Verbal Ellipsis in the Nominal Domain[*]
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1 Introduction & Background

In this paper, I present data from a scarcely documented kind of ellipsis occurring in some registers of English (see Vahedi (2008) and Anderson (2007) for some more background). In this type of ellipsis, a VP within a POSS-ing DP is elided under identity with a VP elsewhere in the structure[1]:

(1)   Mary's reading *Macbeth* came as a surpise, but nobody expected John's __.

The problem is that not all VPs are valid antecedents. Surprisingly, VPs that are not also DP-internal cannot serve as antecedents:

(2)   * John took a long time to read that book, although Mary's __ took longer.

In this paper, I investigate this restriction. While this is work in progress, the discussion still gives rise to some interesting implications for ellipsis in general. Overall, the data and analysis presented here suggest that there are external syntactic restrictions on elided constituents. To wit, it appears to be the case that the syntactic identity conditions on the (internal) structures of elided constituents are not the only syntactic considerations that must obtain for an ellipsis to occur (see Sag, 1976; Rooth, 1992, for more).

In §2, I will describe my assumptions about the internal structure of POSS-ing phrases and the verbal complexes contained therein. Following this, I will establish VP ellipsis within the gerundive in §3. I will also present the basic problem and data, and show that though VP ellipsis is restricted in these constructions, NP ellipsis is not constrained in the same way.

At this point in the paper I begin looking at possible analyses of the problem. In §4, I argue that the impermissible ellipses cannot be the result of morphological mismatches, and additionally I show that VP ellipsis is only blocked in the immediate complement to POSS. In §5, I summarize the material

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[1]It is very interesting that Abney (1987) claims the examples under discussion to be ungrammatical (Ch. 3, §6.1). My informants and I wholeheartedly disagree. People who have never heard constructions such as the one in (1) typically find them grammatical immediately. Pullum (1991) also comments on their validity, with some qualification.

presented up to that point, and provide some discussion and analysis. In §6, I turn to some questions that the analysis raises and some of the more difficult data surrounding these questions. Finally, in §7, I conclude.

2   Verb Phrases and the Structure of Poss-ing Gerundives

In this section, I intend to describe the internal structure of the POSS-ing phrases that will be under scrutiny throughout the duration of this paper. I take the structure described by Abney (1987) as my starting point in Subsection 2.1 and move thence. In Subsection 2.2, I will focus on fixing some of the weaknesses of the structure proposed by Abney, and I will use these to motivate a structure where VP is in construction with the POSS D head. Finally, I will bring the structure more up-to-date in 2.3 to reflect a more contemporary understanding of verbal syntax, calling upon more recent work on both POSS-ing phrases and VPs in general. The sum of all of this will be to make my assumptions about these structures explicitly clear, as they will form the basis of my analysis throughout the rest of this paper.

2.1   Abney (1987) and the Internal Structure of POSS-ing Phrases

The structure of POSS-ing phrases has been of some interest to linguists of the generative tradition. The whole of Chomsky (1970) is dedicated to a description of the differences between these, sentences, and so-called derived nominals. Examples of each are given in (3) below:

(3)   a.   John destroyed the city.   *Sentence*
       b.   John's destroying the city. . .   *Gerundive*
       c.   John's destruction of the city. . .   *Nominal*

Chomsky's focus in his discussion is is the derivational relationship between the kinds of phrases in (3). Each has its own syntactic properties. Examples (3b) and (3c) are indeed very similar in appearence to (3a), but these two phrases have remarkably different distributions from sentences. The property that separates them is that they appear in positions typically occupied by nominals. Examples (3b) and (3c) are further differentiated from each other by their own syntactic and semantic properties. The "gerundive" in (3b) (what I am calling simply a "POSS-ing phrase") can directly take a nominal complement. This is not the case for the possessed nominal phrase in (3c). Here, the head noun must take a PP complement, which appears to be a requirement for case assignment. A further difference is that POSS-ing gerundives take adverbial modifiers whereas the possessed nominals take adjectival modifiers. Finally, the nominals often have opaque semantics, deviating in meaning from their verbal counterparts[2]. These properties led Chomsky to conclude that the gerundives must be fundamentally syntactically verbal, but that the nominals are nouns in the syntax[3].

    The great insight of Abney (1987) was unifying the verbal syntax of POSS-ing phrases with their nominal distribution in a satisfying way. In his investigation, Abney argues that the unifying characteristic of POSS-ing phrases and possessive NPs is the functional determiner POSS itself. Arguing from the nearly identical distribution of the two types of phrases, he concludes that this determiner must be the head of both kinds of phrases and introduces the DP. His structure is in Figure 1.

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[2]I do not discuss these facts in detail due to limitations on space. The reader is referred to Chomsky (1970) for examples and discussion.

[3]There are many more properties that separate POSS-ing phrases from sentences themselves; the reader is referred to Abney (1987, Ch. 3, §§2 & 3) for a much fuller discussion of the facts than is warranted here.
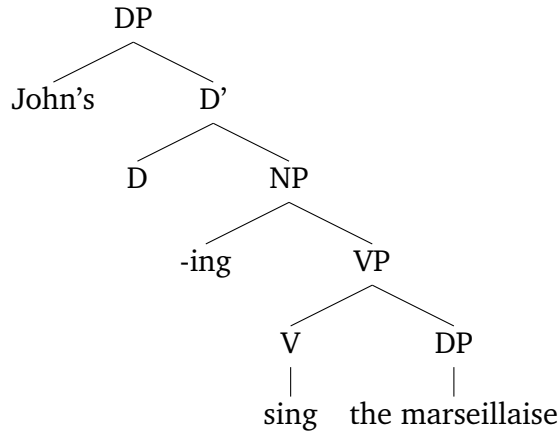
Figure 1: Poss-ing structure in Abney (1987, p. 142): "John's singing the Marseillaise"

There are a few problems with this structure that I wish to turn to now. These stem primarily from structural observations and internal inconsistencies in Abney's discussion.

