

Why Nonfinite *Be* Is Not Omitted While Finite *Be* Is

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1. Introduction

The issue I address in this paper stems from three well-known observations about young children learning (Standard) English, exemplified here with data from children studied by Becker (2000, p.c.), as detailed in Table 1: 1) they optionally omit finite forms of *be* (both auxiliary and copula¹), as shown in the sample utterances in (1) and quantified in Table 2; 2) they very rarely use the infinitive form of *be* in a finite context, i.e., utterances of the sort in (2) hardly ever occur, as documented in Table 3; and 3) at about the same stage when they are optionally omitting finite *be*, their main verbs optionally lack inflection—the Root/Optional Infinitive (OI) Stage (Rizzi 1994, Wexler 1994, i.a.), exemplified in (3) and counted in Table 4.

Table 1: Background data on children analyzed by Becker (2000)

Child	Source	Files	Ages
Nina	Suppes 1974	7–13	2;0.24–2;2.6
Peter	Bloom 1970	6–11	2;0.10–2;3.24
Naomi	Sachs 1983	35–62	2;0.2–2;5.8

- (1) a. this empty
b. Marky crying
c. my pen down there

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1. It is well known that auxiliary *be* develops more slowly in child English than copular *be* (Brown 1973, Ingram 1974, Valian 1992, Wilson 2003); e.g., in one sample, Joseph, Serratrice & Conti-Ramsden (2002) report 38% copular *be* omission alongside 66% auxiliary *be* omission; see Gavruseva 2003 for discussion. However, I believe that this contrast is orthogonal to the issues I am concerned with in this paper, which involve what makes omission possible or not, as a function of finiteness. As a result, I have pooled all uses of *be* in the data that follow.

Table 2: *Be* production in finite contexts (Becker 2000)

Child	Overt <i>be</i>	Omitted <i>be</i>	Omission rate
Nina	231	267	54%
Peter	579	286	33%
Naomi	350	189	35%

- (2) a. #I be tired
 b. #you be hurting me (# = virtually unattested)

Table 3: Form of overt *be* in finite contexts (Becker 2000)

Child	Finite	Infinitive
Nina	231	0
Peter	579	0
Naomi	349	1

- (3) a. the big doll need the bottle
 b. she drink apple juice

Table 4: Finiteness on main verbs (Becker 2000)

Child	Inflected	Uninflected	OI rate
Nina	56	282	83%
Peter	178	117	40%
Naomi	61	49	45%

The issues I address with respect to this pattern of production are the following: i) What causes omissions of finite *be* like (1)? ii) Why does the potential OI “be” itself not occur,² on analogy to OI main verbs? iii) Given that it does not, is there any reason to think *be*-drop (1) and OIs (3) are related? Although some theories of the OI stage have included the claim that *be*-drop is part of the same phenomenon (going back at least to Radford 1988), empirical support for this view has been difficult to come by. In order to find such support, we must contrast the predictions of an OI-based theory of *be*-drop with those of a competing account. The only alternative explanations I am aware of essentially boil down to the following: (See Brown & Fraser 1963 for a particularly clear enunciation of this idea.)

2. When I use “be” in quotation marks I am referring specifically to that one word, the (bare) infinitive; when I use *be* in italics I am referring to the verb in general.

Semantic Vacuity Hypothesis (SVH)

Be is semantically empty, hence a good choice to omit under performance-related pressures.

For reasons that will become clear later, I contrast SVH with a particular family of theories of the OI stage, those that identify Tense as a/the critically absent element, e.g. those of Wexler (1994) and Schütze (1997). Thus, the specific hypothesis for which we seek empirical support is the following:

Tense Omission Hypothesis (TOH)

Omission of finite *be* has to do with its syntactic relationship with Tense.

The TOH is deliberately stated somewhat vaguely for now; technical details will be expounded in §5.2. The key point is that TOH embodies the claim that *be* omission and OIs have the same underlying source, while SVH asserts that they are unrelated. The point of this paper is to seek direct empirical evidence supporting the claim embodied in TOH.

SVH and TOH make opposite empirical predictions about environments not heretofore quantitatively studied, namely, those where *be* should be nonfinite, as in (4).

- (4) a. Mary's gonna be nurse.
b. He'll be coming soon.

Consider first what SVH predicts. In terms of semantic vacuity, nonfinite *be* is an even better choice for omission than finite *be*, since it does not carry tense or agreement information (as noted by Brown 1973)—most such omissions would be completely recoverable, as can be seen in the schematic examples in (5).

