# English Verbal Morphology and VP Ellipsis

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### 1. The Issue: Restrictions on Ellipsis

This paper investigates the influences of verbal morphology on the (im)possibility of VP ellipsis (VPE) in English. VPE is a well-known process in which a VP constituent is missing under some kind of identity with another VP in the discourse. (1) illustrates. There is an overt VP, the *antecedent*, which substitutes interpretationally for an inaudible VP elsewhere, the *target*. Typically below, the antecedent will be bracketed and the elided VP will be explicitly indicated by striking through the unpronounced material. For concreteness, I take VPE to be deletion of a VP at PF (Hankamer and Sag 1976, Sag 1980, Chomsky 1995, and others), although nothing hinges on this assumption since parallel issues arise in a theory of VPE as LF copying (Wasow 1972, Williams 1977, Chao 1988).

(1) a. Joe will [$_{VP}$ taste the food ] if Mikey does ~~taste the food~~.
 b. Elvis has been sighted at Disneyland! So, what famous celebrity hasn't ~~been sighted at Disneyland~~?
 c. Matt is moving to Finland and Sophie might also be ~~moving to Finland~~.

There are numerous restrictions on VP ellipsis in English concerning the structural position of the elided VP and the kind of identity that must hold between the antecedent and target VPs. This paper investigates a particular aspect of the identity—namely, to what extent morphological differences are permitted between the verb forms in the two VPs. To illustrate, in contrast to the grammatical examples in (1) which show full morphological identity, there are examples of VPE, in (2), in which there is imperfect morphological identity and the results are robustly ungrammatical.

(2) a. *I am confused about ellipsis and you will ~~be confused about ellipsis~~ too.
 b. *Chris has been to Rome and his wife might ~~have been to Rome~~ as well.

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The specific questions that this paper will address are 1) what role does verbal inflection play in calculating identity of VPs for the purposes of ellipsis and 2) why are the examples in (2) ungrammatical. I will argue for the following answers: 1) verbal morphology is ignored when calculating identity of VPs, supporting a lexicalist approach to verbal morphology, and 2) the examples in (2), which are apparent counterexamples to this claim, are ungrammatical because the finite auxiliary in each case has undergone V°-to-I° raising out of VP and thus is not part of a VP which can serve as an antecedent.

The paper is organized as follows: Section 2 introduces some of the relevant data and two analytical approaches to verbal morphology: a lexicalist theory in which verbs are inserted into syntactic structures fully inflected and a hybrid (lexicalist-morphosyntactic) theory in which some inflected verb forms are derived in the syntax. The section outlines the predictions that the two analyses make regarding the possibility or impossibility of VP ellipsis when there is incomplete identity. Section 3 investigates the data more closely and exposes two empirical difficulties for the hybrid approach. It rejects the theory as too restrictive. Section 4 develops the lexical approach and argues that inflectional morphology is irrelevant when calculating identity of VPs. Section 5 offers an account of the examples in (2) which are problematic for this conclusion. Section 6 summarizes the results.

## 2.    Verbal Morphology and VP Ellipsis

This section presents the empirical observations from Warner 1985, 1993 regarding the interaction of VP ellipsis and verbal morphology. It then presents two analytical proposals and indicates their relative successes in accounting for the data.

### 2.1.   Empirical Observations

In English, verbs may appear in one of six forms: past, present singular, present plural, bare, *-en*, or *-ing*. The fundamental empirical question is whether a VP headed by a verb in one of these forms can serve as the antecedent for a VP headed by a verb in a different form. That is, what are the restrictions, if any, on morphological identity between verb forms in antecedent and target VPs? In answering this question, I take as a starting point the thorough empirical study of the issue in Warner 1985, 1993. In making sense of the data, Warner identifies two patterns of identity between verb forms depending on the kind of verb that heads the elided VP. One pattern accounts for the behavior of main verbs, the second accounts for that of auxiliaries.

When a VP headed by a main verb is elided, no morphological identity requirement is imposed between it and the antecedent VP. This is illustrated in the examples in (3) in which VP ellipsis is perfectly possible despite the fact that the italicized main verb in the antecedent VP is not of the same form as the italicized main verb in the target. For example, in (3a), *fell*, a past tense form, grammatically antecedes the bare form *fall* in the target. Warner 1993 demonstrates that, in fact, as long as voice (active or passive) is maintained across clauses, all combinations are possible. Of course, complete identity is also allowed as seen in (1).

(3)   a.   Jack [$_{VP}$ *fell* down ] and Jill did ~~fall down~~ too.
      b.   I didn't *touch* the TV set, but Percy might have ~~touched the TV set~~.
      c.   If you haven't *told* them yet, you really should ~~tell them~~.
      d.   Are they *arguing*? Yes, they always do ~~argue~~.

(4) summarizes the observation, also suggested in Pullum and Wilson 1977.

(4)     Warner's Main Verb Generalization (Warner 1985:64)
        In cases of ellipsis of a VP headed by a main verb, the verb need not have
        the same morphological form as its antecedent.

