

RESEARCH

Complex copula systems as suppletive allomorphy

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Languages are known to vary in the number of verbs they exhibit corresponding to English *be*, in the distribution of such copular verbs, and in the presence or absence of a distinct verb for possession sentences corresponding to English *have*. This paper offers novel arguments for the position that such differences should be modeled in terms of suppletive allomorphy of the same syntactic element (here dubbed v_{BE}), employing a Late Insertion-based framework. It is shown that such a suppletive allomorphy approach to complex copula systems makes three predictions that distinguish it from non-suppletion-based alternatives (concerning *decomposition*, *possible and impossible syncretisms*, and *Impoverishment*), and that these predictions seem to be correct (although a full test of the *possible and impossible syncretisms* prediction is not possible in the current state of knowledge).

Keywords: copulas; possession; predication; Late Insertion; syncretism; suppletive allomorphy

1 Introduction

Many languages exhibit more than one verb corresponding to English *be*. Usually, the copular verbs in such systems are not interchangeable. A famous case of this sort comes from Spanish, which has two copular verbs *ser* and *estar*, with apparently different meanings. While many predicates are able to occur only with *ser* or only with *estar*, a number of adjectives allow both options, in which case a sharp semantic distinction arises:

- (1) *Spanish*
- a. Juan **es** feliz.
Juan is_{ser} happy
'Juan is happy.' (i.e., he is a happy person by disposition)
- b. Juan **está** feliz.
Juan is_{estar} happy
'Juan is happy.' (i.e., he is in a happy mood)

The meaning difference here is often characterized in terms of the distinction (due to Carlson 1977; see also Milsark 1974; 1977) between individual level predicates and stage level predicates, although this characterization is not without its problems¹ (see Roy 2013 for an alternative). Whatever the nature of the distinction, it is not represented in the copula system of English.

¹ One famous problem is that the adjective meaning 'dead', apparently individual level though it is, takes *estar*:

- (i) Juan {está/*es} muerto.
Juan {is_{estar}/is_{ser}} dead
'Juan is dead.'

One approach to this cross-linguistic variation is to assume that *ser* and *estar* are entirely distinct lexical entries with different syntactic and/or semantic properties. Variation in the number and nature of BE verbs across languages would then be an irreducible lexical fact.

An alternative approach would take *ser* and *estar* to be conditioned allomorphs of the same meaningless copular verb, with the choice being conditioned by nearby material (silent in Spanish) which gives rise to the interpretive contrast (assuming a Late Insertion approach to morphological exponence, along the lines of Distributed Morphology–Halle & Marantz 1993 et seq.). This conditioned allomorphy would have to be assumed to be suppletive in nature, since the various forms of *ser* and *estar* are not plausibly reducible to a single underlying phonological form. Hence, I will refer to this alternative strategy for dealing with complex copula systems as the *suppletive allomorphy approach*.

Various instantiations of the suppletive allomorphy approach have been put forward in the literature, many of them focused on the copula system of Spanish (see especially Fábregas 2012 for a summary of the literature on *ser* and *estar*). Many of these take *estar* to be the “special” allomorph, with *ser* as the elsewhere case. The extra material associated with *estar* is often taken to be locative in nature. For instance, there are a number of proposals that *estar* is *ser* plus an incorporated preposition (Longa, Lorenzo & Rigau 1998; Uriagereka 2001; Martín 2009; Fábregas 2014; Gallego & Uriagereka 2016). Related are Brucart’s (2010) proposal that *estar* is *ser* plus a Coincidence feature, and Zagona’s (2012) proposal that *estar* is the realization of *ser* when it bears a [uP] feature.² Camacho (2012) argues instead that *estar* is like *ser*, but with an additional unvalued aspectual feature. Roy (2013) takes a different tack, proposing that *estar* is the elsewhere case, with *ser* being the allomorph chosen only when the copula takes an NP complement. Moving beyond Spanish, Welch (2012) analyzes the two-copula system of Ṭḥcḥ Yaṭi as a case of allomorphy conditioned by the presence or absence of little-*v* introducing an external argument.

One might wonder, however, whether this approach can be distinguished from the first approach mentioned above, which eschews Late Insertion, and instead postulates entirely distinct lexical entries for each of the copulas in a system like that of Spanish. I will call this option the *non-suppletive approach*.

This paper has three main goals. The first is to offer a version of the suppletive allomorphy approach which also brings existential sentences and possession sentences into the picture. Although such sentences are clearly cross-linguistically related to predicative copular constructions (Lyons 1968; Clark 1978; Freeze 1992; Kayne 1993; many others), most of the literature cited above does not seek to unify all of these domains.³ The second goal is to point out that such an account makes three typological predictions about the cross-linguistic morphological profile we should expect to see in complex copula systems. I will show that we do in fact find the predicted morphological profile when we look across languages when it comes to two of those predictions. A third prediction, concerning possible and impossible syncretisms, shows promising signs of being correct, but cannot be tested in full given the current state of typological knowledge. I will therefore lay out the predictions of the approach in this domain as an invitation to future research. The third and final goal is to compare this suppletive allomorphy approach to the non-suppletive approach to complex copula systems. While the non-suppletive approach can achieve

² Most of Zagona’s paper does not assume Late Insertion, but on p. 324 she suggests a Late Insertion implementation of her approach.

³ An honorable exception is Martín (2009), who takes a P-incorporation approach to HAVE sentences along the lines of Freeze (1992) and Kayne (1993), and also argues that *estar* is related to *ser* in a similar fashion. I will argue in section 4.2 that a P-incorporation approach is on the wrong track when applied to HAVE sentences, following Myler (2016).

descriptively adequate accounts of some copula systems, I will show that it fails to derive the successful typological predictions of my own approach, and also runs into problems in analyzing individual languages in certain cases. All of these problems stem from a core difference between the two approaches: the suppletive allomorphy approach assigns a key analytical role to Late Insertion, whereas the non-suppletive approach does not.

The paper is structured as follows. Section 2 outlines the three cross-linguistic predictions of the suppletive allomorphy approach to complex copula systems. Section 3 lays out my background assumptions about the structure of the thematic domain. Sections 4–6 examine each of the predictions outlined in Section 2, one by one. Section 7 compares the suppletive allomorphy approach to the non-suppletive approach, showing that only the suppletive allomorphy approach succeeds in accounting for the facts of interest. Section 8 is a brief conclusion.

2 Three predictions

All instantiations of the suppletive allomorphy approach to complex copula systems will make versions of the following predictions:

- (2) *Predictions of the suppletive allomorphy approach to complex copula systems*
 - a. *Decomposition*
Any syntactically present material which is silent in one language might be spelled out in another. Hence, it ought to be possible to find languages with overt morphemes corresponding to whatever syntactic heads are held responsible for conditioning copular allomorphy.
 - b. *Possible and impossible syncretisms*
Across languages, complex copula systems will show commonalities in which subtypes of predication can be marked identically, and which ones never are—this is because allomorphy must be conditioned by coherent sets of features (Halle & Marantz 1993; Halle 1997).
 - c. *Impoverishment*
We expect to find complex copula systems in which the distinctions between copulas are collapsed in certain marked environments, with the collapse being in favor of an allomorph that can be shown on independent grounds to be the default realization. This follows from the existence of Impoverishment (Bonet 1991 et seq.).

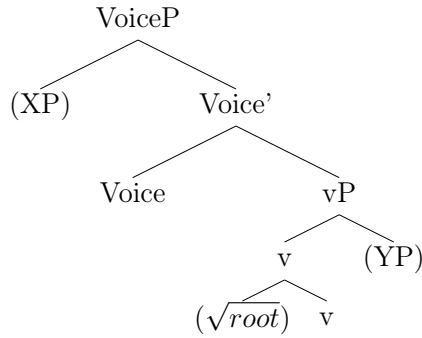
Naturally, the details of the predictions made will vary with the details of the syntax proposed for different types of copula construction. After discussing the structure of the thematic domain in Section 3, I therefore bring together recent work on predicative copula constructions, existential constructions, and predicative possession to propose a specific syntax for the thematic domain of such constructions in Section 4. In the same section, I show that this syntax is indeed supported by cross-linguistic decompositional evidence: certain functional heads which must be assumed to be silent in familiar languages turn out to be overt in others. Having motivated this syntax, I proceed in Section 5 to a discussion of what a Late Insertion approach to spelling out this structure predicts about possible and impossible syncretisms. The Impoverishment prediction is discussed in Section 6.

3 Voice, v, and the structure of the thematic domain

This paper adopts the view of the thematic domain that has emerged from work following Kratzer (1996) and Marantz (1997; 2001) – see especially Pylkkänen (2002/2008); Schäfer (2008); Marantz (2009; 2013); Bruening (2010; 2013); Harley (2010; 2013);

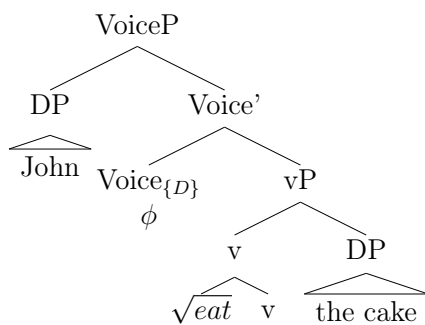
2014); Irwin (2012); Wood (2014; 2015); Alexiadou, Anagnostopoulou & Schäfer (2015); Kastner (2016); Myler (2016); amongst many others (see also Ramchand 2008 for a related approach). The exposition here is an abbreviated and slightly adapted version of Myler (2016: 18–31, 42–45), which itself is partly adapted from Wood (2015: 12–18). According to this approach, verb phrases have the structure represented schematically in (3).