2.2 Fixing Abney's Structures

The structure in Figure 1 is problematic in a number of ways, mostly stemming from what sort of material is assumed to intervene between D and VP. Abney spends considerable time discussing this (see Abney (1987, Ch. 3, §4)); here I want to turn to some of the reasons that the structure above is less than optimal. Here I adopt the solution of simply removing the intervening NP_{-ing}. This greatly simplifies the syntax and more easily captures the data about which Abney was worried.

2.2.1 *-ing* is not in N

Notice that in Abney's structure there is a NP intervening between D and VP. Here the NP is meant to be equivalent to IP. Earlier on, though, Abney specifically argues that *-ing* should not be in N, stating that, for one, nouns are seldom affixes. Furthermore, N is a lexical category, and that it makes more sense if we "take *-ing* in Poss-ing to be 'Inflectional' in the sense of being a functional element; one which is like Infl, moreover, in selecting VP" (p. 123). He concludes that *-ing* should actually be a D, and not an N. He abandons this later on to account for the fact that some gerundives can co-occur with determiners (Abney's judgments):

(4) **Determiners with Gerundives**   (Abney, 1987, Ex. (208))

    a.   There is no enjoying life without thee.

    b.   This telling tales out of school has got to stop.

    c.   The judgement of heaven for my wicked leaving my father's house.

    d.   Between rheumatism and constant handling the rod and gun.

The examples here do not appear to be in the same category as poss-ing gerunds. Specifically, (4c)[4] and (4d) have adjectival modifiers, which poss-ing gerundives do not in contemporary English (see Pullum, 1991). The presence of an adjectival modifier here suggests the presence of a nominal and not a verbal head here, and thus the presence of determiners is not surprising. As such, the need for

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[4]It is a curious fact that *my* appears in this example. However, it is very clearly ungrammatical in Modern English.

an intervening NP layer here seems quite unnecessary. The one thing that this leaves a question about is where POSS_D ought to go, as it is a determiner. This I turn to in (2.2.3).

2.2.2   V-to-N Movement?

Abney motivates the above structure in part to capture the ordering of adverbs with relation to the VP. He wants to account for the contrast in the placement of adverbs observed in (5); particularly, he wants to make sure that there is a structural position to which an adverb can adjoin and still be able to produce the linear ordering in (5a):

(5)   **Adverb placement in POSS-ing phrases**

    a.   John's hurriedly putting out the fire.   (Abney, 1987, Ex. (214))

    b.   * John's putting hurriedly out the fire.

This leads to the argument that D selects NP, and N selects VP. As long as an adverb modifies NP and not VP, this permits V to move to *-ing* without having the verb wind up on the wrong side of the adverb.

    There are at least two problems with this analysis. If, as noted above, N_{-ing} is meant to be an equivalent to Infl in these structures, then this looks suspiciously like (clausal) V-to-T movement. Here, a non–auxiliary verb moves to N, but non-auxiliaries *never* move to T in TPs. In other words, there is no motivation for the proposed movement. Further, even if this movement could be motivated, one would still expect adverbial modification of VP to occur, as it does in contexts of V-to-T movement:

(6)   **Adverb placement in V-to-T contexts**

    a.   John had hurriedly put out the fire.

    b.   * John hurriedly had put out the fire.

The point here is that the structure in Figure 1 actually predicts examples like (5b) to be okay if movement to N_{-ing} is permitted to occur. The problems with the analysis here and in (2.2.1) suggest that a different structure is necessary in order to account for the data above.

2.2.3   VP as Sister to D

In order to fix these problems, I am going to adopt a model of POSS-ing phrases that does not include any sort of *-ing*-headed NP. Rather, I will adopt an analysis where the possessive D head directly selects for a VP instead of a NP. Such analyses have been proposed elsewhere in the literature; for instance, Pullum (1991) proposes a very similar analysis in the GPSG framework, arguing that POSS-ing phrases are simply NPs headed by verbs in the present participle form. The intution is equivalent—POSS-ing phrases are essentially verbal. Such an analysis was also adopted by Vahedi (2008) in her work on POSS-ing and ACC-ing.

    The problems discussed above are alleviated by the adoption of such a hypothesis. The suffix *-ing* becomes a morphological condition on the highest verb in the verbal complex (see Subsection 2.3 below). Such an analysis does not rely on unmotivated syntactic movement in order to get the ordering facts straight, either. In examples like (5), the ordering of adverbs with respect to the verb falls out automatically—adverbs modify VP, just as they always have. Verbs do not move to D, as there is no motivation for them to do so; rather, POSS_D is simply spelled out as *-'s*. The structure is given in Figure 2 below, and will be the structure that I amend. The occurence of *-ing* on the verb here is

simply a morphological requirement enforced by the verb's proximity to the POSS head. Notice that in cases where there are auxiliaries, the highest auxiliary must always bear *-ing*:

(7)   *-ing* **occurence in POSS-ing phrases containing auxiliaries:**
    a.   John's having eaten the meal
    b.   John's having been eating the meal
    c.   * John's has eaten the meal

