1. Central Claim

This paper argues that the English auxiliaries do, be, and have make no semantic contribution to a sentence, but are inserted to support stranded inflectional heads. The choice among them is syntactic, depending on structural properties of the insertion context. During the syntactic computation, have is inserted to support a head with a TP complement, and be is inserted to support other stranded heads. At PF, do is inserted to permit the pronunciation of a Tense head not heading a TP.

2. Theoretical context and assumptions

I assume the general approach of the Minimalist Program, (Chomsky 1995 and subsequent work), along with Distributed Morphology (Halle and Marantz 1993 and subsequent work). Thus, syntactic representations consist only of formal features, with vocabulary items inserted post-syntactically. Syntactic operations are assumed to be feature-driven, either to value an unvalued formal feature or to check an uninterpretable feature. I further assume that functional heads such as Tense, Determiner, and Complementizer consist of both interpretable features, which determine their grammaticalized semantic content, and uninterpretable features, which encode their c-selectional, agreement, and EPP properties.

2.1 Features and Vocabulary Items of Infl

For concreteness, I assume the feature-geometric analysis of English Infl proposed by Cowper (2005), with some minor modifications. The features of Infl are divided into three subgroups, encoding viewpoint aspect, narrow tense, and finiteness/mood, respectively, as shown in (1).

<table>
<thead>
<tr>
<th>(1)</th>
<th>Finiteness/Mood</th>
<th>Narrow tense</th>
<th>Viewpoint Aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Proposition</td>
<td>Precedence</td>
<td>Event</td>
</tr>
<tr>
<td></td>
<td>Finite/Deixis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Modality</td>
<td></td>
<td>Interval</td>
</tr>
</tbody>
</table>

*I am very grateful to Daniel Currie Hall, Lisa Cheng, Sarah Clarke, Diane Massam, and audiences in Leiden, in Toronto, and at the CLA, for helpful comments on earlier versions of this paper.

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The vertical lines in (1) represent dependency relations, with the lower feature dependent upon the higher one. In the finiteness/mood system, Proposition distinguishes propositions from bare events or states, and Finite licenses structural nominative case and agreement. Deixis anchors the clause to the deictic centre of the utterance (usually the utterance time), while Modality encodes either necessity or possibility. In the narrow tense system, Precedence distinguishes past from non-past clauses. In viewpoint aspect, Event distinguishes eventive from stative clauses, while Interval distinguishes imperfective from perfective events.

The vocabulary items of the English Infl system are shown in (2), along with the features that they spell out.

\[
\begin{align*}
-\text{ing} & \Leftrightarrow \text{Interval} \\
-\text{es} & \Leftrightarrow \text{Finite/Deixis} \\
-\text{ed} & \Leftrightarrow \text{Finite/Deixis} + \text{Precedence} \\
-\text{en} & \Leftrightarrow \text{Precedence} \\
\text{could, would, etc.} & \Leftrightarrow \text{Modality} + \text{Precedence} \\
\text{can, will, etc.} & \Leftrightarrow \text{Modality}
\end{align*}
\]

2.2 Mapping to Syntax - the articulation of Infl

I assume that the features of Infl map to an articulated syntactic structure, consisting of at least the projections shown in (3).

EventP, or EP, houses viewpoint aspect, and as such corresponds roughly to the similarly-named projection proposed by Travis (2010). However, following Cowper (2005), I assume that EP appears only in eventive clauses, and is absent

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1Note that the version of EP used here differs from that used by Borer (2005), which appears above TP and does not distinguish events from states.
from stative clauses. MP, or Modal Phrase, hosts the lexical, or non-featural, content of English modals. In line with much work on modals, including that of Hall (2001), I take English modals to be portmanteau elements spelling out both lexical and inflectional content. In the spirit of Abusch (1985), I express the lexical content of the various modals with elements such as those listed in (4). These elements move to T in the syntax, as will be discussed below.

(4) a. will, would WOLL
b. can, could POSS
c. must NECESS
d. shall, should SOLL

TP in (3) hosts the inflectional features of Mood as well as those of Narrow Tense, and in fact TP is actually a projection of the feature Proposition in (1). Only propositional clauses can exhibit a contrast between present and past, and the narrow-tense feature Precedence is thus a semantic dependent of Proposition. For reasons of familiarity, I will nonetheless retain the standard label TP for this projection.