(3) *Basic verb phrase structure*



As can be seen, the core of the thematic domain is a vP. The head “v” comes in a variety of semantico-syntactic flavors discussed in more detail below; in the general case it will introduce a state or event variable. In sentences containing a contentful lexical verb, v has an acategorial root adjoined to it. The v head may additionally take a complement (YP in the structure in (3)). The vP thus formed is typically embedded under a head which may introduce an external argument. Following Kratzer (1996) and the other works cited above, I will refer to this argument-introducing head as Voice. This yields the structure in (4) for the thematic domain of a transitive sentence like *John ate the cake*. Here and throughout, the notation {D} on a functional head signifies the need for a specifier of category D and {} represents the absence of such a requirement. The symbol ϕ represents a phi-probe. Voice comes in variants requiring a specifier, and a variant not requiring a specifier. When Voice requires a specifier, it may additionally bear a phi-probe with which it licenses a DP in its complement domain (this DP may be YP or be contained in YP), in which case we say that the configuration is transitive.⁴

(4) *John ate the cake.*



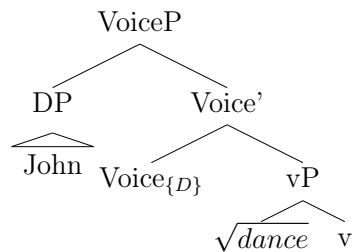
An unergative verb phrase, on the other hand, would look as in (5) – note the presence of a specifier requirement ({D}), and the absence of a phi-probe.⁵ Example (6) illustrates

⁴ A reviewer wonders if the discussion here implies that Agree can cross phase boundaries (if v is a phase head, and the Probe is on Voice). I assume that Agree cannot cross phase boundaries, and that the phase boundary in this case is voided via phase sliding or phase extension (Den Dikken 2006; 2007; Gallego & Uriagereka 2007) when v undergoes short verb movement to Voice (this movement is not depicted in my trees for the sake of simplicity).

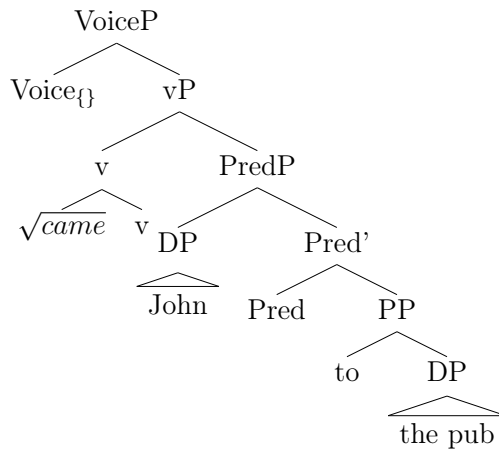
⁵ Here I depart from the tradition, associated with Hale & Keyser (2002) and others, of assigning unergative verbs an underlying transitive structure. Arguments against the Hale & Keyser position are to be found in Marantz (2009); Preminger (2009); Rimell (2012).

one subtype of unaccusative structure in the present theory (on PredP, see section 4.1 below). For discussion of other types of unaccusative, such as anticausatives, see Cuervo (2003); Schäfer (2008); Irwin (2012); Alexiadou, Anagnostopoulou & Schäfer (2015); Wood (2015) for a variety of approaches formulated within this general framework.⁶

(5) John danced.



(6) John came to the pub.



Returning to the schematic structure in (3), notice that the acategorial root is not a necessary part of the structure. It is possible for v to head vP without a contentful root adjoined to it, in which case the verb we see will contribute at most event structure. Constructions of this sort are well-known in the literature on argument structure, where they are conventionally referred to as light verb constructions.

(7) *Definition of a light-verb construction*

A light-verb construction is one that contains a v but no root.

I assume, following Wood (2015) and Myler (2016), that there are two syntactically distinct types of v: substantive v, and meaningless copula v (the latter will henceforth be referred to as v_{BE}). Substantive v may introduce a state variable or an event variable, and also has a causative variant (Wood 2015: 28). v_{BE} , on the other hand, is a meaningless piece of syntactic scaffolding which exists only to help link non-verbal predicates to clausal functional projections.⁷ For the purposes of this paper, I will follow Myler (2016: 42) in taking v_{BE} to denote a type-neutral identity function.

⁶ Note that (5) instantiates (3) without YP, and (6) instantiates (3) without XP. One might assume that weather predicates instantiate (3) with both XP and YP missing, but see Krejci (2014) for arguments that such predicates do in fact have a thematic external argument. It may be that no verb instantiates (3) with both XP and YP missing; the issue of whether this is true (and if so, why) goes beyond the scope of this paper.

⁷ PredP on its own cannot be merged as the complement of such clausal functional projections, since it is not itself verbal. I thank a reviewer for pointing out the need for clarification on this point.

$$(8) \quad \text{Copula } v_{BE}^8 \\ \llbracket v_{BE} \rrbracket \Leftrightarrow \lambda x.x$$

We now turn away from our discussion of the variants of v to address the variants of Voice. Since Kratzer (1996), it has been assumed that the interpretation of Voice is determined by reference to the meaning of vP . Specifically, Kratzer proposed that Voice introduces an Agent thematic role if its complement denotes an event, and that it introduces a Holder thematic role if its complement denotes a state (compare the discussion on page 121 and on page 123 in Kratzer 1996). In addition to this, a number of authors have identified circumstances under which Voice introduces a DP in its specifier but semantically introduces no role at all. This “Expletive” version of Voice has been identified in various types of anticausative in Alexiadou, Anagnostopoulou & Schäfer (2015), in various types of HAVE and BE sentence by Myler (2016), in German marked anticausatives by Schäfer (2008), and in various argument structure alternations in Icelandic by Wood (2014; 2015). These authors differ somewhat with respect to the exact denotation they assign to Expletive Voice; here I will follow Myler (2016) in taking it to be a type-neutral identity function. Putting all of this together, the full set of rules for interpreting the Voice head is given in (9).

$$(9) \quad \text{Rules for the interpretation of Voice (cf. Wood 2015: 30; Myler 2016: 43)} \\ \text{a. } \llbracket \text{Voice} \rrbracket \Leftrightarrow \lambda x_e. \lambda e_s. \text{Agent}(x, e) / \text{___}(\text{agentive, dynamic event}) \\ \text{b. } \llbracket \text{Voice} \rrbracket \Leftrightarrow \lambda x_e. \lambda e_s. \text{Holder}(x, e) / \text{___}(\text{stative eventuality}) \\ \text{c. } \llbracket \text{Voice} \rrbracket \Leftrightarrow \lambda x.x / \text{___}(\text{elsewhere})$$

With this general background on the structure of the thematic domain in place, we are now in a position to introduce the structure of copula sentences, and the cross-linguistic decompositional evidence for it. This is the topic of the next section.

4 The decomposition prediction and the syntax of copular sentences

This section begins in 4.1 by setting out the structures for predicative copular constructions, and the evidence for the decomposition adopted. Section 4.2 turns to HAVE constructions, arguing that HAVE is the transitive form of BE, in agreement with Hoekstra (1994); Belvin (1996); Ritter & Rosen (1997); Jung (2011); Myler (2016). Arguments are presented for preferring this approach over the standard P-incorporation approach associated with Freeze (1992); Kayne (1993); Harley (1995; 2002); Den Dikken (1997; 1998; 1999); and many others. Section 4.3 discusses existential constructions. In section 4.4, a comparison of the copula systems of French, English, and Spanish is used to illustrate the consequences of the approach. Section 4.5 provides a local summary.

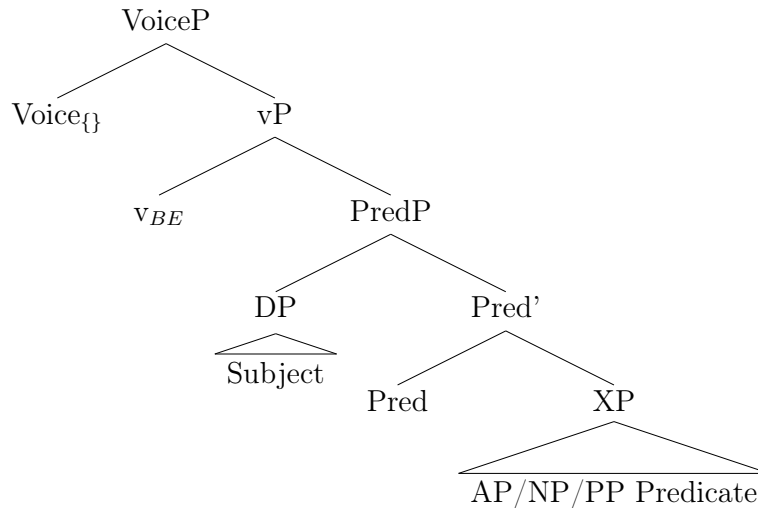
4.1 Predicative copular constructions

My syntactic assumptions concerning the structure of copular predication will be taken from Bowers (1993); Adger & Ramchand (2003); Baker (2003); Citko (2008); Dalmi (2013); Roy (2013); Balusu (2014). These authors defend a unified syntax for predication,

⁸ The idea that copular verbs themselves make no contribution to the semantics, or only a very trivial one, has a long history. Versions of this approach can be found in Bach (1967); Lyons (1968); Williams (1980); Partee (1986; 1987); Bjorkman (2011); amongst others. (In the case of the proposals by Bach 1967; Lyons 1968; Bjorkman 2011; the copula makes no semantic contribution because it is not present in the syntactic representation that feeds semantics at all. I will not make this assumption, although this aspect of my analysis may not be crucial – see footnote 10 for further discussion.) In fact, as Myler (2016: 42) notes, all that this system really requires is that the copula be thematically inert, rather than being completely meaningless. Hence, if Rothstein (1999; 2001) is correct that the copula converts mass-states into countable eventualities, this could be accommodated easily. Nevertheless, I will adopt this simpler denotation to reduce the complexity of the discussion.

according to which a meaningless copular verb embeds a small clause. Small clauses for these authors are universally headed by a Pred head, which projects the subject of predication in its specifier,⁹ and takes the “true” predicate (which may be an AP, an NP, or a PP) as its complement. A schematic representation this structure is given in (10).¹⁰

(10) *Schematic structure for the thematic domain in copular sentences*



Adger & Ramchand (2003); Markman (2008); Balusu (2014) have argued for the existence of two semantically distinct Pred heads which distinguish individual level and stage level predication—call them $\text{Pred}_{\text{indiv}}$ and $\text{Pred}_{\text{stage}}$. Balusu, following Kratzer’s (1995) conception of the individual level/stage level distinction, proposes that what I call $\text{Pred}_{\text{stage}}$ introduces a Davidsonian eventuality variable, whereas what I call $\text{Pred}_{\text{indiv}}$ does not:¹¹

(11) *Stage level Pred* (adapted from Balusu 2014)
 $[[\text{Pred}_{\text{stage}}]] \Leftrightarrow \lambda P_{\langle e, t \rangle} . \lambda x_e . \lambda e_s . \text{holds}(P, e) \ \& \ \text{Holder}(x, e)$

(12) *Individual level Pred* (adapted from Balusu 2014)
 $[[\text{Pred}_{\text{indiv}}]] \Leftrightarrow \lambda P_{\langle e, t \rangle} . P$

Of course, Kratzer’s conception of this distinction has been questioned. For example, Maienborn (2005a; 2005b; 2007) demonstrates that both individual level and stage level copular sentences systematically fail diagnostics for the presence of a Davidsonian eventuality variable. Maienborn instead proposes that stage level predication introduces a

⁹ See Myler (2016: 26–31) for discussion of circumstances where the “subject” of PredP is introduced higher in the structure, a possibility I abstract away from here (see also Harves 2002: 252–255 for a discussion of issues of unergativity and unaccusativity in relation to BE constructions).

