Voice and ellipsis

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Abstract

Elided VPs and their antecedent VPs can mismatch in voice, with passive VPs being elided under apparent identity with active antecedent VPs, and vice versa. Such voice mismatches are not allowed in any other kind of ellipsis, such as sluicing and other clausal ellipses. These latter facts indicate that the identity relation in ellipsis is sensitive to syntactic form, not merely to semantic form. The VP-ellipsis facts fall into place if the head that determines voice is external to the phrase being elided, here argued to be vP; such an account can only be framed in approaches that allow for the separation of syntactic features from the heads on which they are morphologically realized. Alternatives to this syntactic, articulated view of ellipsis and voice either undergenerate or overgenerate.

1 Introduction

The conditions that regulate the distribution of ellipsis have long held a central place in linguistic theory because of the possibility they raise for shedding light on fundamental questions about the form–meaning mapping. Various theories in the last four decades have used elliptical constructions as testing grounds for exploring the nature of the various posited components of the grammar, both syntax–phonology interactions and syntax–semantic ones. Elliptical phenomena were, and continue to be, a central point of contesting in the debate over the nature of linguistic representations as well, with two strands distinguishable, broadly speaking: those that take ellipsis to be entirely a semantic phenomenon, and those that posit that ellipsis is sensitive to syntactic form (either in lieu of semantic form or as a supplement to it). The question is important because how it is answered has straightforward implications for the fundamentals of linguistic theory. If syntactic form is implicated, grammar formalisms that eschew unpronounced syntactic structures must be amended or abandoned, and grammars must countenance a degree of abstractness in their representations which at first sight may appear to be at odds with folk intuitions about the structure of phrases and clauses.

It is in this light that the contrasts between voice mismatches in varying kinds of ellipses loom large. Deviance from identical values for voice on a verbal head can occur in VP-ellipses in English, but not in other elliptical structures (sluicing, fragment answers, gapping, stripping, and pseudogapping). The generalization that emerges is that when the target of ellipsis is a small amount of structure, such as a VP, mismatches in voice appear to be possible, but when more structure is targeted, as in sluicing and the like, no voice mismatch is allowed. The first part of the paper presents in detail the data underlying these empirical assertions. The rest then presents an analysis of these data in terms of the size of the elided constituent, crucially turning on the question of whether the head that determines voice is or is not included in the ellipsis site. Voice mismatch turns out to be a chimera: the identity relation that regulates ellipsis does not tolerate differences in value for the feature voice. It is only apparently so for VP-ellipsis, because the head bearing the syntactic feature that determines the voice morphology on the verb is external to the verbal projection targeted by ellipsis. When this voice head is internal to the elided projection, apparent voice mismatch is seen to be impossible.

2 Voice mismatch tolerance in ellipsis: The data

2.1 Low/Little ellipsis: Voice mismatches possible

It is a well established fact that mismatches in the voice of an elided verb phrase and that of its antecedent are tolerated, provided that certain discourse relations hold (see Kehler 2002 for discussion of this further requirement). This holds both for antecedents in the active voice with elided passive verbs and vice versa. The examples in (1) and (2) are typical; see Sag 1976, Dalrymple et al. 1991, Hardt 1993, Fiengo and May 1994, Johnson 2001, Kehler 2002, and Arregui et al. to appear for further examples, discussion, and qualifications).

(1) Active antecedent, passive ellipsis

    a. Actually, I have implemented it [=a computer system] with a manager, but it doesn't have to be. <implemented with a manager> (Kehler 2002:53)

    b. Steve asked me to send the set by courier through my company insured, and it was. <sent by courier through my company insured> (Kehler 2002:53)

    c. The janitor must remove the trash whenever it is apparent that it should be. <removed>

(2) Passive antecedent, active ellipsis

    a. This problem was to have been looked into, but obviously nobody did. <look into this problem> (Kehler 2002:53)

    b. The system can be used by anyone who wants to. <use it>

    c. 'Slippery slope' arguments can be framed by consequentialists (though I wouldn't in this case). (Richard Dawkins, *The God delusion* (2006), Houghton Mifflin, New York, p. 293)

In earlier investigations, it was usually claimed that voice mismatches were *not* possible in VP-ellipsis. A representative claim is that of Sag 1976:17, who give the following examples with the judgments indicated.

(3) a. *Paul denied the charge, but the charge wasn't by his friends.

    b. *John had observed many of the enemy's soldiers, but hadn't been by them.

These examples are indeed unacceptable, but they are not representative of the full class of relevant data. Sag himself noted counterexamples in his footnote to the above example (Sag 1976:75, footnote 2). This footnote is worth quoting in full:

(4) Although this observation [that voice mismatches are unacceptable, —JM] is surely in general correct, I have nevertheless noted the following peculiar examples of VPD [VP deletion, —JM] ignoring the difference between active and passive.

  a. Botanist: That can all be explained.
     Mr. Spock: Please do.

  b. It should be noted, as Dennett does, that... (Lust (ms.))

  Also note the following general type of discourse:

  a. Speaker A: Someone mugged Tom yesterday.
     Speaker B: Oh yeah?
     Speaker C: You know, the same thing happened to Mary.
     Speaker B: Wow!
     Speaker A: You know, now that I think of it, Sandy was, too.

  This last kind of discourse, which I suspect is rather common, probably shows more about memory (or processing) than it does about grammar. It's clear that there is much more going on here than can be explained at the moment.

What is going on here is that Sag's original examples involve pseudogapping, a special subcase I discuss in detail in Merchant 2006 and in section 4.1 below; in pseudogapping, as Stump 1977 originally noted, voice mismatches are indeed generally impossible, and contrast in this respect with examples of VP-ellipsis *tout simple*. The examples in Sag's footnote are in fact the more representative ones, and already show that voice mismatches in VP-ellipsis are found and must be accounted for.

2.2 High/Big ellipses: No voice mismatches possible

In sluicing, fragment answers, gapping, and stripping, on the other hand, elided material and antecedent phrase must match in voice. This is demonstrated by the following examples.

Examples of voice mismatch in sluicing were discussed in Merchant 2001 and Chung 2005. The data are given for English and for German; German shows the contrasts particularly clearly, since it marks the relevant case morphologically—nominative indicates the subject of an active transitive clause.

(5) English
    a. *Joe was murdered, but we don't know who.
    b. *Someone murdered Joe, but we don't know who by.

(6) German
    a. * Joe wurde ermordet, aber wir wissen nicht, wer.
       Joe was   murdered but we know not who.NOM
      (lit.) 'Joe was murdered, but we don't know who.'
    b. * Jemand ermordete Joe, aber wir wissen nicht, von wem.
       Someone murdered Joe but we know not by whom
      (lit.) 'Someone murdered Joe, but we don't know by whom.'

Parallel facts hold in fragment answers, which derive from movement of the fragment to a clause-external position followed by ellipsis of the clause (Merchant 2004). English cannot show the entire paradigm, since it does not reliably mark case on fragments (that is, case on fragments tends to be accusative regardless of their origin site) and since English allows preposition stranding. In other words, in a pair like *Q: Who were you sent by? A: Marcus*, we cannot be sure whether *Marcus* is the underlying object of the preposition *by* in a passive clause (corresponding to the voice of the question) or whether *Marcus* is the subject of an active clause (a potential voice mismatch). Only the possibility of pied-piping the passive *by* in an answer to a question in the active voice permits the relevant test to be run in English, as seen in (7).

(7) Q: Who is sending you to Iraq? A: *By Bush.

Such confounding factors do not affect a language like German, in which fragment answer DPs bear the case assigned at their origin site, and in which preposition-stranding is barred. In German, active/passive mismatches like (8a) are barred, as are passive/active mismatches as in (8b).

(8) a. Q: Wer   hat den Jungen untersucht? A: * Von einer
         who.NOM *has the boy   examined?   by   a*
         Psychologin.
         psychologist

         'Q: Who examined the boy? A: [intended:] (He was examined)
         by a psychologist.'

     b. Q: Von wem   wurde der Junge untersucht? A: * Eine
         by   who.DAT *was   the boy   examined   a*
         Psychologin.
         psychologist.NOM

         'Q: Who was the boy examined by?' A: [intended:] A psychologist
         (examined him).'

Gapping similiarly does not tolerate voice mismatches.

(9) a. *Some bring roses and lilies by others.
     b. *Lilies are brought by some and others roses.

It comes as no surprise, then, that stripping or Bare Argument Ellipsis,
commonly analyzed as a subspecies of gapping, also fails to allow voice mis-
match. Again, because of the case and preposition-stranding properties of
English, the possibility of examples like *The roses were bought by MAX on
credit, not AMY* shows nothing, since nothing can guarantee that *AMY* in
such an example is the subject of an elliptical active clause, and is not the
object of an elided passive *by*. German again shows that once these potential
confounds are controlled for, it is clear that voice mismatch in stripping is
disallowed.

(10) Stripping/Bare Argument Ellipsis
     a. *MAX brought the roses, not by AMY!
     b. * Der Junge wurde von einer Psychologin untersucht, und ein
          the boy   was   by   a   psychologist examined,   and a
          Kinderarzt   auch.
          pediatrician.NOM *too.*

          'The boy was examined by a psychologist, and a pediatrician
          examined him, too.'