The infinitival marker to heads its own syntactic projection. Clauses headed by to are phasally defective, as shown by Cowper and Hall (2001).

Finally, NegP hosts clausal negation. The analysis of auxiliary verbs to be proposed here makes it possible, and indeed necessary, that Neg merge as the highest element in the Infl system, above both T and infinitival to. Space does not permit a full discussion of the merits of this move; suffice it to say that it has been argued (Zanuttini 2001) that Neg merges above T in a variety of languages, and that semantically, there is no reason to believe that negation should not take scope over tense (Chierchia and McConnell-Ginet 1990: 232).

The structure in (3) raises the question of which head carries the EPP property of IP. I assume that the EPP property is true of the Infl system as a whole, and is realized on whichever projection is the last one to merge.²

3. Selection and Feature-Checking in Infl

It has been proposed (Adger 2010; Adger and Svenonius to appear) that the operation of Merge is triggered by a need to check categorial features. I take a slightly different view, namely that it is s-selectional properties that trigger Merge, while

²See Potsdam (1997), who argues that Neg licenses ellipsis in (1). The subject he is thus in the specifier of NegP.

(1) Fred wants to take the car, but it’s absolutely essential that he not.
c-selectional category features are checked immediately on Merge. I further assume that some, but not all, interpretable features of inflectional heads assign a value to the element that checks their category feature.

The lowest Infl head, Event, carries a c-selectional feature \([uV/uv]\), which can be checked under Agree either by the lexical verb (V) or by a light verb (v). When Event is marked with its dependent feature, Interval, Event has the additional property of valuing V, so that it is ultimately pronounced with the participial suffix -ing. Thus, when Interval is present, Event can be checked only by V, not by v.

M, T, and to all carry the c-selectional feature \([uV]\), and thus must be checked under Agree by a lexical verb. For M and to, this is all that needs to be said; both leave the verb they c-select unvalued, and the verb thus surfaces as a bare stem. The dependent features of T, however, affect whether and how T values the verb it c-selects. When T is marked with both Precedence and Finite/Deixis, it values the verb as a finite past-tense form. If Precedence appears without Finite/Deixis, the verb is valued as the past participle, while if Finite/Deixis appears without Precedence, it is valued as a finite present-tense form.

The feature Modality is somewhat different. It carries a c-selectional feature \([uM]\), which can only be checked by a lexical modal verb such as woll or one of the others listed in (4) above. In addition, that feature is strong, forcing the lexical modal verb to move overtly to T. Since the lexical modals are a subset of the category V, the strong \([uM]\) feature contributed by the Modality feature will override the \([uV]\) feature carried by a bare T head.

The highest head in the Infl system, Neg, carries a c-selectional \([uT]\) feature, which is checked under Agree. In finite clauses, as we shall see, T moves to Neg overtly; I assume that this is required in order to permit the realization of Nominative case on the subject in the specifier of NegP.

There are two more elements that affect the behaviour of auxiliary verbs in English. These are the passive light verb \(v\text{en}\), and the matrix interrogative complementizer \(CQ\). I assume that light verbs in general carry a c-selectional \([uV]\) feature, which must be checked on merge. Most light verbs do not assign a value to the verb they c-select, but the passive light verb does, causing the verb

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3Space constraints prevent a full discussion of the relative merits of these two positions; however, the data in (1) suggest that at least some instances of head-complement merge do not require the complement to be of a particular syntactic category. Rather, the complement must be able to satisfy the semantic/thematic requirements of the head.

(1) a. They expected [\(DP\) a better answer].
   b. They expected [\(CP\) that the train would be late].
   c. They expected [\(toP\) the train to be late].

4I assume here that Nominative Case is the spelling-out of an uninterpretable T feature on DP, as proposed by Pesetsky and Torrego (2004).
ultimately to be pronounced as the passive participle. The matrix interrogative complementizer \( C_Q \) carries a strong \([uT]\) feature, which triggers overt movement of the T head out of TP, adjoining it to C.

Finally, a word needs to be said about the lexical verb, V. I assume that V enters the derivation with an unvalued inflectional feature that makes it available to check c-selectional features of higher heads. As long as the inflectional feature of V remains unvalued, a single V can continue to check c-selectional features of higher heads. However, as soon as the inflectional feature of V is valued, V becomes inert and unavailable to participate in further feature-checking. If a derivation ends leaving the inflectional feature of V unvalued, then the verb is pronounced by default as a bare stem.