¹⁰ I assume that Voice selects vP, and thus that a verb must be present in the syntax in order for Voice and other clausal functional heads to appear in a structure. It is for this reason that I have not adopted the idea that copula v_{BE} is inserted into the syntactic structure at PF, as in Bjorkman (2011), although I leave open the possibility that Bjorkman’s is the correct analysis for auxiliary BE. If one were to relax the restriction that Voice can only combine syntactically with verbs, then Bjorkman’s approach could be adopted for copula BE also – this would not change anything of substance in the rest of my analysis, as far as I can tell.

¹¹ Following Balusu (2014, his (47)), and departing from Myler (2016: 44), I assume $\text{Pred}_{\text{indiv}}$ denotes an identity function over predicates, rather than a type-neutral identity function. Given the approach to possession sentences discussed in 4.2, this is necessary in order to explain why structures like the following cannot mean ‘I consider John to have a plumber’ or ‘I consider John to have a sister’ alongside their actual meanings (I thank an anonymous reviewer for pointing out these examples and the issue they raise):

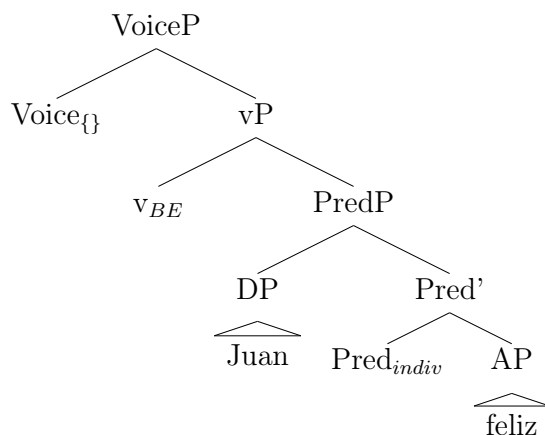
- (i) I consider John a plumber.
- (ii) I consider John a sister.

Assigning $\text{Pred}_{\text{indiv}}$ the denotation in (12) prevents it from taking an open relation as its first semantic argument, thereby ruling out the undesired readings.

pragmatic relation with some existing discourse situation, and that this relation is absent with individual level predication (see Higginbotham & Ramchand 1996; Richardson 2001; 2007; Arche 2006; Dalmi 2013; 2015; Roy 2013 for a range of other alternatives).

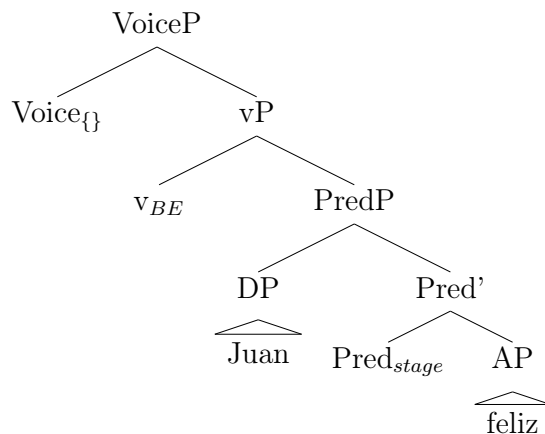
Luckily, there is no need to try to settle this controversy here. All that is required for current purposes is that $\text{Pred}_{\text{indiv}}$ and $\text{Pred}_{\text{stage}}$ have distinct denotations, in accordance with whatever the proper semantic characterization of the individual level/stage level distinction turns out to be (if Roy 2013's approach is ultimately to be preferred, then all we would need to say is that $\text{Pred}_{\text{stage}}$ introduces a presupposition that the main predicate is Dense in the sense defined by Roy).¹² The structures of *ser* and *estar* sentences will then be geometrically identical, differing only in the type of Pred head, as shown below. Pred therefore plays the same role as the P head in the proposals of Longa, Lorenzo & Rigau (1998); Uriagereka (2001); Martín (2009); Fábregas (2014); Gallego & Uriagereka (2016). However, I leave open whether Pred incorporates into v_{BE} as on these earlier proposals. The assumption of incorporation may not be strictly necessary, depending on one's theory of allomorphy. For the purposes of this paper, I assume that the heads Pred and Voice, as well as adjacent inflectional heads like T, are close enough to condition allomorphy of v_{BE} simultaneously. Taking it that $\text{Pred}-v_{BE}$ -Voice-T constitutes a *span*, this seems compatible with what is known about locality conditions on allomorphy more generally (see Merchant 2015).

- (13) Juan **es** feliz.
 Juan is_{ser} happy
 'Juan is happy.' (i.e., he is a happy person by disposition)



- (14) Juan **está** feliz.
 Juan is_{estar} happy
 'Juan is happy.' (i.e., he is in a happy mood)

¹² Roy herself does not implement her semantic insight in terms of two different Pred heads. Instead, she argues that Non-Dense meanings are always associated with functional heads of the nominal extended projection (namely ClassifierP and NumberP). Relative to Spanish, this means that *ser* is the allomorph of v_{BE} when it takes a predicate nominal as its complement. This implies that in apparent examples of *ser* taking an AP predicate, like *Juan es feliz* in (1a), the adjective is in fact encased in a hidden nominal substructure. *Estar* is the allomorph of v_{BE} found in all other environments. This in turn gives rise to a rather different approach to what conditions the allomorphy of v_{BE} cross-linguistically: rather than different Pred heads, it is the category of Pred's complement which conditions allomorphy on Roy's (2013) approach. A problem with this idea is that it makes it impossible to capture languages in which the existential verb and the stage level/Dense copula have the same form, to the exclusion of the individual level/Non-Dense copula. This is because existential contexts are like individual level/Non-Dense copula contexts in that Pred takes an NP complement. The prediction is then that a syncretism between a *ser*-like verb and an *haber*-like verb to the exclusion of an *estar*-like verb is expected to be possible, but a syncretism between *estar* and *haber* to the exclusion of *ser* is not. Yet many languages exhibit precisely this latter pattern, including Santiago del Estero Quechua (discussed in Section 5).



The distribution of *ser* vs. *estar* is then accounted for by the following schematic Vocabulary Insertion rules:¹³

$$(15) \quad v_{BE} \Leftrightarrow \text{ser} / \text{---Pred}_{\text{indiv}}$$

$$(16) \quad v_{BE} \Leftrightarrow \text{estar} / \text{---Pred}_{\text{stage}}$$

An anonymous reviewer challenges the idea that it is desirable to analyze *estar* as an allomorph of v_{BE} , suggesting that it is instead a posture verb (as indeed its Latin etymon *stare* ‘to stand’ was). However, it can be shown that *estar* is a true copula verb in the synchronic grammar. The most clear-cut test for this distinction consists of the ability to occur as the nonfinite complement of a perception verb. Posture verbs allow this, but copulas do not (see Carlson 1977: 125–126; Maienborn 2005a).¹⁴

(17) I saw her standing there.

(18) *I saw her being there.

Turning to Spanish, we find that *estar* patterns like a copula in this respect.

¹³ These rules are schematic in nature; since *ser* itself exhibits suppletion for tense and phi features, Vocabulary Insertion rules for individual forms of *ser* will need to be more complex. For example, the rule inserting the third person singular form *es* might look as follows:

$$(i) \quad v_{BE} \Leftrightarrow \text{es} / \text{---Pred}_{\text{indiv}} T_{[\text{Pres}, 3\text{sg.}]}$$

What all *ser*-related rules will have in common, however, and what is encoded in (15), is that they will all name $\text{Pred}_{\text{indiv}}$ in their conditioning environment.

Notice that here and throughout I assume that Vocabulary Insertion is into terminal nodes only, as in Distributed Morphology. For the purposes of this paper, this is a matter of convenience only – I believe that my analysis could easily be reformulated in terms of span-based or XP-based spell-out, as in Nanosyntax (Caha 2009; Starke 2009; Svenonius 2012; 2016).

¹⁴ This diagnostic is cross-linguistically robust, as far as I know. Note that examples involving so-called “active *be*” (Partee 1986), like the following (supplied by a reviewer), are not genuine counterexamples:

(i) I saw her being {silly/a fool/like that}.

Active *be* is eventive, as shown by its compatibility with the progressive aspect, and is therefore clearly not a straightforward copula construction.

(ii) She is being {silly/a fool/like that} again.

I speculate that active *be* involves combining v_{BE} with a silent activity verb, which we might call v_{DO} . Compatible with this is the fact that many varieties of English, including mine, display morphological regularization of active *be*, as shown in (iii). This regularization could be captured if v_{DO} blocks the suppletion for tense and agreement that *be* usually undergoes (for varieties unlike mine, it could be that v_{DO} undergoes pruning at PF, in the sense of Embick 2010: 58–60, before Vocabulary Insertion):

(iii) I love it when she comes in and bes {silly/a fool/like that}.

