When is a verb not a verb?*

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1. Background

The intent of this paper is to motivate a change from the traditional description of the categorial status of Aux-related and verbal elements in the clause, and to apply this new taxonomy of categories in working out an explicit implementation of an old insight, namely that *be* should be analyzed as the default, semantically empty verb. Key to this approach will be a rather nuanced answer to the question, "When is a verb not a verb?"—that is, When does a verb-like element not count as categorially a V for the purposes of syntactico-semantic distribution?

1.1 A classic view

One traditional way of thinking about the syntactic status of verb-related elements in English derives from Chomsky 1955, 1957: there is a special category Aux that dominates modals (*can, will, should, might*, etc.), auxiliary *be* and *have*, Tense, and presumably dummy *do* after it is inserted by transformation;[1] under a different node label, V(erb), we find finite main verbs (after Affix Hopping has applied), bare (invariant) main verbs (preceded by a modal or *do*), and participles (again, after Affix Hopping).

1.2 An alternative view

I propose a different way of dividing these elements into syntactic categories, one that will perform crucial work in stating the distribution of *be*. The major refinements to the classic view are: 1) removing *be* and *have* from the category Aux and treating them as V; 2) separating out participles from genuine tensed and bare verbs; 3) grouping *do* with the modals rather than with *have* and *be*. This is accomplished using the following category system. A category I call Mood (M) includes the modals, *do*,[2] and certain null morphemes (Ø). The category Tense (T) is little changed from the classic version, encompassing the suffixes usually represented as *-s*, *-ed*, and the null

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[1] Here and throughout, the reader is free to read "Tense and Agreement" for "Tense"; nothing will hinge on how agreement is analyzed.

[2] Hereafter, *do* always refers to dummy *do*, not main verb *do*.

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suffix (-Ø) that occurs in the rest of the regular paradigm. I appeal to a family of Part(iciple) categories, where we find all the perfect and passive (*-en*) and progressive (*-ing*) participles, including participles of all uses of *have* and *be* (e.g., *am singing*, *have been eating*). What is left as V are just tensed and bare verbs (including *be* and *have*, excluding *do* and modals), e.g., *eat*, *eats*, *are*, *be*.

1.3 Where this will take us

The goal is to use this classification to account for the entire distribution of the forms of *be* just by treating it as the member of category V with no further properties, that is, the semantically empty, default V (cf. Scholten 1988, Emonds 1985, Déchaine 1995). As such it should surface if and only if it is needed to satisfy the requirements of some other element, since it will contribute no meaning of its own to the sentence. Effectively, *be* will be called to action when the lexical meaning of a clause leaves it with a Verb shortage.

1.4 Incompatible views on be

Warner (1985: 68) states, "*be*, . . . like modals, lacks any regular verbal morphology . . . I would speculate that *is*, *are*, etc. belong with modals to a separate form-class which lacks verbal affixes . . . so that *is* and *be* are different 'parts of speech'." Similarly, Becker (2002) argues that finite *be* forms are not verbs, and that *am/are/is* are not forms of *be*. Here we have found three (interrelated) claims that I must reject: 1) the notion that finite forms of *be* are categorially like modals, not verbs; 2) the notion that *am/are/is* etc. and *be* are categorially different; 3) the notion that *am/are* etc. and *be* are not differently inflected instances of the same element.

2. *Be* and V

In this section I show that *be*, as the default Verb of English, is called upon to fulfill two kinds of requirements that cannot always be met by contentful verbs: the first is a syntactico-semantic property, the second is a morphological "support" property, but not the one usually attributed to *be*. In motivating the former I first need also to debunk a myth about the latter.

2.1 Be *as a syntactic supporter*

In work that espouses the same fundamental idea that I pursue in this paper, namely that *be* is 'the verb of last resort', it is often said that the role of *be* is to support Tense, just like *do* but in a complementary set of environments. This idea is first of all insufficient, in that it has nothing to say about the distribution of uninflected (bare and participial) forms of *be*; for my approach, unifying the treatment of finite and nonfinite *be* is a central desideratum. Moreover, viewing finite *be* as a Tense supporter misses a key generalization (Rapoport 1987). Consider sentences (1a) versus (1b).