The examples in (5) and (6) show how c-selection works. Checked features are shown with a strike-through, and copies of moved constituents are shown in angle brackets. When a verb is valued on checking, the category that values it is indicated as a subscript in italics. It should also be borne in mind that the lexical items themselves are included only to make the structure easier to read; as stated earlier, only formal features are present during the syntactic computation.

(5) Lisa drew a picture.

```
  (DP) V
  (Lisa) v

  (vP) v

  (EP) Event

  T'[uV][EPP]

  FIN/DX PREC

  TP

 Lisa

  T'
```

In (5), V checks uninterpretable V-features on v, E, and T. V is valued by T, and at PF is spelled out as drew. The DP in spec/vP moves to spec/TP, checking EPP of T.

(6) Sybren could speak Cantonese.
This sentence is slightly more complicated, since T bears the feature Modality, and MP appears between T and EP. Here, V checks uninterpretable V-features on v, E, and M. None of these heads assigns a value to V’s inflectional feature, and the verb is thus ultimately pronounced as a bare stem. M moves to T, checking the strong M-feature of T. T values M, which is ultimately pronounced as could. As before, the DP in spec/vP moves to spec/TP, checking EPP of T.

4. Where do auxiliary verbs come from?

Given the view of c-selection and feature-checking just outlined, it is possible to claim that be and have are not merged as Vs heading VPs. Rather, they are inserted during the syntactic computation, in a structurally-conditioned way, simply to check categorial features of inflectional heads. We turn first to the least marked auxiliary verb, be.

4.1 Auxiliary be

The primary contexts of auxiliary be are progressive and passive clauses like those in (7).

(7) a. Marc is reading the magazine.
    b. Sarah was hired.

The derivation of (7a), up to the point where T merges, is schematized in (8).
Here, V has checked uninterpretable V-features on v and E. Since E bears the feature Int, E assigns a value to V’s inflectional feature, making V unavailable to check any higher c-selectional features. Thus, no verb is available to check [uV] of T. The derivation cannot proceed leaving [uV] of T unchecked, since c-selectional features must be checked immediately upon Merge.

Effectively, then, T is stranded in (8), in the sense that there is no verb in the structure that can check T’s features, or realize any inflectional value that T may have to assign. Let us refer to this situation as being stranded on Merge, or Merge-stranded, as in (9a). This, I propose, is the trigger for the rule of BE-support, given in (9b).

\[(8)\]

\[
\begin{align*}
TP \quad & \\
T_{[uV]} \quad & \text{FIN/DX} \\
E \quad & \text{vP} \\
INT \quad & \text{DP} \\
Marc \quad & \text{VP} \\
V_{[v]} \quad & \text{DP} \\
\end{align*}
\]

\[
\text{read} \quad \text{the magazine}
\]

Once \textit{be} is inserted, it immediately checks the V-feature of T, and is valued by T. The subject DP moves to spec/TP, checking EPP of T, and the result is as shown in (10).

\[(9)\]

a. **Stranded on Merge**: A head is stranded on Merge, or Merge-stranded, if it has an uninterpretable category feature that cannot immediately be checked.

b. **BE-support**: The verb \textit{be} is inserted immediately in a Merge-stranded Infl head.
The passive clause in (7b) is similar, except that it is the passive light verb rather than E that values V. The light verb itself checks [uv/V] on E, but cannot check [uV] of T. Be-support thus applies at T, as shown in (11).

The sentence in (12) combines the situations in (10) and (11). Here, V checks and is valued by the passive light verb. When E merges, bearing the feature Interval, it is merge-stranded, triggering Be-support. Be checks and is valued by E, with the result that when T merges, it is also merge-stranded, triggering be-support a second time and giving the structure in (13).

(12) Jenny was being entertained.
Inserting *be* directly on the stranded inflectional head predicts, without further head movement, that if *T* moves to a higher inflectional head such as Neg or C, *be* will move as well, as happens in (14).

(14) a. Ben isn’t reading the magazine.
   b. Is Ben reading the magazine?

4.2 The status of copular *be*

The literature is full of discussions of whether copular *be* should be treated as a lexical verb heading a full VP, or whether it should be considered an inflectional element simply supporting otherwise stranded morphological elements. Some such proposals can be found in work by Eide and Åfarli (1999), Cann (2003), Schütze (2004), Progovac (2006), and many others.