- (19) *Spanish*
- a. La vi **sentada** en su oficina.
her I.saw sat in her office
'I saw her sitting in her office.'
- b. *La vi {**estada/estando/estar**} en su oficina.
her I.saw been/being/be_{stage} in her office
'*I saw her being in her office.'

Since *estar* is indeed a copula, it is plausible from the present perspective to analyze it as an allomorph of v_{BE} , as above. As evidence for the decomposition underwriting the present approach to this allomorphy, consider the following evidence from Telugu, presented by Balusu (2014).

- (20) *Telugu*
- a. Naaku koopam-**gaa** undi.
I.DAT anger-Pred_{stage} be
'I am angry.' (i.e., I am in an angry mood.)
- b. Naaku koopam undi.
I.DAT anger be
'I am angry.' (i.e., I am an angry person by disposition.)

Balusu argues that *-gaa* is an overt exponent of Pred_{stage} and that Pred_{indiv} is silent in Telugu. This is overt morphological evidence for the two flavors of Pred head proposed here, and constitutes strong independent evidence for the syntax assigned to Spanish copular sentences in (13) and (14).¹⁵

To sum up this subsection, we have motivated a decompositional syntax and semantics for predicative copular sentences that recognizes two syntactically and semantically distinct Pred heads. The difference between these Pred heads accounts for the individual level and stage level distinction at the level of the semantics, as well as allowing for the statement of Vocabulary Insertion rules which yield a suppletive allomorphy approach to the predicative copula system of Spanish. The next section focuses on possession sentences, arguing that HAVE is an allomorph of v_{BE} also.

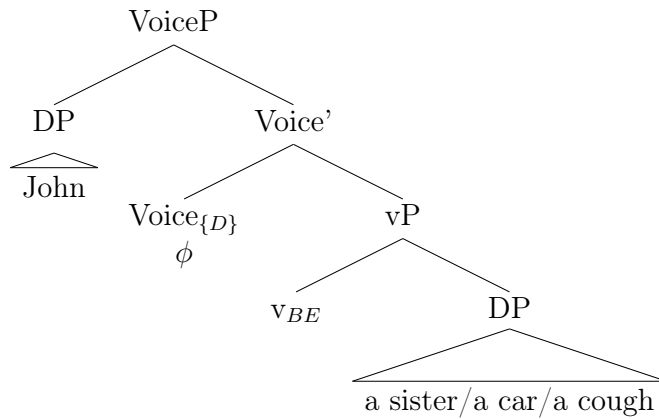
4.2 HAVE constructions

Even more so than with complex copular systems of the *ser* vs. *estar* type, there is a long tradition of taking HAVE to be v_{BE} plus something else. Proposals differ along two main lines with respect to what the 'something else' is. What we might call the standard approach is that HAVE is a form of v_{BE} with an incorporated adpositional element, as in Freeze (1992); Kayne (1993); Harley (1995; 2002); Den Dikken (1997; 1998; 1999); and numerous others.¹⁶ An alternative account argues that HAVE is the transitive form of v_{BE} . This view has been implemented in a variety of ways in Hoekstra (1994); Belvin (1996); Ritter & Rosen (1997); Jung (2011); Myler (2016). In this paper I will adopt the position that the second tradition is correct, and specifically that HAVE is v_{BE} in the environment of a transitive Voice head, following Myler (2016) (recall that a voice head is transitive on the present approach iff it has a specifier and bears a phi probe). This yields (21) as the schematic structure for a HAVE sentence. Vocabulary Insertion rules for HAVE as compared to BE can then be formulated as shown in (22) and (23).

¹⁵ It is worth pointing out that other Ibero-Romance languages have a similar copula system to the one I have analyzed above for Standard Spanish, but with a number of subtle variations in the precise distribution of *ser* and *estar* (see especially Pountain 1982; Hengeveld 1991). Such variation can be dealt with in terms of microparametric variation in the c-selection restrictions on Pred_{stage} and Pred_{indiv}, but space restrictions preclude a detailed discussion here.

¹⁶ See also Bjorkman (2011: Chapter 3) for a related proposal about the auxiliary use of HAVE, according to which it is an allomorph of BE in the environment of an aspectual head, bearing an adpositional feature.

(21) *Schematic structure for a HAVE sentence*

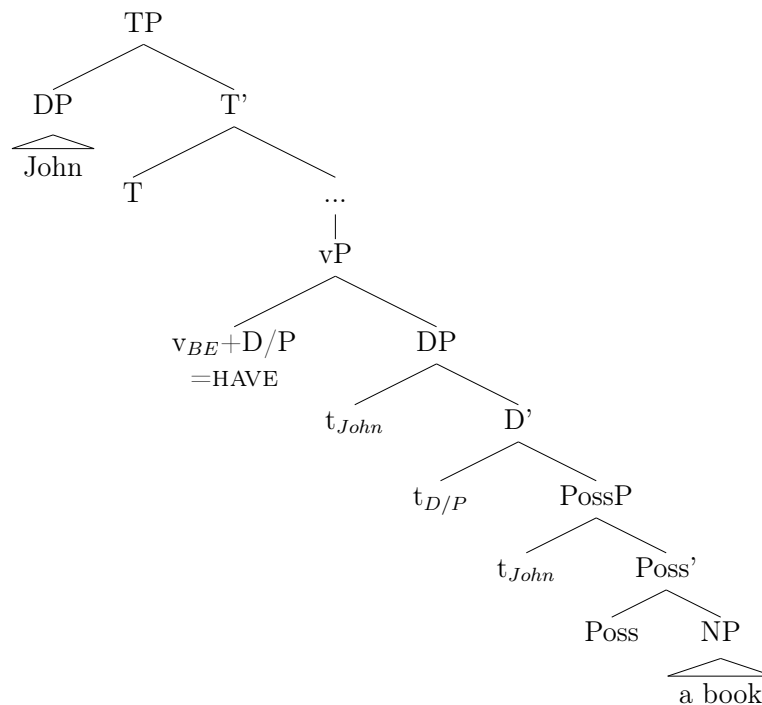


(22) $v_{BE} \Leftrightarrow \text{HAVE} / \text{Voice}_{\{D\}, \phi}$

(23) $v_{BE} \Leftrightarrow \text{BE}$

While a full defense of this position cannot be undertaken for space reasons, let us examine some of the arguments provided in its favor by Myler (2016: Chapter 5). The various versions of the standard approach have in common the idea that HAVE is underlyingly an unaccusative verb: it is simply a form of BE with an incorporated adposition, and with movement of the possessor from below BE into the subject position. Kayne’s (1993) version of this analysis is schematized in slightly adapted form in (24).¹⁷ Note that D/P in this structure represents a prepositional determiner, an element analogous to a prepositional complementizer which Kayne proposes incorporates into BE to yield HAVE.

(24) *John has a book* (à la Kayne 1993)



¹⁷ My own assumptions about the structure of existential sentences are somewhat different from this, and are discussed in subsection 4.3.

There are numerous problems for this approach (the following discussion borrows liberally from Myler 2016: Chapter 5). One is that it will not extend straightforwardly to cases of HAVE which clearly do take an external argument, such as causative HAVE and light verb HAVE (see also Harley 1997; 1998), as shown in the Spanish examples below (and their English translations).

- (25) *Spanish*
- a. Juan tiene preocupada a su mama.
Juan has worried to his mother
'Juan has his mother worried.'
 - b. Juan tuvo un infarto.
Juan had a heart.attack
'Juan had a heart attack.'

A second problem is that analyses like (24), in giving HAVE an underlyingly existential syntax, predict definiteness effects in HAVE sentences to match up with those found in existential sentences in all instances. While definiteness effects are attested in some subtypes of HAVE sentences (see Myler 2016: 329–336 for an account of these compatible with the assumptions of this article), this strong prediction turns out to be false. To take two examples among many, compare locative HAVE and temporary possession HAVE with existential sentences in English (Myler 2016: 329, his (33) and (34); see Myler 2016: Chapter 4 for an account of such sentences compatible with the present approach).

- (26) a. Does that tree have my hat in it?
b. *Is there my hat in that tree?
- (27) a. Does John have the keys?
b. *Are there the keys with John?

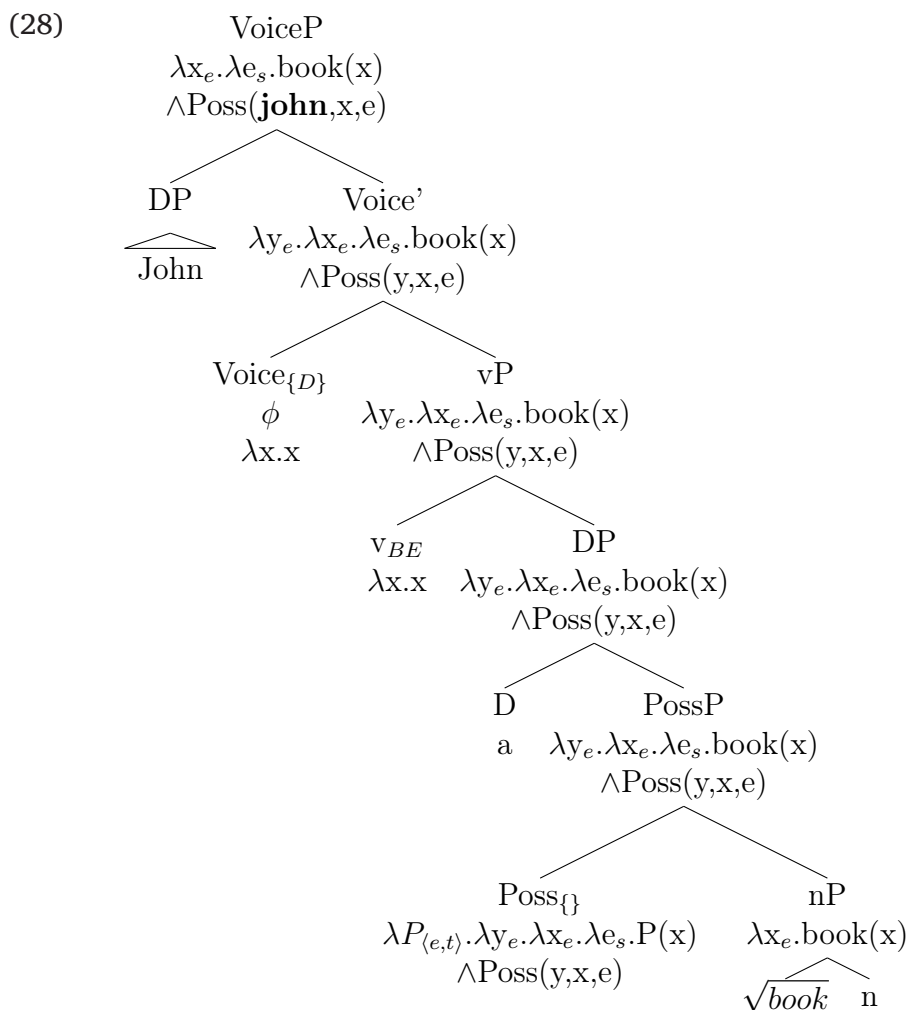
Myler (2016: 336–343) also gives a number of arguments against the prediction of (24) that HAVE should pattern like an unaccusative verb (on HAVE's failure to undergo passive, see below). I thus conclude that structures like (24) are incorrect, and that the proper analysis of HAVE sentences assigns them a structure like (21).