The behavior of the auxiliary verbs *have* and *be* is interestingly more complex.
Several works (Halliday and Hasan 1976; Huddleston 1978; Warner 1985, 1993; Quirk et.
al. 1972, 1985; Lasnik 1995) have noted that ellipsis is degraded or ungrammatical when
there is imperfect morphological identity between verb phrases headed by auxiliary verbs.
Examples are given in (5) with judgments in parentheses from Warner 1985:62-63. In each
case, the antecedent VP is headed by an auxiliary verb, italicized, which is different in form
from the italicized auxiliary heading the target VP.

(5)  a.   (*)He may [$_{VP}$ *be* thrashed by his father ]. In fact, from the yells, I think he is
          ~~being thrashed by his father~~.
     b.   (*)He simply won't *be* honest about himself. He never has ~~been honest about
          himself~~ yet.
     c.   (*)John *is* happy and Mary soon will ~~be happy~~.
     d.   (*)John *has* probably kissed his grandmother goodnight, but Paul won't ~~have
          kissed his grandmother goodnight~~ yet.

As with main verbs, above, the result is fully grammatical if there is morphological identity
between the two verb phrases, (6).

(6)  a.   John will be happy about the results and Mary will ~~be happy about the results~~ too.
     b.   Elvis has been sighted at Disneyland! So, what famous celebrity hasn't ~~been
          sighted at Disneyland~~?
     c.   He is being audited by the IRS because his company is ~~being audited by the IRS~~.

The pattern is stated in (7) as Warner's Auxiliary Verb Generalization. The
following subsection provides two approaches to the analysis of verbal morphology and
evaluates their degree of compatibility with Warner's two observations, (4) and (7).

(7)     Warner's Auxiliary Verb Generalization (Warner 1985:63)
        In cases of ellipsis of a VP headed by an auxiliary verb, the auxiliary must
        have the exact same morphological form as its antecedent.

### 2.2. Theories of Verbal Morphology

Analyses of English verbal morphology offer at least two answers to the question
of where inflection is added to verbs: in the lexicon or in the syntactic component. I
develop these two approaches below based on proposals in the current literature.

#### 2.2.1. A Lexicalist Approach

In the Minimalist Program, Chomsky 1995 returns to a conception of English
verbal morphology in which it is supplied in the lexicon and verbs are inserted into
syntactic structures fully inflected. Such an approach has roots in traditional lexicalist
theories of grammar such as LFG and HPSG (Bresnan 1996, Pollard and Sag 1994) and
implicitly assumes that the domain of morphology is the lexicon, or at least not the syntax.
Individual inflectional affixes have no independent syntactic representation. With respect to
a syntactic analysis of identity under ellipsis, a lexical treatment of verbal morphology will
not require any morphological identity between antecedent and target VPs because such

information is not syntactically represented. Thus, a lexicalist treatment of verbal morphology is compatible with inflectional morphology being ignored in the computation of identity. In the case of ellipsis of a VP headed by a main verb, this is the correct prediction: no identity requirement exists. This is Warner's Main Verb Generalization, in (4). For auxiliaries, however, given Warner's Auxiliary Verb Generalization in (7), incorrect results are countenanced. Since verbal morphology is not relevant, all the examples in (5) with incomplete identity should be as grammatical as both the examples in (6) with full identity and the parallel examples in (3) with main verbs. This is contrary to Warner's observations.

### 2.2.2. A Hybrid Approach

To account for well-known facts about the behavior of English negation, Lasnik 1995 motivates a hybrid approach to English verbal morphology which is partly lexical and partly morphosyntactic in nature. The main elements of the analysis are summarized in (8). While auxiliaries are inserted into structures fully inflected as in the lexicalist account, main verbs are inserted into structures uninflected—in their bare forms—and are inflected morphosyntactically. The inflectional endings for main verbs are separate, affixal heads in the syntax and they merge with the bare verb forms via a morphophonemic PF rule which requires adjacency between the inflectional head and the verb (see Chomsky's (1957) rule of Affix Hopping and references cited in Lasnik 1995).

(8)     Hybrid Approach to Verbal Morphology (Lasnik 1995)
        i)      auxiliaries are always inserted into structures fully inflected
        ii)     main verbs are inserted into structures uninflected

(9) illustrates how the approach works. The sentence has both a main verb *smiled* and an auxiliary *has*. The auxiliary is inserted into the structure in its fully inflected form while the main verb is inserted bare. The VP projection of the main verb is dominated by a functional projection FP whose head is the morpheme *-ed*. At PF, this morpheme merges with the verb as shown, yielding the inflected form. Crucially, however, there is a stage in the derivation at which *smiled* is not a single unit.

(9)  a.   Cher has smiled.

     b.
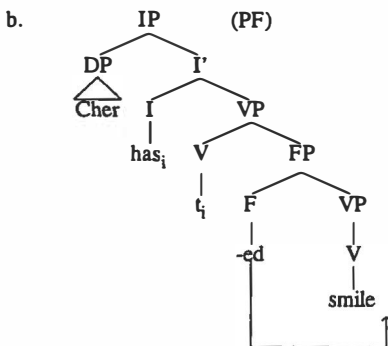
Central to the account is the Stranded Affix Filter in (10), a statement of the intuition that morphological affixes cannot remain unattached in the syntax. They must either undergo merger or be deleted.