Regardless of where copular *be* originates, it is clear that in at least some cases, it ends up in an inflectional head. First, if copular *be* is the highest verb in its clause, it moves to Neg and to C just as auxiliary *be* does. In this, copular *be* contrasts with verbs like *seem* and *look*, which behave like lexical verbs and don’t move to Neg or to C.

(15) a. George isn’t happy.
   b. Is Martha Scottish?

(16) a. i. * George seemsn’t happy.
   ii. George doesn’t seem happy.
   b. i. * Looks Martha Scottish?
   ii. Does Martha look Scottish?

Second, when copular *be* is the highest verb in the clause, it is not deleted in ellipsis constructions, as in (17), just like the auxiliary *be* in (18). Again, this contrasts with the behaviour of *seem*, which is deleted just like a lexical verb.
(17)   a. Rint is ready to go, and Lisa is ⟨ready to go⟩ too.
       b. * Rint is ready to go, and Lisa does ⟨be ready to go⟩ too.

(18) Rint is going to Paris, and Lisa is ⟨going to Paris⟩ too.

(19)   a. Philip seemed worried, but Tanya didn’t ⟨seem worried⟩.
       b. * Philip seemed worried, but Tanya seemedn’t ⟨worried⟩.

These data follow automatically if copular *be*, like auxiliary *be*, is inserted by BE-support, as shown in (20). The lack of a lexical verb in the sentence means that T is stranded on Merge, triggering be-support.

(20) Roberta was happy.

```
TP
   /
  DP
     /
Roberta
     /
   T'
      /
T\[uV\]
    /
V_{(T)}
  /
(Roberta) happy
```

Some instances of be seem to carry more meaning than the one in (20). In (21a), be seems to be both eventive (polite behaviour was happening) and agentive (Martina was behaving in a certain way). The interpretation of (21b) is that Wayne behaved rudely on three occasions—again both eventive and agentive. If all instances of be are to be accounted for by the rule of be-support proposed above, an account will have to be given of the eventive/agentive interpretations.

(21)   a. Martina was being polite.
       b. Wayne was rude three times.

The first piece of the answer is that EP is present in these two sentences—in (21a) bearing the dependent feature Interval. Since there is no lexical verb in (21a), both E and T are merge-stranded. Since each of the two heads assigns a value to the verb that checks its V-feature, be-support applies twice, as shown in (22).
The difference between (21a) and (21b) is that in (21b), E does not carry the dependent feature Interval, and thus does not value be when be-support applies. Be thus remains available to check and be valued by T. For reasons that are not entirely clear, it appears that in this case, be moves overtly from E to T. This can be seen from the fact that it subsequently moves to Neg or to C, as shown in (23).

(23) a. Wayne wasn’t rude even once today.
   b. Was Wayne rude at all today?

The presence of Event in such sentences accounts for the eventive interpretation. The agentivity of the subject in a copular sentence correlates fairly strongly with eventivity, but the correlation is not perfect, as shown by the data in (24).

(24) a. i. Martin was lethargic all day. (stative, non-agentive)
   ii. Martin was deliberately lethargic all day. (stative and agentive)
   b. i. The baby was sick twice, so I took her to the doctor. (eventive, but not agentive)
   ii. The malingerer was sick on purpose, so we made him clean it up. (eventive and agentive)

Following and slightly adapting Kratzer (1996), I assume that agentive external arguments are merged in, or moved to, the specifier of Voice.5 I further propose that Voice may merge in a clause that lacks a lexical verb. The difference between the (i) and (ii) examples in (24) is thus due to the presence or absence of VoiceP above AP, as in (25).

5As noted by Jackendoff (1972), the thematic role of agent frequently combines with other thematic roles such as theme, source, goal, or location. This is expected if the specifier of Voice can be filled either by external Merge, giving a pure agent, or by Move/Internal Merge, adding agentivity to an argument originally merged in another thematic position.
Having shown that auxiliary and copular *be* can be accounted for by the rule of *Be*-support, we now turn to auxiliary *have*.

### 4.3 Auxiliary *have*

This section demonstrates that the choice between auxiliary *be* and auxiliary *have* can be made on purely structural grounds. Both are inserted to support Merge-stranded inflectional heads, but *have* is subject to a contextual restriction that does not apply to *be*. Specifically, *have* is inserted when the stranded inflectional head has a TP complement. This can be seen by comparing (26a) with (26b).