(1) a. Ora dances.
b. Ora will dance(*s).

The impossibility of Tense inflection on *dance* in (1b) tells us that a modal such as *will* expresses, absorbs, or in some other fashion "takes care of" Tense features, such that they need not, and indeed must not, surface anywhere else. To the extent that anything is hosting or supporting Tense in (1b), it must be *will*. Now consider (2).

(2) Ora is dancing.

Here the element that inflects, i.e. that hosts or supports Tense, is obviously *is*. The question is whether the need to support Tense is ***the reason*** for *is* being in the sentence. Suppose this were true; then (1) and (2) would tell us that it suffices for making a well-formed sentence if we have something supporting Tense and any form of a main verb (including a participial form).

The fact that this is wrong is shown by (3).

(3) a. *Ora will dancing.
b. Ora will be dancing.

(3a) contains a supporter for Tense, *will*, as in (1b), and it contains a form of main verb, as in (2), and yet it is ungrammatical. Evidently, those elements are not sufficient. (3b) is saved by the presence of *be*, but we know that *be* is not supporting Tense in this sentence, so what is demanding its presence? We can make sense of the paradigm using the categorial distinctions proposed in §1.2, whereby (1a) and (1b) each contain a Verb *dance*, while in (2) and (3) *dancing* is not a Verb. What differentiates (2) and (3b) from the ungrammatical (3a) is that the former each contain a form of (what I claim is) the Verb *be*; as a result, (3a) is the only sentence that contains no Verb at all. I propose that this is why it is ungrammatical. To put it another way, whatever requirement is being violated in (3a) but satisfied in (3b) must be being satisfied by *is* in (2), by process of elimination. That requirement cannot be support of Tense, because *will* performs that function in (3a). The requirement must therefore be something that *is* and *be* can both satisfy. If, contra the views cited in §1.4, *is* and *be* are both Verbs, their category is what satisfies the requirement. The fact that *is* also bears tense morphology in (2) is incidental, i.e. it does not explain ***why*** *is* is part of the sentence. Thus, the seemingly trivial paradigm in (1)–(3) gives us reason to believe that *is/am/are* etc. are of the same syntactic category as the word *be* itself, and that they are versions of the same object, the object that rescues a Verbless sentence.

The hypothesis now is that there is a need for all finite clauses to contain a Verb; call this the "V Requirement" (cf. Déchaine 1995). We can make it more precise by observing the ungrammaticality of (4):

(4) *John is be tired. (cf. John will be tired)

Here, Tense is supported, as required; a bare verb follows the finite elements, as is possible elsewhere; by hypothesis *be* has no meaning, so repeating it should have no effect; and yet the sentence is ungrammatical. I take this to show that the V Requirement must actually be stated as follows:

(5) The V Requirement: All finite clauses must contain exactly one Verb.

In other words, although *be* is an empty element, inserting it at will can lead to violation of (5); thus, *be* is a last resort device.

2.2 Be *as a morphological supporter*

There remain some instances of *be* that cannot be triggered in this way and that ***are*** present, I claim, just to support morphology. The participial occurrences of *be* italicized in (6) cannot be explained by the V Requirement.

(6) a. John is *being* interrupted.
b. John will be *being* interrupted.
c. John has *been* interrupted.
d. John will have *been being* interrupted.

That is because in each case there already is either an inflected verb or a bare verb to do that job. How then can we account for the presence of *be* in these sentences? Here I appeal to a role of morphological support, but what is being supported is the participial suffix. Just as in §2.1, this is a role that can be played by contentful verbs: compare (6) with (7), where each *dance* replaces an instance of *be*.

(7) a. John is dancing.
b. John will be dancing.
c. John has danced.
d. John will have danced, John will have been dancing.

I assume that participial suffixes carry meaning and head their own functional projections (van Gelderen 1997). Whenever possible they combine with main verbs, like all the instances of *dance* in (7); suppose this is accomplished by (very short) V-raising, as in (8).

