One *be*

Rose-Marie Déchaine

0. Introduction

In many languages, including English, only verb predicates inflect:[1]

(1)   Lucy translat-*ed* the book.   (2)   *Lucy *was* translate the book.
        *Lucy anarchist-*ed*.   Lucy *was* an anarchist.
        *Lucy at-*ed* the protest.   Lucy *was* at the protest.
        *Lucy brilliant-*ed*.   Lucy *was* brilliant.

Not only must verbs inflect for tense, but a sentence must contain an inflected verb:

(3)   *Lucy translate Rosa Luxemburg's letters.
        *Lucy {an anarchist/at the protest/brilliant}.

The V/non-V split disappears in certain embedded contexts:

(4)   I saw Lucy [depart]
        I consider Lucy [a genius/off her rocker/brilliant]

(4) establishes that non-verb predicates don't require the copula in order to be licensed. Why the split between V and non-V predicates in tensed clauses? Descriptively, V predicates are directly selected by Tense in a structure like (5a). Non-V predicates require an intervening V projection in the form of the copula, (5b).

(5)   a $[_{TP}$ DP $[_{\bar{T}}$ Tense $[_{VP}$ V ... $]]]$
        b $[_{TP}$ DP $[_{\bar{T}}$ Tense $[_{VP}$ *be* $[_{XP}$ X ... $]]]]$ X = {N, P, A}

The presence of *be* in (5b) follows from how Functional heads (henceforth F-heads) are associated with Lexical heads. Some F-heads — specifically Tense, Aspect and σ — c-select (categorially select) for a V projection. I call this the *c-selection constraint*. Before looking at how the c-selection constraint permits a unified analysis of all occurrences of *be*, one must first establish that *be* is a verb.

---

1. BE is a verb

On one view, *be* is inserted into T to provide support for otherwise stranded tense features. On another view, *be* is a verb, which sometimes but not always raises to T. Four types of evidence support the latter, namely that *be* heads a V projection distinct from T: subject-aux inversion, negation/affirmation, tag questions and adverb placement. (Henceforth, only examples with adjectival predicates are given, with the understanding that they are representative of non-verb predicates.)

   With subject-aux inversion, if *be* occurs with a modal it remains *in situ*, i.e. within its V projection, (6a). If nothing else is in T, *be* raises, surfacing as inflected *be*, and is accessible for further raising to C, (6b).

(6)   a $[_C$ Will$_i]$ $[_{TP}$ Lucy $[_T$ $t_i]$ $[_{VP}$ be $[_{XP}$ late]]]?
       b $[_C$ Is$_i]$ $[_{TP}$ Lucy $[_T$ $t_i]$ $[_{VP}$ t_i $[_{XP}$ late]]]?

If negation/affirmation group together as the same syntactic category σ (Gleitman 1969, Laka 1990), the distribution of *be* supports the hypothesis that *be* heads its own V projection: if *be* stays in situ, it follows σ, (7a); if *be* raises, it precedes σ, (7b). (UPPER CASE represents focus intonation.)

(7)   a   Lucy $_T$will $[_{σP}$ not/SO/TOO $[_{VP}$ be $[_{XP}$ late]]]
       b   Lucy $_T$is$_i$ $[_{σP}$ not/SO/TOO $[_{VP}$ t_i $[_{XP}$ late]]]

Tag questions, formed by copying material in T combined with the polar value of σ (Heggie 1988:22), provide a third diagnostic which supports the analysis of *be* as V. *In situ* (uninflected) *be* is not copied onto the tag, but raised (inflected) *be* is:[2]

(8)   a   Lucy $_T$can $[_{σP}$ AFF $[_{VP}$ be $[_{XP}$ late]]], can't she?
            Lucy $_T$can $[_{σP}$ n't $[_{VP}$ be $[_{XP}$ late]]], can she?
       b   Lucy $_T$is$_i$ $[_{σP}$ AFF $[_{VP}$ t_i $[_{XP}$ late]]], isn't she?
            Lucy $_T$is$_i$ $[_{σP}$ n't $[_{VP}$ t_i $[_{XP}$ late]]], is she?

The fourth and final diagnostic to be discussed is adverb placement (Heggie 1988: 20*f.*). If *be* heads a VP, this predicts that VP adverbs such as *already* and *suddenly* will precede in situ (uninflected) *be*, and follow raised (inflected) *be*:

(9)   a   Lucy $_T$may $[_{VP}$ already $[_{VP}$ be $[_{XP}$ late]]]
            Lucy $_T$is$_i$ $[_{VP}$ already $[_{VP}$ t_i $[_{XP}$ late]]]

---

[2] Declarative clauses taking a negative tag implies there is a covert affirmative σ (Gleitman 1969).

Be's syntactic ambivalence with these four diagnostics (subject-aux inversion, σ-placement, tag questions and adverb placement) reflects the fact that it patterns with main verbs if it stays in situ, and patterns with auxiliaries if it raises to T. But having shown that *be* does indeed head a V projection, we still wonder why *be* is there at all.

2. There is one BE

The arguments presented so far in support of the claim that *be* is V have been based on its occurrence with non-verb predicates. But *be* doesn't only occur with non-verb predicates, and the literature posits a number of distinct *be*'s:

				c-selected by
(10)	a	Lucy was$_1$ good.	'copular' *be*	Tense
		Lucy was$_2$ the teacher.	'equative' *be*	Tense
		The cake was$_3$ eaten by Lucy.	'passive' *be*	Tense
		Lucy was$_4$ eating the cake.	'progressive' *be*	Tense
		God is$_5$.	'existential' *be*	Tense
	b	The cake has been$_6$ eaten.	'perfective' *be*	Aspect
		Lucy was being$_7$ good.	'active' *be*	Aspect
	c	Be$_8$ good!	'main verb' *be*	σ

I will argue that all of these *be*'s are in fact the same *be*.