(26)  

<table>
<thead>
<tr>
<th>a.</th>
<th>She had entertained the children.</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>She was entertaining the children.</td>
</tr>
</tbody>
</table>

Both sentences contain a single auxiliary verb and a participial form of the lexical verb. If both auxiliary verbs are inserted by a syntactic rule, then we must explain why *have* is inserted in the first case, and *be* in the second.

The difference between the two sentences can be seen in (27). The structure in (27a) has two TP projections, while the structure in (27b) has only one.
(27) a. TP
   DP
   she
   T
   T'
   FIN/DX PREC
   TP
   T
   [uV]
   EP
   PREC
   E
   vP
   ⟨she⟩ entertain[?T] the children

b. TP
   DP
   she
   T
   T'
   FIN/DX PREC
   EP
   T
   [uV]
   E
   vP
   ⟨she⟩ entertain[?E] the children

In (27a), V checks [uV/v] of E and [uV] of T and is valued by T, so that the higher T is stranded on Merge. In (27b), since E bears the feature Interval, V is valued by E and cannot check [uV] of T. In both structures, then, T is stranded on Merge. The crucial difference, which determines which auxiliary is inserted, is that the stranded T in (27a) has a TP complement, while the stranded T in (27b) does not. Whenever a merge-stranded Infl element has a TP complement, have, rather than be, is inserted. This is captured in the revised rule of Aux-Support, stated in (28).

(28) **Aux-Support:** Have is inserted in a Merge-stranded Infl head with a TP complement. Be is inserted in any other Merge-stranded Infl head.

This rule accounts for the appearance of auxiliary have in perfect tense forms such as the one in (26a), and also accounts for its appearance in two other constructions that superficially resemble the perfect, but are, in fact, merely non-finite past tense forms. Consider the data in (29) and (30).

(29) a. We believe the boys to have eaten lunch at noon today.
b. We believe that the boys ate lunch at noon today.
c. We believe that the boys have eaten lunch (*at noon today).
In both of these sets of sentences, the (a) sentence corresponds more closely in meaning to the (b) sentence, which contains a simple past tense subordinate clause, than to the (c) sentence, whose subordinate clause is in the perfect. The distinction is made especially salient by the point adverbial *at noon today*, which cannot appear with the perfect and is thus ill-formed in the (c) sentences. I conclude from this that the presence of *have* in the (a) sentences has nothing to do with the perfect. However, each of these sentences contains a merge-stranded inflectional head with a TP complement, as shown in (31) and (32).

(31)

```
(31)  MP
     \   /
      M
     \  /  
poss  TP  PP
     \  /  
      T
     \  /  
   PREC EP vP
     \  /  
     at noon today
     \  /  
     vP
     \  /  
     the boys eat at noon today
```

(32)

```
(32)  toP
     \   /
      toP
     \  /  
      TP
     \  /  
      PP
     \  /  
      T
     \  /  
   PREC EP vP
     \  /  
     at noon today
     \  /  
     vP
     \  /  
     they take at noon today
```

In both of these structures, the lexical verb checks the \([uV]\) features of \(v\), \(E\), and \(T\), and is valued by \(T\), ultimately being pronounced as the past participle. The verb is thus unavailable to check the \([uV]\) feature of the next head that merges,
to in (31) and the modal *poss* in (32). Those heads are thus merge-stranded, triggering Aux-support. Since the complement of each of these heads is TP, *have* is inserted rather than *be*.

5. **T outside TP: DO-support**

The conditions governing the insertion of auxiliary *do* are quite distinct from those triggering Aux-support. In this section, I show that *do* is inserted at PF to permit the pronunciation of a T that, for one reason or another, no longer heads a TP.

Auxiliary *do* is inserted when T moves to a higher inflectional head such as Neg or C. Assuming that Neg is merged above T, T then moves to Neg in finite clauses so as to be local to C and permit nominative case to be checked on spec/Neg (cf. Pesetsky and Torrego 2004). In nonfinite clauses, T remains in situ, as illustrated in (33), and checks [uT] of Neg under Agree.

(33)  a. We expect the children [not to be talking when the curtain went up].
    b. The students prefer [not being excluded from important decisions].