(8) a. Peter is sing$_i$ -ing [$_{VP}$ t_i].
b. Peter was interrupt$_i$ -ed [$_{VP}$ t_i].

However, once the main verb is used up by having one such affix attached to it, like *interrupted* in (6), any additional participial suffixes need a separate host. These suffixes select for a V stem, so when they lack a host, the default Verb steps in to support them. Importantly, although *be* itself is a Verb in the italicized words of (6), the participial suffixes are category-changing, creating Participles from Verbs; by most definitions, that makes them derivational affixes, a conclusion I accept. In this they differ crucially from Tense, which must not be category changing and can be treated as inflectional along traditional lines.

2.3 Implementation

While the two sets of uses of *be* (§§2.1 and 2.2) are descriptively rather different, my proposed analysis reduces them to the same thing, expressible in the following slogan: "Need a verb? Don't care which one? Use *be*!" The differences lie in how the need for V arose, something that is irrelevant to the mechanism by which *be* actually comes to be part of the sentence. In my implementation, that mechanism in both instances is late insertion, in the sense of Distributed Morphology (DM) (Halle and Marantz 1993). Specifically, the relevant syntactic structures contain just a V slot, and in the morphological spell-out component a form of *be* will be inserted in that position. I claim that *be* is the default vocabulary item of category V, that is, the V with no specified properties. Following the vocabulary insertion principles of DM, it will be inserted just when all other Vs are specified for features that do not appear on the syntactic node in question. Since the V slot's presence was triggered in the scenarios of §§2.1 and 2.2 by a purely formal condition (the V Requirement or morphological selection), the resulting V will not be specified for any properties. Therefore, all verbs with lexical properties, i.e. all verbs other than *be*, fail to be insertable, leaving only the default to be inserted.

3. Evidence for key assumptions

The viability of this account rests on the taxonomy proposed in §1.2. Here I argue for the crucial assumptions made there: that dummy *do* is a Mood head, in a class with modals and not with Verbs; that modals and *do* are distinct from Tense; and that participles are not Verbs.

3.1 Do *is a Mood*

I broadly concur with Roberts (1993) and Culicover (1999) (and hence disagree with Giorgi and Pianesi (1997)) on the view that *do* is distributionally like a modal (for me they are both M heads, though *do* is not a (dummy) modal). What I show in detail is that dummy *do* also does ***not*** behave like

the other "auxiliaries," finite *be* and *have*.[3] First of all, consider an arguably criterial property of English modals: they are mutually exclusive with *do* (9a). This mutual exclusivity is of course one reason for wanting to place *do* in the same class with them; it does not extend to finite *be* and *have* (9b).

(9) a. *must do (not) go, *do (not) must go, *do must not go
b. must have gone, must be eating, must be in Tulsa

Moreover, numerous clause types exclude *do* and modals while allowing *be* and *have*.

(10) Subjunctives
a. It is vital that John be here on time.
b. It is vital that John be smiling in the photograph.
c. It is vital that Rover have eaten before we arrive.
d. *It is vital that John do not be late.
e. *It is vital that John will not come unprepared.[4]

(11) *To*-infinitives
a. It is important (for everyone) to be on time.
b. It is important (for a movie star) to be smiling whenever the paparazzi are nearby.
c. It is important (for every applicant) to have finished high school.
d. *It is important (for us) to do not leave her alone.
e. *It is important (for us) to can be alone.

(12) Small clauses
a. I made him be alone for a while.
b. The director made us be dancing when the curtain opened.
c. ?The coach made her not have just eaten when she came to practice.
d. *The conductor made us do not sing the harmony line.
e. *The therapy made her can/could walk again. (cf. The therapy made her be able to walk again.)

[3] For brevity I mean "finite *be* and *have*" to include just those instances of *have* that behave like the perfective auxiliary in the dialect of interest, e.g. that undergo subject-auxiliary inversion. This will include possessive *have* in most British but not most American dialects, the *have* of *have got*, etc.