Before proceeding, a word is in order concerning how structures like (21) are interpreted semantically. Practically all approaches to possession sentences, including the tradition associated with Freeze (1992) and Kayne (1993), are united in assuming that the possession relation does not come from HAVE/BE itself, but rather from lower in the structure.¹⁸ On many accounts, the possession relation originates inside the possessee DP itself. Instantiations of this approach are found in Szabolcsi (1981; 1994); Freeze (1992: 590, although Freeze does not extend this idea to possession sentences in all languages); Kayne (1993); Ritter & Rosen (1997); Den Dikken (1997; 1998; 1999); Partee (1999); Beavers, Ponvert & Wechsler (2009); Sæbø (2009); Myler (2016); amongst others. The idea is that possessed DPs denote a possession relation, rather than a simple individual or predicate. This relation may be inherent to the noun root itself, as in relational nouns like *sister*, or it may be introduced by a Poss head in the case of alienably possessed common nouns like *car* (Barker 1995 et seq.).¹⁹

¹⁸ See Tham (2004) for an exception.

¹⁹ Though see Adger (2013), who argues that the possession relations are introduced with separate functional heads even in the case of apparently relational nouns.

For HAVE sentences in languages like English, there are three main approaches to how the possessor role in this relation comes to be assigned to the subject of HAVE. One is that the possessor raises from inside the possessed DP into the subject position – this is the approach found in the Freeze/Kayne tradition, which we have argued against above. A second approach, advanced by Ritter & Rosen (1997), assumes that HAVE’s subject is generated outside of the possessed DP, but binds a pronoun inside it. This approach is compatible with the structure I have been arguing for in (21). Another possibility, also compatible with (21), is that the possessee DP contains no syntactic representation of the possessor at all. Since (by hypothesis) that possessee DP is relational, the absence of a possessor inside it implies that the whole DP will denote a relation. Given the fact that v_{BE} is meaningless, this relation is passed up the tree to the subject of HAVE. Versions of this approach are found in Partee (1999); Beavers, Ponvert & Wechsler (2009); Sæbø (2009); Myler (2016). An illustration of such a derivation for the thematic domain of the sentence *John has a book* is given in (28), taken from Myler (2016: 60).



The nP *book* denotes a simple predicate of individuals. The head Poss, adapted from Barker (1995), introduces a possession relation. However, since no possessor is merged in spec-PossP, this relation comes to be the denotation of the whole DP. The copula v_{BE} merges with this DP, giving rise to a vP which inherits the relational denotation (because v_{BE} denotes a type-neutral identity function). Voice_{{D}, ϕ} combines with this vP. Because the vP denotes a relation rather than a predicate of events or a predicate of states, the Expletive alloeme of Voice is chosen (recall the rules for the interpretation of Voice in

(9)). The DP *John*, introduced in spec-VoiceP, then goes in as the possessor argument introduced by Poss. Because the possessor role is introduced low in the structure but not saturated immediately, Myler (2016) refers to this situation and others like it as *Delayed Gratification*.²⁰

The approach embodied in (28) entails that there is no possessor syntactically present inside the possessed DP, whereas Ritter & Rosen's (1997) approach entails that there is one (in the form of a null pronoun bound by the subject of HAVE). Myler (2016: 261–262) presents an argument for preferring the former approach over the latter. Santiago del Estero Quechua, a language to which we return in Section 5, exhibits obligatory agreement in possessed noun phrases: possessees must agree with the possessor for person and number.

- (29) *Possessor agreement in Santiago del Estero Quechua.*
- a. Juan-pa pana-*(n)
Juan-GEN sister-3POSS
'Juan's sister'
 - b. Juan-pa auto-*(n)
Juan-GEN auto-3POSS
'Juan's car'

It also happens that Santiago del Estero Quechua is a HAVE language. If HAVE sentences involved a null pronominal inside the possessee being bound by the subject of HAVE, the prediction would be that agreement on the possessee should be obligatory in HAVE sentences just as it is in (29). The Delayed Gratification approach predicts that there should be no such agreement, since no possessor is inside the possessed DP on that approach, and there is therefore nothing there to trigger the agreement. The latter prediction turns out to be correct.

- (30) *No agreement needed on the possessee in Santiago del Estero Quechua HAVE sentences*
- a. Juan pana-ta api-n.
Juan sister-ACC have-3SUBJ
'Juan has a sister.'
 - b. Juan auto-ta api-n.
Juan car-ACC have-3SUBJ
'Juan has a car.'

As Myler (2016: 337–338) also shows, the Delayed Gratification account also provides an alternative explanation for a fact that has historically been taken to support the idea that HAVE is underlyingly unaccusative; namely, that it does not passivize on its possessive uses.²¹

²⁰ As for the open variable corresponding to the possessee *a book*, Myler (2016: 59, fn 37) suggests either that it might undergo existential closure at the VoiceP level (cf. Diesing 1992), or that it is in fact closed by the indefinite article (which would then have to be assumed to have a special denotation when it combines with a relation-denoting nP, along the lines of Partee 1999 and Wood & Marantz 2017). It strikes me, however, that the second of these two approaches may not be compatible with the account of the passivization facts in HAVE sentences discussed below.

²¹ Myler (2016: 338, fn (50)) notes that HAVE does passivize readily on its eventive light verb use:

- (i) A terrible fight was had on that street corner.
- (ii) A thorough discussion needs to be had before we can proceed.
- (iii) A debate was had to resolve the issue.
- (iv) He's unlikely to leave while there's still fun to be had.

(31) *{A car/a sister} was had by John.

The proposal is that (31) is ruled out on semantic grounds. Bruening (2013: 23) proposes that the passive morpheme (which merges with a VoiceP which has an open variable for an external argument, before such an argument gets a chance to merge with it) has the denotation shown in (32).

(32) $[[\text{Pass}]] \Leftrightarrow \lambda f_{\langle e, st \rangle} \cdot \lambda e_s \cdot \exists x_e \cdot f(x, e)$

This is of the right type for most transitive VoicePs, which will denote a function from an individual to a function from eventualities to truth values, but it will be unable to take the relational denotation of Voice' in (28). Attempting to passivize a possessive HAVE sentence therefore leads to a fatal type mismatch.

Let us conclude this subsection by examining the consequences of the present approach to HAVE for cross-linguistic variation. As is well known, many languages lack a transitive HAVE verb altogether (around 74% of the world's languages are like this, according to Stassen's 2013 map titled "Predicative Possession" on the web version of the World Atlas of Language Structures). On the present theory, one reason for which languages may lack HAVE is that they forbid v_{BE} from being selected by transitive Voice_{{D}, ϕ} (as a simple matter of c-selection), in which case they will allow no configuration like (21) or (28) to be built. Such languages instead construct their possession sentences around various kinds of intransitive copular and existential predication, leading to BE.²² Another logical possibility is that a language might permit the syntactic configuration in (21) and (28), but simply lack a special allomorph for v_{BE} for that context. This situation appears to be attested in Akan (Kwa), Indo-Portuguese creoles (see also Krajinović 2016), and Iatmul (Papuan-Sepik), to judge by Creissels (2016: 24), who shows that these languages display a transitive morphosyntactic configuration in possession sentences, and yet spell out the verb in such structures using a form of BE.

With respect to the Decomposition Prediction, the approach argued for here leads us to expect languages in which possession sentences have a transitive case frame, and the verb is v_{BE} plus a transitivity marker of some kind. This prediction is correct, as exemplified in (33) and (34) (these examples are cited by Myler 2016: 61, his (91) and (92)).

(33) *HAVE as BE + transitivity in Qiang* (LaPolla and Huang 2003: 98)
 Khumtsi *tutʃ-ʏʒə-zi* **ʒi-ʒ**.
 Khumtsi younger.brother-four-class *be_{exist}*-CAUS
 'Khumtsi has four younger brothers.'

(34) *HAVE as BE + transitivity in Huallaga Quechua* (Weber 1989: 164, his (582))
 Mana *papa-ta* **ka-chi-**-na-chu.
 Not potato-ACC be-CAUS-1SUBJ-now-NEG
 'I don't have any potatoes now.'

This subsection has presented a syntax for possessive HAVE constructions which assigns them a transitive structure. The verb HAVE, in languages that have it, is an allomorph of v_{BE} chosen in the presence of a transitive Voice head. Syntactic and morphological evidence

²² As Myler (2016: 10) notes, since there are many ways for a possession structure to be intransitive, but only one way for it to be transitive (i.e., by introducing the possessor in the specifier of transitive Voice), many more configurations lead to BE than lead to HAVE. It is therefore hardly surprising that HAVE languages are so much rarer than BE languages.

in favor this view of HAVE, and against the standard approach under which HAVE is v_{BE} plus a preposition in an unaccusative existential structure, has also been presented. In the next subsection, I extend the approach to existential sentences, beginning by laying out my assumptions about their syntax and semantics. In the course of this discussion, a third Pred head will be introduced.