Be has been analyzed as thematically inert (Rothstein 1983:74, Heggie 1988: 117*f*., Scholten 1988:97*ff*., Pollock 1989, Moro 1990). The lexical entry of *be* is exhausted by its categorial specification [V] plus phonetics. Accepting this much, *be* is licensed only by c-selection. If *be* is present, it is c-selected by some F-head:

(11) $[_{FP}$ SPEC $[_{\bar{F}} F^0 [_{VP}$ *be* $[_{XP} X ...]]]]$ $F^0 = \{$Tense, Aspect, σ$\}$

If (11) is correct, then *be* never has independent lexical-semantic content. This *be*-selection hypothesis is committed to the existence of a single *be*, and runs counter to tradition which distinguishes several homophonous *be*'s. The *be*-selection hypothesis says all these *be*'s are licensed by c-selection, and only by c-selection: c-selected by Tense are copular, equative, passive, progressive and existential *be*; c-selected by Aspect are perfective and active *be*; c-selected by σ is main verb *be*.

There remains the question of exactly how *be*-selection is triggered. What would it mean for *be*-selection to be semantically triggered? A popular version of the semantic selection hypothesis is to analyze *be* as a predicate operator. This starts with the assumption that only verbs are natural predicates, and that non-verbs must be supplemented in order to be truly predicative (Chierchia 1984,

Heggie 1988). This is unsatisfactory: it rests on an ill-defined notion of natural predicate; it is forced to posit the presence of a covert *be* whenever there is a non-verb predicate; and it fails to generalize to all the environments that *be* occurs in, e.g. passive, perfective and progressive *be* must be given a separate account (cf. Déchaine 1993).

Another version of the semantic selection account is to posit that T semantically selects for a V projection (Guéron and Hoekstra 1993). This is a weaker version of the natural predicate hypothesis, since it is an F-head which triggers the presence of *be*, rather than the failure of non-verb predicates to licénse predication. This version of semantic selection account gets the first four *be*'s listed in (10), but must be supplemented in order to account for the last four *be*'s.[3]

If *be*-selection is not semantically triggered, then how is it licensed? A first step in answering this question is to separate the semantic requirement that predicates be in the scope of T (the *Predicate Visibility Principle*) from the morphological requirement that F-heads with content categorially select for VP (the *c-selection constraint*). *Be*-selection follows from the c-selection imposed by F-heads. This is a morphological restriction, so if an F-head has no morphological content, c-selection is not activated.

(12)   *Predicate Visibility Principle*:
        A predicate is visible only if it is c-commanded by Tense.

(13)   *c-selection constraint*
        If F = {Tense, Aspect, σ}, and if F has morphological content, then F c-selects V.

A consequence of the c-selection constraint is that whenever T, Asp or σ is projected with morphological content, its complement must be a V projection:[4]

(14)   a $[_{TP}$ T^0 $[_{VP}$ *be* ...   T   = { $[_{Past}$ *-ed*], $[_T$ *-s*] }
        b $[_{AspP}$ Asp^0 $[_{VP}$ *be* ...   Asp = { $[_{Prog}$ *-ing*], $[_{Perf}$ *-en*] }
        c $[_{\sigma P}$ σ^0 $[_{VP}$ *be* ... σ = { NEG, AFF }

If Tense c-selects a V projection, it follows that the VP in (14a) can contain either a main verb or *be*. Similary, if Aspect is an F-head (Manfredi 1988, Laka 1990), then it will also c-select a V projection, yielding (14b). And if affirmation/negation, grouped together as σ, also impose c-selection, this will induce (14c).

---

[3] Guéron and Hoekstra predict that *be* will be followed by a complement, ruling out existential *be*. In their analysis, each aspectual head is introduced by a T operator. This predicts a one-to-one correspond between the occurrence of T (their higher T) and Aspect (their lower T). Aspect stacking is problematic for them, since it involves one Tense position in combination with two Aspect positions: *Katy* $[_T has]$ $[_{Asp} been]$ $[_{Asp} being]$ *naughty* (cf. §4.3).

[4] This recalls Iwakura (1977:134), for whom *have-en* and *be-ing* subcategorize for VP.

Given a succession of F-heads, each with morphological content, then the c-selection of each F-head must be satisfied, ruling out (15a) and allowing (15b).

(15) a $*[_{TP} T^0$ $[_{\sigma P} \sigma^0$ $[_{AspP} Asp^0$ ...]]]
      b $[_{TP} T^0 [_{VP}$ *be* $[_{\sigma P} \sigma^0 [_{VP}$ *be* $[_{AspP} Asp^0 [_{VP}$ *be* ...]]]]]]

Occurrences of *be* selected by Tense are considered first, then those selected by Aspect and σ.

3. BE selected by Tense

Be-selection by Tense is evidenced in three environments. First, between T and a Lexical non-verb predicate: this is copular *be*. Second, between T and another F-projection: this is equative, passive and progressive *be*. Third, as sister to T: this is existential *be*.

3.1. Tense and non-Vs: copular BE₁.

3.1. Tense and non-Vs: copular BE$_1$. With matrix and embedded non-verb predicates, *be* is obligatory. This follows from c-selection: T has content, and c-selects VP. In the presence of an aux such as *might* (presumably in T), *be* is uninflected, (16a). If nothing else occupies T, *be* raises, surfacing in its inflected form, (16b).

(16) a (Lucy said) the cake $_T$might $[_{VP}$ be $[_{XP}$ good]]]
      b (Lucy said) the cake $_T$was$_i$ $[_{VP}$ t_i $[_{XP}$ good]]]

Why don't main verbs require *be*? One possibility is economy (Chomsky 1991). The c-selection of T is already satisfied by a main verb, so *be* is not licensed, implying that *be* only projects as a last resort:[5]

(17) a Lucy $_T$+*past* $[_{VP}$ bak-*ed* the cake]
      b *Lucy $_T$was$_i$ $[_{VP}$ t_i $[_{VP}$ bake the cake]]

In a c-selection analysis, overt *be* signals that some F-head is imposing c-selection. This clarifies the syntax of infinitive clauses, whose clausal status has occasioned much debate: are they full-fledged clauses or not?[6] Observe that infinitive clauses require *be* with non-verb predicates:

---

[5] Hoekstra (1984) bans successive V projections. Alternatively, *be* might c-select for a non-V projection. We will see that economy is consistent with a larger set of data.