[4] This sentence may be grammatical on a nonsubjunctive reading roughly paraphrased as 'The fact that John will not come unprepared is vital.'

(13) Mad Magazine sentences (Akmajian 1984)[5]
a. What?? Her be out all night??? Never!
b. What?? Him be drinking at 9 in the morning??? Never!
c. ?What?? John not have finished his homework by 9pm?? Never!
d. *What?? Him do/does not pick up the kids on time??? Never!
e. *What?? Him should/must/could leave the firm?? Never!

(14) *Why (not)*
a. Why (not) be a responsible citizen?
b. Why be working when you could be partying on the beach?
c. ?Why not have made the appointment with her before she has a chance to make one with you?[6]
d. *Why do not go to the beach?
e. *Why should/must stay home? (cf. ?Why be obliged to stay home?)

(15) Gerunds
a. John being unable to complete 50 pushups is embarrassing.
b. (*John being drinking was not a surprise.)[7]
c. John having completed 50 pushups in 45 seconds was impressive.
d. *John doing not like opera surprises me.
e. *John canning not complete 50 pushups is embarrassing. (cf. a.)

For *do* and modals to pattern together against *be* and *have* in so many environments clearly should not be a coincidence. The most straightforward way to explain the exclusion of *do* and modals is to say that these clause types either are too small to contain a Mood projection at all (e.g. small clauses), or else come with their own Ø Mood morpheme that blocks insertion of any of the Mood heads we are discussing (e.g. subjunctives and Mad Magazine clauses[8]).

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[5] But see Lambrecht 1990 for an analysis on which the subject and predicate of a Mad Magazine sentence do not form a constituent, hence do not involve a "clause" in any sense.

[6] Example from Wachtel (1979), contra Akmajian, Steele and Wasow (1979).

[7] This sentence is presumably blocked as a violation of the Doubl-ing restriction (Ross 1972), whatever its source.

[8] I claim the problem is morphosyntactic, not semantic—the badness of (13e) cannot be explained by suggesting that the Mad Magazine's inherent meaning is incompatible with the meaning of the overt modals, for two reasons. First, adjectives that express the same kinds of modality are fine (i).

(i) What?? Him (be) obliged/required/able to leave the firm?? Never!!

Second, in a language such as French whose modals do not have special non-V syntax the way English modals do, Mad Magazine sentences with modal verbs are fine (Dominique Sportiche, p.c.).

The only environment where modals and dummy *do* diverge is in imperatives, where *do* is possible and modals are impossible:

(16) a. DO take your time.
b. Do not take too long.
c. *Can play those arpeggios by your next piano lesson!

There are a few ways to handle this contrast, for instance by positing that *do* is underspecified—consistent with both an indicative M and an imperative M head, while the lexical content of modals makes them incompatible with the latter. I do not pursue the matter.

3.2 Modals are not under Tense

The other salient difference between *do* and modals is morphological: *do* takes regular tense suffixes, modals do not. Traditionally the latter fact has been handled by saying that modals *are* an expression of the T head, but this would preclude our treating modals like *do,* because inflected forms of *do* transparently show a distinct stem concatenated with a tense suffix. However, on the question of whether modals ever inflect for tense, I adopt the nontraditional stance that at least some of them sometimes do (Gazdar, Pullum and Sag 1982). In particular, (17b) is a simple statement about the past (and cannot be expressed with any other modal form), and (18b) involves sequence of tense.

(17) a. Right now I cannot do it.
b. Yesterday I could not do it. (cf. *Yesterday I cannot do it.)

(18) a. He says he will be late.
b. He said he would be late.

This is not to deny that there are nonpast uses of *could, would*, as well as historically parallel *should, might*; but in this respect the modals are not special: counterfactual conditionals are also formed with (what look like) past tense forms (*If I knew the answer, …*); cf. Giorgi and Pianesi 1997. The special (nonpast) meanings of some modals are no reason to deny that the past readings in (17b, 18b) are transparently formed. Thus, we find both *do* and modals affixed with T, so neither of them can be realizations of T.