This appears to be a selctional requirement. The D_{poss} head selects for a V in the *-ing* form. There are some problems for this analysis, which I will shortly turn to in §2.3.2. First, I want to build up the rest of the structures that appear to occur in the VP.
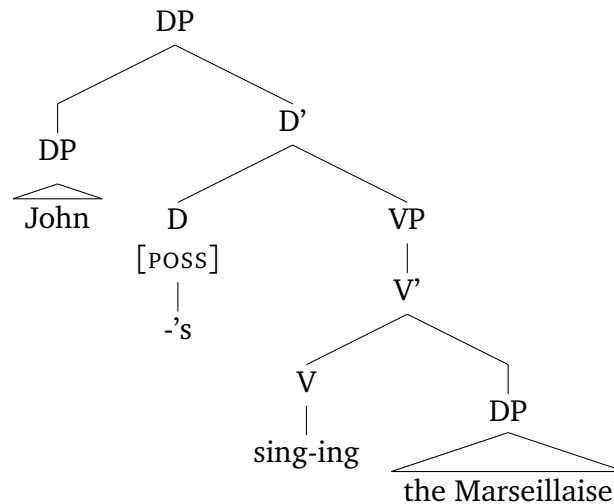

Figure 2: Abney's (1987) structure amended: "John's singing the Marseillaise"

2.3   Updates

2.3.1   External Arguments

When Abney wrote his dissertation, it was still believed that sentential subjects were generated in SPECTP. This certainly seems to be the case in Abney's writing. Kuroda (1988), based on evidence in Japanese and English, argues that the subject of a sentence must originate as the external argument of V (*i.e.* SPECVP). SPEC VP is a θ-marking position, receiving one of the θ-roles locally within the VP. SPECTP in English is then a Case-marking position. In English, the nominal generated in SPECVP raises to SPECTP in order to get Case.

It follows then that one would want to adopt a similar analysis for the structure in Fig. 2 above. Verbs still ought to assign their θ-roles locally—the main difference between POSS-ing phrases and sentences is that the functional layer above VP in the former is not a TP but a DP. Since the DP that sits in SPECDP is receiving a θ-role from the main verb in the VP, it stands to reason that it is moving to SPECDP to receive (genitive) Case, analogous to the movement described by Kuroda (1988).

Kratzer (1996) further developed this line of thought with the introduction of "VoiceP" (or "little" *v*P, which I will use here[5]). The point of this phrase is to account for differences in argument structure that correlate with different voices. So, for instance, the Agent *v* head assigns the Agent role to

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[5]See, however, discussion in Merchant (2007) for arguments that there needs to be a separate VoiceP and *v*P.

arguments in its specifier. Kratzer argues specifically that Poss-ing phrases need to have VoiceP in order to explain the accusative Case marking of verbal complements. In Fig. 3, I present the structure that this entails:
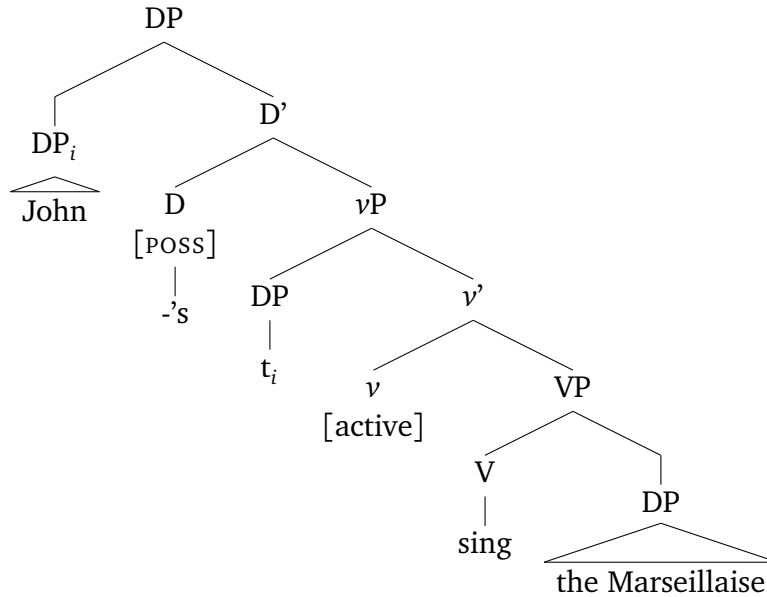

Figure 3: Poss-ing with *v*P: "John's singing the Marseillaise"

2.3.2 Auxiliaries

Poss-ing phrases, like typical clauses, permit a full range of auxiliaries to occur:

(8)   John's having been being admired always perplexed me.

(9)   [$_{Aux}$ have [$_{Aux}$ been [$_{vP}$ being [$_{VP}$ admired]]]]

The auxiliaries themselves behave a lot like verbs. They expone tense in the clausal domain and show agreement with the subjects. They also undergo T-to-C movement, much as normal verbs do in languages other than English. Assuming that V must adjoin to little *v* as it moves to T in other languages, and provided that auxes do in fact move to T in English, I am going to label them as little *v*s that intervene between D$_{poss}$ and the voice-determining *v*P. Their status in the structure is quite important, as they can license VP ellipsis. Fig. 4 shows how they are organized.