(10)    The Stranded Affix Filter
        A morphologically realized affix must be a syntactic dependent of a morphologically realized category, at surface structure

In support of the analysis, Lasnik 1995 argues that it permits a particularly elegant statement of VP ellipsis: ellipsis requires complete identity of verb forms at PF, before verbs and affixes merge. With respect to Warner's Generalizations, the theory makes the following predictions. For an elided VP headed by an auxiliary, ellipsis will only be possible with full identity, in agreement with Warner's Auxiliary Verb Generalization. This follows because the theory requires identity and auxiliaries are inflected from the lexicon. For an elided VP headed by a main verb, ellipsis will be permitted when there is complete identity or when the target VP is headed by a bare verb. The former situation is illustrated in (11) in which the antecedent is boldfaced and the identical elided phrase is indicated by overstriking.

(11) a.  Joe might be leaving and Bill might be too.

   b.
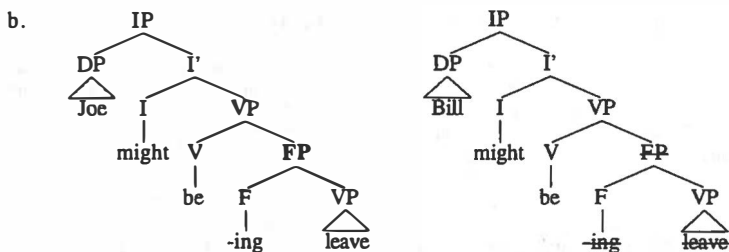


The Stranded Affix Filter will prohibit the lower VP alone, without the dominating FP, from being the antecedent in (11) because the affix -*ing* would then be stranded in the target clause. If the verb is in its bare form in the target clause however, the VP can be elided because there will be no dominating inflection projection FP. Full identity will still obtain but no affix will be present and, consequently, no Stranded Affix Filter violation. As a result, ellipsis under apparent non-identity is permitted just in case the target VP is headed by a main verb in its bare form, as shown in (12). Before PF merger there is actually the required identity.

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(12) a.  Maxine might be joining a sorority because Fanny did.

b.
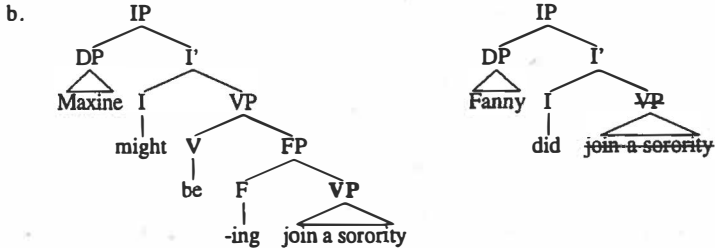


   The above predictions are distinct from Warner's Main Verb Generalization, which indicated that verbal morphology was irrelevant for identity between VPs headed by main verbs. Thus, the hybrid approach is more restrictive than expected in this domain. The next section develops this, and a second, contrasting prediction further and concludes that the theory's restrictiveness is undesirable. It leads to empirically incorrect predictions not countenanced by the lexicalist approach.

## 3.  Empirical Difficulties for the Hybrid Approach

   The hybrid approach from section 2.2.2 faces two empirical problems with respect to the patterns of ellipsis that it predicts. The first group of counterexamples involves violations of the Stranded Affix Filter with elided VPs headed by main verbs. The second group of counterexamples arises when one more carefully considers ellipsis of VPs headed by auxiliaries. Contrary to Warner's Auxiliary Verb Generalization, ellipsis of such VPs under morphological non-identity is permitted in some cases. Given these two empirical failings, the section rejects the hybrid approach to verbal morphology. Although the lexicalist approach also does not immediately fully account for the new ellipsis patterns for VPs headed by auxiliaries, section 4 explores a possible approach to the restricted set of counterexamples.

### 3.1.  Stranded Affix Filter Violations

   Visser 1963, Pullum and Wilson 1977, and Quirk et. al. 1985 cite examples of VP ellipsis which are transparent violations of the Stranded Affix Filter. In the examples in (13) and (14) below, the italicized main verb is elided under non-identity with its antecedent but it is not in its bare form.

(13) a.  I didn't touch the TV, but Percy might have ~~touched the TV~~.
  b.  Would you mind washing the dog if you haven't ~~washed the dog~~ already?
  c.  I don't like you. Never have ~~liked you~~.

(14) a.  Why don't you sit quietly? I am ~~sitting quietly~~.
  b.  "I must see you alone," she said. "You are ~~seeing me alone~~," his uncle said.
  c.  John said that he would never take money on the side but I knew he was ~~taking money on the side~~.

To see why these examples are Stranded Affix Filter violations and hence problematic for the hybrid approach, consider (15), which is representative of the above data and corresponds to (14a).