4.3 Existential constructions

In languages with existential constructions containing a visible verb, the verb in question is sometimes distinct from the verb used in possession sentences and the one used in predicative copular constructions (see below on Spanish). On the other hand, there are many languages where the existential verb is HAVE or an otherwise-occurring BE verb. These facts taken together suggest that we should take existentials also to involve v_{BE} along with some other elements which in certain languages induce suppletive allomorphy of v_{BE} .

First, some terminology is needed. Existential sentences in English can be divided into four visible elements, as follows.

(35) [There]_{expletive} [is]_{copula} [a book]_{pivot} [on the table]_{coda}.

The terms “expletive” and “copula” will be familiar from traditional descriptions of existentials. The terms *pivot* and *coda* are taken from Francez (2007; 2009; 2010). The *pivot* is a DP which corresponds to the entity whose existence is being asserted. The *coda* is an optional phrase, often but not necessarily a PP, which usually follows the pivot in English.

Overt expletives and copulas are not present in the existential sentences of all languages. Nevertheless, *pace* Francez (2007: 8–13), I will assume that languages that do not manifest these categories overtly still represent them in the syntactic structure. This is in accordance with the *Uniformity Principle* of Chomsky (2001: 1, his (1)).

(36) *Uniformity Principle*

In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances.

An important controversy in the literature on existentials concerns the relationship between the pivot and the coda. One tradition takes the coda to be predicated of the pivot, making existential sentences with PP codas identical to predicate locative structures with respect to the core predication (see Chomsky 1981; Safir 1982; Freeze 1992 for various implementations). In other words, this tradition would assign (37) and (38) the same predicative structure.

(37) There is a book on the table.

(38) A book is on the table.

As many authors have noted, however, this position cannot be maintained. Whereas PP codas are optional, the PP of predicate locative structures is usually obligatory. Hartmann & Milićević (2008: 1, their (1) and (2)) demonstrate this for Serbian using the following contrast, which can be replicated in a number of other languages. (Note

that Serbian uses a form of HAVE as its existential copula; I return to such languages presently.)

(39) *Serbian*

- a. Ima nekih studenata (ovde) koji hoće samo diplomu.
Has some students.GEN here who want just certificate
'There are some students (here) who just want the certificate.'
- b. Neki studenti su *(ovde) koji hoće samo diplomu.
Some students.NOM are here who want just certificate
'Some students are *(here) who just want the certificate.'

While it seems certain that codas are not merged as the complement of Pred, as the PPs of predicate locatives are, the question of where codas actually are is still a vexed one. One possibility, that codas are always NP modifiers internal to the pivot, is ruled out by certain relativization facts pointed out by Keenan (1987: 302), cited in Francez (2007: 23–24). Whereas PP modifiers of NP must surface next to NP in relative clauses, codas cannot surface next to the pivot in the same structures (examples adapted from Francez 2007: 24, his (43) and (44)):

- (40) a. John painted [_{DP} the shelves in my living room] purple.
b. [_{DP} The shelves in my living room that John painted purple] are an eyesore.
c. *_{DP} The shelves that John painted ___ in my living room purple] are an eyesore.
- (41) a. There were shelves in my living room.
b. *The shelves in my living room that there were disappeared.
c. The shelves that there were ___ in my living room disappeared.

For the remainder of this paper, I will adopt the idea that the coda is an adjunct to vP in existential sentences (Francez 2007; 2009; 2010; Hartmann & Milićević 2008; many others), and that it is optionally included to specify the content of a locative element discussed below (see Hoekstra & Mulder 1990; Williams 1994; Moro 1997; amongst others, for related ideas; whether this locative element is to be identified with the expletive *there* is a matter I will return to). However, not much hinges on this decision. All that matters for the remaining discussion is that codas are not the predicate of the existential construction.

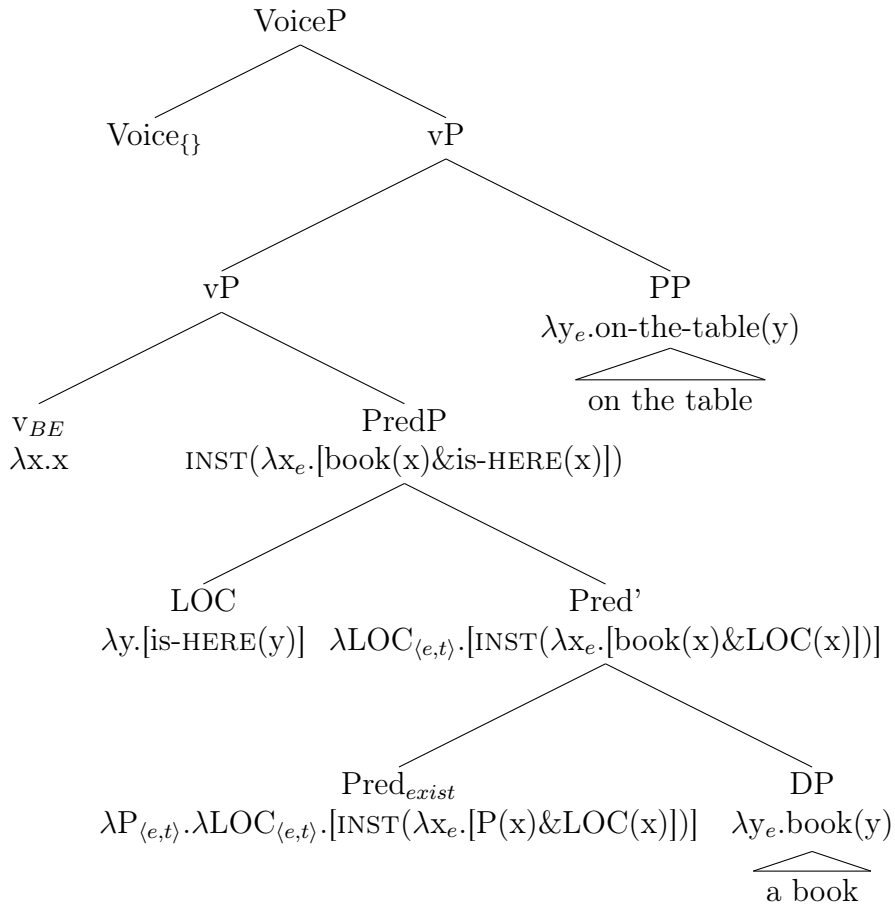
Since the coda is not the predicate in existential constructions, the question arises of what the predicate is in such structures. I will follow Williams (1994; 2006); Hazout (2004); Francez (2007; 2009; 2010); Irwin (2016: 23–24) in assuming that the pivot is the predicate. The pivot's semantic denotation is a simple property (McNally 1998; McCloskey 2014; Irwin 2016). Following Irwin (2016), I will assume that the pivot is selected by a third variant of Pred, Pred_{exist}. Semantically, Pred_{exist} takes the pivot as its first argument, and asserts that the pivot is INSTANTIATED (in the sense of McNally 1998) at a particular location,²³ represented syntactically as LOC. The identity of the location introduced by LOC may be determined contextually, or by the coda if there is one. The denotations for Pred_{exist} and for LOC, as proposed by Irwin (2016: 28), are given in (42) and (43). Putting these assumptions together yields the schematic structure we see in (44).

²³ McNally's INSTANTIATE function takes a property and returns an individual instantiating that property.

(42) $[[\text{Pred}_{\text{exist}}]] \Leftrightarrow \lambda P_{\langle e,t \rangle} . \lambda \text{LOC}_{\langle e,t \rangle} . [\text{INST}(\lambda x_e . [P(x) \& \text{LOC}(x)])]$

(43) $[[\text{LOC}]] \Leftrightarrow \lambda y . [\text{is-HERE}(y)]$

(44) There is a book on the table.



I leave open the mechanism by which a coda like *on the table* comes to be coreferent with the *HERE* introduced by the denotation of *LOC*.

The status of “expletive” *there* in English is not my main concern here, but a couple of possibilities are compatible with the general picture above. Following Deal (2009), it could be that *there* is introduced in spec-VoiceP (this is compatible with my approach so long as Voice does not bear a phi probe, and is thus not transitive). *LOC* would then be silent in English. Alternatively, it could be that *there* is an overt realization of *LOC*. Identifying *there* with *LOC* in this way would then make the approach identical with Williams (1994); see also Hazout (2004); Williams (2006).²⁴

²⁴ The core generalization that Deal’s spec-VoiceP proposal derives is the incompatibility of *there* with unergatives and anticausatives (see (i) and (ii) below). If we instead adopt the hypothesis that *there* realizes *LOC*, the same generalization would still be accounted for given that neither unergatives nor anticausatives involve $\text{Pred}_{\text{exist}}$

(i) *There danced a man.

(ii) *There broke a vase.

To see how this syntax can account for how existentials fit into various types of copula system, the next section compares French, English, and Spanish.

4.4 Comparison of French, English, and Spanish

Beginning with French and English, these languages are similar in having a transitive verb HAVE in possession sentences, and in lacking anything equivalent to the *ser* vs. *estar* distinction.

- (45) *French*
- a. Jean **a** {deux sœurs/une voiture rouge/de la toux}.
Jean has two sisters/a car red/of the cough
'Jean has two sisters/a red car/a cough.'
 - b. Jean **est** content.
John is happy
'John is happy.' (ambiguous between i-level and s-level)

This suggests their Vocabulary Items for v_{BE} are identical in format:

- (46) $v_{BE} \Leftrightarrow \{\text{avoir/have}\} / \text{Voice}_{\{D\},\phi_}$

- (47) $v_{BE} \Leftrightarrow \{\text{\`etre/be}\}$

One way in which French and most²⁵ English famously differ is in existential sentences: French displays HAVE, where most English uses BE.

- (48) *French*
- Il y **a** des personnes heureuses dans le monde.
it there has of.the people happy in the world
'There are happy people in the world.'

Rather than calling for a revision of (46) and (47), I propose that this difference is syntactic in nature. French existentials are transitive in the sense that they contain $\text{Voice}_{\{D\},\phi}$ introducing expletive *il* in its specifier (since *il* is an expletive, the structure must be interpreted using the Expletive alloeme of Voice from (9)). I take *y* to be a manifestation of LOC, as proposed by Longa, Lorenzo & Rigau (1998: 129). This gives rise to the configuration in (49) for example (48).