[6] See Déchaine (1993) for references.

(18) a   Jan wants [$_{TP}$ (Lucy) [$_T$ to] [$_{VP}$ leave]]
    b   Jan wants [$_{TP}$ (Lucy) [$_T$ to] [$_{VP}$ be [$_{XP}$ good]]]]

If the obligatoriness of *be* with infinitival clauses is a diagnostic for the presence of an F-head, then (18) supports the analysis of infinitives as tensed, and hence clausal (Stowell 1982, Williams 1984:140, *fn.* 2).

    Be is also present in subjunctive clauses. Subjunctives embedded under desiderative verbs like *wish* take inflected *were* with non-V predicates, consistent with *be* having raised to Tense, (19). Clauses embedded under mandative verbs like *ask* and *demand* take uninflected *be*, consistent with it remaining *in situ*, (20). Neg placement confirms that *were* raises to T and *be* remains *in situ*.

(19) a   Lucy wishes that [$_{TP}$ Ed $_T$were$_i$ [$_{VP}$ t_i [$_{XP}$ quiet]]]
    b   Lucy wishes that [$_{TP}$ Ed $_T$were$_i$ [$_{σP}$ not [$_{VP}$ t_i [$_{XP}$ noisy]]]]
(20) a   Lucy demands that [$_{TP}$ Ed [$_T$ $-realis$] [$_{VP}$ be [$_{XP}$ quiet]]]
    b   Lucy demands that [$_{TP}$ Ed [$_T$ $-realis$] [$_{σP}$ not [$_{VP}$ be [$_{XP}$ noisy]]]]

The two types of subjunctive are indistinguishable with main verbs:

(21) a   Lucy wishes that [$_{TP}$ Lucy [$_T$ $-realis$] (not) [$_{VP}$ leave]]
    b   Lucy demands that [$_{TP}$ Lucy [$_T$ $-realis$] (not) [$_{VP}$ leave]]

(20) is the first example where the copula is obligatory despite the absence of overt Tense. This constitutes a potential counterexample to the c-selection constraint, since T has no overt morphological content, and yet *be* is obligatory. But perhaps T has covert morphological content. There is reason to think that the clausal complements of mandative verbs are associated with an abstract morphological feature, call it [$-realis$]. The semantic parallelism is suggestive: clausal complements of both *wish* and *demand* have a subjunctive interpretation: in both (19a) and (20a) "Ed being quiet" is a situation which is part of what is ordered to be in the larger situation (Portner 1992:159*ff.*). As we shall see below, the imperative provides indirect support for [$-realis$] as an abstract morphological feature of T. If the existence of such a feature can be independently motivated, then abstract features trigger c-selection. And if this feature has no independent motivation, then (20) constitutes a genuine counterexample to the c-selection constraint.

3.2. Tense and DP predicates: equative BE$_2$. The existence of a distinct equative *be* is often invoked (Williams 1984, Rapoport 1987). Equative *be* occurs with a DP predicate which stands in an identity relation with a DP or CP subject. Two orders are possible, canonical or inverse (Ruwet 1982, Moro 1990):

(22) a   *canonical [Subject Predicate]*
$[_{DP}$ George] is $[_{DP}$ the problem we're discussing].

b $[_{CP}$ That he's insane] is $[_{DP}$ the real problem].

(23) a   *inverse [Predicate Subject]*
$[_{DP}$ The problem we're discussing] is $[_{DP}$ George].

b $[_{DP}$ The real problem] is $[_{CP}$ that he's insane].

The canonical order is base-generated, (24). The inverse order is derived by raising the DP predicate, with the copula raising to T and onto some higher F-head, (25).

(24) $[_{TP}$ DP/CP$_{subj}$ $[_{T}$ is$_i$] $[_{VP}$ t_i [DP$_{pred}$]]]

(25) $[_{FP}$ [DP$_{pred}$]$_k$ $[_{F}$ is$_i$] $[_{TP}$ DP/CP$_{subj}$ $[_{T}$ t_i] $[_{VP}$ t_i t_k]]]

Independent of the debate concerning the derivation of the canonical and inverse orders (cf. Heggie 1988, Moro 1990, Heycock 1991, den Dikken 1994b), the central point remains: the occurrence of *be* in this context follows from c-selection. The equativeness of these constructions is not due to a special kind of *be*, but reflects the fact that a DP predicated of a DP/CP is interpretable only under the identity relation. This follows from the semantics of referential expressions, and need not be encoded into the meaning of *be*. The source of the equative interpretation is not *be*, but the projections that *be* is linking. The only thing that *be* does in this environment is satisfy c-selection: T c-selects for VP, forcing the presence of *be*. Conclusion: there is no equative *be* distinct from other *be*'s.

    This analysis of equative constructions is consistent with the fact that in many languages different copulas are used according to whether the predicate is an L-projection (NP, PP, AP), or an F-projection (DP), e.g. Thai (Kuno and Wongkhomthong 1981), and Welsh (Rouveret 1992, Zaring 1993). The English copula occurs in both environments. In terms of the syntax-morphology interface, a copula is restricted to environments where an F-head c-selects VP. It leaves open the possibility that in a given language, the morphological realization of the copula may differ according to the identity of the complement of the copula (e.g. in both Thai and Welsh, Lexical (NP, PP, AP) vs. DP predicates are introduced by different copulas), or according to the identity of the selecting F-head (e.g. in Welsh, Comp and Tense select different copulas). If a language does have morphologically distinct copulas, these distinctions follow from differences in syntactic environment, rather than reflecting inherent semantic differences between the various copulas.