All of the examples in this section would be irrelevant to the theory of ellipsis if their ill-formedness could be attributed to some other component; the most likely candidates would be some more general constraints on connected discourse sequences or more specific constraints on focus across discourse-trees. Such constraints certainly exist, and have been investigated by, among others, Lambrecht 1994, Kehler 2002, and Büring 2003. As always, it is therefore crucial to compare the above examples from sluicing, fragment answers, gapping, and stripping to their putative non-elliptical counterparts. If general principles of discourse well-formedness or specific principles of focus were to rule out voice switches among such clauses, then the elliptical cases would simply form a proper subdomain of the application of such principles, and nothing about the nature of ellipsis itself could be gleaned from the attested contrasts.

The following set of examples, from English and from German as necessary, provide the relevant controls. All produce well-formed discourses, despite the voice switch. While these may not be ideal or even optimal discourse sequences, their status is significantly better than their elliptical counterparts above.

(11)   Nonelliptical counterparts to sluicing

    a. Joe was murdered, but we don't know who murdered Joe.

    b. Someone murdered Joe, but we don't know who Joe was murdered by.

    c. Joe wurde ermordet, aber wir wissen nicht, wer   ihn
        *Joe was   murdered but we know not   who.*NOM *him*
        ermordete.
        murdered

        'Joe was murdered, but we don't know who murdered him.'

    d. Jemand ermordete Joe, aber wir wissen nicht, von wem er
        Someone murdered Joe but we know not   by whom he
        ermordet wurde.
        murdered was

        'Someone murdered Joe, but we don't know by whom he was murdered.'

(12)   Nonelliptical counterparts to fragment answers

    a. Q: Who is sending you to Iraq? A: I'm being sent by Bush.

b. i. Q: Wer hat den Jungen untersucht? A: Er wurde von
        who.NOM *has the boy examined? he was by*
        einer Psychologin untersucht.
        a psychologist examined
        'Q: Who examined the boy? A: He was examined by a psychologist.'

    ii. Q: Von wem wurde der Junge untersucht? A: Eine
        by who.DAT *was the boy examined a*
        Psychologin hat ihn untersucht.
        psychologist.NOM *has him examined*
        'Q: Who was the boy examined by?' A: A psychologist examined him.'

(13)   Nonelliptical counterparts to gapping
       a. Some bring roses and lilies are brought by others.
       b. Lilies are brought by some and others bring roses.

(14)   Nonelliptical counterparts to stripping/Bare Argument Ellipsis
       a. MAX brought the roses–they weren't brought by AMY!
       b. Der Junge wurde von einer Psychologin untersucht, und ein
           the boy was by a psychologist examined, and a
           Kinderarzt hat ihn auch untersucht.
           pediatrician.NOM *has him too examined.*
           'The boy was examined by a psychologist, and a pediatrician examined him, too.'

Note that the improvement found in such examples cannot simply be attributed to the fact that the pronounced material allows the hearer to 'accommodate' in some way a perhaps strictly speaking infelicitous voice switch. Such a theory is posited in Fox 2000 for unrelated examples: working within a theory of LF-identity for ellipsis, Fox shows that under certain circumstances, the LF of an elided phrase marker can be non-parallel to its antecedent, but just in case a parallel LF can be accommodated from the non-parallel antecedent. He posits that such accommodation is possible only when the clause containing the ellipsis contains some 'accommodation-seeking material' (namely, some material that would indicate that the elided clause deviates in some way from its antecedent, and triggers the accommodation of a

parallel LF for ellipsis resolution). While Fox shows that such a mechanism is necessary to derive the full range of narrow scope readings inside ellipsis sites, it must not be allowed to apply to voice mismatches. Examples like (5b), repeated here, could otherwise be generated—the preposition *by* in the sluiced clause could function as 'accommodation-seeking material', triggering the creation via accommodation of a passive antecedent LF to license the ellipsis of *Joe was murdered*. (Similar remarks hold for the unexpected, and ungrammatical, morphological case in the German examples.)

(15)   *Someone murdered Joe, but we don't know who by. <Joe was murdered>

I conclude that the notion of accommodation as Fox conceives it has no role to play in voice mismatches, and must be restricted to applying to scope facts alone.

In sum, voice mismatches are ruled out in all cases of ellipsis other than VP-ellipsis and this fact must be derived from the theory of ellipsis itself.

3   Triggering ellipsis

Ellipsis of a phrase XP is subject to two major requirements, known as the 'licensing' requirement and the 'identification' requirement, following Lobeck 1995. The first refers to the local, idiosyncratic syntactic features of a head that 'licenses' the ellipsis (see Johnson 2001 for an exemplary discussion of the licensing requirements for VP-ellipsis, and Warner 1985, Lasnik 1995b, Potsdam 1997, and Winkler 2003 for important related points). For VP-ellipsis, this requirement usually reduces to the claim that a missing VP must be locally c-commanded by a T node (hosting an auxiliary of some sort, including *do*, or *to*, or the null T found with negation in embedded subjunctives). For sluicing, the licensing head is the complementizer found in constituent questions in English. These requirements can be implemented as structural conditions on a transformation (as in Sag 1976), as a kind of ECP-like filter (as in Lobeck 1995 and Johnson 2001), as *sui generis* restrictions on phrase structure rules or constructions (as in theories like Ginzburg and Sag's (2000) or Culicover and Jackendoff's (2005)), but none of these alternatives are particularly palatable in the more ontologically restrictive theories under the Minimalist umbrella, in which the locus of all variation is posited to be the lexicon. Taking this idea seriously requires us to posit a lexical feature or

family of features that can encode these requirements. Such an approach is taken in Merchant 2001 (and developed in Merchant 2004, van Craenenbroeck 2004, Aelbrecht 2006, van Craenenbroeck and Lipták 2006, Toosarvandani 2006, Vicente 2006, and Ha to appear, among others), who proposes that the English lexicon contains a feature E which must be merged with an appropriate head (certain Ts or auxiliary vs for VP-ellipsis, C[+wh, +Q] for sluicing), due to its morphosyntactic deficiency (much in the spirit of certain analyses of clitics, for example). For example, in its simplest instantiation, the E feature that occurs in sluicing will be joined with the C, notated C[E], and will trigger the non-pronunciation ('PF-deletion') of its complement, TP. This is illustrated in the following tree, where angled brackets enclose the TP node which fails to undergo lexical insertion due to the effects of the E feature on its sister; this can be viewed as a kind of morphosyntactic syncope of the PF-relevant features of the complement.

(16)   a. Someone murdered Joe, but we don't know who.

        b.
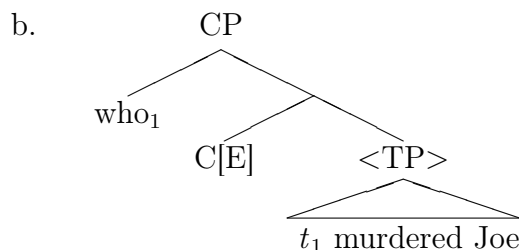
Syntactically, on this view, the elided material is fully present in the derivation, both before and after Spell-Out, and indeed in sluicing contains the trace of the fronted wh-phrase in specCP (the origin and properties of which remain problematic on approaches that eschew syntactic structure inside the ellipsis site; see Lasnik and Merchant in preparation for a review of the arguments for this position).

For VP-ellipsis, on a traditional clause structure, E would be on T, yielding the following.

(17)   a. Abby didn't see Joe, but Ben did.

b.

```
            TP
      ┌──────┴──────┐
    Ben
            ┌────────┴────────┐
          T[E]              <VP>
            │                 ╱╲
           did             see Joe
```
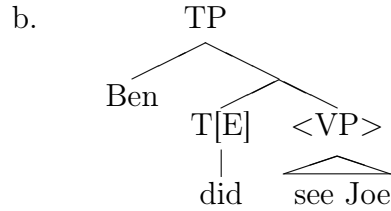
In sluicing, then, a larger amount of structure is elided, while in VP-ellipsis, a smaller amount is.

4   Analyzing the uneven distribution of voice mismatch

The empirical contrasts found in the data above are puzzling for current theories of the identity relation between an elided phrase and its antecedent. The fundamental difficulty is that voice mismatch has an *uneven distribution*: it is found in some, but not all, kinds of ellipsis. For theories that posit only semantic identity (such as Merchant 2001) or none at all (such as 'inference'-based theories like Sag 2006 and Culicover and Jackendoff 2005), the puzzle is why voice mismatches should be *disallowed* in so many cases, since active and passive clauses are mutually entailing and allow for the relevant inferences. For theories that posit syntactic identity (whether implemented as LF-copy as in Fiengo and May 1994, Chung et al. 1995 and others, or as the trigger of syntactic or PF 'deletion', as in Sag 1976, Baltin 2007), the puzzle is why voice mismatches are sometimes *allowed*, given that the syntax of actives and passives is not identical.