A reviewer asks about the status of sentences of the following sort:

- (iii) Across the floor there danced a man.

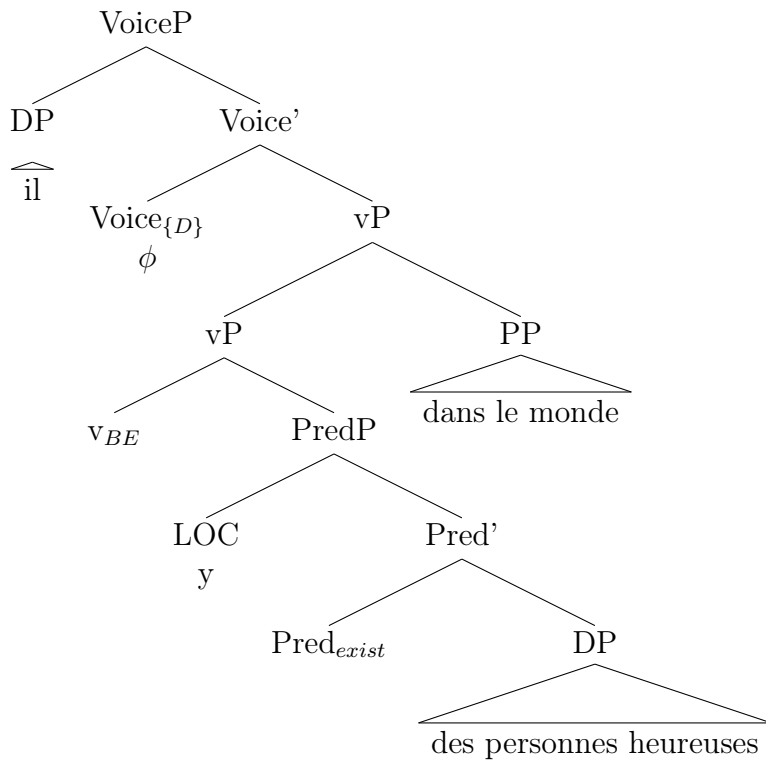
I assume that these are in fact a subtype of unaccusative structure dubbed *existential unaccusative* by Irwin (2016; 2018), and that they do involve $\text{Pred}_{\text{exist}}$. See Irwin (2016; 2018).

²⁵ The use of *have* in existential sentences is attested in some varieties of African American Vernacular English. See Green (2002: 80), who cites the following examples (her (8b) and (8c)):

- (i) It got some coffee in the kitchen.
- (ii) It have some coffee in the kitchen.

On the present approach, such varieties might be analyzed as involving the syntactic structure suggested for French below in (49), but with LOC silent.

(49) *French existential structure*



English existentials, on the other hand, are intransitive – their Voice head bears no phi features of its own (cf. the many proposals in which *there* plays a key role in mediating phi agreement with the pivot, including Deal 2009), and perhaps no specifier either depending on the position of *there*. Even though (46) and (47) are the same in both languages, v_{BE} is therefore realized differently in existential sentences in French vs. English.²⁶

Turning now to Spanish, we have already discussed the *ser* and *estar* distinction in predicative copula constructions in Section 4.1. Moving on to possession sentences and existential sentences, we find it uses a verb *tener* in possession sentences, and a verb *haber* (itself once a possession verb) in existentials.

(50) *Spanish*

- a. Juan **tiene** {dos hermanas/un carro rojo/tos}.
Juan has two sisters/a red car/cough
'Juan has two sisters/a red car/a cough.'
- b. **Hay** personas felices en el mundo.
exist people happy in the world
'There are happy people in the world.'

In many varieties of Spanish, including standard variants, *haber* does not agree with its associate. Suppose then that Spanish is like French in having an *it*-like expletive in the specifier of Voice_{{D},φ}, so that Spanish existentials are syntactically identical to French

²⁶ It is worth noting that there is no one-to-one correlation across languages between having an *it/il*-like expletive and exhibiting HAVE in existential sentences (cf. Schoorlemmer 2007). A number of Italo-Romance varieties, particularly in northern Italy, have such an expletive in combination with BE in existential sentences (Bentley, Ciconte & Cruschina 2015; Bentley 2016); so too does African American Vernacular English (alongside the constructions mentioned in footnote 25, for some speakers; this example is from Green 2002: 81, her (10a)):

(1) It was a lot of things going on in this lesson.

It could be that *it* can spell out LOC in AAVE and languages with similar existential constructions.

existentials (with the difference that the expletive and LOC are silent in Spanish).²⁷ This means that *haber* is still a HAVE verb in the technical sense in modern Spanish (i.e., it is a form taken by v_{BE} in the environment of the transitive Voice head); the question is what accounts for the distinct distributions of the *tener* and *haber* allomorphs. I suggest that *haber* additionally requires the presence of $\text{Pred}_{\text{exist}}$, as well as $\text{Voice}_{\{D\},\phi}$. The complete set of allomorphs for v_{BE} in Spanish would then be as follows:

(51) $v_{BE} \Leftrightarrow \text{haber} / \text{Voice}_{\{D\},\phi} \text{---} \text{Pred}_{\text{exist}}$

(52) $v_{BE} \Leftrightarrow \text{ser} / \text{---} \text{Pred}_{\text{indiv}}$

(53) $v_{BE} \Leftrightarrow \text{estar} / \text{---} \text{Pred}_{\text{stage}}$

(54) $v_{BE} \Leftrightarrow \text{tener} / \text{Voice}_{\{D\},\phi} \text{---}$

4.5 Local summary

This section has brought together existing literature to propose distinct syntactic structures for predicative copular constructions, HAVE constructions, and existential constructions.²⁸ Each of these constructions involve the same v_{BE} ; they vary in the other elements in the structure surrounding v_{BE} . Direct morphological evidence for this syntax has been presented, meaning that the Decomposition Prediction discussed in Section 2 is confirmed.

For the convenience of the reader, the full inventory of Vocabulary Insertion rules and denotations implicated in this analysis to this point is repeated here (this time with citations removed to avoid visual clutter):

- (55) *Vocabulary Insertion: Spanish*
- $v_{BE} \Leftrightarrow \text{haber} / \text{Voice}_{\{D\},\phi} \text{---} \text{Pred}_{\text{exist}}$
 - $v_{BE} \Leftrightarrow \text{ser} / \text{---} \text{Pred}_{\text{indiv}}$
 - $v_{BE} \Leftrightarrow \text{estar} / \text{---} \text{Pred}_{\text{stage}}$
 - $v_{BE} \Leftrightarrow \text{tener} / \text{Voice}_{\{D\},\phi} \text{---}$

²⁷ Alternatively, adopting the suggestion of a reviewer, it could be that the *-y* of *hay* is in fact an overt manifestation of LOC. This element is a remnant of a locative clitic cognate with French *y*, and may still be analyzable as such in the synchronic grammar of Spanish (although it is no longer productive in Spanish, and in the paradigm of *haber* only appears in present tense existential sentences).

A reviewer asks how the presence of a silent expletive in spec-VoiceP might be inferred by a learner. I assume that the agreement facts are a sufficient cue in the case of Spanish; in languages with overt accusative case marking, this too would serve as an indirect cue for the presence of such an expletive (since the case marking would indicate a transitive configuration, forcing the inference that something occupies spec-VoiceP).

²⁸ This article leaves aside identificational sentences, concentrating on predicative copula constructions, existential constructions, and possession constructions. However, it should ultimately be possible to bring identificational copulas into the picture, since they do participate in the same sorts of morphological variation. Although identificational copulas are often syncretic with individual-level predicational copulas, in some languages they are morphologically distinct. Thai provides an example of a language of this sort, according to Stassen (1997: 105, citing Kuno & Wongkhamthong 1981).

(i) *Thai*

Cɔ:n pen khru:
John is teacher
'John is a teacher.'

(ii) *Thai*

Pràthə:nə:tʰɨ̀bòddi: khɔ̃:ŋ sàhàràd àmɛ:ríka: khɨ̀ Kha:t̚t̚:
President of US America is_{ident} Carter
'The president of the USA is Carter.'

(56) *Vocabulary Insertion: French/English*

- a. $v_{BE} \Leftrightarrow \{\text{avoir/have}\} / \text{Voice}_{\langle D \rangle, \phi} _$
 b. $v_{BE} \Leftrightarrow \{\text{\u00eatre/be}\}$

(57) *Denotations*

- a. $[[v_{BE}]] \Leftrightarrow \lambda x.x$
 b. $[[\text{Voice}]] \Leftrightarrow \lambda x_e \lambda e_s. \text{Agent}(x,e) / _ (\text{agentive, dynamic event})$
 c. $[[\text{Voice}]] \Leftrightarrow \lambda x_e \lambda e_s. \text{Holder}(x,e) / _ (\text{stative eventuality})$
 d. $[[\text{Voice}]] \Leftrightarrow \lambda x.x / _ (\text{elsewhere})$
 e. $[[\text{Pred}_{\text{stage}}]] \Leftrightarrow \lambda P_{\langle e,t \rangle} \lambda x_e \lambda e_s. \text{holds}(P,e) \ \& \ \text{Holder}(x,e)$
 f. $[[\text{Pred}_{\text{indiv}}]] \Leftrightarrow \lambda P_{\langle e,t \rangle} .P$
 g. $[[\text{Pred}_{\text{exist}}]] \Leftrightarrow \lambda P_{\langle e,t \rangle} \lambda \text{LOC}_{\langle e,t \rangle} .[\text{INST}(\lambda x_e . [P(x) \ \& \ \text{LOC}(x)])]$
 h. $[[\text{LOC}]] \Leftrightarrow \lambda y. [\text{is-HERE}(y)]$
 i. $[[\text{Pass}]] \Leftrightarrow \lambda f_{\langle e, st \rangle} \lambda e_s \exists x_e . f(x,e)$

The other two predictions mentioned in Section 2 are the topic of Sections 5 and 6. In Section 5, I discuss what the present system predicts about what kinds of syncretisms amongst individual level, stage level, existential, and possession sentences we can expect to see, and which should be unattested (that is, the possible and impossible syncretisms prediction). Section 6 is devoted to the impoverishment prediction.