2.3.3 Negation

Finally, there is the case of negation in Poss-ing phrases. Negation is said to always occur between Poss and the highest verbal element. This comes as a consequence of there being no possible verbal movement to D in these structures as there is to T in tensed domains, as discussed in §2.2.3 above:

(10)   John's not eating the cake

(11)   Murphy's not having been at the party

Negation poses an interesting problem for the structures outlined above. If we take it to be a structurally intevening head, such as Σ, sitting between D$_{poss}$ and *v*P, the immediately local relationship that obtains between the head of the verbal phrase and the D is broken apart.
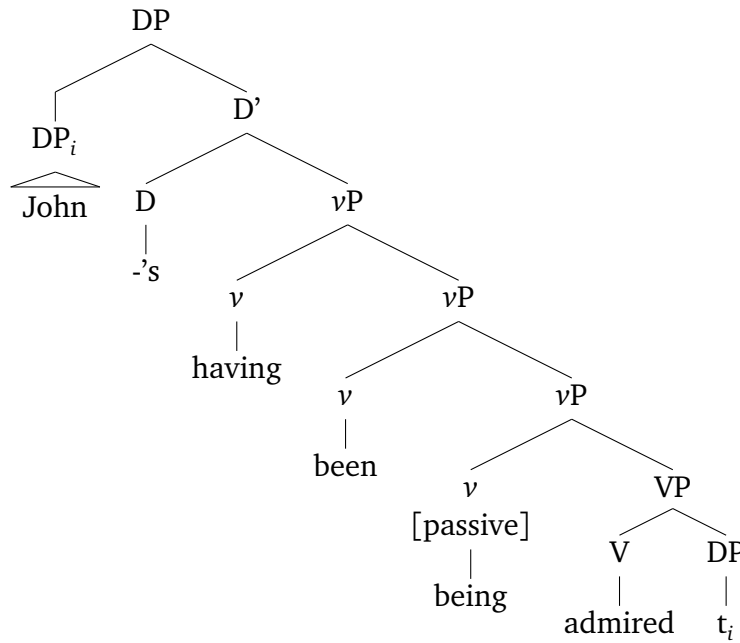
Figure 4: Poss-ing phrase with auxiliary verbs: *John's having been being admired*

This is undesirable under the structure I am advocating here. The *-ing* suffix is required on verbs that are immediately adjacent to the poss head, and this condition on the form of the verb cannot obtain if there is an intervening projection between D and the verbal element.

I would like to entertain the hypothesis (at least for now) that the negation seen in the examples above is actually constituent negation. There is some motivation for proposing such an analysis. Abney (1987, p. 129) notes, for instance, that negation in poss-ing phrases cannot take wide scope in cases like (12a), although they can in the clausal equivalent:

(12) **Scope of Negation in poss-ing as opposed to Sentences**   (Abney, 1987, p.129)

    a. *Neg > ∀ Everybody's not coming

    b. Neg > ∀ Everybody didn't come.

In the material that follows, I will adopt the analysis of consituent negation outlined by Embick & Noyer (2001, p. 588-589). In their view, a [neg] feature (spelled out as *not*) head-adjoins to vP and has the effect of negating that vP (see Fig. 5). For them, this is the same [neg] feature that is exponed in regular ΣPs, which explains the semantic similarities between sentential negation and constituent negation, as well as the fact that both license NPIs. This would allow for the D_{poss} to directly select for the verbal head[6].

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    [6]Nothing rides particularly on using the structure proposed by Embick & Noyer (2001); certainly, any other account of negation in these structures that avoids putting the vP in a position where it would be non-adjacent to D should be able to effectively deal with this problem.
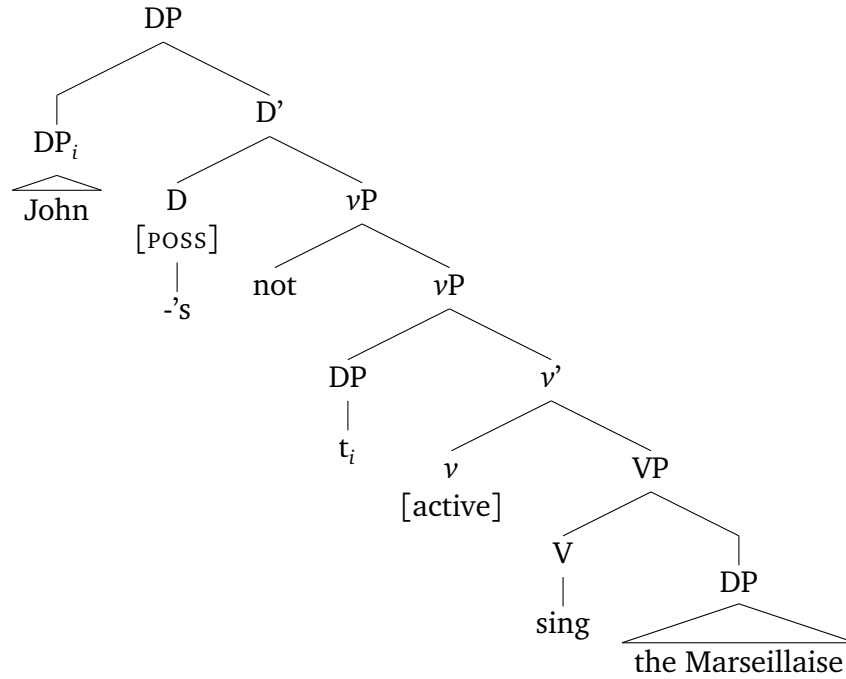
Figure 5: Head adjunction of [neg] to *v*P, following Embick & Noyer (2001): *John's not singing the Marsillaise.*

3   VP Ellipsis in Poss-ing Phrases

Ellipsis is a process whereby syntactic material in an utterance fails to be pronounced[7]. Ellipsis of VP can occur in POSS-ing phrases, as I noted in the Introduction, but there are some peculiar restrictions on it in this syntactic domain. In this section, I discuss the licensing conditions that must obtain in the structure that I developed in §2. Here, I will primarily be concerned with ellipsis licensed by the D head, keeping in mind NP ellipsis as a basis for comparison.