In summary, we have learned three things by comparing and contrasting the distributions of modals, *do*, and the verbs *be* and *have*. From §3.1, *do* and modals are of one category (M), *be* and *have* of another (V). From §3.2, M cannot be equated with T; rather, M can take T as an affix. Now combining these findings, since *be* and *have* obviously inflect for tense, T can be affixed to two different categories: V as well as M (cf. Ouhalla 1991, p. 64).

3.3 Participles are categorially not Verbs

The claim that heads this subsection is neither new nor difficult to motivate. Traditionally, attributive participles are considered to be identical or very similar to adjectives. In contrast, the position between D and N is clearly not a position where bare or tensed verbs can appear.

(19) a. The breaking/broken/heavy glass.
b. *The break/breaks/broke glass.

A second argument comes from the fact that participles and bare verbs can be independently selected for as heads of complement clauses, suggesting a categorial distinction (Blight 1997).

(20) let: *selects for bare verbs, not participles*
a. I let the police arrest John.
b. I let John be arrested by the police.
c. *I let the police arresting John.
d. *I let John arrested by the police.
e. *I let John being arrested by the police.

(21) want: *selects for participles, not bare verbs*
a. I want John arrested as soon as possible.
b. I want our sharpshooters watching from every rooftop.
c. I want John being handcuffed when the reporters take his picture.
d. *I want John be arrested right away.
e. *I want our officers arrest John right away.

4. Putting the clause together

4.1 Arrangement of functional categories

We have now established when a verb is not a Verb. In so doing we have identified the triggers for the spelling out of *be* at the point of vocabulary insertion, which reduce to the need for a Verb. In this section I briefly sketch how the bits and pieces established heretofore fit together to generate grammatical sentences of English. Let us begin with the hierarchy of functional heads, given first schematically in (22).

(22) $[_{CP}\ [_{MP}\ [_{TP}\ [_{\Sigma P}\ ([_{VP})\ [_{PerfP}\ [_{ProgP}\ [_{PassP}\ [_{\{VP,\ AP,\ PP,\ NP\}}$

Here ΣP (a.k.a. PolarityP) is the home of negation and (emphatic) assertion. The parentheses around the high VP will be explained shortly. PerfP, ProgP and PassP are the Part(iciple) functional categories. The disjunctive braces enclose the main predicate of the clause; since I will derive the presence of *be*, the predicate is not uniformly VP—any predicative category is possible.

For concreteness, (23) shows this structure instantiated for a sentence containing two occurrences of *be* that spell out otherwise empty head posi-

tions selected for by participial suffixes. (Some details such as subject raising are suppressed for clarity.)

(23)
$[_{CP}\ [_{MP}$ I must $[_{TP}$ PRES $[_{\Sigma P}$ not $[_{VP}$ have $[_{PerfP}$ be+en $[_{ProgP}$ be+ing $[_{PassP}$ $fool_i$+ed $[_{VP}$ t_i

The next two sentences exemplify the appearance of *be* in order to satisfy the V Requirement.

(24) $[_{CP}\ [_{MP}$ Mary $Ø_{indic}$ $[_{T/VP}$ is $[_{\Sigma P}$ $Ø_{affirm}$ $[_{AP}$ tired

(25) $[_{CP}\ [_{MP}$ Mary might $[_{TP}$ PRES $[_{\Sigma P}$ $Ø_{affirm}$ $[_{VP}$ be $[_{PP}$ in Cleveland

Comparing (24) and (25) we see that *be* can find itself either above (if inflected) or below (if bare) Σ; it will correspondingly undergo Subject-Aux Inversion (SAI) or not. This pair of sentences illustrates the optionality of the parenthesized VP in (22): it hosts the bare *be* in (25), when Tense is affixed to a modal, but is absent from (24), where the *be* that satisfies the V Requirement can also host Tense. Since I will argue that finite *be* is inserted above Σ, not raised across it, there is no V anywhere below Σ in (24).