- (5) a. Gonna ~~be~~ careful.
b. He better ~~be~~ nice.
c. She'll ~~be~~ dancing next.
d. I wanna ~~be~~ the cowboy.
e. Daddy hafta ~~be~~ home soon.
f. You can't ~~be~~ the mommy.

Furthermore, all else equal, an utterance with nonfinite *be* will be longer than one with finite *be* (because it could contain a finite element in addition to the word *be*), hence higher in processing load and more prone to deletion. Thus, SVH would lead us to expect omission of nonfinite *be* to be at least as frequent as omission of finite *be*, probably more frequent, for a given child at a given age. In contrast, TOH does *not* predict any nonfinite *be* omission of the sort in (5), because nonfinite *be* does not stand in the same relationship with Tense that finite *be* does (see §5 for details). Which prediction is correct—do children in the relevant stage make omissions of nonfinite *be* like those in (5)?

2. Method

This empirical question must be asked at a stage in each child's development when the word "be" has already been produced, so that omissions could not be due to a lexical gap, and when omissions of finite *be* forms are happening concurrently, so that there is reason to think that whatever process induces those latter omissions is still operative in the child's grammar. Thus, the counts in §3 incorporate portions of transcripts beginning when nonfinite *be* begins to be used and ending when omission of finite *be* has virtually ceased. Relevant transcripts were sought in the CHILDES database (MacWhinney 2000). Counts were then performed in two different ways for different sets of children. One set were done purely "by hand," reading through the entire transcript and noting all relevant utterances, that is, environments for both finite and nonfinite *be*. The other set were semi-automated, by first using computer search plus information from the literature (particularly Stromswold 1990) to identify the vast majority of environments where the word "be" could in principle occur (i.e., environments where a bare infinitive is selected for: following modals, auxiliaries, semi-auxiliaries such as *better*, *gotta*, *sposta*, main verbs like *want*, *try*, *let*, and the infinitival morpheme *to*), and reading through only those; comparison rates of finite *be* omission were estimated from other sources. In both approaches the following counting principles were applied. Imitations, self-repetitions, and very frequent formulas like *Be right back* were excluded, as were omissions of *be* that would be grammatical for an adult. Positive imperatives like *Be careful!* were excluded because omission of *be* in this environment would generally yield an acceptable adult utterance, *Careful!*, in which furthermore there is no direct evidence of a verbal projection; thus, including the overt imperatives would artificially inflate the frequency of overt *be*. On the other hand, negative imperatives were included, because they do not share this problem (**Don't __ silly!*).

3. Results

3.1 Hand counts

Table 5 contains the largest data sample examined. It shows that *be*-drop was occurring at a rate of 21% in finite contexts but only 3% in nonfinite contexts (Fisher exact $p < .0025$). In (6)–(8) representative examples of the three substantially nonzero cells of Table 5 can be found. (9a) shows the one utterance that was counted in the bottom right cell; (9b) shows the next closest case, which I deemed sufficiently unclear that I did not count it. Table 6 shows the same counts for another child with somewhat fewer utterances but an even stronger effect of context on omission rate (Fisher exact $p < .0001$). In (10) are some examples from the three attested cells of Table 6; (11) shows the closest thing to an omission of nonfinite *be*; I classified this as insufficiently clear to count as a genuine example.

Table 5: Distribution of *be* forms—Anne (Theakston et al. 2000), Files 7–31 (2;0.15–2;8.24)

Context	Form	
	Overt	Omitted
Finite	1655	430 (21%)
Nonfinite	38	1 (3%)

- (6) *Production of finite be*
- I'm a mummy
 - are you putting my blanket on?
 - because it's too warm
- (7) *Omission of finite be*
- this one not gonna hold
 - it raining on him
 - where baby?
- (8) *Correct production of nonfinite be*
- they should be in here
 - that one wants be up there?
 - that's gonna be driver
- (9) *Potential omissions of nonfinite be*
- it's gonna better
[The investigator glossed this as *it's gonna get better*, but it is hard to distinguish that target from *it's gonna be better*.]
 - want to # sleeping with Mummy
[In principle the target could have been *want to be sleeping...*, but future progressive is unusual in this context, and the pause suggests this might not have been all one sentence.]