3.1   Ellipsis After Poss

It is a well known fact that phonologically realized T heads in English license verb phrase ellipsis, henceforth VPE(Ross, 1967; Lobeck, 1995, for more), and that the POSS head allows for noun phrase ellipsis, henceforth NPE (Jackendoff, 1971; Chisholm, 2001, for more). Examples of each are given here[8]:

(13)   **VPE after T and NPE after D:**
    a.   Mary will <u>buy a car</u>, and John might$_T$ __, also.   *VPE*
    b.   I like Sally's <u>car</u>, and I like Tom's$_{poss}$ __, too.   *NPE*

Following the discussion in §2, the *v*P in POSS-ing phrases is directly adjacent to D$_{poss}$. This is directly analogous to the position of *v*P next to T within TPs. Here, there is an apparent intersection of

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[7]I remain agnostic as to whether the elided structure remains unpronounced at PF or gets deleted. However, I have argued that null pronominal accounts of VPE (see, for instance, Lobeck (1995)) are unfeasible in light of some of the data presented here. I leave this argument aside here.

[8]In my examples, I <u>underline</u> to indicate an antecedent, and I employ an underscore (*i.e.* __) to show the site of an ellipsis.

the domains that license ellipsis in the examples above. As noted above, a pronounced T licenses the ellipsis of its vP complement[9], resulting in VPE. The possessive D licenses the ellipsis of its NP complement, which typically results in NP ellipsis. Crucially, though, the possessive D can also take vP as its complement, putting it directly in the same structural location where NPE occurs. Given the similarity between the TP and DP structures, we should expect, contra Abney (1987), that vPs can be elided in the DP as well, and they are:

(14) **Ellipsis of a vP complement to D in a POSS-ing phrase:**

a.   Erik's buying a car came as a surprise, and Bud's __ came out of nowhere.

3.2   The "Size" of VPE

The fact of the matter, though, is that verbal and nominal structures are not identical, so in spite of the surface similarity described above, we should not be so quick jump to conclusions. The material following D_{poss} is substantially different in nominals than it is in POSS-ing phrases. Thus, it is not simply enough to assume D_{poss} licenses VP ellipsis directly. For one, in clauses auxiliaries can license VPE, not just T. There does not appear to be any such equivalent in nominal DPs. This raises the question: how much material does VPE elide in these structures?

There are some apparent restrictions on these other VPE licensing heads within POSS-ing contexts. Single auxiliaries resist getting stranded in POSS-ing phrases:

(15)   John's having eaten a turtle was strange, but...

a.   ...Mary's [having eaten a turtle] didn't faze me.
b.   * ...Mary's having [eaten a turtle] didn't faze me.

(16)   Sally's being upset was understandable, but...

a.   ...Harvey's [being upset] was incomprehensible!
b.   * ...Harvey's being [upset] was incomprehensible!

This might invite the proposal that VPE licensed by D_{poss} must elide all of the material adjacent to D. This would be unusual, given that it is hard to recover an elided perfective *have*, as in (15b) and (17) (Johnson, 2001).

(17)   Sally might have eaten rutabagas, but Holly shouldn't __.   (Johnson, 2001)

However, stranding auxiliaries in POSS-ing phrases notably improves when more than one is left behind:

(18)   John's having been eating a turtle was strange, but...

a.   ...Mary's [having been eating a turtle] didn't faze me.
b.   ...Mary's having been [eaten a turtle] didn't faze me.

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[9]Given the reanalysis of the VP as a more complex constituent containing vP, VPE licensed by a D or a T is really vP ellipsis. Inasmuch as its properties are the same, I will generally refer to elision of vP as VPE, except where the distinction is crucial.

The explanation behind this seems to be that VP ellipsis after licensors ending with the *-ing* suffix is severely dispreferred. Johnson (2001) notes that as far back as Ivan Sag's dissertation, it has been observed that "VPs elide quite badly when the Aux governing them has *ing* suffixed to it" Johnson (2001, p. 3). This seems to be a general constraint on VPE:

(19)   * Doc Golightly is being discussed and Sally is being __ too.   (Johnson, 2001)

Since POSS-ing phrases require that the highest verbal element appear with the *-ing* suffix, the constraint on stranding a single auxiliary is unsurprising.

3.3 *v*Ps & NPs

Importantly, these ellipses are restricted with regard to which antecedents they are allowed to take. Where the antecedent is the complement element non-gerundive clause—a T, *v*, or Σ_{neg}[10]—but the ellipsis site is complement to POSS, the ellipsis is ungrammatical. A particularly interesting fact about these structures is that they permit the elision of a NP but not a verbal complement where we expect ambiguity between the two options. This is surprising because the syntactic structure is identical in these cases, and the restrictions on VPE and NPE are largely the same (Chisholm, 2001).

   It appears that in order for this kind of ellipsis to be able to apply, the antecedent *v*P must be the complement of a POSS as well. Compare the examples in (20) with the unelided equivalents in (21):

(20)   a.   * He hesitated to gesticulate wildly because of Sally's __.
         b.   * I thought John would leave early, and I knew about Mary's __.
(21)   a.   He hesitated to gesticulate wildly because of Sally's gesticulating wildly.
         b.   I thought John would leave early, and I knew about Mary's leaving early.

As we see in (20), the ellipses fail to find antecedents, and the sentences are ungrammatical. Crucially, (21) shows that these sentences are completely grammatical when no ellipsis has occurred.

   To put it succinctly, this is weird. This problem is not attributable to the well-known restrictions on ellipsis antecedents, documented originally by Ross (1967). Ross claims that an ellipsis antecedent cannot be c-commanded by the ellipsis site, as in examples like (22)[11]:

(22)   * I will __, if I can work on it.   (Ross, 1967)

The other restriction on ellipsis is that the ellipsis site cannot precede the antecedent if the antecedent is in a different conjunct of a coordinate structure:

(23)   * I will __, and Mary will work on it too.