The direction of the uneven distribution points the way to the solution: in all cases, a lower VP can be elided, but a higher node cannot, under the same circumstances. I take it that this fact is not accidental, and can be accounted for if the voice morphology of a clause reflected in English on the verb is merely a morphological reflex of a syntactic agreement relation with a separate head which is asymmetrically c-commands the verbal head V. This idea is commonplace since the work of Kratzer 1996, who identifies this head as v[Voice] and uses it to introduce external arguments. For reasons that will become clearer in section 4.3 below, I will follow the more recent proposal of Collins 2005 that Voice is a separate head from the head that determines

the transitivity (or unergativity or unaccusativity) of the VP, including introducing its external argument if one is present (see also McCloskey 1996 for an argument that subjects originate lower than their pronounced position in Irish: I suspect we may identify his FP with VoiceP in Collins's sense.) In other words, I adopt the proposal that the clause structure of (18a) is that given in (18b).

(18)   a.   Someone murdered Joe.

      b.
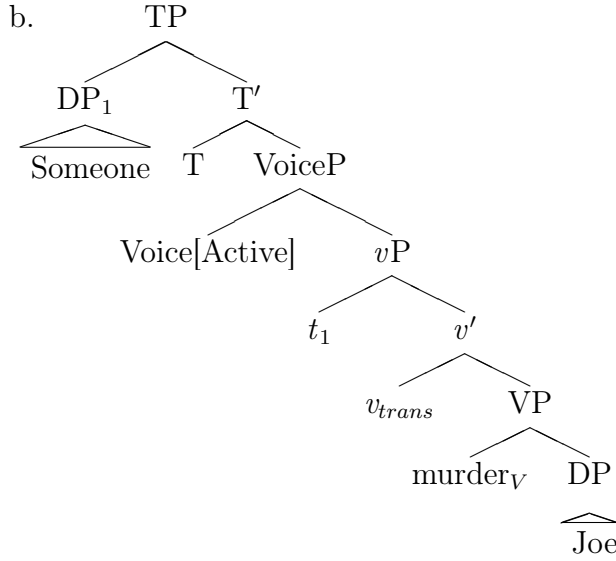
With head movement of the verb *murder* to the transitive v_{trans}, and with an application of Agree between Voice[Active] and the unvalued Voice[_] feature on v, the resulting complex [murder+v_{trans}[Voice[Active]]] will be spelled out by the morphology as the passive participial form *murdered*.

This clausal architecture allows the desired structural distinctions to be drawn. If the identity relation between an elided phrase XP_E and its antecedent XP'_A is one of syntactic featural identity (and not morphological), then any elided Voice head will necessarily be the same (that is, have the same value for the feature Voice, Voice[{Active|Passive}]) in the elided structure and in its antecedent. On Voice, this feature is a categorial feature; as such, its value is fixed in the lexicon and cannot be altered by any process or operation (it is 'interpretable' in some uses of that term). By contrast, the Voice feature on v is a morphological (or 'inflectional') feature which is unvalued in the Numeration; its value is assigned by Agree(Voice,v;Voice)

(where Agree is a relation between a head X and another head Y with respect to a categorial feature F on X and a matching morphological feature F′ on Y, resulting in F″'s value being set to that of F).
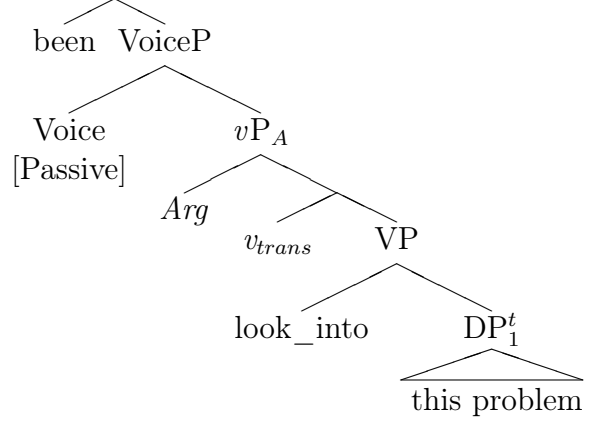
In VP-ellipsis, then, the Voice head must not be included in the target of ellipsis. Since it is not, it is not subject to the elliptical identity requirement. In other ellipses, which target larger clausal nodes necessarily containing VoiceP, Voice will be part of the elided structure and thus subject to elliptical identity, which requires that its antecedent have the same value for the feature, namely Active or Passive consistently. The simplest way to capture this distinction, then, is to posit that in VP-ellipsis, it is the verbal projection which is the complement to Voice that is elided, while in sluicing and the like, what is elided is a clausal node.

For examples of licit voice mismatch in VP-ellipsis, such as (19a), the structural analysis is that in (19b,c). The elided VP, notated VP_E in (19c) is *look into this problem.* The antecedent VP, labelled vP_A in (19b) is identical to vP_E, assuming that movement of the underlying object into subject position leaves a copy.[1] Non-pronounced copies—traces, that is—I will represent either with the traditional t or, when it is helpful to see the content of the copy, as the phrase itself superscripted with t, as with DP^t in (19b). Following Baker, Johnson, and Roberts 1989, Emonds 2000, Collins 2005, and others (see Bhatt and Pancheva 2006 for a recent overview), I assume that the indefinite subject of a passive, if not expressed in a *by*-phrase, is syntactically present, here as a null indefinite argument I will express as *Arg*; it satisfies the selectional features of heads it combines with via Merge, though it is inaccessible to Move, and like all other null indefinite arguments, it takes a fixed narrow scope (see Mittwoch 1982).

(19) a. This problem was to have been looked into, but obviously nobody did.

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[1]In general, copies of moved elements in antecedents behave as their unmoved counterparts for the purposes of ellipsis resolution unless the moved element contrasts with a corresponding element in the clause containing the ellipsis (that is, syntactic identity is identity of phrase markers modulo focussed elements whose focus alternatives are given by an element in the elided clause). I will sidestep this complication here, but see Merchant 2001 and Kobele 2007 for discussion.

b. $[_{DP}$ This problem $]_1$ was to have vP

been VoiceP

Voice [Passive] $v\text{P}_A$

Arg

v_{trans} VP

look_into DP_1^t

this problem

c. TP

nobody$_2$ did   VoiceP

Voice[E] [Active] $\langle$ $v\text{P}_E$ $\rangle$

t_2

v_{trans} VP

look_into DP_1

this problem
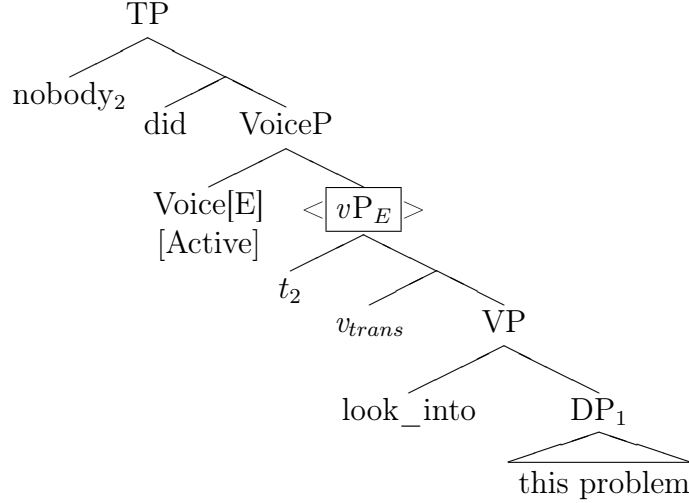
These structures shed light as well on the details of how the syntactic identity condition must ultimately be formulated (details to which I return below). Note for the moment that while featural identity is crucial on Voice, elements which have moved out of the ellipsis site–here for example the vP-internal trace of the moved subject *nobody* is structurally equivalent to the unexpressed agent of the passive (*Arg* in spec$v$P in (19b)). The generalization is that the traces of elements moved out of elided phrases must have structural equivalents in the antecedents, though these correlates (here, *Arg*) need not be featurally identical if the differing featural content can be recovered by elements outside the ellipsis site (here, in other words, by *nobody*). The contents of traces is crucial, however, for understanding why the elided vP is

understood as *look into this problem* and not simply something like *look into something*. Because there is no supplementary material in the elided clause that corresponds in position (or whose trace would correspond in position) to the trace of *this problem* in the antecedent clause, the content of that trace must be understood in the ellipsis site.

The same analysis applies when the voice mismatch is $[\text{active}_A : \text{passive}_E]$, with an active antecedent and a passive elided one. In the following trees, I suppress representation of the PP adjunct for simplicity; I also assume that *have to* is a raising predicate, but avoid representing this in any detail—of consequence here are only the structures under VoiceP.