(15) a. Why don't you sit quietly? I am.

b.
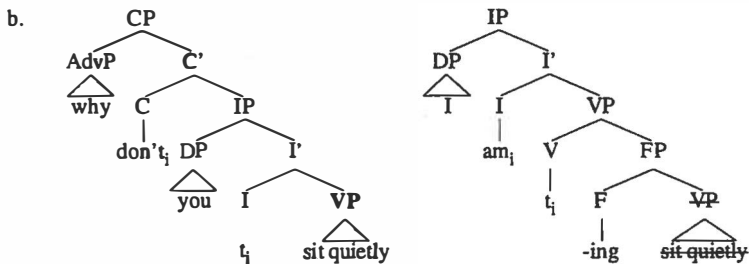


It can be seen that eliding the VP *sit quietly* in the target clause on the right under exact identity with the boldfaced VP antecedent is possible; however, it leaves the affix *-ing* stranded. This violates the Stranded Affix Filter in (10). Consequently, the examples and similar ones above should be ungrammatical under the hybrid analysis, contrary to fact.[1]

### 3.2. Inadequacy of Warner's Auxiliary Verb Generalization

The second difficulty facing the hybrid approach concerns the more general adequacy of Warner's Auxiliary Verb Generalization, (7), which claims that ellipsis involving VPs headed by auxiliary verbs always requires strict morphological identity. A more fine-grained investigation of the data indicates that the situation is more complex.

If there is exact morphological identity between VPs headed by auxiliaries, ellipsis is of course permitted. If, on the other hand, the target VP is headed by an auxiliary which is not morphologically identical to the antecedent, there are two distinct cases depending upon whether the antecedent is finite or not. When the antecedent is headed by a *finite* auxiliary, the result is clearly ungrammatical:.

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[1]Lasnik 1995 is aware of such Stranded Affix Filter violations involving *-en*, in (i) (his (73) and 74)), but cites parallel cases with *-ing* as ungrammatical, in (ii) (his (62) and (63)).

(i) a. John may be questioning our motives but Peter hasn't ~~questioned our motives~~.
    b. Peter saw your parents last week but he hasn't ~~seen your parents~~ since.

(ii) a. *John slept and Mary was ~~sleeping~~ too.
     b. *John will sleep. Mary is ~~sleeping~~ now.

Examples minimally different from (ii) can be constructed, however, which seem fine, in (iii). As I discuss below, the acceptability of VPE data can be increased if contextualization that aids in the recovery of the meaning of the elided VP is supplied.

(iii) a. John left because Mary was ~~leaving~~.
      b. The baby will sleep if he sees that his brother is ~~sleeping~~.

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(16) a.  *I am confused about ellipsis and, after reading this paper, you will ~~be confused about ellipsis~~ too.
     b.  *Mary is an auto mechanic and her daughter wants to ~~be an auto mechanic~~ also.
     c.  *Chris has been to Rome and his wife might ~~have been to Rome~~ as well.
     d.  *Some of the election results have been announced but the winner can't ~~have been announced~~ yet.

When the antecedent is headed by a *non-finite* auxiliary, judgments are inconsistent and variable. Many of the examples seem fully acceptable, though others are degraded. Data with unmarked judgments are given in (17), with further examples back in (5a,b). (17c) is from Quirk et. al. 1972 and (17d) is a text example.

(17) a.  John is being examined but Jack really should ~~be examined~~ also.
     b.  He might be attending AA sessions, I know his mother has ~~been attending AA sessions~~.
     c.  John may be questioning our motives but Peter hasn't ~~been questioning our motives~~.
     d.  [Snoopy talking to Woodstock, *Peanuts* cartoon]
         You and I are alot alike . . . Just a common bird and a common dog.
         Of course, if we had wanted to ~~be great~~, we could have [$_{VP}$ been great ] . . .
         But we didn't need to ~~be great~~.

The relatively high acceptability of the examples in (17), particularly in contrast to the clearly ungrammatical examples in (16), is problematic for the hybrid approach. If one accepts these data, Warner's generalization is really only a tendency, as he himself noted, and any theory that captures it in its original form is ultimately too restrictive. This was also seen to be the case with the main verb ellipsis data. Given these empirical difficulties, I will not consider the hybrid analysis further. On the other hand, the lexicalist approach to verbal morphology did not supersede the now superseded Warner's Auxiliary Verb Generalization pattern. In the following section I return to the lexicalist analysis and demonstrate that it better handles the revised empirical observations, in (18). (18) summarizes the more precise pattern of ellipsis when the elided VP is headed by an auxiliary verb.

(18)    Auxiliary Behavior under Ellipsis
        In cases of ellipsis of a VP headed by an auxiliary verb, if the antecedent auxiliary is
        i)      the same morphological form, ellipsis is fully acceptable
        ii)     non-finite and different in morphological form, ellipsis is inconsistently permitted
        iii)    finite, ellipsis is impossible

### 4.  Salvaging the Lexicalist Approach

As a reminder, the lexicalist approach to verbal morphology inserts all verbs into syntactic structures fully inflected and asserts that no morphological identity between antecedent and target verb forms is necessary. In contrast to the hybrid approach then, the lexicalist analysis is rather under-restrictive. This captures the behavior of main verbs in accordance with Warner's Main Verb Generalization. Turning to the revised behavior of auxiliaries under ellipsis, (18), we will see that these patterns are also largely predicted. This section develops this result and addresses the residual.