   The examples in (20) are not subject to either of these restrictions. In neither case is the ellipsis in a position to C-command the antecedent, and in (20b), where there is a coordinate structure, the ellipsis clearly follows the antecedent. Therefore, the fact that the ellipsis cannot find an antecedent in these instances is not predicted by the typical syntactic restrictions on ellipsis.
   An even more perplexing fact is exemplified in example (24):

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[10]I will generally refer to all ellipses and antecedents in TPs (as opposed to DPs) by the less-specific term "TP-internal" or "clausal" antecedents, noting, of course, that each of the ellipsis-licensing heads in these domains may each have its own individual properties.

[11]This assumes, of course, that the CP headed by 'if' is in fact modifying VP. Ross doesn't provide any evidence that this phrase does not adjoin to TP (though to his credit, this is not easy to show). This issue is tangential to my main point, but it is at least worth noting that the restrictions on antecedents could be more stringent than typically presented.

(24)   a.   * Harvey wanted to buy a <u>Ferrari</u> because of Sally's __.

       b.   Harvey wanted to buy a <u>Ferrari</u> because of Sally's __.

In these cases the ellipsis *can* find an antecedent, but that antecedent must be nominal as in (24b)—the antecedent cannot be a *v*P. This is a particular problem because one type of ellipsis is allowable in a domain where we would expect another to be equally licit; that is, this sentence should be ambiguous, but it is not. The structure of each sentence is identical with the exception of the elided constituent. This is especially unusual given that the restrictions on VPE and NPE are largely the same. Chisholm (2001) notes that the only real difference seems to be that VPE can take so-called split antecedents while NPE cannot (see Fiengo & May, 1994, for some discussion), so the fact that VPE is not allowable here while NPE is perfectly licit is poses a problem for syntactic accounts of ellipsis. If the structural restrictions that hold over NPE are indeed the same as those that hold over VPE, then there is no reason that the ellipsis in (24a) should not be possible while the ellipsis in (24b) is. This indicates that there must be some constraint that precludes the ellipsis in (24a) to which NPE is not sensitive.

3.4   Invalid Antecedents

As I noted, there are cases where we expect the apparent elision of a *v*P in a POSS-ing to be able to find an antecedent but where this does not happen. In (25) below, I provide examples of the four logically possible kinds of VPE. The distinction between types is based upon whether there is a clausal antecedent or a POSS-ing-internal antecedent, and whether the ellipsis occurs in a TP or in a POSS-ing.

(25)   **The four logically possible patterns of VPE:**

       a.   Steve <u>played the guitar</u> and John did __ also.

       b.   Steve's <u>playing the guitar</u> inspired me and John's __ depressed me.

       c.   i.   % Steve's <u>playing the guitar</u> convinced me to __.

            ii.   % Steve's <u>playing the guitar</u> convinced me that John should __.

       d.   * Steve <u>played the guitar</u> because of John's __.

While the other examples are generally acceptable, sentences of the form in (25d) are categorically disallowed. The observation is that VP ellipses in POSS-ing phrases are only possible when the antecedent is also in a POSS-ing phrase. More complex are examples like (25c). Grammaticality judgments vary with regard to examples such as these. A fair number of speakers reject them as completely impossible whereas others find them grammatical (or at least acceptable). There seems to be some preference towards ellipses after *to,* as in (25c-i) rather than modals. This varying assymetry is somewhat unexpected, especially since the pattern in (25d) is universally ungrammatical. Whatever the analysis arrived at may be, it needs to account for this asymmetry.

   The first step here is to show that the verbal morphosyntax is not the cause of the ungrammaticality of (25d). It could be argued that the ungrammatical cases are the result of the deletion of the verb with the *-ing* suffix. In this case, the badness of the ellipses in cases like (25d) above would result from morphological differences existing between the elided constituent and the antecedent. I turn to this possibility immediately, arguing that it does not provide a satisfactory account of the given data.

4   Morphosyntactic Identity & Locality

4.1   Identity & Recoverability

Depiante & Hankamer (2006), writing on sluicing in Spanish, argue that ungrammatical sluices are the result of "una verdadera falta de identidad en el nivel de la sintaxis entre los morphemas que pertenecen al Sintagma de Tiempo antecedente y aquellos que pertenecen al Sintagma de Tiempo elidido en el nivel de la Estructura Morfológica"[12] (p. 6). That is to say, the morphological features of an antecedent and the corresponding sluice must be identical at the level of syntax, before morphology (example (26) from Hankamer and Depiante; my translation and glosses).

(26)   * Ayer,   María comió   carne, pero mañana,   no sé   dónde [comerá
       Yesterday, María eat.3SG.PST meat, but   tomorrow, NEG know.1SG.PRES where eat.3sg.fut
       carne].
       meat

       'Yesterday, María ate meat, but tomorrow, I don't know where [she will eat meat].'

In example (26), the antecedent is in the past tense, but the elided material is in the future, and this is ungrammatical. Hankamer and Depiante explain this as a lack of identity at the level of syntax. Tense and aspect heads are inside of the TP, they note, and as such the sluiced TP does not share identity with the antecedent because the identity condition on the T and Asp heads is not met. Eliding the T node effectively deletes unrecoverable information.

   Turning back to VPE now, it seems unlikely that there is anything in the vP-internal structure that could prevent an ellipsis from happening within POSS-ing phrases. Take for example (20b), reproduced below as (27b). One of the features of VPE in English is that it preserves tense information[13], or in this case, the licensing head (shown in boxes).

(27)   a.   I thought John $\boxed{\text{would}}$ leave early, and I knew that Mary $\boxed{\text{had}}$ [left early].

       b.   * I thought John $\boxed{\text{would}}$ leave early, and I knew about Mary $\boxed{\text{'s}}$ [leaving early].