4.2 Mood (M)

We need to establish what M contains in sentences with no overt modal or dummy *do*, and how the conditions on *do*-support are derived. I claim that in indicative clauses, there is an indicative morpheme whose phonological realization is null, as in (24) above. Furthermore, to explain *do*-support I contend that *do* is also an expression of the feature [indicative] in M; that is, this feature has two allomorphs, *do* and Ø. What we describe as environments with *do*-support versus without are formally treated as environments triggering one or the other allomorph of the [indicative] M head. This choice is determined in the spell-out branch as part of vocabulary insertion, with a statement such as the following: pronounce [indicative] as *do* if Tense (or another affix) is in need of a host; otherwise pronounce it as Ø.

As for ensuring that *do* does not encroach on *be* or vice versa, note that the V Requirement is enforced in the syntax, thus V as a potential host for T would already be present when, at spell-out, we choose between $Ø_{indic}$ and *do*. In a sentence like *Does John sing?*, the main verb starts low and never raises as high as Σ, but it does satisfy the V Requirement, therefore *be* cannot be inserted anywhere higher in the clause, correctly blocking **Is John sing?* However, the T affix will find itself with no host, triggering [indicative] to be spelt out as *do* in order to provide one. Conversely, in a sentence like *John is happy*, the V/T[9] head will be realized as *is*, leaving no affixes without hosts, thus forcing the choice of $Ø_{indic}$ rather than *do*.

[9] The precise meaning of "V/T" is explained in §4.3.2.

4.3 Finite be *and* have

Having argued that finite *be* and *have* are not syntactically the same as modals or dummy *do*, we must now explain why they nonetheless pattern with the M heads with regard to word order (to the left of negation and certain adverbs), undergoing SAI, and being stranded by VP ellipsis. All of these facts point to finite *be* and *have* being higher in the structure than finite main verbs. The V Requirement will be the key to explaining why they are there. The first piece of the answer is that finite *be* and *have* are generated high in the tree to begin with, rather than starting out low like all other verbs and then exceptionally raising across Σ to INFL; in this I follow Ouhalla (1991) and Emonds (1994). Before presenting the rest of the account, I present a piece of independent evidence for this critical link in the chain of inference.

4.3.1 Evidence for high insertion of finite auxiliaries

In VP ellipsis in English, the surface form of the elided verb and its antecedent need not be identical; in particular, a tensed main verb in the full clause can license ellipsis of a bare verb in the elided clause, and vice versa:

(26) a. John *left* early, and Mary will ~~*leave* early~~ too.
b. Although Susan rarely *leaves* early, I think today she did ~~*leave* early~~.
c. At first, ***John*** seemed to be *winning* the race, but now it's clear that ***Mary*** will ~~*win* the race.~~

Such mismatches can be elegantly accounted for by assuming that what is required is true identity of underlying structures prior to their morphological combination into words. (For present purposes it is immaterial whether verbs and affixes are united by head movement, affix hopping, morphological merger, or whatever.) Thus, the examples in (26) would get the analyses in (27), wherein the VPs are strictly identical:

(27) a. $[_{MP}$ John $Ø_{indic}$ $[_{TP}$ PAST $[_{\Sigma P}$ $Ø_{affirm}$ $[_{VP}$ leave early]]]], and
$[_{MP}$ Mary will $[_{TP}$ PRES $[_{\Sigma P}$ $Ø_{affirm}$ $[_{VP}$ leave early]]]] too.
b. … $[_{MP}$ Susan rarely $Ø_{indic}$ $[_{TP}$ PRES $[_{\Sigma P}$ $Ø_{affirm}$ $[_{VP}$ leave early]]]],
…today $[_{MP}$ she $Ø_{indic}$ $[_{TP}$ PAST $[_{\Sigma P}$ $Ø_{affirm}$ $[_{VP}$ leave early]]]].
c. John seemed to be $[_{ProgP}$ -ing $[_{VP}$ win the race]], but now it's clear that Mary will $[_{VP}$ win the race].

In (27b), the stranded past tense morpheme will trigger the spell-out of M as *do*, creating *did*.