Since the lexicalist approach ignores verbal morphology in calculating identity, ellipsis possibilities will, in general, be unrestricted. Thus, (18i,ii) are basically accounted for. It remains to explain why the second case is only inconsistently accepted and why the third case, (18iii), is not possible. With regard to (18ii) and the variable judgments on ellipsis data when the antecedent and target VPs are headed by morphologically distinct auxiliaries, several researchers (Halliday and Hasan 1976; Huddleston 1980; Warner 1985, 1993) have suggested that the degradation is a consequence of processing difficulties. The examples are not syntactically ill-formed but are of reduced or inconsistent acceptability because semantic information about the elided VP is not easily recoverable from the antecedent, because it is distinct, and additional processing effort is required to determine this information. Although the target VP is structurally the same as the antecedent, semantic information is not carried over and must be determined by explicitly reconstructing the missing material. These additional computations are claimed to be the source of the degradation in examples such as (5a,b) and (17), repeated below as (19), without judgments.

(19)  a.  He may be thrashed by his father. In fact, from the yells, I think he is.
      b.  He simply won't be honest about himself. He never has yet.
      c.  They were being well looked after and I hope you have too.
      d.  John is being examined but Jack really should also.
      e.  He might be attending AA sessions, I know his mother has.
      f.  John may be questioning our motives but Peter hasn't.
      g.  [Snoopy talking to Woodstock, *Peanuts* cartoon]
          You and I are a lot alike . . . Just a common bird and a common dog.
          Of course, if we had wanted to, we could have been great . . .
          But we didn't need to.

(20) summarizes the general claim.

(20)   VPE Processing Principle
       A need to recover semantic information for an elided VP increases processing effort and reduces acceptability

We can be more precise about what kind of missing information results in increased effort and how it can be compensated for to improve the examples. In each case above, tense and aspect of the elided VP, encoded in its auxiliary sequence, is distinct from that of the overt VP. I hypothesize that it is this information that must be recovered in interpreting the target clause. In the absence of semantic clues external to the VP, the VP itself must be explicitly reconstructed, a large processing effort yielding consequent degradation in the data's acceptability. If alternative means for determining this information are available, however—such as explicit temporal subordination with respect to the antecedent clause or explicit adverbials which help to temporally and aspectually situate the target clause—then processing effort is reduced and the examples are more acceptable. Thus, one way of improving such examples is to provide sufficient context external to the elided VP such that the appropriate aspectual information is independently determinable.[2]

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[2]In addition, Warner 1985:63 observes that, because *be* may take either a progressive, passive, or predicational complement, the processing required is additionally increased if the elided VP is introduced by a form of *be* since knowledge of the complement structure of *be* does not unambiguously determine the antecedent. Huddleston 1980:71 likewise acknowledges this difficulty: "A functional explanation for these conditions on the stranding of a new [form of] *be* is probably that when it occurs before a deletion site there is not enough information to enable the decoder to determine easily which *be* it is". Huddleston asserts

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This principle is not active when there is exact identity because both morphosyntactic *and* semantic information, is identical across the two VPs. This accounts for why VPE is most felicitous when there is full parallelism. Acceptability decreases as the semantic correspondence diverges, as occurs in sentences with auxiliaries. If such a principle is fully general, one expects its effects to show up in ellipsis involving main verbs as well. It was suggested in an earlier footnote that contextualization does indeed improve the acceptability of similarly degraded examples cited in Lasnik 1995. These cases were largely parallel in their need to recover overtly unavailable aspectual information.

I turn now to (18iii), the restriction that VPE is impossible if the antecedent is headed by a finite auxiliary. The account to be offered is based on a proposal put forth and rejected in Lasnik 1995: the examples are ungrammatical because the finite auxiliary has undergone $V^\circ$-to-$I^\circ$ head movement (Jackendoff 1972, Emonds 1976, Pollock 1989). As the exemplary structure in (21) shows, what all of the ungrammatical examples have in common is that the finite auxiliary has raised from $V^\circ$ to $I^\circ$, leaving only a trace of the verb in the VP. A possible account of the data then is that the boldfaced VP in the structure is not a licit antecedent; the trace of movement is not interpretable as part of a VPE antecedent. I state this as a hypothesis in (22).

(21) a.  *I am confused about ellipsis and you will too.

    b.
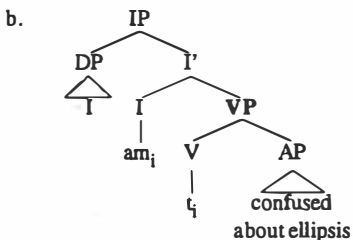


(22) Hypothesis
    a trace of verb movement cannot serve as part of a VPE antecedent

Lasnik 1995 argues that this cannot be the right solution, showing that traces of XP movement are interpretable in an ellipsis antecedent. Thus, the proposal cannot be correct for traces generally. The next section demonstrates that XP traces and $X^\circ$ traces behave differently however and that the hypothesis can be maintained if it is restricted to head traces.