(20)   a. I have implemented it with a manager but it doesn't have to be.

   b.

```
                        TP
                      /    \
                   I₁       \
                         /      \
                      have      VoiceP
                              /        \
                          Voice         vP_A
                         [Active]      /    \
                                     t₁      \
                                         /        \
                                      v_trans      VP
                                                  /    \
                                           implement   it₂
```

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c.

```
            TP
          /    \
       it₂      \
              doesn't
                   \
                   have
                      \
                      to      vP
                            /    \
                          be     VoiceP
                                /     \
                          Voice[E]   <⟨ vP_E ⟩>
                          [Passive]  /      \
                                   Arg       \
                                        v_trans    VP
                                               /      \
                                         implement   it₂ᵗ
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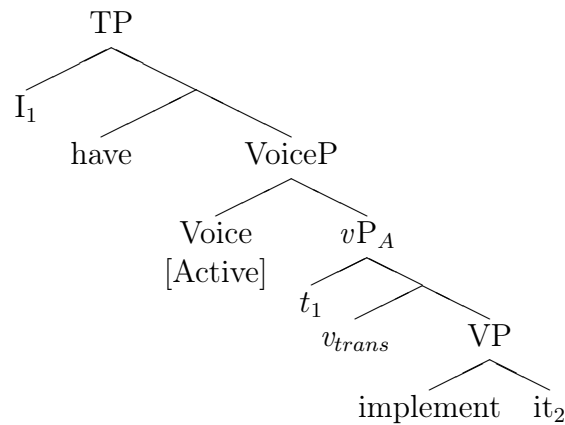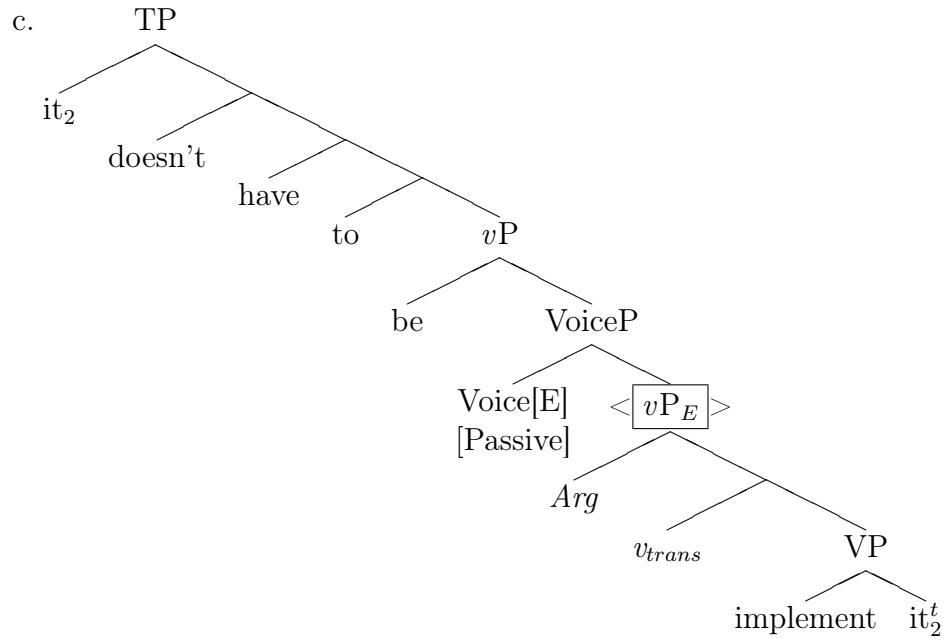
For sluicing (and the other clausal ellipses), the node targeted by ellipsis contains VoiceP; in sluicing, this node is TP. No voice mismatch will be possible, in either direction. This is shown in (21) for [passive$_A$: active$_E$] mismatch and in (22) for [active$_A$: passive$_E$].

(21)   a.   *Joe was murdered (by someone), but we don't know who.

b.

TP$_A$
- Joe$_1$
- was
- vP
  - t_{was}
  - VoiceP
    - Voice [Passive]
    - vP
      - Arg
      - vP
        - v_{trans}
        - VP
          - murder Joe$_1^t$

c.

CP
- who$_1$
- C[E]
- <TP$_E$>
  - t_1'
  - T
  - VoiceP
    - Voice [Active]
    - vP
      - t_1
      - vP
        - v_{trans}
        - VP
          - murder Joe

(22) a. *Someone murdered Joe, but we don't know by whom.

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b.

TP$_A$

someone$_1$

T   VoiceP

Voice
[Active] vP

t_1

v_{trans} VP

murder   Joe

c.   CP

PP$_1$

by whom   C[E]   < TP$_E$ >

Joe$_2$

was vP

t_{was} VoiceP

Voice
[Passive] vP

t_1

v_{trans} VP

murder Joe$_2^t$
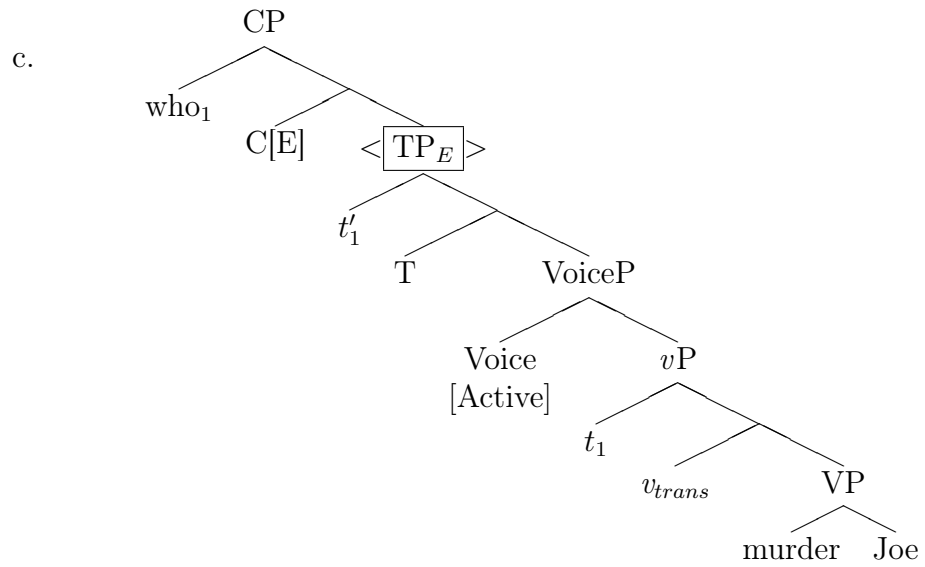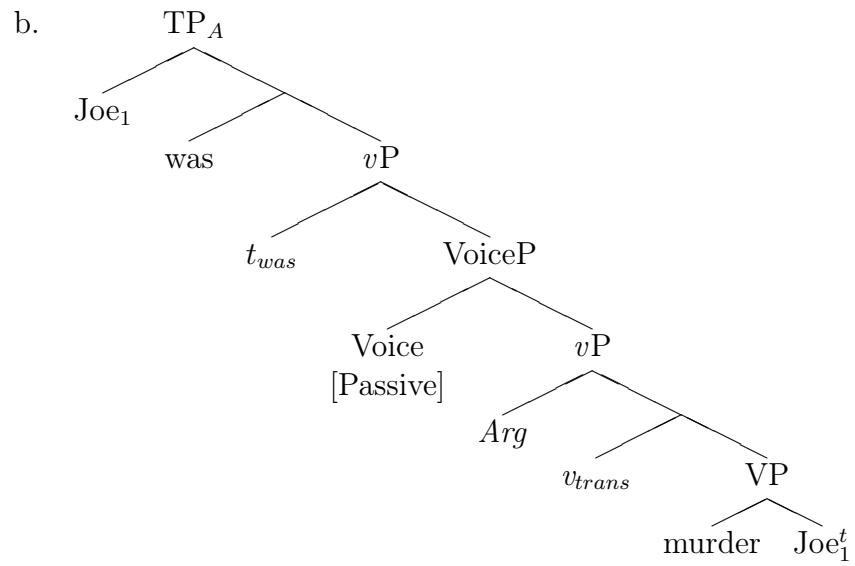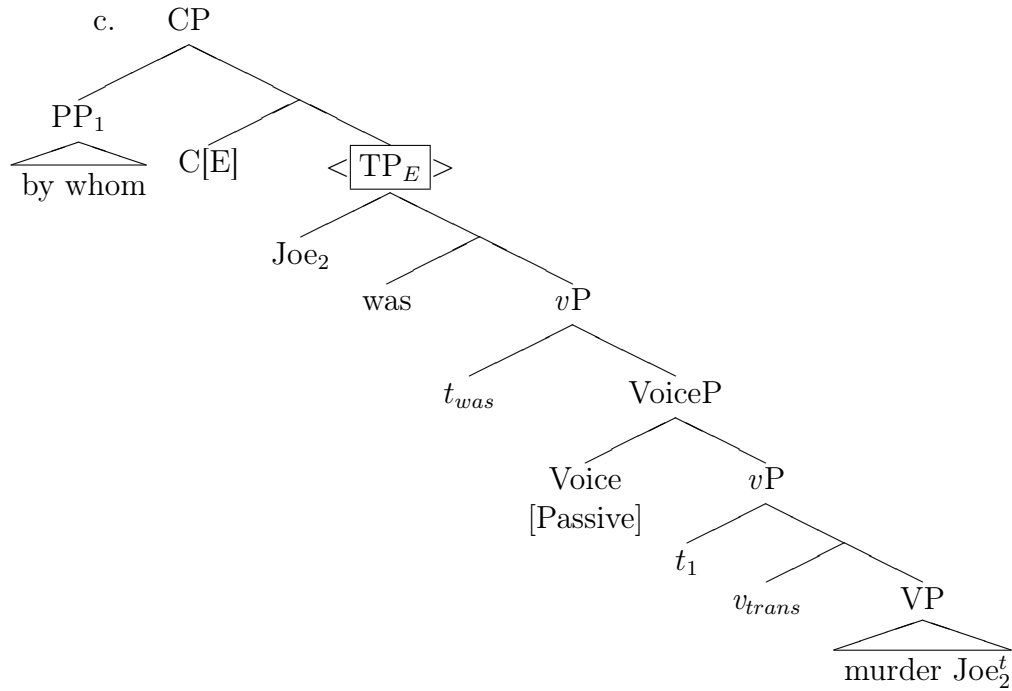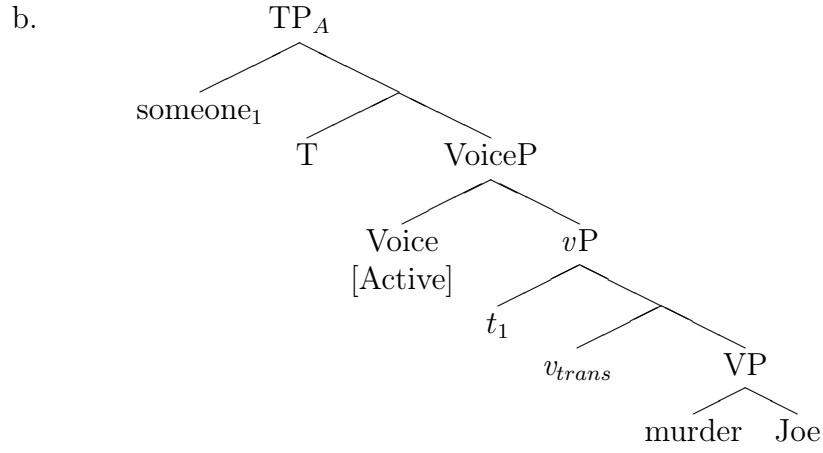
It is important to note that it is impossible on this analysis to imagine a language which would be the inverse of English, which would allow voice mismatches in VP, but not TP, ellipses. The fact of the uneven distribution of voice mismatches is captured by the variable height of ellipsis, and clausal ellipses will always elide more structure than VP ellipses. This negative pre-

diction stands in contrast to a conceivable alternative to the above analysis framed in terms of 'constructions' (construed as first-order objects in the ontology of linguistic description). Proponents of such construction-employing theories might simply claim that the construction of VP-ellipsis is subject to a weaker identity relation (say, the one claimed by Culicover and Jackendoff 2005 or Sag 2006), but that the sluicing 'construction' makes use of a different identity relation, one that is sensitive to the voice of its antecedent (when there is one). Besides the fact that there is no other known reason for positing different identity relations for the different ellipses studied here, note that such theories would be equally able to account for 'inverse' English.

In all such theories, voice is simply a feature on the verb (which may or may not be projected to the featural complex of that verb's clause), and is not a separate head or projection in the syntax. There is therefore no way to separate the voice of the verb from the verb's use in a particular structure. Only an articulated syntax in which Voice is external to the ellipsis site in 'VP'-ellipsis can directly capture the uneven distribution of apparent voice mismatches across ellipsis types.

4.1 VoiceP is crucial, not the passive auxiliary