Table 6: Distribution of *be* forms—Aran (Theakston et al. 2000), Files 16–34 (2;4.20–2;10.28)

Context	Form	
	Overt	Omitted
Finite	1262	323 (20%)
Nonfinite	98	0

- (10) a. Pingu was laughing
 b. I sitting on it
 c. it can't be a bun anymore

(11) *Potential omission of nonfinite be*

I can't that one

[Mother's preceding and following utterances strongly suggest that Aran meant *I can't build up that one.*]

Tables 7–10 show substantially smaller samples from other children (each followed by illustrative utterances from that sample), whose purpose is to provide a snapshot of the behavior of the phenomenon of interest at a single moment in developmental time, as well as documenting its generality. They show the same pattern we saw above: three cells of the table are attested, the nonfinite/omitted combination is not. The results do not reach statistical significance because the raw numbers are so small; nonetheless, they verify the existence of a stage at which opportunities to omit nonfinite *be* occur—the fact that such omissions are unattested is not an artifact of pooling data over a long stretch of development in which omission of finite *be* stopped before production of nonfinite *be* began.³

Table 7: Distribution of *be* forms—Ross (MacWhinney 2000), File 24 (2;8.16)

Context	Form	
	Overt	Omitted
Finite	53	8 (13%)
Nonfinite	10	0

- (12) a. Marky crying
b. I'll be the alligator
c. you're riding it

Table 8: Distribution of *be* forms—Sarah (Brown 1973), File 66 (3;6.23)

Context	Form	
	Overt	Omitted
Finite	30	14 (32%)
Nonfinite	5	0

3. Notwithstanding the comments in footnote 1, it must be acknowledged that in these data the vast majority of overt nonfinite *be* uses are copular, while very many of the finite *be* omissions are auxiliary uses. Thus, one might attempt to argue that in looking at the pooled data we would not expect omission rates to match in finite and nonfinite contexts even under SVH. I believe that with a sufficiently large sample this argument could be countered, because a nonnegligible amount of finite copular omission still occurs at this stage.

- (13) a. that the roast cutter
 b. you going be the children
 c. this is salad roll
 d. I puttin(g) supper on the table

Table 9: Distribution of *be* forms—Sarah, File 89 (4;0.28)

Context	Form	
	Overt	Omitted
Finite	59	12 (17%)
Nonfinite	3	0

- (14) a. this is going be a chair
 b. you lazy
 c. this is soft
 d. you're makin(g) one awful

Table 10: Distribution of *be* forms—Sarah, Files 109–111 (4;5.14–4;5.29)

Context	Form	
	Overt	Omitted
Finite	104	15 (13%)
Nonfinite	15	0

- (15) a. I not gonna tell you
 b. dis can be a poodle
 c. it was breakin(g)

3.2 Semi-automated counts

To broaden the empirical base, counts of nonfinite environments are provided in Tables 11 and 12 for transcripts whose finite *be* omissions have already been reported on in the literature.⁴ It would be tempting to conclude that Table 12 is especially compelling because the rate of finite omissions is so high, so that *ceteris paribus* the expected number of nonfinite *be* omissions, given 11 overt uses, would be over 25, while there are actually none—example (16) was excluded as insufficiently clear. However, some have speculated that the high rate of finite *be* omissions in Adam's speech might be related to the possibility that he was exposed to Black English (Dickey & Jackson n.d.). This could also ex-

4. The estimated finite percentages in Tables 11 and 12 were computed from the data of Wilson (2003, p.c.), pooling auxiliary and copular uses of *be*. They are based on Nina's files 16–31 and Adam's files 10–18. The raw numbers are 845 overt vs. 242 omitted cases, and 94 overt vs. 219 omitted cases, respectively. For Adam, Becker's (2000) data yield a similar omission rate by sampling files 10, 15, 18 and 20: 101 overt vs. 261 omitted = 72% omission.

plain why Adam has a relatively high rate of *be* as an OI, as shown in §3.3. His percentages are therefore left out of the summary percentages in §4. Nonetheless, Tables 11 and 12 do conform to the pattern seen in §3.1.