3.3. Tense and passive -en: BE$_3$. Passive *be* is motivated for the same reason as copular *be*: it satisfies the c-selection of Tense. This is expected if *-en* is a non-verbal F-head, and so cannot be sister to Tense, thereby inducing the presence of

be.[7] If passive *be* satisfies the c-selection of T, then the projection headed by passive *-en* is lower than T, (26a-b). The surface order derives as follows: the complement of V raises to the [SPEC, TP]; *eat* adjoins to [+Nom] in order to satisfy the morphological subcategorization of *-en*; *be* remains in situ in (26a) and raises to T in (26b). In (26c), c-selection is satisfied, but T has no content, which is illicit in Standard English.[8] And (26d) constitutes a c-selection violation: although T is supported by *do*, T is not sister to VP.[9]

$$(26) \quad \text{a} \quad \text{The cake}_k \text{ } _T \text{might } [_{VP} \text{ be } [_{+NomP} \text{ eat}_j\text{-en } [_{VP} \text{ } t_j \text{ } t_k]]]$$
$$\text{b} \quad \text{The cake}_k \text{ } _T \text{was}_i \text{ } [_{VP} \text{ } t_i \text{ } [_{+NomP} \text{ eat}_j\text{-en } [_{VP} \text{ } t_j \text{ } t_k]]]$$
$$\text{c} \quad *\text{The cake}_k \text{ } _T \varnothing \text{ } [_{VP} \text{ be-en}_j \text{ } [_{+NomP} \text{ } t_j \text{ } [_{VP} \text{ eat } t_k]]]$$
$$\text{d} \quad *\text{The cake}_k \text{ } _T \text{did } [_{+NomP} \text{ eat}_j\text{-en } [_{VP} \text{ } t_j \text{ } t_k]]]$$

Non-verb predicates can't be passivized. Consider (27a): there are two different ways it might be ill-formed. If passive *-en* counts as an F-head, this would be a c-selection violation, since [+Nom] would be sister to a non-V projection.[10] But if *-en* does impose c-selection, it should be satisfied in (27b): T is sister to a V projection, as is the *-en* projection. The first occurrence of *be* would raise to T and surface as *was*, the second occurrence of *be* would raise to [+Nom] and surface as *be-en*.

$$(27) \quad \text{a} \quad *\text{Lucy}_k \text{ } _T \text{was}_i \text{ } [_{VP} \text{ } t_i \text{ } [_{+NomP} \text{ proud}_j\text{-ed } [_{XP} \text{ } t_j \text{ } t_k]]]$$
$$\text{b} \quad *\text{Lucy}_k \text{ } _T \text{was}_i \text{ } [_{VP} \text{ } t_i \text{ } [_{+NomP} \text{ be}_j\text{-en } [_{VP} \text{ } t_j \text{ } [_{XP} \text{ proud } t_k]]]]$$

Though (27b) is not ruled out by c-selection, it may violate semantic selection (s-selection): *-en* absorbs the external θ-role of the head it is affixed to, and if *be* is thematically empty, it cannot satisfy the argument-binding property of *-en*. Thus, (26a) satisfies the s-selection of passive *-en*, but c-selection is violated. Conversely, (26b) satisfies the c-selection of passive *-en*, but not its s-selection.

---

[7] For concreteness, I adopt the traditional analysis of *-en*, according to which it absorbs the external θ-role of the predicate-head, and blocks Case assignment to the complement, forcing the object to raise to [SPEC, TP]. The nature of "passive geometry" (Postma 1992) is not at issue here (cf. Stowell 1981, Jaeggli 1986, Baker, Johnson and Roberts 1989, Rooryck 1993, Hoekstra 1994).

[8] But possible in other dialects (e.g. African American English) and other languages (e.g. Semitic, Russian, Haitian). See Déchaine (1993).

[9] If this view of passive *be* is correct, then analyses which identify passive *-en* with the Tense/Infl position must be reappraised, e.g. Baker (1988: 309*ff.*), Baker, Johnson and Roberts (1989).

[10] A possible source for the badness of (27) is that X^0-movement is restricted to V in English. If so, then *-en* would be stranded at S-structure. Since stranded T is rescued by *do*-support, one might expect stranded *-en* to trigger support, yielding **Lucy was done against*. Even if the failure of *do*-support can be explained, restricting X^0-movement to V is *ad hoc*, since X^0-movement of other Lexical heads is independently attested.

This predicts that non-V predicates never form passives in a language whose passive morpheme is an F-head (as opposed to a verb meaning 'undergo'), as c-selection will require a V projection, and s-selection will require a thematically active predicate-head.

Conclusion: there is no distinct 'passive' *be*, *pace* Langacker and Munro (1975).

3.4. Tense and progressive -ing: *BE₄*. If progressive -*ing* counts as an F-head, then the occurrence of the copula in the progressive also follows from c-selection.

Consider the progressive inflection in (28a-b). T c-selects V, forcing the presence of *be*; aspectual -*ing* also c-selects V, and this is satisfied by the main verb *eat*. (Progressive -*ing* is a bound form, surfacing on the main verb as an affix, deriving *eat-ing*.) Independently of Asp, T also c-selects for V, so a V projection between T and Asp is obligatory, making (28b) ill-formed. A main verb satisfies c-selection of Asp, so economy rules out the occurrence of the lower *be* in (28d).

(28)   a   Lucy $_T$might [$_{VP}$ be [$_{AspP}$ eat$_j$-ing [$_{VP}$ t_j cake]]]

      b   Lucy $_T$was$_i$ [$_{VP}$ t_i [$_{AspP}$ eat$_j$-ing [$_{VP}$ t_j cake]]]

      c   *Lucy $_T$did [$_{AspP}$ eat$_j$-ing [$_{VP}$ t_j cake]]

      d   *Lucy $_T$was$_i$ [$_{VP}$ t_i [$_{AspP}$ be$_j$-ing [$_{VP}$ t_j [$_{VP}$ eat cake]]]]

3.5. Tense and V: existential BE₅. There is one context where *be* seems to function as the sole predicate: when it is used to make an existential claim. Based on examples of stressed *be* such as those in (29), an existential verb *be* has been postulated.