   In the case of DP-internal VP ellipsis, the sister to the elided vP is POSS, which is not elided because it sits outside of the ellipsis site, and it is morphologically exponed on the subject of the gerundive. It is a requirement that all verbs selected by this head must be in their present participle, or V+ing, forms. The verb's form is the only outward difference between POSS-ing phrases and normal sentences. As the verb's form is enforced by the immediately higher selecting head, D_{poss}, the form should be recoverable based on the remaining POSS head. Of course, it could be the case that it is simply the verb's form that is interfering with the ellipsis, but if it were, we would not be able to explain the following examples:

(28)   a.   Tom has never played chess before, but he is [playing chess] right now.

       b.   * I thought John was leaving early, and I knew about Mary's [leaving early].

Example (28a) is grammatical in spite of the fact that the morphological forms of the verbs are different (and, notice that the elided form is the same as it would be in a gerundive). (28b) is still ungrammatical despite the fact that the morphological forms of the verbs are identical.

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[12]"...a true lack of identity at the level of the syntax between the morphemes that belong to the antecedent TP and those that belong to the elided TP at the level of morphological structure." My translation.

[13]Even where tense is normally spelled out on the verb, do-support ensures that the this information is not lost. Thus, the tense information is recoverable

There remains one final possibility that the *-ing* suffix seen in the POSS-ing phrases could somehow be some sort of non-verbal *-ing,* and this difference accounts for the ungrammaticality found in examples like (27b)(see Borer, 1990, for discussion). The attested acceptability of examples such as those in (25c), however, suggests that this should not be the case. The fact that POSS-ing-internal *v*Ps can antecede VPE outside of gerunds lends credence to the notion that the internal structures and morphological features of the *v*Ps are the same.

All together, there does not appear to be any element or feature in the verbal structure that would cause a mismatch in the identity between POSS-ing *v*P and one that sits in a TP at the level of syntax.[14]. The difference in the *v*Ps appears to be at the level of morphology. However, even where the morphological form is the same, the ellipsis is still bad. Consequently, we should be able to rule out any *v*P-internal morphological differences preventing an ellipsis from occurring.

4.2   Locality

Another fact suggesting that the analysis for (25d) lies outside of the verbal syntax is that ungrammaticality of the type under analysis only occurs when the verbal complex is the immediate complement of POSS. Ellipses after other licensing heads remain perfectly licit, even inside the DP:

(29)   a.   John might <u>buy a car</u>, but I didn't know about [Mary's thinking she should __]$_{DP}$.

     b.   Mary's attempting to <u>solve the puzzle</u> inspired [John's thinking that he should try to __]$_{DP}$ also.

Notice that here the antecedents are complements to non-D heads. If POSS prevented ellipsis everywhere in the DP (i.e. in its c-command domain), we would expect the above examples to be ungrammatical, but they are not. Consequently, one can conclude that POSS does not block ellipsis in deeper parts of the structure. Whatever restriction it imposes, it is very local, only extending to the immediately adjacent verbal complex. Thus, I argue that the presence of the POSS head is at least in part responsible for the badness of (25d).

5   Summary

So far, we have seen that there are a number of facts that need to be taken into account when considering this data. There are no evident *v*P-internal reasons for the ellipses to be bad. Ellipses deeper in the structure are permitted, but the verbal material immediately adjacent to POSS cannot be elided if the antecedent is not itself an immediate complement to POSS itself. This all points toward the D$_{poss}$ head. It seems that inasmuch as this head licenses the ellipsis of a VP, it also severely restricts when it can happen.

Stepping back for the moment from the intricacies of the data, it seems appropriate to discuss the ellipsis-licensing heads at this point. It is an accident of English syntax that DP-internal VP ellipsis is even a possibility. POSS-ing gerundives are alleged to occur in only two languages, English and Turkish (Abney, 1987), and Turkish does not permit VPE. This accident, however, gives us a particularly interesting insight into ellipsis as a process. We could think of POSS as a VPE-licensing head in addition to its normal role as a NPE-licensing head, but this, I think, misses a rather important generalization. It would be much superior to think of POSS as simply an ellipsis-licensing heads. The fact that it doesn't

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[14]However, it has been pointed out to me that some sort of asymmetrical identity could hold here (Jorge Hankamer, p.c.). It is unclear to me how such a hypothesis would affect the structure, though admittedly I have yet to fully pursue the ramifications of such a hypothesis.

license sluicing, elision of a DegP, or whatever other phrase, is the result of the head's idiosyncratic selectional properties.

Given such an understanding, names like "verb phrase ellipsis" and "noun phrase ellipsis" are really misnomers. Ellipsis licensing heads are simply heads that permit the elision of their complements, whatever that complement may be. What appears to be VPE is actually the amagalmation of ellipses licenced by heads that take verbal complements. T, v, and Σ all license vP compelments. The fact that they only take one kind of complement, a vP, is what results in VPE. Likewise, NPE should be thought of as a variety of Complement-of-D ellipsis. Since some D's select VPs as complements, DP-internal VPE would be another form of Complement-of-D ellipsis.

With this analysis of ellipsis, it does not make sense to generalize over VPE as a unified process. An individual head licenses the ellipsis of its complement, and the consequence of this may well be that each ellipsis licensing head carries its own idiosyncratic constraints on ellipsis. In this view, the fact that the restrictions on gerundive-internal VPE spring from the POSS head are unsurprising. There is some restriction on T elements in the clausal domain that prevents them from finding an antecedent in a verbal complex locally c-commanded by D. Sadly, there is no immediately obvious explanation for why this constraint should exist. So, while this analysis explains the local effects of D_{poss} on ellipsis, there is no account of why D_{poss} has those effects. In the following section, I turn to some of the other implications that this theory gives rise to, and possible ways of exploring it futher.