The facts for *be* and *have* are subtly but crucially different (Warner 1985; see also Lasnik 1995 and Potsdam 1997). First we note that there is no problem with elided nonfinite forms of *be* and *have* in general: in (28), with an identical (nonfinite) antecedent, ellipsis is perfect.

(28) a. Mary should [be paid better], and Pam should [~~be paid better~~] too.
b. Pam has been eating chocolate, and Mary has [~~been eating chocolate~~] too.
c. Doug will [have finished his main course by the time we get there], but maybe Fred won't [~~have finished his main course~~…]

In striking contrast, examples parallel to (26) with a finite *be* or *have* trying to license ellipsis of its nonfinite counterpart are entirely ungrammatical.

(29) a. *John was hassled, and soon Mary will ~~be hassled~~ too.
b. *A few people are already staring at us, and if you keep screaming, soon everyone will ~~be staring at us.~~
c. *Mary has never been to France, but John might ~~have been to France.~~
d. *John was just harassed, and in the last week several others have ~~been harassed~~ too.

If finite *be* and *have* were generated low like regular verbs and then raised to T, these antecedent clauses should contain underlying VPs "be hassled", "be staring", etc., and the impossibility of ellipsis would be mysterious. If instead *be* and *have* are generated high, then the badness of (29) is explained because there is no antecedent identical with the elided material. The posited structure of (29a) is:

(30) John $[_{MP}$ $Ø_{indic}$ $[_{T/VP}$ be+PAST $[_{ΣP}$ $Ø_{affirm}$ $[_{PartP}$ hassled]]]],
…Mary $[_{MP}$ will $[_{TP}$ PRES $[_{ΣP}$ $Ø_{affirm}$ $[_{VP}$ be $[_{PartP}$ hassled]]]]] too.

The critical part of (30) is the absence in the antecedent of a VP immediately above the projection of the passive participle.

Now having independent reason to believe that finite *be* and *have* are generated higher in the clause than inflected main verbs, we are in a position to explain what leads to their high base position.

4.3.2 The high position

The gist of the analysis is as follows; some further details are discussed in §5. I take the V Requirement to represent a need of some functional head high in the clause, perhaps T. What it needs is to have a clause-mate V somewhere in its c-command domain. Consider now the derivation of a clause bottom-up, having constructed the "predicate" portion of the clause, i.e. the lexical projection and any participial projections above it, and then merged Σ, forming ΣP. The derivation now needs to worry about whether this partial structure contains a V that will satisfy the V Requirement. If it does, all is well, the derivation can proceed, merging T and M, etc. If it does not, now is the last chance to save the derivation by merging in a V for that purpose, while still allowing it to be c-commanded by T. I propose that (only) con-

tentless heads can be freely pulled from the lexicon during a derivation, without having been part of the numeration, so empty V is what will be merged.[10] Now the rest of the clause can be assembled successfully, creating a structure such as (24).

I am relying on some crucial assumptions. One is that the machinery that keeps the heads within a clause in their correct hierarchical order is flexible enough to allow C and Σ to either have a V merged somewhere between them or not. Suppose this is possible because M selects for Tense ***features***, but not for any particular category. As we saw earlier, Tense is an affix that requires either a M or a V as its stem. Thus, T can become part of a well-formed word either by combining with M above it or by finding a V to combine with. In the latter scenario, I suggest that the eventual result of merging the empty V above Σ is a head of category V that bears Tense features; the former property satisfies the V Requirement, and the latter satisfies M's selectional requirement. This is what I have symbolized as T/V above. A second assumption is that V itself must be selectionally content in this high merged position, with Σ as its complement. But this is what we expect from an empty V: it has no properties, in particular no selectional restrictions, as indeed we see in the fact that *be* can be observed taking just about anything as its complement.

4.4 Nonfinite be *and* have

The preceding scenario omitted one other possibility for satisfying the V Requirement in case the lexical predicate cannot do so: an empty V could be merged with the predicate ***before*** the predicate is merged with Σ. That is the scenario that yields bare *be/have* in clauses with modals, e.g. (25). The mechanics of this insertion will be much the same as those just discussed. Here what matters is that Σ should not be disturbed to either have VP as its complement or not. But once we allow high generation of finite *be/have*, we already need to allow a range of possible complements to Σ: AP, PP, NP and PartP; adding V to the list should not raise any additional difficulties.