Table 11: Distribution of *be* forms—Nina, Files 17–30 (2;3.14–2;5.27)

Context	Form	
	Overt	Omitted
Finite	≈78%	≈22%
Nonfinite	17	0

Table 12: Distribution of *be* forms—Adam (Brown 1973), Files 10–20 (2;7.14–3;0.11)

Context	Form	
	Overt	Omitted
Finite	≈30%	≈70%
Nonfinite	11	0

(16) *Potential omission of nonfinite be*

I going big helper

[The target might have been *I('m) going (to) be (al)the big helper*.⁵]

3.3 Counts of root infinitive *be*

For the same range of files examined in §3.2, consider now the number of times “be” is used in a finite context, i.e. as an OI, as a percentage of all the finite *be* contexts. The figures are in Table 13, with corresponding examples in (17); figures for Nina and Adam are from Becker 2000. As can be seen, with the possible exception of Adam (cf. §3.2) these cases are so rare that we should seek a theory that predicts their nonattestation.

Table 13: Use of nonfinite *be* in finite contexts

Child	Overt nonfinite “be”	Total finite <i>be</i> contexts	Nonfinite rate
Anne	7	2092	0.3%
Aran	4	1589	0.25%
Ross	1	62	1.6%
Sarah	2	236	0.8%
Nina	0	231	0%
Adam	8	299	3.5%

5. One can argue that what has really been ungrammatically omitted is infinitival *to*, the element that would require/license nonfinite *be*, so even with the suggested target utterance the example still would not represent a genuine case of “be” being omitted in and of itself.

- (17) a. he just be in the line (Anne)
 b. this be in here, look
 c. those be a cot
 d. I be naughty (Aran)
 e. I be a monkey again
 f. you be all right
 g. I be Norman+Price
 h. Doctor David Banner take his shirt off and be the # be the Hulk (Ross)
 i. I always be the mummy (Sarah)

4. Summary of evidence

So far we have seen that during the period of interest...

- in finite *be* contexts, *be* is mostly overt but sometimes omitted (13–32%);
- in nonfinite *be* contexts, *be* is almost always overt, virtually never omitted (at most a single instance, $\leq 3\%$);
- “be” is virtually never used in a finite context, i.e. as an OI ($< 2\%$).

The large discrepancy in omission rates of finite versus nonfinite *be* supports TOH over SVH.

Independent evidence that finite *be*-omission is connected with underspecification of Tense can be found in another domain as well. The rate of finite *be*-omission and the rate of 3sg *-s* omission track each other very closely in a sufficiently large sample (contra Wilson 2003). Figure 1 shows data from cross-sectional samples of typically developing children from Rice & Wexler 2001.⁶

6. There are 37 children in the youngest age group and 50 children in each of the older age groups.

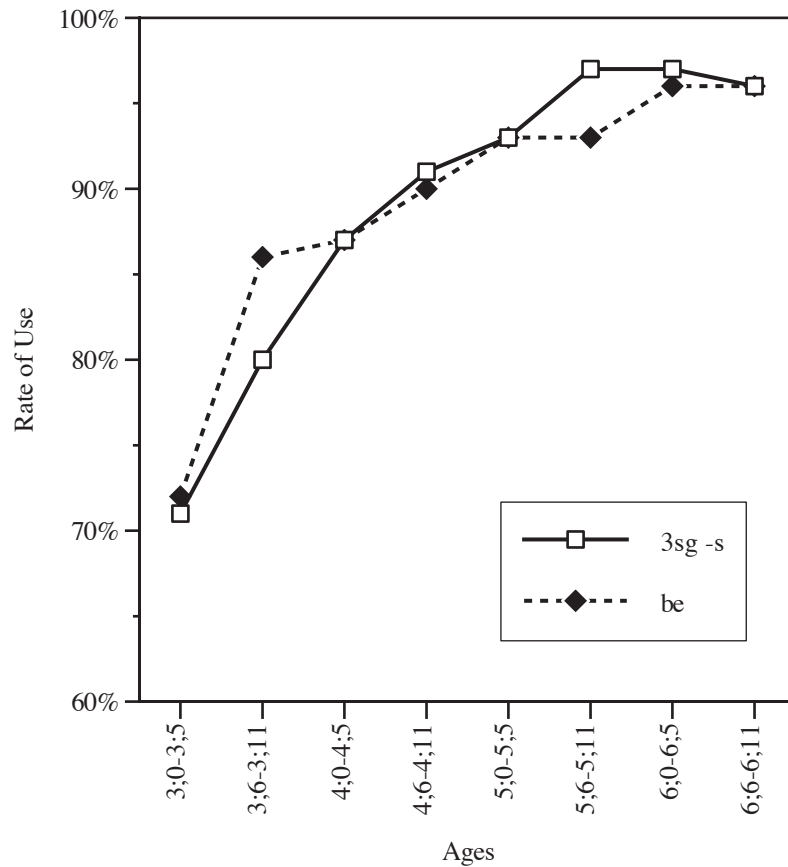


Figure 1: Rate of production of 3rd person singular *-s* and finite *be* for samples of 50 children in each age group (adapted from Rice & Wexler 2001)