Movement of T to the matrix interrogative complementizer C\(_{Q}\) is triggered by a strong [uT] feature of C. When Neg and C\(_{Q}\) are both present, T moves first to Neg, and then T and Neg move together to C\(_{Q}\).

Generally speaking, there are two possible situations when T moves to Neg or to C\(_{Q}\). T may already contain a verbal element, such as *be*, *have*, or a modal. In that case, the verbal element automatically moves with T, and is pronounced in Neg, or in C, as the case may be. The second possibility, which concerns us here, is that T does not contain a verbal element, as in (34).

(34)  a. She didn’t entertain the children.
    b. Did she entertain the children?
    c. She entertained the children.

The structure below TP is identical in all three sentences in (34). We thus expect V to check [uV] of v, E, and T, in all three cases, and to be pronounced as *entertained*. This expectation is fulfilled only in (34c); in the other two sentences the verb is pronounced as a bare stem. Under a cyclic view of the syntax, there is no obvious way to prevent checking between V and the inflectional heads up to

---

6Space does not permit a discussion of the differences in behaviour between *not* and *n’t*, exemplified in (1).

(1)  a. Haven’t you seen his new car?
    b. Have you not seen his new car?

I restrict attention here to the dependent form, *n’t*, which moves with T when T moves past NegP to C.
and including $T$. Both $\text{Neg}$ and $C$ are merged above $TP$, after $[uV]$ of $T$ is checked. Somehow, movement of $T$ to $\text{Neg}$ and/or $C$ breaks the already-established relation between $T$ and $V$, preventing $T$ from being spelled out on $V$, and stranding $T$ in some fashion.

Intuitively, the problem seems to be that the inflectional features of $T$ cannot be realized without a verbal stem to host them. This problem arises only when $T$ moves out of $TP$, to $\text{Neg}$ or to $C$.

Following a suggestion by Daniel Currie Hall (p.c.), I propose a PF requirement that if $T$ is not dominated by the $TP$ it heads, it must be phonetically realized, whether or not it has been checked, or has valued a verb’s inflectional feature. I also assume, standardly, that affixes cannot be pronounced unless they are attached to a stem. If this idea is on the right track then any moved $T$ that does not contain a verbal element will be stranded at PF. This gives us the environment for $do$-support, stated in (35).

(35) **Do-support**: $Do$ is inserted at PF to permit pronunciation of a $T$ not heading a $TP$.

A sentence like (34b) would thus be derived as follows. When $T$ is merged, it Agrees with $V$ in the ordinary way, and values the inflectional feature of $V$. When $C$ merges with $TP$, $T$ moves to $C$ to check strong $[uT]$ of $C$. Then, after spellout, when Vocabulary Items are inserted and their morphophonological realizations computed, the fact that $T$ has moved out of $TP$ makes the valuation of the inflectional feature of $V$ unrecoverable, and the verb is pronounced, by default, as the bare stem *entertain*. Since $T$ is outside $TP$, it must be phonologically realized, but it contains no stem to host the inflectional material it contains. $Do$-support therefore applies at PF, permitting $T$ to be pronounced.

$Do$-support thus has a different status from $be$-support and $have$-support, in that it is not triggered in the syntax by the need to check features, but rather at PF by the need to pronounce a $T$ head that is not in $TP$.

5.1 Negated imperatives: $T$-support?

The account proposed here makes possible a fairly straightforward account of an initially mysterious property of negated imperatives in English. We saw earlier that in declarative clauses and questions, $do$-support applies only in the absence of other auxiliary verbs. However, in negated imperatives, $do$ is required regardless of the presence of other auxiliaries or copular $be$, as shown in (36).

(36) a. Don’t eat the vegetables.
   b. Don’t be eating vegetables when the inspector arrives. (cf. *Be n’t eating vegetables...*)
c. Don’t be surprised when the bell rings. (cf. *Be n’t surprised...)

d. Don’t be rude. (cf. Be n’t rude.)