5. Further issues

What we have seen in the previous section is (very roughly) how to generate various types of word orders involving INFL elements. What we have not seen, for the most part, is how to exclude the many impossible alternatives, e.g. **John does be tired, *Mary will be not late*, etc. Regrettably, there is not space to present that explication here; on the former, see Schütze in

[10] This restriction can be derived (Ouhalla 1991). Contentful verbs by definition have selectional restrictions and/or subcategorization frames, but if they were inserted where we are inserting finite *be*, they would be forced to take ΣP as their only complement.

press. Instead I touch on some more general issues concerning the overall approach pursued in this paper.

5.1 What about have*?*

It is beyond the scope of this paper to thoroughly extend the proposed analysis to finite *have*. Clearly I will want to take quite literally the notion that *have* is *be* plus a little something else, say a silent preposition. One approach could be to treat *have* as an allomorph of *be*, i.e. also a semantically empty V, whose environment for vocabulary insertion refers to the null preposition. (For an interesting variant see Emonds 1994.)

5.2 Whence the V Requirement?

The V Requirement is a stipulation that we would clearly like to derive from something more principled. I offer here a vague speculation, inspired by Rothstein (1999): she argues that it is an inherent property of the category V that it supplies an event(uality) variable, while predicates of other categories are not capable of this. My suggestion is that finite clauses have a Tense operator that needs to bind such a variable.[11] The need for the operator to bind something guarantees at least one V per clause. Having more than one V bound by the same operator would create two elements intending to describe the same event; I speculate that their structural configuration (one heading a phrase containing the other) would be incompatible with this interpretation.

If Tense is the syntactic locus of the operator, it stands to reason that when a V appears in a clause just to supply a variable for that operator to bind, it would appear close to and in the domain of T, and that is indeed where we find finite and bare *be*. Since participles do not satisfy the V Requirement, the V stem inside them is apparently ineligible for binding by the tense operator; one can imagine various reasons for this.

5.3 What about languages with null copulas?

An immediate problem for any attempt to find a deep explanation for the V Requirement is that it appears to be violated in the (not uncommon) languages with a null copula. Here I limit myself to the Arabic type, where the present tense copula is null but past and future are overt; I mainly summarize Benmamoun's (2000) lucid discussion. He argues conclusively against the following two simple analyses that could have made life easy for the present theory: first, that syntactically the present copular sentences are just like the other tenses but the copular V is phonologically null (satisfying an exceptionless V Requirement); second, that the present tense copular utterance is a

[11] The requirement is more general, extending to *to*-infinitives and certain other clause types.

small clause, lacking Tense and other functional projections (which might have meant that the operator node that enforces the V Requirement was absent). He argues instead that a null copula clause has Tense and all the functional structure above that, but no VP underneath, rather just the lexical predicate (e.g., AP); he argues more generally (from noncopular sentences) that in Arabic the present Tense head differs from its past and future counterparts in not requiring any clause-mate Verb.[12]

This treatment of present tense in Arabic amounts to a parameterization of the V Requirement of Tense. If we pursue a motivation along the lines of §5.2, the ability of the V Requirement to be voided in the present tense might have a semantic explanation, e.g. that an event variable can be bound to the speech time "deictically," without the need for an operator in the Tense head of the syntactic representation. The parametric choice would then be whether a given language is allowed to take advantage of this way of expressing present tense meaning.

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[12] Benmamoun's specific proposal is implemented in terms of presence/absence of a [+V] feature on Tense, which is checked when V raises to T. The reason why I have not opted for a feature-checking implementation is because in English the amount of material that can intervene on the surface between the Tense head and the Verb that would have to check its [+V] feature (e.g. in a *do*-support configuration) can be considerable, including adverbs and negation. I am skeptical as to whether covert head movement of V could be claimed to traverse all this material.

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