(29)   a   I think, therefore I am.   (R. Descartes)

      b   I was, I am, I will be!   (R. Luxemburg, 14/1/1919)

      c   It is, if you think it is.   (L. Pirandello)

These examples are stylistically unusual, as reflected by the fact that they are calqued from languages with richer verb morphology than English: (29a) from French, (29b) from German, (29c) from Italian. Nonetheless, they have an existential interpretation, and this is puzzling if *be* is defined as lacking semantic content.

By hypothesis, *be* is present in order to satisfy the c-selection of an F-head, and this is precisely what it is doing here: T has morphological content, and so must be sister to a V projection, forcing the presence of *be*:

(30)   [$_{TP}$ SPEC [$_T$ ±*past*] [$_{VP}$ be]]

As to the source of the existential reading. Kratzer (1989) draws a parallel between T operators and Stage-level predicates, suggesting that T itself is Stage-level. On independent grounds, Stage-level predicates canonically give rise to existential quantification (Diesing 1992). If so, the source of the existential interpretation associated the configuration in (30) is the T operator, and not the copula. Although the details remain to be worked out, one can conclude that there is no 'existential' *be*.

4. BE selected by Aspect

Tense c-selects for V in English, and so does Aspect. If perfective *-en* and progressive *-ing* are analyzed as aspectual F-heads, a principled account is possible for the occurrence of *be* with these morphemes.

4.1. Perfective -en *and non-Vs: BE$_6$.* Perfective *-en* occurs with auxiliary *have*.[11] With respect to the diagnostics discussed in §1 — co-occurrence with modals, subject-auxiliary inversion, negation/affirmation, tag questions, adverb placement — *have* heads its own V projection (Scholten 1988).

Perfective *-en* shows the familiar V/non-V split. If the predicate is a verb, c-selection is satisfied: Asp is sister to a V projection, (31). (*-en* is a bound form, so *eat* adjoins to *-en* to form *eaten*.) With non-V predicates and passive, c-selection is not satisfied, and *be* is obligatory, (32)-(33).

(31) a   Lucy $_T$will [$_{VP}$ have [$_{AspP}$ eat$_j$-en [$_{VP}$ t_j the cake]]]
      b   Lucy $_T$has$_i$ [$_{VP}$ t_i [$_{AspP}$ eat$_j$-en [$_{VP}$ t_j the cake]]]
(32) a   Lucy $_T$will [$_{VP}$ have [$_{AspP}$ be$_j$-en [$_{VP}$ t_j [$_{XP}$ active]]]]
      b   Lucy $_T$has$_i$ [$_{VP}$ t_i [$_{AspP}$ eat$_j$-en [$_{VP}$ t_j [$_{XP}$ active]]]]
(33) a   Lucy $_T$will [$_{VP}$ have [$_{AspP}$ be$_j$-en [$_{VP}$ t_j [$_{NomP}$ seen]]]]
      b   Lucy $_T$has$_i$ [$_{VP}$ t_i [$_{AspP}$ be$_j$-en [$_{VP}$ t_j [$_{NomP}$ seen]]]]

4.2. Progressive -ing *and non-Vs: active BE$_7$.* We have already seen that if a V predicate combines with progressive *-ing*, c-selection by T forces the presence of a copula:

(34) a   Lucy $_T$should [$_{VP}$ be [$_{AspP}$ eat$_j$-ing [$_{VP}$ t_j cake]]]
      b   Lucy $_T$is$_i$ [$_{VP}$ t_i [$_{AspP}$ eat$_j$-ing [$_{VP}$ t_j cake]]]

---

[11]   The question of what determines auxiliary selection is not dealt with here, cf. Bach (1967), Scholten (1988), Kayne (1993), den Dikken (1994a), Hoekstra (1994).

Combined with non-V predicates, progressive *-ing* yields multiple occurrences of *be*, e.g. *Lucy is being polite*. Many take the active meaning of such sentences to reflect a special main verb *be* (Akmajian and Wasow 1975; Partee 1977; Stump 1985; Williams 1984: 138*f*.). But this obscures two generalizations. First, syntactically, the occurrence of *be* in these contexts follows from c-selection: as the head of Asp, progressive *-ing* c-selects for V, (35). The passive *-en* form predictably patterns with non-verb predicates, (36).

(35)   a $[_{TP}$ Lucy $[_T$ should] $[_{VP}$ be $[_{AspP}$ be$_j$-ing $[_{VP}$ t_i $[_{XP}$ polite]]]]]
    b $[_{TP}$ Lucy $[_T$ is$_i$] $[_{VP}$ t_i $[_{AspP}$ be$_j$-ing $[_{VP}$ t_i $[_{XP}$ polite]]]]]
(36)   a $[_{TP}$ Lucy $[_T$ should] $[_{VP}$ be $[_{AspP}$ be$_j$-ing $[_{VP}$ t_i $[_{NomP}$ forgiven]]]]]
    b $[_{TP}$ Lucy $[_T$ is$_i$] $[_{VP}$ t_i $[_{AspP}$ be$_j$-ing $[_{VP}$ t_i $[_{NomP}$ forgiven]]]]]

Second, semantically, progressive *-ing* converts eventive predicates into statives (Dowty 1979: 163 *ff.*, Vlach 1981, Bach 1981). This creates a semantic selection problem with N, P and A predicates, which are canonically stative. Although, in general, stative predicates do not take the progressive, they may do so just if they are "intended to express an activity" (Kučera 1981: 185) or "successive stages" (Smith 1983: 497), cf. the contrast between (37) and (38).

(37)   *Lucy is liking ice cream.
       *Lucy is being tall.
(38)   Lucy is actually liking this play.
       Lucy is being polite.