5 .    **Traces in Elided VPs**

We can be more specific about what it means for a trace to be able to serve as part of a VPE antecedent by considering two characterizations of imperfect identity that could *a priori* be possible between the trace and the corresponding element in the elided VP: 1) the trace may correspond to an unmoved constituent or 2) it may at least correspond to a

that the givenness of the elided material is also relevant to its recovery and Levin 1986:153 argues for the existence of semantic/pragmatic factors in ellipsis patterns involving non-finite forms of *be*. Such effects deserve further investigation.

structurally parallel trace in the elided VP but that trace has a distinct antecedent.[3] This first question is a rephrasing of the issue of whether a trace may serve as part of a VPE antecedent. If it can, then it is interpretationally equivalent to its antecedent and does not need this antecedent to be interpreted elsewhere. The second question provides a looser view on the interpretation of traces. Perhaps the trace must be accompanied by an antecedent to be interpreted but is able to pick up a new, distinct one. For $X^*$ traces, the working hypothesis above was that the answer to the first question is 'no'—an $X^*$ trace without its coindexed antecedent has no interpretation. The data to be presented below indicate that the answer to the second question is also 'no'—an $X^*$ trace cannot take a new antecedent in the target clause and still be considered identical for the purposes of ellipsis. This is demonstrated in section 5.2. In contrast, the answer to both of these questions for XP traces is 'yes', which is shown in section 5.1. If the two types of traces are interpreted differently for the purposes of ellipsis, then the above hypothesis remains a viable solution, although its actual correctness is not confirmed.

## 5.1. XP Traces

First consider the behavior of XP traces under ellipsis. The data in (23) show that XP traces are interpretable for the purposes of identity under ellipsis. In the examples, a trace of $\overline{A}$-movement (topicalization or *wh*-movement) is contained in a VP antecedent. In the target VP, the position of the trace corresponds to an unmoved element with the interpretation of the moved constituent. Identity is permitted and the target VP is grammatically interpreted. (24) illustrates the situation, for (23a). The italicized trace is able to correspond to the italicized constituent *shoes* which is the moved element in the antecedent. These data thus illustrate that traces of XP movement can be interpreted as part of a VPE antecedent.[4]

(23) a. Shoes, my son refuses to wear *t*. Of course, I do ~~refuse to wear shoes~~ too.
   b. Linguistics, I like *t*. I can't imagine who wouldn't ~~like linguistics~~.
   c. Actually, it's the SPE stuff which they really hate *t*.
      Well, they used to ~~hate it~~, but I'm not sure they do ~~hate it~~ anymore.
   d. John named a country which he wants to visit *t*, and given the amount of traveling he does, I'm sure he will ~~visit it~~.

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[3]In an LF copying theory of VPE, these options are equivalently: 1) the trace that is copied into the ellipsis site can be free and 2) it may be bound by a binder distinct from the one in the antecedent clause.
[4]The same situation cannot be easily created with A-movement, at least in part because of Case considerations. Despite such complications, examples of the relevant type can be found in the literature and are claimed to be grammatical. If the data in (i), variously from Sag 1980, Dalrymple 1991, and Fiengo and May 1994, are grammatical, they make the same point as the above $\overline{A}$-movement cases.

(i) a. This law should be repealed *t* by Congress, but I'm sure that it won't ~~repeal this law~~.
   b. It should be noted *t*, as Max did ~~note it~~, that Fermat's last theorem has not yet been proven.
   c. Botanist: That can all be explained *t*.    Mr. Spock: Please do ~~explain that~~.
   d. In March, four fireworks manufacturers asked that the decision be reversed *t*, and on Monday the ICC did ~~reverse the decision~~.
   e. A lot of this material can be [$_{VP}$ presented *t* in a fairly informal and accessible fashion ], and often I do ~~present a lot of this material in a fairly informal and accessible fashion~~.

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(24)  a.  Shoes, my son refuses to wear. I do too.

b.
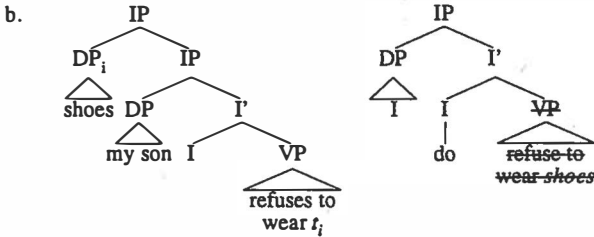


Second, XP traces are less restricted in that a trace in the target clause
corresponding to a trace in the antecedent clause need not have the same binder. In the
examples below, corresponding traces in each clause are bound, but not by identical
antecedents. This situation obtains for both A-movement in (25a-f)[5] and A-movement in
(25g,h). The distinct binders are italicized.