Suppose that imperative clauses lack TP, and consist of a CP with an EP complement. Negated imperatives have a clausal NegP between CP and EP. Crucially, this is the same clausal NegP as appears in declarative and interrogative clauses, and its head thus has a strong [uT] feature, just as it does in ordinary sentences. A sentence like (36a) would thus have the structure shown in (37).

\[
(37) \quad \begin{array}{c}
CP \\
\downarrow \\
CP \\
\downarrow \\
C_{imp} \\
\downarrow \\
NegP \\
\downarrow \\
Neg[uT] \\
\downarrow \\
\text{n’t EP} \\
\downarrow \\
vP \\
\text{pro eat the vegetables}
\end{array}
\]

V checks [uv/V] of E in the ordinary way. However, when Neg merges, there is no T available to check its [uT] feature. The situation here is entirely parallel to the one we saw earlier, where an auxiliary verb was inserted to permit checking of [uV] on a merge-stranded head. Here, the unchecked feature is [uT], and a T head is thus inserted on the merge-stranded head, as in (38). The inserted T makes no semantic contribution to the clause; it is there merely to permit feature-checking.

\[
(38) \quad \begin{array}{c}
CP \\
\downarrow \\
CP \\
\downarrow \\
C_{imp} \\
\downarrow \\
NegP \\
\downarrow \\
Neg[uT] \\
\downarrow \\
\text{T n’t EP} \\
\downarrow \\
vP \\
\text{pro eat the vegetables}
\end{array}
\]

This structure satisfies all syntactic requirements. However, at PF, T runs afoul of the requirement that a T not heading a TP must be pronounced. This situation triggers do-support, and the result is (36a).

The T-insertion rule proposed here automatically predicts that do is inserted in negated imperatives even when the clause contains an auxiliary or copular be.
Consider the structure of (36d), shown in (39).\(^7\)

(39)  
```
    CP
   /  \
C_imp  NegP
     /  \     /  \\
    Neg [n't]  EP
    /     |   /   |
   E  AP   V  pro rude
      |
      BE
```

As shown, \textit{be} is inserted to check \([uv/V]\) of \textit{E}. Since the structure lacks TP, Neg is Merge-stranded, and \textit{T} is inserted to check \([uT]\) of Neg. However, the inserted \textit{T}, unlike interpretable \textit{T} heads, is merely a dummy categorial head. It does not s-select or c-select, and thus does not enter into an Agree relation with \textit{be}. At PF, \textit{do} is inserted to permit pronunciation of \textit{T} not heading TP.

If we assume, in the spirit of Laka (1990), that clausal negation and affirmative emphasis are two versions of the same head, and further assume that both versions carry a \([uT]\) feature, then emphatic DO-support, as in (40), follows automatically.

(40)  
\begin{enumerate}
  \item I haven’t read the play, but I \textbf{do} know the actors reasonably well.
  \item \textbf{Do} come in. We’re happy to see you.
  \item I don’t know the answer, but I \textbf{have} thought seriously about the question.
  \item \textbf{He must} come to the party. He’s so entertaining.
\end{enumerate}

Inserted \textit{do} exhibits the same initially puzzling pattern in emphatic imperatives as it does in negated imperatives, as shown in (41).

(41)  
\begin{enumerate}
  \item \textbf{Do} be quiet—we’re trying to hear the birds.
  \item Please \textbf{do} be sitting perfectly still when the inspector arrives.
\end{enumerate}

6. Consequences and further questions

We have seen that the conditions determining auxiliary verb insertion arise either during the syntactic computation (for \textit{be}, \textit{have} and \textit{T}), or in the post-syntax (for

\(^7\)I have omitted \textit{VoiceP} from this structure, as it makes no difference to the point at issue.
do). It thus seems that some grammatical formatives are inserted during the syntactic computation, while others are inserted postsyntactically. This is an expansion of the range of possibilities available to Distributed Morphology. It would be worth exploring whether it might be possible to insert simply a dummy categorial head in the syntax, and spell it out postsyntactically as have or be. The problem that will have to be solved, under such an approach, is that the conditions determining the choice between have and be hold during the syntactic computation, and may not be recoverable in the postsyntax.

Another question raised by the analysis sketched here is that of the relation between auxiliary verbs and their main-verb counterparts. We saw that it might be possible to account for all instances of be with the rule of Aux-support, but both have and do have uses that cannot be assimilated to the analysis given here. In addition, the analysis is interesting to the extent that it can be shown to exemplify a cross-linguistic phenomenon. Further work is required to determine whether auxiliary verbs in other languages can be treated in a similar fashion.

References


Schütze, Carson T. 2004. Why nonfinite be is not omitted while finite be is. In *Proceedings of the 28th Boston University Conference on Language Development*.