5. Analysis

5.1 Syntax (adult and child)

In order to develop a theory of the child grammar that will derive the omission of finite inflection from main verbs and the omission of finite but not non-finite forms of *be* from a common source, we first need an explicit account of the distribution of *be* in the adult language. For more detail on what is laid out below, see Schütze 2001, 2002; this work draws on many insights from Scholten (1988), Emonds (1985), Déchaine (1995) and Rapoport (1987), i.a. The tenets of the analysis are as follows. All forms of *be* are categorially Verbs, never INFL heads (contra Becker 2000). They surface due to a formal requirement that clauses have an element of category V; when the substantive predicate is not of

that category (AP, PP, NP) *be* must step in to fulfill this “V Requirement.” The V Requirement is imposed by Tense (and is subject to crosslinguistic variation—see the Appendix). For present purposes the precise source of the V Requirement is immaterial: it could be that T c-selects for V, or that Tense needs to bind an event(uality) variable within its clause and, as argued by Rothstein (1999), Verbs are the only category of predicate that can introduce an event variable. What matters is that the V Requirement of Tense can cause a V head with no real world (“encyclopedic”) meaning or content to be projected as a last resort to save a structure; *be* is the default verb, the pronunciation of such a V with no properties. Thus, if the intended message consists of a nonverbal predication [_{AP} *John tired*] and a Tense specification [+past] then V must also be part of the numeration to avoid a crash at LF (**John tired*, $\sqrt{\text{John was tired}}$). Crucially, if the intended message already consists of a verbal predication, e.g. [_{VP} *John love Mary*], *be* is disallowed (**John was love Mary*, $\sqrt{\text{John loved Mary}}$) by Economy of Representation. Finally, modals (*can*, *should*, *might*, etc.) are not categorially Verbs in English, hence the need for *be* following a modal in order to satisfy the V Requirement (*John will *(be) tired*). However, modals do bear or consume tense morphology (**John couldn't walked*, **John can runs*), which is why a theory of *be* that says that its sole purpose is to support inflection would be inadequate—it would not account for the bare (infinitive) uses.

5.2 Tense Omission Hypothesis for child grammar

The claim that the OI stage in the acquisition of English and numerous other languages is due to the underspecification (or omission) of Tense has been formulated in numerous ways by different researchers; space precludes a review here. What is crucial for my purposes is that when Tense is underspecified it is “weakened” to the point where it no longer has a V Requirement. Now, what will happen if the contentful predicate is not a verb and the V Requirement is not in force? Nothing will demand the presence of *be*, so *John tired* will be licit. Also, as discussed in §5.1 for the adult grammar, Economy of Representation prohibits a representation that contains *be* when it is not required, thus it will rule out a clause with underspecified Tense but a (superfluous) *be* (*#John be tired*). Consider now what we expect in a nonfinite *be* context (e.g. *You will be the fireman*, *I'm gonna be stronger*): this is a context where Tense is realized on or consumed by some word other than *be*, i.e. a modal or auxiliary. If we hear one of those elements, we know we are dealing with a clause in which Tense is specified, not underspecified or absent. Therefore, Tense will impose its V Requirement, forcing the presence of *be* if the main predicate is nonverbal. The child does not say *#John will tired* because that would violate T's need for a V just as it does for the adult. Under this analysis we cannot preclude the possibility that a clause whose “target” structure involves, say, a modal and a nonfinite *be* (e.g., *John will be late*) might lose its modal due to Tense underspecification, which would in turn entail the absence of the V Requirement and therefore the lack of motivation for (and hence prohibition on, by Economy) the nonfinite *be*,

so that what the child actually utters would be just *John tired*, with an intended future or modal interpretation. But since the modal is not expressed, there is no way to determine just from the form of the utterance that the target was not simply *John is/was tired*, that is, an instance of finite *be* omission. So it could be that nonfinite *be* is in fact sometimes omitted, just in case a preceding Tense-bearing word is also omitted, but it would be difficult to detect when precisely this is going on.