Besides the differences in the Voice heads between the antecedents and elided phrases in the sluicing examples above, there is also a difference in whether or not the auxiliary *be* occurs. One might equally take the presence of this auxiliary to be the distinguishing characteristic that rules out identity in the cases of sluicing, since its presence does indeed ensure a structural, syntactic difference between e.g. active antecedent TPs and elided passive TPs (assuming as I will for simplicity that it is always full TPs are elided; cf. Yoshida 2005 and Nakao et al. 2006 for an importantly more complex view of the situation). While it would be consistent to follow this line of thinking for the cases examined thus far (and it would allow one to claim that voice switches in VP-ellipsis simply show that voice is irrelevant, generally), such a tack fails more generally. This can be seen, first, by noting that the facts are identical in a language which marks the passive/active distinction entirely synthetically through morphological means on the verb itself, such as Greek, and second, by examining pseudogapping in English, in which voice mismatches are ruled out despite the auxiliary being external to the ellipsis site.

4.1.1 Greek sluicing

Sluicing in Greek, which shares a wide range of properties with its congeners in other languages and in English in particular (see Merchant 2000, 2001), also forbids voice mismatches between the antecedent clause and the elided one, as seen in the examples in (23).

(23) Illicit Greek voice mismatches

    a. * O Jannis skotose kapjon, alla ðen kserume
        the Giannis.NOM *killed*.ACT *someone*.ACC *but not we.know*

        pjos.
        who.NOM

        '(lit.) Giannis killed someone, but we don't know who.'

    b. * O Jannis skotoθike, alla ðen kserume pjos.
        the Giannis.NOM *killed*.PASS *but not we.know who*.NOM

        '(lit.) Giannis was killed, but we don't know who.'

As always, it is crucial to run the nonelliptical controls; these show that, while the voice switch may sometimes be dispreferred as somewhat awkward (hence the stigma '?' on (24a)), the examples are significantly more acceptable than their elided counterparts in (23).

(24) Nonelliptical controls

    a. ? O Jannis skotose kapjon, alla ðen kserume
        the Giannis.NOM *killed*.ACT *someone*.ACC *but not we.know*

        pjos skotoθike.
        who.NOM *killed*.PASS

        'Giannis killed someone, but we don't know who was killed.'

    b. O Jannis skotoθike, alla ðen kserume pjos
        the Giannis.NOM *killed*.PASS *but not we.know who*.NOM

        ton skotose.
        him.ACC *killed*.ACT

        'Giannis was killed, but we don't know who killed him.'

With only a synthetic active/passive in Greek, the presence or absence of an auxiliary is not at issue; the deviance must be due to the differing values on Voice itself.

4.1.2 Pseudogapping

The same point can be seen in English pseudogapping. Pseudogapping is similar to VP-ellipsis in that it targets a verbal projection under T, but differs from VP-ellipsis in disallowing voice mismatches. This fact is analyzed in Merchant 2006 as reflecting the fact that in pseudogapping, the node targeted for ellipsis is VoiceP itself (there implemented as an obligatory E feature on the head that licenses the remnant movement out of VP). Representative examples are the following.[2]

(25) Active antecedent, passive ellipsis
    a. *Some brought roses, but lilies were by others. <brought>
    b. *Abby admires Klimt$_1$ more than he$_1$ is by anyone else. <admired>
    c. *Laypeople respect Hundertwasser's actual work more than his ideas are by scholars. <respected>

(26) Passive antecedent, active ellipsis
    a. *Roses were brought by some, but others did lilies. <bring>
    b. *Klimt is admired by Abby more than anyone does Klee. <admire>
    c. *Hundertwasser's ideas are respected by scholars more than most people do his actual work. <respect>
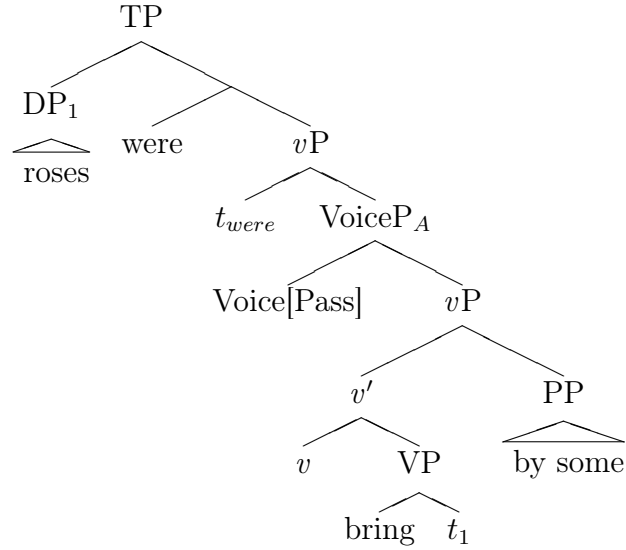
Following Kuno 1981, Jayaseelan 1990, 2001, and Gengel 2006 in particular (see Lasnik 1995a, 1999, 2001, Johnson 2001, Baltin 2002, 2003, and Takahashi 2004 for proposals related in spirit), I assume that the remnant (typically an internal argument of the elided verb) is moved out of the VP prior to ellipsis to the specifier of a clause-internal functional projection that hosts a [focus] feature and the E feature, and which selects for VoiceP. A relevant example is given in the following, with structures for the antecedent and the attempted elided vP_E in (27b,c).[3]

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[2]But cf. Miller 1991:94 (55): (*The arms were hidden by the rebels as a woman would (do) her most precious jewels*), and Coppock 2001:135 (4c): (*?That should be explained to individual students by the TA, but the professor will to the class in general*); grammars that allow such structures may allow VP to be targeted in pseudogapping as well.
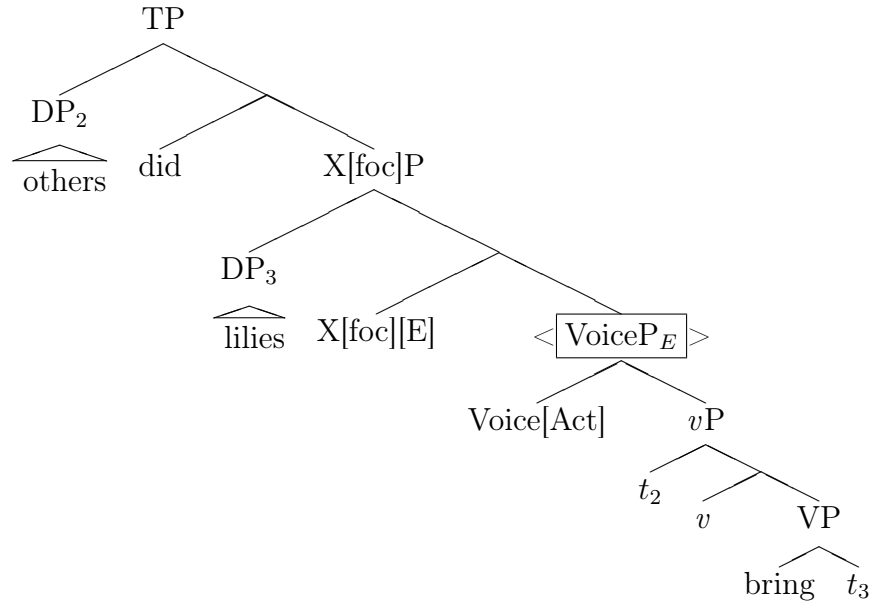
[3]For simplicity, I represent the passive agent in (27b) as being in a *by*-PP in a right specifier of *v*; see Collins 2005 for a more detailed look at the position of the *by*-phrase, and one which maintains the intuition that transitive *v* always selects a left specifier, even under Voice[Passive].

(27)   a. *Roses were brought by some, but others did lilies.

b.