As non-verb predicates are canonically stative, the combination of progressive *-ing* with non-verb predicates reduces to the possibility of *-ing* combining with stative predicates, and the activity interpretation arises whenever *-ing* combines with a stative predicate, verb or non-verb. That *being polite* is an activity is confirmed by the fact that it can be paraphrased with the volitional predicate *act* (*like*), and it can be used in the imperative (a property of activity predicates):

(39)   a   Lucy was acting polite.
    b   Be good!

The active interpretation in (39b) is often taken as evidence for an activity verb *be*, but this *be* curiously lacks the syntactic properties of a main V: it doesn't take emphatic *do*, and fails to trigger *do*-support with negation and yes/no questions:

(40)   a   *Lucy DID be good!   (cf. Lucy DID do it!)
    b   *Lucy didn't be good.   (cf. Lucy didn't do it.)
    c   *Did Lucy be good?   (cf. Did Lucy do it?)

Conclusion: there is no syntactic evidence for a distinct activity *be*.

4.3. Aspect stacking. If Aspectual heads combine with each other, the c-selection constraint requires each Asp head to c-select a V projection. In (41), the c-selection of T is satisfied by *have*; the c-selection of *-en* is satisfied by *be* (deriving *be-en*); the c-selection of *-ing* is satisfied by *eat* (deriving *eat-ing*).

(41) a Ed $_T$will [$_{VP}$ have [$_{AspP}$ be$_j$-en [$_{VP}$ t_j [$_{AspP}$ eat$_k$-ing [$_{VP}$ t_k cake]]]]]
      b Ed $_T$has$_i$ [$_{VP}$ t_i [$_{AspP}$ be$_j$-en [$_{VP}$ t_j [$_{AspP}$ eat$_k$-ing [$_{VP}$ t_k cake]]]]]

With non-verb predicates, stacked Asp forces a V projection between the lower Asp head and the non-V predicate:

(42) a Ed $_T$will [$_{VP}$ have [$_{AspP}$ be$_j$-en [$_{VP}$ t_j [$_{AspP}$ be$_k$-ing [$_{VP}$ t_k [$_{XP}$bad]]]]]]
      b Ed $_T$has$_i$] [$_{VP}$ t_i [$_{AspP}$ be$_j$-en [$_{VP}$ t_j [$_{AspP}$ be$_k$-ing [$_{VP}$ t_k [$_{XP}$bad]]]]]]

5. The imperative and main verb BE₈

The last *be* to be considered is the one that occurs with non-verb predicates in the imperative, (43a). If overt morphological tense c-selects a V projection , then the ill-formedness of imperatives like *Good!* as in (43b) is unexpected.[12]

(43) a Be good!
      b *Good

As a marker of mood, the imperative is a property of Comp. Although C might have morphological content by virtue of the feature [+*imperative*], this doesn't carry over to T. This predicts that (43b) should be well-formed, since T has no content and should therefore not trigger c-selection. Despite the appearance of 'null tense' in the imperative, I suggest T is in fact not null, but is associated with morphological features. One way to work out this idea is to let the [+*imperative*] feature in C bind T and thereby supply it with content:

(44)   [$_{CP}$ [$_C$ +*imperative$_i$*] [$_{TP}$ *pro* [T$_i$] [$_{VP}$ be [$_{XP}$ good]]]]!

(In (44) the null subject in [SPEC, TP], notated *pro*, is discourse-linked with the relevant 2nd person adressee(s).)

If *be*'s presence in (44) is the only indication that T has content in the imperative, then the correlation between *be* and morphological tense is circular: morphological tense is indicated by overt *be*, overt *be* reveals morphological tense. But *do*-support, overt subjects and the placement of *better* suggest (44) is on the right track.

---

[12]   (43b) is well-formed as an exclamative: (*That's*) *good*!

. If *do*-support lexicalizes tense features, the possibility of *do* in (45), and its obligatoriness in (46) indicates that the imperative has T features.

(45)   a   [$_{CP}$ [$_C$ +*imp*] [$_{TP}$ *pro* [$_T$ (do)] [$_{VP}$ sit down]]]!
       b   [$_{CP}$ [$_C$ +*imp*] [$_{TP}$ *pro* [$_T$ (do)] [$_{VP}$ be [$_{XP}$ good]]]]]!
(46)   a   [$_{CP}$ [$_C$ +*imp*] [$_{TP}$ *pro* [$_T$ do] [$_{\sigma P}$ not [$_{VP}$ sit down]]]]]!
       b   [$_{CP}$ [$_C$ +*imp*] [$_{TP}$ *pro* [$_T$ do] [$_{\sigma P}$ not [$_{VP}$ be [$_{XP}$ stupid]]]]]]!

Do-support is optional with affirmative imperatives, but obligatory with negatives. Why this difference? One possibility is that T can remain *in situ* in the affirmative imperative, but must move to C in the negative imperative, thereby forcing the presence of *do*. This is confirmed by constraints on the realization of overt subjects. In the affirmative, an overt subject is possible only if *do* is absent, cf. the well-formed (47) vs. the ill-formed (48)-(49). In the negative, an overt subject is possible only if *do* has raised to C, cf. the ill-formed (50)-(51) vs. the well-formed (52).

(47)   You be good, or else!   (50)   *You don't be stupid, now!
(48)   *You do be good, or else!   (51)   *You don't be stupid!
(49)   *Do you be good, or else!   (52)   Don't you be stupid!

The crucial example is (52), showing movement to C, consistent with there being a T position. Why such movement is impossible in the affirmative, but obligatory in the negative is unclear, but may be related to the fact that affirmative σ is not overt, but negative σ is, and movement to C implies movement of σ to C (Déchaine 1993).