6. Conclusions and open issues

We have determined that children's omission of finite *be* must be due not just to its semantic emptiness, but also to the fact that its presence is demanded by Tense, which is itself optional at the stage of development under examination. The reason we find OI main verbs but not OI *be* is because underspecifying Tense just takes away the inflection from a contentful verb, but it takes away the very *raison d'être* from *be*: in a [-Tense] clause, no position for *be* can be projected. Finite *be*-drop and main verb OIs are both attributable to underspecification of Tense, albeit in slightly different ways. While the absence of finite inflection on main verbs is a direct reflection of the absence of morphological Tense features (themselves the expression of a Tense head that is fully specified in the syntax), the absence of finite *be* is a reflection of a syntactic consequence of the absence of those Tense features—the fact that the V Requirement ceases to hold.⁷ In this sense, *be* omission has more in common with the null (PRO) subjects that co-occur with OIs (on some views) than with the OIs themselves.

An important open question is how the present proposal could be extended to account for *be*-omission by children acquiring languages that are claimed not to have main verb OIs, such as Italian (Valian 1992, Lyon 1997, Berger-Morales & Salustri 2003). Relevant data from one child are cited in Table 14, which highlights the important fact that it is not only auxiliary uses of *be* that are omitted, but also “copular” ones (used here as a shorthand for all non-auxiliary uses—in Table 14 this includes existentials as well as possessive, locative and adjectival predicatives). (Cf. the proposal in Wexler 1998 for deriving English-type OIs and Italian auxiliary omission from a common source; as formulated, that account does not seem to predict copula omission in Italian, because it relies crucially on a specialized Aux projection.

7. See Schütze (in press) for an alternative attempt to derive *be*-omission in the Spell-Out component as a purely morphophonological phenomenon. My current feeling is that the present approach is less stipulative.

Table 14: Omission of *essere* in child Italian—Rafaello (Colombrone corpus, Cipriani et al. 1989), Files 3–11 (1;10.20–2;6.13), data from Caponigro 2000

Use of <i>essere</i>	Form	
	Overt	Omitted
Auxiliary	7	4 (36%)
Copula (all other)	73	28 (28%)

The fact that my proposal treats main verb OIs and *be* omission slightly differently, while still deriving them from a common source, suggests a possible approach to the Italian facts. Tense features might in fact be underspecifiable in child Italian (contra most accounts in the literature), yielding *be*-omission as in child English, but independent properties of the language may conspire to prevent us from finding morphological evidence of the underspecification on main verbs. In particular, bare stems are not possible words, and present tense marking and subject agreement are portmanteaux. Thus, there would be no way to see Tense features missing with Agreement features still expressed,⁸ and if the absence of Tense features were to cause the absence of the entire portmanteau affixes, we would be left with unviable words (namely, bare stems), unlike in English and many of the other OI languages. Thus, the only way to pronounce tenseless verbs might be as agreeing forms that sound just like present tense forms. (This presupposes that Italian infinitival suffixes are not possible spell-outs of [-Tense, +Agr] forms, something for which we would want independent evidence.)

Appendix. What about adult languages with null copulas?

An immediate problem for any attempt to find a non-ad hoc explanation for the V Requirement in English is that this requirement appears to be violated in the (not uncommon) languages with a null copula. Here I limit discussion to the Arabic type, where the present tense copula is null but past and future copulas 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 theory in §5.1: first, that syntactically the present copular sentences are just like the other tenses but the copular verb is phonologically null (satisfying an exceptionless V Requirement); second, that the present tense copular utterance is a small clause, lacking Tense and other functional projections (which would have meant that the functional head that imposes the V Requirement was absent). Benmamoun 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

8. Following Wexler's (1998) extension of the ATOM model (cf. Schütze 1997), I assume that Agreement features in Italian INFL are interpretable and hence not omissible, unlike in traditional OI languages.

in Arabic the present Tense head differs from its past and future counterparts in not requiring any clause-mate Verb. (His proposal is implemented in terms of the presence/absence of a [+V] feature on Tense, which is checked when V raises to T.)

This treatment of present tense in Arabic amounts to a parameterization of the V Requirement of Tense. If we pursue a motivation involving binding of event variables along the lines of §5.1 rather than a feature-based treatment, 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. (It has been suggested that something like this is what happens in children’s OIs also, but for them it might not be restricted to speech time/present tense.) The parametric choice would then be whether a given language is allowed to take advantage of this way of expressing tense meanings.

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