```
                    TP
             ┌──────┴───────┐
           DP₁        ┌─────┴──────┐
          /‾‾\       were          vP
         roses           ┌─────────┴─────────┐
                       t_were          VoiceP_A
                                ┌──────────┴──────────┐
                          Voice[Pass]                vP
                                             ┌────────┴────────┐
                                            v'               PP
                                       ┌─────┴─────┐        /‾‾‾\
                                       v          VP      by some
                                              ┌────┴────┐
                                            bring      t₁
```

c.

```
                   TP
           ┌────────┴─────────┐
         DP₂        ┌──────────┴──────────┐
        /‾‾\       did              X[foc]P
       others            ┌───────────┴───────────┐
                       DP₃                 ┌──────┴──────┐
                      /‾‾\           X[foc][E]      <│VoiceP_E│>
                     lilies                     ┌────────┴────────┐
                                          Voice[Act]            vP
                                                          ┌──────┴──────┐
                                                         t₂       ┌─────┴─────┐
                                                                  v         VP
                                                                        ┌────┴────┐
                                                                      bring     t₃
```

Since VoiceP_A ≠ <│VoiceP_E│>, ellipsis is not permitted, and voice mismatches are correctly ruled out. Crucial for present purposes is merely the fact that the passive auxiliary *be* is external to both antecedents and elided phrases, and thus can play no role in ruling out the voice mismatches in pseudogapping. Further, while perhaps less than beautiful as examples of good

English prose stylistics, the addition of the omitted verb in angled brackets in (25) and (26) makes these examples acceptable. The deviance of these voice mismatches under ellipsis must be attributed to the varying values for voice on Voice itself.

4.2   A morphological argument for syntactic identity

Another argument in favor of syntactic identity is provided by the behavior of *be* in English. A deservedly famous set of facts discussed in Warner 1985, Lasnik 1995b, Potsdam 1997 (see also McCloskey 1991, Goldberg 2005 for related points) concerns the distribution of forms of the verb *be* under VP-ellipsis. Although in general, English verbs (both regular and irregular) don't require morphological identity, as seen in (28), the situation is different for *be*.

(28)   a. Emily played beautifully at the recital and her sister will, too. <play beautifully at the recital>

   b. Emily took a break from her studies, and her sister will, too. <take a break from her studies>

   c. Emily sang the song {because|the way} she wanted to. <sing the song>

Forms of *be* do require morphological identity:

(29)   a. Emily will be (beautiful) at the recital, and her sister will, too. <be (beautiful) at the recital>

   b. *Emily was beautiful at the recital and her sister will, too.

   c. Emily will be elected to Congress just like her sister was.

   d. *Emily was elected to Congress {because|just like} she really wanted to.

A convincing analysis of these facts comes from Lasnik 1995b, who claims that forms of *be* are drawn from the lexicon into the Numeration fully inflected, while other verbs get their inflection in the course of the derivation. In other words, verbs other than *be* are inserted into the syntactic structure without values for ϕ-features or tense: they, in conjunction with their selecting v, receive these values through applications of Agree with higher heads (such as T) or phrases (such as subject DPs) that do bear these features.

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What is again crucial to this account of these facts is that the morphological realization of various features of most verbs be separated in the syntax from the heads which bear these features categorially. Only then can the syntactic identity condition on ellipsis ignore them: in the case of *be*, this is by hypothesis not the case, and ellipsis is therefore sensitive to its forms in ways it is not for other verbs.

4.3   Argument structure alternations under ellipsis

Argument structure alterations involve apparently different syntactic realizations of a verb or predicate's semantic or thematic arguments. They fall into two broad classes. The first are those that involve an argument appearing in some contexts as a subject of a verb (such as of an intransitive unaccusative or anticausative, as in *The ice melted*), and in other contexts as a non-subject of the same verb (as a direct object, for example, as in *The sun melted the ice*). The second kind of argument structure alternation is between two differing kinds of internal argument expression, such as the 'dative' alteration, or other kinds of direct object/prepositional object alternations (like *Max passed the ball to Sheila/Max passed Sheila the ball*). Such argument structure alternations are not found between an antecedent and an elided phrase in ellipsis of any type. If one diathesis variant is found in an antecedent phrase, then that same variant must be in the elided phrase, under sluicing, VP-ellipsis, or any of the other ellipsis types that target clausal syntax. This fact is well-known for sluicing (see Chung et al. 1995, Merchant 2001) and gapping (Johnson 1996), but is equally true of VP-ellipsis, as for example Sag 1976 and Johnson 2004 point out.

4.3.1   Subject/non-subject alternations

Certain transitives (sometimes called causatives) alternate with intransitives (anticausatives or unaccusatives), in one of the most well-known alternations in modern linguistics (see Perlmutter 1978 for the original observations and analysis and Alexiadou et al. 2005 for recent approaches and references). Pairs such as the following are typical, given for English and Greek.

(30)   a.   This can freeze. Please freeze this.
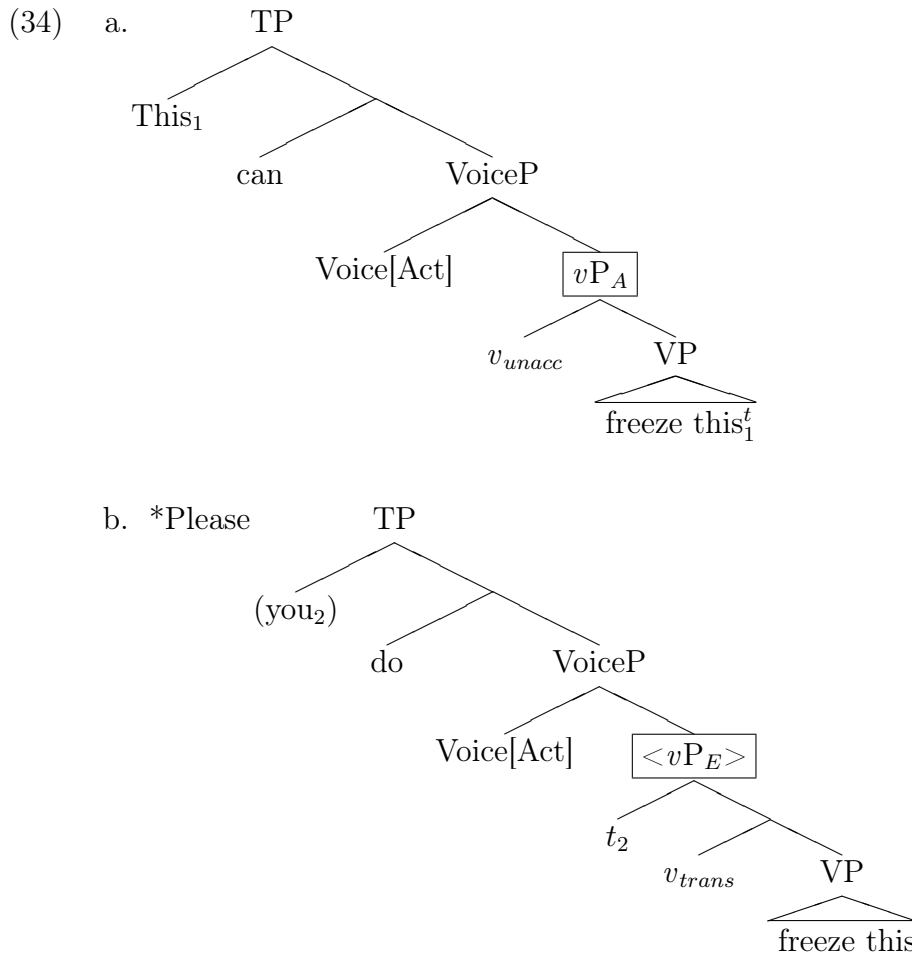   b.   Bill melted the copper vase, and the magnesium vase melted, too.

(31) a. Eklisan   ena   ðromo.
       *closed.3p a.*ACC *road.*ACC
       'They closed a road.'

    b. Enas   ðromos   eklise.
       *a.*NOM *road.*NOM *closed.3s*
       'A road closed.'

Such alternations are not found under ellipsis, however. This is illustrated first for VP-ellipsis with examples from Johnson 2004 and Sag 1976, and second for sluicing. The sluicing example in (33a) comes from Greek, where the case morphology on the wh-phrase indicates whether the wh-phrase is a subject (of the unaccusative alternant) or an object (of the transitive alternant); the poor morphological case resources of English make seeing this in English impossible. A Greek control case (where the sluiced clause is transitive, and the wh-phrase accordingly properly marked accusative) is given in (33b).

(32) a. This can freeze. *Please do. (Johnson 2004:7)

    b. *Bill melted the copper vase, and the magnesium vase did, too.
       (Sag 1976:160 (2.3.48)

(33) a. * Eklisan   ena   ðromo,   alla ðen ksero   pjos.
         *closed.3p a.*ACC *road.*ACC *but not know.1s which.*NOM
         <eklise>
         closed.3s

         (intended: 'They closed a road, but I don't know which one (closed).')

    b. Eklisan   ena   ðromo,   alla ðen ksero   pjon.
       *closed.3p a.*ACC *road.*ACC *but not know.1s which.*ACC
       <eklisan>
       closed.3p

       'They closed a road, but I don't know which one.'

If causative and anticausative/unaccusatives differ in their v (as Mokilese and other languages may show morphologically, and as may be required to state the selectional restrictions of the passive Voice head to capture Perlmutter's generalization; see Legate 2003 for arguments that even unaccusatives have a v), then Voice takes as its complement the vP which may introduce the external argument (as Collins 2005 proposes on independent grounds; see

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also McCloskey 1996 for early evidence that even transitive subjects in Irish start in a lower position than their final, post-T position). The insightful account Johnson suggests for these cases carries over to the present system, *mutatis mutandis*: Voice selects vP; Voice hosts the E feature; vP elides; and $v_{trans} \neq v_{unacc}$, so in Johnson's example, $\boxed{v\mathrm{P}_A}$ in (34a) will not license the deletion of $\boxed{v\mathrm{P}_E}$ in (34b).

(34) a.