A final indication that T has features in the imperative comes from the placement of *better*, which arguably occupies T (Bach 1983:102):

(53)   a   [$_{CP}$ [$_C$ +*imp*] [$_{TP}$ (you) [$_T$ better] [$_{VP}$ leave]]]!
       b   [$_{CP}$ [$_C$ +*imp*] [$_{TP}$ (you) [$_T$ better] [$_{VP}$ be [$_{XP}$ good]]]]]!
(54)   a   [$_{CP}$ [$_C$ +*imp*] [$_{TP}$ (you) [$_T$ better] [$_{\sigma P}$ not [$_{VP}$ sit down]]]]]!
       b   [$_{CP}$ [$_C$ +*imp*] [$_{TP}$ (you) [$_T$ better] [$_{\sigma P}$ not [$_{VP}$ be [$_{XP}$ bad]]]]]]!

The necessity of *be* in the imperative is not a counterexample to the c-selection constraint. Although T does not necessarily have phonological content, there are morphological features associated with T. If c-selection holds generally, this means abstract morphological features also induce c-selection. In §3, clausal complements of mandative verbs were analyzed as having a T with the abstract feature [−*realis*]. The presence of this feature induces c-selection, making *be* obligatory with embedded non-V predicates, e.g. *Lucy demands that Ed be quiet*.

In many languages the imperative has subjunctive morphology, so it may be that [−*realis*] and [+*imperative*] reduce to the same thing, cf. Lasnik (1981) and Roberts (1985) for related discussion.

A final puzzle concerning the imperative is that, in the Adult Standard, it is the only context where there is *do*-support with *be*:

(55) a *Lucy [$_T$ does] [$_{VP}$ be [$_{XP}$ late]]
        *Lucy [$_T$ does] [$_{\sigma P}$ n't [$_{VP}$ be [$_{XP}$ late]]]
        *Lucy [$_T$ does] [$_{VP}$ be [$_{AspP}$ eat$_j$-ing [$_{VP}$ t_j cake]]]
        *The cake [$_T$ does] [$_{VP}$ be [$_{NomP}$ eat$_j$-en [$_{VP}$ t_j]]]
     b *pro* [$_T$ do] [$_{VP}$ be [$_{XP}$ good]]]!
        pro [$_T$ do] [$_{\sigma P}$ n't [$_{VP}$ be [$_{XP}$ late]]]!

Whatever prohibits *do*-support in (55a) must be specific to Adult Standard English, since both Child English and African American English allow *do*-support with *be* in non-imperative contexts:

(56)   This [$_T$ did] [$_{\sigma P}$ n't [$_{VP}$ be [$_{XP}$ colored]]]]   (Child English)
        'This wasn't colored'
(57)   Sue [$_T$ DO] [$_{VP}$ be reading books during class]]!   (Afr-Am)
        'Sue is SO usually reading books during class!'

In the acquisition sequence, *be* is initially treated as a main verb, and so like main verbs triggers *do*-support (Roeper 1991). And in African American, there is evidence that habitual *be* has the syntax of a main verb (Green 1992). This means that a thematically transparent verb such as *be* can sometimes have the syntax of a main verb. But this is precisely the characterization of a light verb construction. This highlights the fact that pre-theoretical intuitions about what characterizes a 'copula', an 'auxiliary', a 'light verb', or a 'main verb' can be misleading (Mulder 1992).

6. Conclusion

According to the c-selection constraint, all occurrences of *be* in English are induced by an F-head c-selecting a V projection. In environments where *be* is obligatory, and where the correlated F-head is not phonologically overt (subjunctives and imperatives), there is motivation for positing the presence of an abstract morphological feature, and it is this feature which triggers c-selection.

The discussion has concentrated on environments where *be* is obligatory. To round out the picture, one must also look at contexts where *be* is absent or optional. Given the c-selection constraint, the former correspond to instances where an F-head has no morphological content, even in the form of abstract features. More problematic are cases where *be* is optional, e.g. *Katy considers Ed (to be) a fool*, *Katy saw Ed (be) sick*. The *be*-less variants must be structurally distinct from the *be*-full ones.[13]

---

[13]   See Déchaine (1993) for discussion. See den Dikken (1994b) for discussion of *consider*.

This approach has consequences for the analysis of *have* and *do* which, like *be*, occur in seemingly unrelated environments. *Have* is used as the perfective aux (*Katy has eaten*), as a possessor verb (*Katy has sheep*) and as a causative verb (*Katy had Ed leave*). *Do* occurs in *do*-support contexts (*Katy DID leave!*, *Katy didn't leave*), with VP ellipsis (*...and Katy did too*), with operators (*...what he knows how to do*), and in light verb constructions (*Katy did her work*). Future research will reveal whether *have* and *do* are governed by the c-selection constraint.[14]

References

Akmajian, A. and T. Wasow (1975) 'The constituent structure of VP and AUX and the position of the verb BE', *Linguistic Analysis* 1, 205-245.

Bach, E. (1967) '*Have* and *be* in English syntax', *Language* 43, 462-485.

Bach, E. (1981) 'On time, tense, and aspect: an essay in English metaphysics', in P. Cole, ed., *Radical Pragmatics*, 63-81, Academic Press, New York.

Bach, E. (1983) Generalized categorial grammars and the English auxiliary, in F. Heny and B. Richards, eds., *Linguistic Categories*, 101-120, Reidel, Dordrecht.

Baker, M. C. (1988) *Incorporation*, University of Chicago Press, Chicago.

Baker, M. C., K. Johnson and I. Roberts (1989) 'Passive arguments raised', *Linguistic Inquiry* 20, 219-251.

Chierchia, G. (1984) *Topics in the syntax and semantics of infinitives and gerunds*, PhD dissertation, UMass Amherst.

Chomsky, N. (1991) 'Some notes on economy of derivation and representation', in R. Freidin, ed., *Principles and Parameters in Comparative Grammar*, 417-454, MIT Press, Cambridge, Mass.

Chomsky, N. (1993) 'A Minimalist Program for Linguistic Theory', in K. Hale and S. J. Keyser, eds., *The View from Building* 20, 1-52, MIT Press, Cambridge, Mass.

Déchaine, R.-M. 1993 *Predicates across categories: towards a category-neutral syntax*, PhD dissertation, UMass Amherst.