(25)  a.  *Chicken*, she'll eat *t*, but *ostrich*, she won't ~~eat *t*~~.
      b.  *Ketchup*, I put *t* on my eggs all the time but *Tabasco* I never do ~~put *t* on my eggs~~.
      c.  There was one thing in his talk *which* I liked *t* but there were about twenty things
          *which* I didn't ~~like *t*~~
      d.  Please tell me *who* I should call *t* and *who* I shouldn't ~~call *t*~~.
      e.  ?*Frank* is easy to like *t* but *his twin brother* is easy not to ~~like *t*~~.
      f.  We never know *what* Omar will order, but we can always guess *what* you will
          ~~order *t*~~.
      g.  *The students* were arrested *t*, and *the instructors* were ~~arrested *t*~~ too.
      h.  *Jo* seemed *t* to enjoy the party and *her sister* did ~~seem *t* to enjoy the party~~ too.
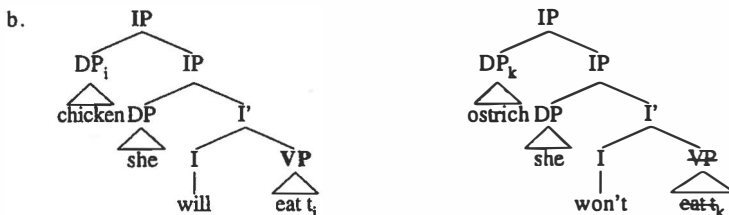
(26) illustrates the structure for (25a). Although the corresponding traces are bound in both
the antecedent and target clauses, the trace in the former is bound by the DP *chicken* while
the trace in the latter is bound by the DP *ostrich*. Nevertheless, identity must still obtain
since the example is grammatical.

(26)  a.  Chicken, she'll eat, but ostrich, she won't.

---

[5]Not all A̅-movement cases containing the desired configuration are as acceptable as the above. Sag 1980
cites similar examples which he indicates that his consultants found very degraded:

| (i) | a. | A: | What did Harry take a picture of *t*? | | B: | An elephant. |
| | | A: | ??What did Bill ~~take a picture of *t*~~? | | B: | A tiger. |
| | b. | C: | What was John able to take a picture of *t*? | | D: | An elephant. |
| | | C: | *What was Harry able to ~~take a picture of *t*~~? | D: | A tiger. |

Further research will elucidate the differences between the examples in (i) and those above. Fiengo and May
1994 indicate that issues of contrastiveness are involved. Another apparent difference is that the traces in the
text examples are bound by antecedents which are more clearly D(iscourse)-linked (Pesetsky 1987).

b.

```
            IP                                        IP
          /    \                                   /     \
       DP_i     IP                              DP_k      IP
      /  \     /  \                            /  \      /   \
  chicken DP        I'                    ostrich DP         I'
         /  \      /  \                          /  \       /   \
       she    I      VP                        she    I       V̶P̶
              |     /  \                               |      /   \
             will  eat t_i                          won't   e̶a̶t̶ t̶_k̶
```

Summarily, XP traces have great freedom of interpretation in an ellipsis antecedent. They may correspond to a trace with a distinct binder or an actual noun phrase. Lasnik 1995 reached a similar conclusion; however, Lasnik 1995 also took the XP trace data to be representative of the behavior of all traces and extended the conclusion to X° traces. The contrasting behavior of X° traces, immediately below, indicates that this extension is unjustified.
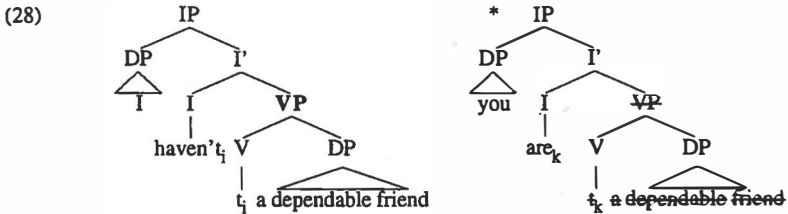
### 5.2. X° Traces

It was hypothesized in (22) that X° traces may not be part of a VPE antecedent, in contrast to the XP traces in (23) which could. It is also the case that corresponding X° traces must have the same binder in both the antecedent and target clauses, again in contrast to the behavior of XP traces in (25). The empirical reflex of this restriction is that the raised verbs in ellipsis antecedent and target clauses must be the same. That this situation actually obtains has been asserted for at least two languages which exhibit both verb raising and VP ellipsis. Doron 1990 shows that it holds for Hebrew and McCloskey in preparation demonstrates that it is strikingly the case for Modern Irish. I know of no language where it does not hold.[6] The situation can be demonstrated in British English, which has two verbs, possessive *have* and copula *be*, which undergo V°-to-I°, participate in VP ellipsis, and which have transparently similar argument structures, both taking a DP complement.[7] The crucial data are given in (27). In each case, the bracketed VP antecedent contains a trace of the italicized raised verb *have*. This VP may not, however, be an antecedent for the target clause even though the structure is parallel, with the trace bound in the target by the italicized raised form of *be*. The reason is claimed to be because the binders are different. The structure of (27a) is made explicit in (28).