```
                    TP
              ┌──────┴──────┐
          This₁
                    ┌────────┴────────┐
                  can              VoiceP
                            ┌────────┴────────┐
                       Voice[Act]          vP_A
                                      ┌──────┴──────┐
                                   v_unacc         VP
                                               ┌────┴────┐
                                              freeze this₁ᵗ
```

b. *Please

```
                    TP
              ┌──────┴──────┐
          (you₂)
                    ┌────────┴────────┐
                   do              VoiceP
                            ┌────────┴────────┐
                       Voice[Act]         <vP_E>
                                      ┌──────┴──────┐
                                     t₂
                                            ┌────────┴────────┐
                                         v_trans            VP
                                                        ┌────┴────┐
                                                       freeze this
```

The crucial element involved in these accounts is the separation of the head that determines voice from the head that determines the external valency of the predicate. There is in fact no conceptual reason these two should go together, and the ellipsis facts argue directly against this assumption.

Another well-studied alternation involving subjects and non-subjects is the middle. In languages like English, while the morphology of the verb remains constant (namely, active), the argument realization changes:

(35)   a. They market ethanol in the Midwest.

        b. They sell Hyundais in Greece.

        c. Studios release action films in the summer.

(36)   a. Ethanol markets well in the Midwest.

        b. Hyundais don't sell well in Greece.

        c. This kind of movie generally releases in the summer.

No such alternations are found between antecedent∼ellipsis pairs, however:

(37)   a. *They market ethanol in the Midwest, and regular gas doesn't.

        b. *They sell Hyundais in Greece because Hondas don't.

        c. *Studios release action films in the summer, and big-name comedies generally do as well.

(38)   a. *Ethanol markets well in the Midwest, though they don't in the South.

        b. *Hyundais don't sell well in Greece because dealers don't.

        c. *This kind of movie generally releases in the summer, though a studio might in the winter if it's Christmas-themed.

This follows, again, if the heads which regulate this alternation are internal to vP, under Voice. (And indeed if lexical, non-syntactic, approaches to middle formation are correct as well.)

4.3.2   Internal argument alternations under ellipsis

If internal argument alternations are regulated by syntactic heads (or even lexical rules operating on V entries) that are lower in the clausal structure than the heads that introduce external arguments, and lower than the Voice head, then we expect that all such alternations, even perfectly meaning-preserving ones, will be illicit across antecedent-ellipsis pairs. This is in fact the case. This was pointed out for sluicing in Chung et al. 1995, and discussed further in Merchant 2001 and Chung 2005.

This holds for the ditransitive diathesis illustrated by *serve* in (39): as (40) shows, all combinations of the internal arguments can serve as *wh*-remnants in sluicing, but if one alternant occurs in the antecedent clause—for example, $serve_1$—, the same alternant must occur in the elided clause. Thus while (40c) is possible, since *who* originates as the first object of $serve_1$, in (41a), the PP *to whom* is ruled out, since $serve_1$, present in the antecedent, does not license a PP complement. Any attempt to use the other alternant, $serve_2$, as in (41b), fails.

(39)   a.   They served$_1$ someone something.

        b.   They served$_2$ something to someone.

(40)   a.   They served$_1$ the guests something, but I don't know what.

        b.   They served$_2$ something to the guests, but I don't know what.

        c.   They served$_1$ someone the meal, but I don't know who.

        d.   They served$_2$ the meal to someone, but I don't know (to) who(m).

(41)   a.   *They served$_1$ someone the meal, but I don't know to whom.

        b.   *... to whom <they served$_2$ the meal t>

The absence of internal argument alternations under ellipsis also holds for null argument/prepositional phrase alternations. In such cases, a stranded preposition must have a correlate in the antecedent. These facts are examined at length in Chung 2005, who concludes that the identity relation in ellipsis must be in part stated over syntactic representations.

(42)   Mary was flirting, but they wouldn't say with who < Mary was flirting t>.

(43)   *Mary was flirting, but they wouldn't say who <Mary was flirting with t>.

(44)   a.   They sent the package—find out who to <they sent the package>!

        b.   *They sent the package—find out who <they sent the package to>!

This observation does not concern only stranded prepositions: object alternations that involve two different obliques (see Levin 2003 for further examples of predicates in this class) are equally impossible, even when the alternating preposition is pied-piped (and hence not stranded internal to the

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ellipsis site in violation of elliptical identity stated over only otherwise non-null distinct morphemes). The examples in (45)–(46) illustrate this for sluicing: (45) gives the alternation in question (*embroider X with Y* / *embroider Y on X*), and (46) demonstrates that the elided phrase must contain the same alternant as the antecedent.

(45) a. They embroidered something with peace signs.
     b. They embroidered peace signs on something.

(46) a. *They embroidered something with peace signs, but I don't know what on <they embroidered peace signs t>.
     b. *They embroidered something on their jackets, but I don't know with what <they embroidered their jackets t>.
       (On image impression reading of *with what*, not manner reading.)

The same can be seen in other elliptical phenomena, such as pseudogapping.[4]

(47) *She embroiders peace signs on jackets more often than she does with swastikas.

(48) a. *Abby flirted more often in general than Beth did <flirt with> Max.
     b. ?Abby flirted with Ben more often than she did <flirt with> Ryan.

(49) a. *He'd give Yale money more readily than he would <give money> to charity.
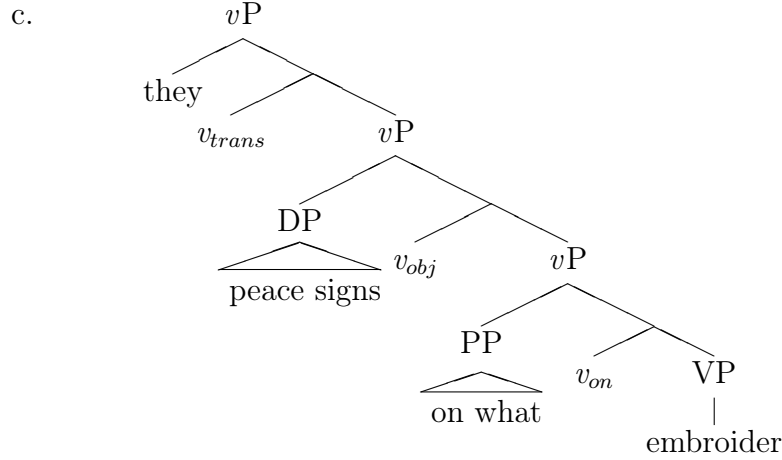   b. ?He'd give money more readily to Yale than he would <give money to> charity.

The lack of argument structure alternations (whether or not they involve stranded prepositions) follows if all such alternations reflect distinct heads in the numeration (Hale and Keyser 1993, 2001, et multi alii ante postque). Here I use v_{trans} from Kratzer 1996 to introduce the external argument, v_{obj} from Jelinek 1998 (what she calls $v_{[trans]}$; cf. Bowers 1993, 2002 and Basilico 1998) to introduce the direct object, and v_P to introduce arguments that are marked with various prepositions, following the line of work that

