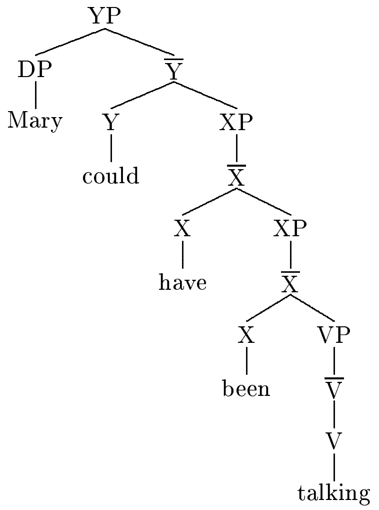
The structures that Lobeck predicts to be acceptable ellipsis structures are the following, where [+WH], [+PLURAL], [+POSSESSIVE], and [PHI] are the "strong agreement features" which can properly head govern the silent *pro*.



Lobeck must account for the uses of quantifiers and numbers (which in her account head NumP) without overt NPs, within her framework of strong agreement features. A theory which accounts for the pragmatic/syntactic control distinctions, does not conflate bare quantifiers with bare possessors, and accounts for the identity requirements on all three types of ellipsis with a single condition is much more empirically complete and theoretically compact.

Although there may be some merit to the generalization that agreement and this type of ellipsis are linked, any account in terms of strong agreement features will always have problems with cases of VP Ellipsis in English where multiple stacked auxiliaries precede the ellipsis site, and agreement is not realized on multiple heads;

(93) *Bob wasn't talking, but Mary could have been talking.*



Regardless of the specific syntactic theory, if ellipsis is licensed by strong agreement features, you must locate the same strong features on both XPs and the VP above, since all three phrases are valid candidates for ellipsis. In other words, it is generally assumed that strong agreement features are located on some functional head, either I°, or Agr° or T°. But if three of the phrases above are eligible for ellipsis, then the strong agreement features which license ellipsis must be covertly located in three places instead of one, yet they only appear overtly in the topmost position.

At some point, perhaps the syntactic control facts can be unified with the observation that agreement and ellipsis are linked. But for now, it remains only an observation.

7 Conclusion

I have shown that NP Ellipsis, ellipsis of an NP within DP stranding a possessor, is a syntactically controlled ellipsis process, parallel to VP Ellipsis in clausal syntax. Bare quantifiers, on the other hand, pattern like pragmatically controlled ellipsis. All of the consequences of this analysis of NP Ellipsis are borne out; the ellipsis site has internal structure and it is limited by the exact same identity condition given by Merchant (1999) for VP Ellipsis.

Lastly, an argument is given that Lobeck's account is incomplete compared to this one.

We have seen a greater symmetry across ellipsis paradigms and between the nominal and clausal syntactic domains, thus simplifying and unifying the grammar. It remains to be seen whether there are other ellipsis patterns that can be added to the NP Ellipsis/VP Ellipsis/Sluicing paradigm, whether from English or from other languages, and whether a simple generalization can be made about what exactly licenses these particular ellipsis processes and prevents many imaginable but non-existent others. As is so often the case, new questions have emerged even as old ones are resolved.

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