Diesing, M. (1992) *Indefinites*, MIT Press, Cambridge, Mass.

den Dikken, M. (1994a) 'Auxiliaries and participles', *NELS* 24: 65-79.

den Dikken, M. (1994b) 'Predicate inversion and minimality', in R. Bok-Bennema and C. Cremers, eds., *Linguistics in the Netherlands 1994*, 1-12, John Benjamins, Amsterdam.

Dowty, D. R. (1979) *Word Meaning and Montague Grammar: The Semantics of Verbs and Times in Generative Semantics and in Montague's PTQ*, Reidel, Dordrecht.

Gleitman, L. R. (1969) 'Coordinating conjunctions in English', in D. A. Reibel and S. A. Schane, eds., *Modern Studies in English*, 80-112, Prentice-Hall, Englewood Cliffs, New Jersey.

Green, L. (1992) *Topics in African American English Syntax: The Verbal System Analysis*, PhD dissertation, UMass Amherst.

Guéron, J. and T. Hoekstra (1989) 'T-chains and the constituent structure of auxiliaries', in A. Cardinaletti *et al.*, eds., *Annali di Ca' Foscari*, Venice.

Guéron, J. and T. Hoekstra (1993) 'The temporal interpretation of predication', *ms.*, Université Paris X and Leiden University.

Heggie, L. A. (1988) *The syntax of copular structures*, PhD dissertation, USC.

Heycock, C. (1991) *Layers of predication: the non-lexical syntax of clauses*, PhD dissertation, UPenn.

---

[14] On *have*, see Ritter & Rosen (1991), Guéron & Hoekstra (1989) and Hoekstra (1994); on the *have/be* connection see Kayne (1993) and den Dikken (1994a); on *do* see Déchaine (1993).

Hoekstra, T. (1984) *Transitivity*, Foris, Dordrecht.

Hoekstra, T. (1994) 'Transitivity and possession', *ms.*, Leiden University.

Iwakura, K. (1977) 'The auxiliary system in English', *Linguistic Analysis* 3, 101-136.

Jaeggli, O. (1986) 'Passive', *Linguistic Inquiry* 17, 587-622.

Kayne, R. (1993) 'Toward a modular theory of auxiliary selection', *Studia Linguistica* 47.

Kratzer, A. (1989) 'Stage-level and individual-level predicates', *ms.*, UMass Amherst.

Ku cera, H. (1981) 'Aspect, markedness and t_0', *Syntax and Semantics* 14, 177-189.

Kuno, S. & P. Wongkhomthong (1981) 'Characterizational and identificational sentences in Thai', *Studies in Language* 5, 65-109.

Laka, I. (1990) *Negation in syntax: on the nature of functional categories and projections*, PhD dissertation, MIT.

Langacker, R. and P. Munro (1975) 'Passives and their meaning', *Language* 51, 789-830.

Lasnik, H. (1981) 'Restricting the theory of transformations: a case study', in N. Hornstein, N. and D. Lightfoot, eds., *Explanations in Linguistics*, Longman, London.

Manfredi, V. (1988) 'Aspect, V-movement and V-incorporation in Àbï', in C. Tenny, ed., *Lexicon Project Working Papers* 24, 85-95, MIT Center for Cognitive Science, Cambridge, Mass.

Moro, A. (1990) 'The raising of predicates: copula, expletives and existence', *ms.*, Università di Venezia and MIT.

Mulder, R. (1992) *The aspectual nature of syntactic complementation*, PhD dissertation, Leiden University.

Partee, B. H. (1977) 'John is easy to please', in A. Zampolli, ed., *Linguistic Structures Processing (Fundamental Studies in Computer Science* 5), 281-312, North-Holland, Amsterdam.

Pollock, J.-Y. (1989) 'Verb movement, Universal Grammar and the structure of IP', *Linguistic Inquiry* 20, 365-424.

Portner, P. (1992) *Situation theory and the semantics of propositional expressions*, PhD dissertation, UMass Amherst.

Postma, G. (1992) 'On the nature of the particle GE- in Westgermanic participles', *ms.*, Leiden University.

Rapoport, T. (1987) *Copular, nominal and small clauses*, PhD dissertation, MIT.

Ritter, E. and S. Rosen (1991) 'Causative HAVE', *NELS* 21: 323-336.

Roeper, T. (1991) 'How a marked parameter is chosen: adverbs and *do*-insertion in the IP of child grammar', in B. Plunkett, B. and T. Maxfield, eds., *Papers in the Acquisition of Wh*, 175-202, University of Massachusetts Occasional Papers (Special Edition).

Roberts, I. (1985) 'Agreement parameters and the development of English modal auxiliaries', *Natural Language and Linguistic Theory* 3, 21-58.

Rooryck, J. (1993) 'On passive as partitive quantification', *ms.*, RUL.

Rothstein, S. D. (1983) *The syntactic forms of predication*, PhD dissertation, MIT.

Rouveret, A. (1992) 'BOD au temps présent et aux autres temps', *ms.* Université de Paris VIII.

Ruwet, N. (1982) *Grammaire des insultes et autres études*, Seuil, Paris.

Smith, C. S. (1983) 'A theory of aspectual choice', *Language* 59, 479-501.

Scholten, C. (1988) *Principles of universal grammar and the auxiliary verb phenomenon*, PhD dissertation, University of Maryland.

Stowell, T. (1981) *Origins of phrase structure*, PhD dissertation, MIT.

Stowell, T. (1982) 'The tense of infinitives', *Linguistic Inquiry* 13, 561-570.

Stump, G. T. (1985) *The Semantic Variability of Absolute Constructions*, Reidel, Dordrecht.

Vlach, F. (1981) 'The semantics of the progressive', *Syntax and Semantics* 14, 271-292.

Williams, E. S. (1984) *There*-Insertion, *Linguistic Inquiry* 15,131-152.

Zaring, L. (1993) 'Two *be* not to two *be*: identity, predication and the Welsh copula', *ms.* Carleton College.