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[4]Miller 1991 gives an example of a diathesis switch under pseudogapping which he claims is acceptable; I cannot account for his judgment.

introduces oblique arguments as selected by 'applicative' vs of various sorts (see Pylkkänen 2003, Anagnostopoulou 2003 for recent approaches). The latter sort of v will be coded as selecting the appropriate preposition; for example v_{with} selects a PP headed by *with*, etc. Note that by Levin's 2003 test (possible cooccurrence with a 'fake' object *X's way into Y* as in *she embroidered her way into the record books*), *embroider* has a simple event structure: [x ACT<MANNER>]; I take this to mean that it has no selectional feature of its own.

(50)   a.   *They embroidered something with peace signs, but I don't know what on <they embroidered peace signs t>.

b.

c.

vP
- they
- v_{trans}
- vP
  - DP
    - peace signs
  - v_{obj}
  - vP
    - PP
      - on what
    - v_{on}
    - VP
      - embroider
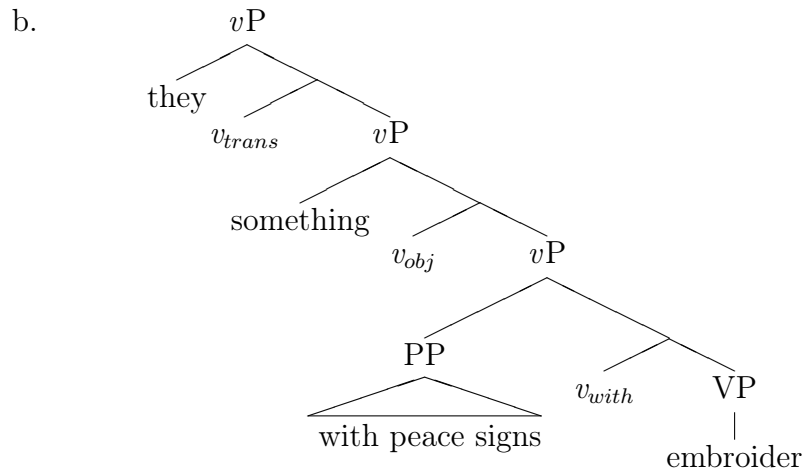
The complete lack of such argument structure alternations regardless of the size of the elided category follows from the syntactic identity condition if there is simply no location for the ellipsis-triggering E feature low enough in the structure to exclude the v heads that regulate these alternations. This is in contrast to the situation with voice, where VP-ellipsis can target the sister to Voice. The fact that even causative~inchoative/unaccusative alternations are ruled out is further evidence that the heads which determine this alternation (namely v_{trans} vs. v_{unacc}) are not the same as the head which determines the voice properties of the clause (namely Voice). This was demonstrated for sluicing, VP-ellipsis, and pseudogapping, but holds as well of fragment answers, gapping, and stripping. I have also omitted for reasons of space the nonelliptical controls: such nonelliptical controls show that the deviances found above are due to the ellipsis—while stylistically awkward, diathesis alternations across clauses without ellipsis does not give rise to ungrammaticality.

The above conclusions are also consistent with another set of facts raised in Johnson 2004. Following a substantial literature, he points out that *again* has two readings, one in which it indicates repetition of an event (the repetitive reading, given in (51a), and one in which it operates on the internal state (the restitutive reading, available in (51b)).

(51) a. The door was open. Ben closed it. It blew open. Maribel closed it again. (repetition)

   b. The door was closed. The wind blew the door open and no-one closed it. Finally, Maribel closed it again. (restitution)

Johnson shows convincingly that these two readings reflect two different possible attachment positions for *again*: the repetitive reading arises when *again* is adjoined high in the structure (to vP/VoiP or higher), and the restitutive reading arises when *again* is adjoined low (to VP).

The novel observation that Johnson 2004 makes is that the restitutive reading is absent in VP-ellipsis, and correctly concludes that this fact indicates that ellipsis in these cases is targeting a node which excludes a low-adjoined *again* from surfacing. On the structures proposed here, this fact follows because the boxed $\boxed{\text{VP}^1}$ in (52b) is not a possible target for deletion (since it is not the sister to a head with the E-feature), so (52a) cannot be generated.

(52) a. The door was closed. The wind blew the door open and no-one closed it. Finally, *Maribel did again.

     b.
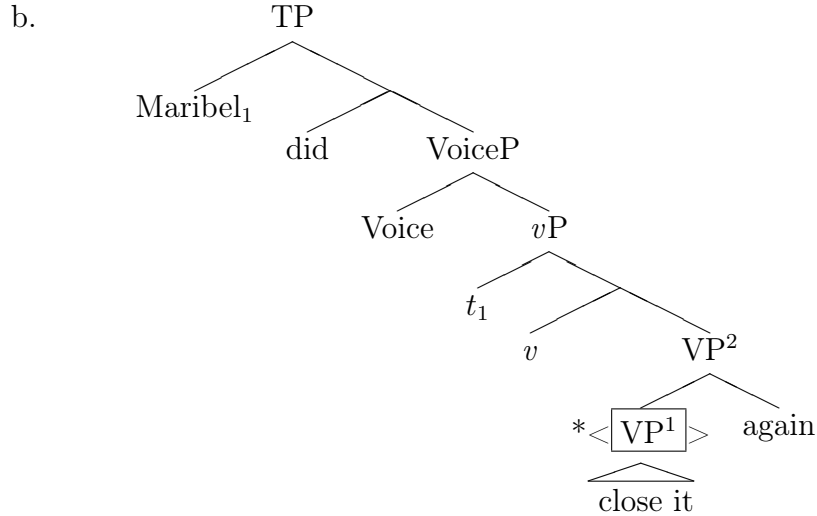
In sum, *no* argument structure alternations are possible under any kind of ellipsis: with the exception of voice, both sluicing and VP-ellipsis require antecedents that match in the exact syntactic expression of their arguments.

5   Conclusions

I have tried to show that not only must we posit syntactic structures internal to ellipsis sites, the identity relation that licenses ellipsis is sensitive to

syntactic form, and cannot be plausibly stated over linguistic representations in which the difference between active and passive expressions are neutralized. If voice mismatch had been uniformly possible in both low ellipses such as VP-ellipsis and in high ones like sluicing, we would have concluded that ellipsis identity is not sensitive to such syntactic information. If voice mismatch had been uniformly impossible in both kinds of ellipsis, we would have reached the conclusion that syntactic matching was required. Previous work on these questions has addressed only one or the other of the kinds of ellipses examined here, and so has generally reached one or the other conclusion, on the assumption of uniformity across ellipsis types. But it is precisely the *uneven distribution* of voice mismatches that proves such an analytical puzzle, since on its surface, it seems to require a non-uniform theory of ellipsis licensing—a conclusion that seems otherwise entirely unwarranted.

The uneven distribution of voice mismatches in high vs. low ellipses, coupled with the uniform ban on argument structure mismatches in all kinds of ellipsis, can be accounted for by a syntactic identity condition, as long as the relevant difference–here posited to be located in Voice—is external to the ellipsis site in low ellipses but internal to it in high ellipses. This distribution thus provides evidence that ellipsis identity is calculated over syntactic structures. On approaches that posit them, it appears that semantic or 'argument structure' or 'conceptual structure' representations are either too coarse-grained (entailment-based or inference-based approaches) or too fine-grained ('argument structure' in the HPSG sense) to make the necessary distinctions.

This analysis crucially relies on the assumption that surface differences can be due to different morphological realizations of what are syntactically the same items. These differing realizations are conditioned by the co-presence in the structure of elements *outside* the ellipsis site which triggers or determines the values of the features that the morphological realization rules are sensitive to. Specifically, these conclusions rely on a separation of traditional verbal information, with some of that information being encoded on (possibly unpronounced) higher nodes in the extended projection of the verb, though realized synthetically on the verb by the morphology of English. Frameworks which do not countenance such forms of distribution of features or which subscribe to some version of strong lexicalism cannot easily accommodate these data.

6   References

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