6   Implications, and Moving Forward

If we are to adopt an analysis where restrictions on ellipsis are derived from the head that licenses the elision, then we might be able to explain some of the facts above. However, there are some odd facts that need to be accounted for before such an analysis can become fully tractable. There are also some more general implications that the above hypothesis makes with regard to what gets elided. In this section, will look first at the stranding of other ellipsis licensing heads and then at the elided constituents themselves. The data in this section are very murky, and as such much of the discussion will devolve into speculation. With luck, this speculation will be somewhat enlightening.

6.1   Outside of the Ellipsis Site

It has been observed in previous work that VP ellipsis is subject to constraints on form both inside and outside of the ellipsis site. Rooth (1992)'s discussion of Fiengo & May (1994) summarizes this view succinctly. Fiengo & May identify two relations between VP ellipses and their antecedents. One is a relation of structural identity that must hold between antecedent and elided VPs. Basically speaking, the structure and content of the VPs must be the same in order for one to be elided. Importantly, Fiengo & May identify yet another relation, which holds over the greater structure in which the VPs occur. Rooth describes this relation as "regulating indices", requiring syntactic isomorphy for the patterns of indices in a tree.

It is fairly obvious that the restriction on clausal antecedents for ellipses in POSS-ing phrases cannot be the same one described by Fiengo & May (1994). If the discussion and analysis of the structure of POSS-ing phrases in §2.3 is at all on track, then one would legitimately expect the structural isomorphy between the DP and TP functional layers to be sufficiently similar. Rather, what is uncovered here is a different syntactic requirement that must hold over the structures that contain antecedent and elided VPs. This constraint is apparently correlated with the category of the licensing head, though for the time being, its full nature is unfortunately unknown.

6.2   Negation

Ellipsis after negation in POSS-ing DPs is subject to a great deal of variation between speakers.

(30)   a.   [%] Sally's buying us lunch was a nice gesture, but Mary's not ~~buying us lunch~~ told us how she felt.

b.   [%] I understand Harvey's arriving early and Murphy's not ~~arriving early~~.

Some speakers reject the examples in (30) as ungrammatical while others accept them. There are a few things worth saying about these sorts of examples.

I assumed early on in this paper that the negation seen in POSS-ing phrases a form of constituent negation derived via adjunction of [neg] to *v*P. At present, I have little to say about the variation here, except to say that some speakers may be able to delete a "smaller" *v*P, effectively stranding the adjoined [neg].

6.3   The Examples in (25c)

Finally, there is the peculiar issue of the examples found in (25c), reproduced here as (31):

(31)   a.   [%] Steve's <u>playing the guitar</u> convinced me to __ .

b.   [%] Steve's <u>playing the guitar</u> convinced me that John should __ .

These examples are interesting because they show considerable variation amongst speakers. I have even had a couple of speakers tell me that examples like (31a) are much better sounding than (31b). From a purely theoretical angle, these sorts of examples do not appear to be easily analyzed. To be able to really get down to the internal workings of what is going on here, more detailed and expansive grammaticality judgements need to be obtained.

This looks to be an area in the data where experimental investigation may be either interesting or beneficial. It would be worth investigating whether speakers who find these sentences acceptable take longer to read them as compared to other similar examples, or if other factors, such has hearing similar examples repeated affects speakers' judgments (see Frazier, 2008, for related experiments regarding ellipsis, gerundives, and voice mismatches).

At any rate, it is important to develop an understanding of these examples. If they are more like the cases where TP-internal *v*Ps cannot antecede ellipses in *poss*-ing phrases, then it may be possible to unify the analysis of both; I they are fundamentally different, the analysis will have to be more articulate in explaining the differences.

7   Conclusion

The conditions on ellipsis of a VP inside of a POSS-ing gerundive are both complex and fascinating. As I have shown, the typical understanding of ellipsis in the syntax simply cannot account for all of the data presented. DP-internal VP ellipsis is much more restricted than VPE in other domains. This cannot be attributed to VP-internal morphosyntax or to conditions outside of the DP. This leaves the licensing head itself to be the source of the restrictions, and locality conditions on the restrictions point to this being the case. However, moving to an account of ellipsis where heads license the deletion of their complements still raises a number of issues that are not fully resolved.

There are a few ways forward here. One reason that POSS may not allow an ellipsis to find VP antecedents may have to do with its more usual status as the possessive determiner. The fact that it

typically selects for NPs may cause this head to act differently when it selects for a VP. There do not seem to be a great deal of ellipsis-licensing heads in the language that take complements of different categories, but the verb 'be' selects for many phrase types and seems to allow for the ellipsis of all of them. One potential course of investigation would be to see if there are any restrictions on 'be' and the ellipsis it licenses. The question to ask would be: Does ellipsis after 'be' have different properties depending on the elided constituent? This could help identify reasons why some ellipses are licit while others are not permissible.

Another place for investigation is VPE after other heads. As I have noted many times so far, ellipsis is licensed by T, V_{aux}, and Σ. It would likely be worthwhile to test and see how good ellipses are when the antecedent and the elided constituent are selected by different members of this set of licensing heads to see if there are any restrictions in this domain. If any regularities are discovered, this could help uncover why the mismatch between POSS and other licensing heads exists. The material in §6 treads in this direction, and all of the data there need serious investigation as well.

In conclusion, there is still a great deal of work to be done. The problems presented here are only a few of many peculiar questions posed by ellipsis in POSS-ing nominals. The facts, though, point to the ellipsis-licensing head as being the source of a lot of these, and it is these heads that need further investigation.

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