(27)  a.  *I *haven't t* a dependable friend, unless you *are* t̶ a̶ d̶e̶p̶e̶n̶d̶a̶b̶l̶e̶ f̶r̶i̶e̶n̶d̶.
      b.  *Have* you *t* a good dentist? Yes, my cousin *is* t̶ a̶ g̶o̶o̶d̶ d̶e̶n̶t̶i̶s̶t̶.
      c.  *Have* you *t* to be at the wedding rehearsal?
          *Yes, I *am* t̶ t̶o̶ b̶e̶ a̶t̶ t̶h̶e̶ w̶e̶d̶d̶i̶n̶g̶ r̶e̶h̶e̶a̶r̶s̶a̶l̶, at six. I'm needed to organize the guests.

---

[6]Otani and Whitman 1991 assert that it does not hold for Chinese, Japanese and Korean; however, Hoji 1995 offers a convincing analysis of the Japanese data which does not appeal to ellipsis.

[7]See Hoekstra 1994 and references therein for proposals that the argument structure of *have* and *be* is not as transparent as assumed here. If those analyses turn out to be correct, the data would not transparently illustrate the desired point.

(28)

```
        IP                              *      IP
       /  \                                   /  \
     DP    I'                              DP     I'
     /\   /  \                             /\    /  \
    I    I    VP                         you    I    VP
      haven't_i  /  \                        are_k  /  \
              V    DP                             V    DP
              |   /    \                          |   /    \
            t_i  a dependable friend            t_k  a dependable friend
```

Ellipsis in (28) fails because the binder of the verbal trace in the target clause, a form of *be*, is not the same as the binder in the antecedent clause, a form of *have*. In other respects, the VP is appropriate to serve as an antecedent. If the binders are made to be the same lexical item, the results are grammatical in British English:

(29) a. £I haven't a dependable friend. Have you?
     b. £Have you a good dentist? No, but my cousin has.
     c. £Have you to be at the wedding rehearsal?
        Yes, I have, at six. I'm needed to organize the guests.

To summarize, if corresponding $X^\bullet$ traces are present in ellipsis antecedent and target clauses, they must be bound by the same verb. This behavior contrasts with that of XP traces in elided VPs which do not need to have identical antecedents. $X^\bullet$ and XP traces are clearly distinct in this regard. If this is so, then it is not unreasonable to extend the reasoning to the situation in which the respective traces are unbound and suggest that $X^\bullet$ traces differ in this domain as well: $X^\bullet$ traces, unlike XP traces, have no independent interpretation in an ellipsis antecedent. Consequently, we have suggestive support for the proposed explanation in (22) as to why ellipsis fails in the data repeated below as (30), in which the antecedent VP is headed by a finite auxiliary. The trace of verb raising cannot be part of a VPE antecedent. The cause of the ungrammaticality is *not* attributed to a mismatch in verbal morphology. This permits the lexicalist approach to verbal morphology to fully capture the complex pattern of ellipsis when the antecedent is headed by either a main verb or an auxiliary.

(30) a. *I am confused about ellipsis and, after reading this paper, you will be confused about ellipsis too.
     b. *Mary is an auto mechanic and her daughter wants to be an auto mechanic also.
     c. *Chris has been to Rome and his wife might have been to Rome as well.
     d. *Some of the election results have been announced but the winner can't have been announced yet.

## 6. Conclusion

The paper concludes with a summary of the two main claims that have been made. First, VP ellipsis in English does not require any morphological identity between verb forms in the antecedent and target clauses. It appears that inflectional information is ignored in determining identity between the two VPs. If VP ellipsis actually involves some kind of *syntactic* identity, then the particular morphosyntactic system outlined which does morphology in the syntax and represents inflectional affixes as distinct heads cannot account for the fact that such information appears to be irrelevant. To the extent that such an analysis cannot capture the correct generalization about the ability of VPE to ignore inflectional morphology, it is deficient. At the same time, to the extent that the hybrid

approach was able to correctly account for the behavior of auxiliaries and main verbs with negation (Lasnik 1995), that analysis is no longer available and an alternative must be found. A lexicalist approach to verbal morphology was shown to be better suited to capturing the patterns. One difficulty in completely accepting this conclusion was the data in (30), in which morphological non-identity with a finite auxiliary seems to rule out ellipsis. An alternative account to the data was offered that appealed to the presence of the trace in the antecedent VP. The proposal is in fact independent of any particular theory of verbal morphology.

Second, the proposed account of (30), if correct, supports the claim that there is a distinction between XP traces and X° traces with regard to their interpretory possibilities in ellipsis contexts. While this might not seem intuitively surprising since heads and arguments are very different things, it does not immediately follow from standard conceptions of what traces are or how movement operates. Neither pattern of behavior follows from a view of movement as leaving anaphoric traces nor from a copy and delete strategy of movement (Chomsky 1995). In the latter framework, traces and their antecedents should be syntactically equivalent. In particular, a trace in a target clause that has a different binder from the one in the antecedent clause should cause ellipsis to fail. This correctly predicts the behavior with X° traces but not XP traces. Likewise, a trace in an antecedent clause should be the same as the actual noun phrase in a target clause. Consequently, traces should be interpreted exactly like their antecedents. This was seen to be the case with XP traces but potentially not with X° traces. Neither pattern is correctly predicted. I leave the issue of accounting for the claimed contrast between X° and XP movement for future investigation.

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