5 Prolegomenon to a test of the *possible and impossible syncretism prediction*

If the suppletive allomorphy approach is on the right track, then it follows that languages with simpler copula systems are exhibiting syncretism. For instance, English *be* neutralizes a three-way distinction between v_{BE} in the environment of $\text{Pred}_{\text{indiv}}$, v_{BE} in the environment of $\text{Pred}_{\text{stage}}$, and v_{BE} in the environment of $\text{Pred}_{\text{exist}}$ —that is, it exhibits *syncretism* amongst these different environments. The more complex copula system of Spanish, on the other hand, does not exhibit syncretism for these distinct contexts. In realizational approaches to morphology, including Distributed Morphology, syncretism between two elements is only possible when they have at least one feature in common. This is because realization rules in such theories (including the Vocabulary Insertion Rules of Distributed Morphology) are formulated in terms of sets of features. It follows that any theory of the bundles of syntactic features or the hierarchical syntactic structure associated with a particular domain automatically makes strong and testable predictions about possible and impossible syncretisms in that domain (see Caha 2009; Pescarini 2010; Radkevich 2010; Pantcheva 2011; Bobaljik 2012; Smith et al. 2016; many others for applications of this reasoning to various domains).

The decompositional system sketched in the previous section makes such predictions for the domain of v_{BE} . These are laid out in detail in the online appendix, although many are discussed below. At this stage, it is not possible to test the predictions fully, because existing typological surveys of copulas are often not oriented towards syncretism per se (Clark 1978; Stassen 1997; Pustet 2003; Koch 2012). An imperfect test can be done using Clark's (1978) survey of what she calls *locationals* in 30 languages, but in any case a broader survey needs to be conducted before solid conclusions can be drawn. For now, I will spell out which gaps in the typological record are predicted to be genuine gaps by the present approach, and which systems are predicted to be attested in a broader sample. I will note however that nothing contradicting my claims emerges from Pustet (2003), Stassen (1997), or Creissels (2016), which are somewhat larger typological samples than Clark (1978). My only reason for not directly discussing these larger surveys here is that

their discussions of the data are not organized in such a way as to facilitate a discussion of syncretisms.²⁹

Clark (1978) is a typological survey based around a core survey of thirty languages, with data occasionally brought in from a few languages beyond her core sample.³⁰ Clark divides what she calls *locationals* into four types:

- (58) *Locationals in the typology of Clark (1978)*
- a. There is a book on the table. (Existential construction)
 - b. The book is on the table. (Locative construction)
 - c. Tom has a book. (Possessive₁ construction)
 - d. The book is Tom's. (Possessive₂ construction)

The structure of Clark's survey makes it imperfect as a test for the present approach in two ways. The first is that, while her use of the term *Existential* agrees with the usage in this paper so far, some of her other subtypes map only imperfectly onto the subdivisions I am concerned with. In particular, Clark does not use the categories "individual level" and "stage level".³¹ Clark's survey can still serve as a testing ground, however. The Locative construction can be used as a proxy (albeit an imperfect one) for stage level predication. Similarly, the Possessive₂ construction can be used as a proxy for individual level predication.³² Indeed, Spanish uses *estar* in the translation of (58b), and *ser* in the translation of (58d).

- (59) El libro está en la mesa.
the book is_{estar} on the table
'The book is on the table.'

- (60) El libro es de Tom.
The book es_{ser} of Tom
'The book is Tom's.'

The second issue with employing Clark's survey as a testbed has to do with what Clark refers to as Possessive₁ in (58c). While Clark means to include in this category HAVE sentences in languages like English and their translational equivalents in BE languages, it turns out that her sample doesn't include all types of BE-based possession construction that are now known to exist. Her sample does include Possessive₁ constructions based around existential BE, such as those found in Russian (Jung 2011) and Hungarian (Szabolcsi 1981).³³

- (61) *Russian*
U menja est' kniga.
at me.GEN be_{exist}.3SUBJ book
'I have a book.'

²⁹ Koch (2012), on the other hand, does lay out his discussion in a way conducive to investigating syncretisms. His sample is smaller than Clark's, however, at 19 languages. Koch makes somewhat different distinctions amongst subtypes of construction than Clark does, but I will not discuss the differences here for space reasons.

³⁰ Although Clark notes that her sample contains a disproportionate number of languages from Europe and the Indian subcontinent, it does include a number of languages from East Asia, Africa, and North America too.

³¹ This is hardly surprising, since the distinction had only just appeared in the literature (Carlson 1977) when Clark's paper was published.

³² Again, the proxy is an imperfect one—as a reviewer points out, it would be much better for present purposes if Clark had included sentences like *John is a man* in her survey.

³³ I note in passing that structures of the sort in (61) and (62) will be analyzed as special cases of existential constructions on the present approach, following Myler (2016: 54–8). In the context of the present paper, this will mean that their syntax includes Pred_{exist}.

- (62) *Hungarian*
 Nekem van könyvem.
 I.DAT be_{exist} 3SUBJ book.1POSS.NOM
 ‘I have a book.’

By a sheer accident of the sample, however, certain other BE-based possession constructions are not instantiated at all in Clark’s survey. Amongst these are what Stassen (2009) calls the WITH-Possessive subtype, exemplified by the Icelandic example in (63) (see also Irie 1997; Levinson 2011; Myler, E.F. Sigurðsson & Wood 2014; Myler 2016: Chapter 7), and the Predicativization subtype (the latter involving converting the possessee into a noun, adjective, or verb, which then serves as the predicate of the construction; see also Nevins & Myler 2014; Myler 2016: Chapter 6), exemplified for English in (64).

- (63) *Icelandic*
 Ég er með bók.
 I am with book
 ‘I have a book.’

- (64) I am brown-eyed.

My approach makes clear predictions about how constructions like (63) and (64) should pattern in terms of syncretism. Since such sentences will be analyzed as predicative copular constructions (following Levinson 2011; Myler, E. F. Sigurðsson & Wood 2014; Nevins & Myler 2014; under revision; Myler 2016: Chapters 6, 7), in terms of the present proposal either Pred_{div} and Pred_{stage} should be able to merge in either construction. This means that such possession constructions should be compatible with both individual-level and stage-level copulas in languages where these are distinguished. While this prediction cannot be tested using Clark’s survey, what can be gleaned from other typological surveys seems to indicate that it is borne out (see Stassen 2009; Creissels 2016; Myler 2016: Chapters 6, 7).

Most relevant to the present concerns are Clark’s generalizations concerning how different languages partition the domain of locationals (Clark 1978: 105–109). These generalizations are summarized by Myler (2016: 74–75) as follows; note that (65f) is not included in the same list in Myler (2016), but is referred to obliquely in a footnote.³⁴

- (65) *Clark (1978): Copula systems and Locationals*
- Some languages use a single BE verb for all four of locative, existential, possessive₁, and possessive₂.
 - Where possessive₁ and possessive₂ use a different verb, possessive₁ patterns with existentials, and possessive₂ patterns with locatives and other predicative copular constructions.
 - Existentials and locatives sometimes share a BE verb to the exclusion of copula constructions with a nominal predicate.
 - Existentials and possessive₂ are never marked with the same BE verb to the exclusion of the others.

³⁴ I have slightly changed the order in which these are listed in Myler (2016). An additional generalization of Clark’s listed there is that “[T]here are languages in which the locative copula may or must be silent (especially in the present tense), but where the existential must be overt in all tenses. There are no languages with the opposite pattern.” Since zero copulas are modeled as just another possible type of copula allomorphy on the present approach, I have no explanation for this extremely interesting generalization, and must leave it aside here. See also Stassen (1997: 64–65).

- e. Locatives and possessive₁ are never marked with the same BE verb to the exclusion of the others.
- f. Possessive₁ and possessive₂ are never marked with the same BE verb to the exclusion of the others.³⁵

Languages of the sort under (65a) include Finnish, as shown in the following data.³⁶

(66) *Finnish Locationals*

- a. Pöydällä **on** kirja. (Existential Construction)
Table.AD is book
'There is a book on the table.'
- b. Kirja **on** pöydällä. (Locative Construction)
Book is table.AD
'The book is on the table.'
- c. Tomilla **on** kirja. (Possessive₁ Construction)
Tom.AD is book
'Tom has a book.'
- d. Kirja **on** Tomin. (Possessive₂ Construction)
Book is Tom.GEN
'The book is Tom's.'

Such languages will have a single Vocabulary Item capable of realizing v_{BE} , without a specified conditioning environment:

(67) $v_{BE} \Leftrightarrow$ olla

There are two subtypes of language that meet the description under (65b). One subtype corresponds to languages with a transitive possessive verb HAVE which use the same verb in existential constructions – French, already analyzed in Section 4.4, is an example of such a language. The other subtype consists of languages with no transitive HAVE verb, but with a split between existential and predicative copula forms of BE. Cochabamba Quechua (on which see Lastra 1968; Bills et al. 1969; Albó 1970; van de Kerke 1996), spoken in Cochabamba, Bolivia, exhibits such a system (at least in the present tense; we return in Section 6 to what happens in other tenses).

(68) *Cochabamba Quechua Locationals*

- a. Mesa-pi libru **tiya-n**. (Existential Construction)
Table-on book be_{exist}-3SUBJ
'There is a book on the table.'
- b. Libru-s mesa-pi **ka-n-ku**. (Locative Construction)
book-PL table-on be-3SUBJ-PL
'The books are on the table.'
- c. Tom-pata libru-n **tiya-n**. (Possessive₁ Construction)
Tom-GEN book-3POSS be_{exist}-3SUBJ
'Tom has a book.'

³⁵ Clark (1978: 188) gives two examples which appear to meet this description, from Japanese and from Yoruba. However, these appear to be red herrings. In the case of Japanese, the allomorphy turns out to be conditioned by animacy rather than the nature of the predication (Tsujioka 2002). In the data from Yoruba reported by Clark, there seems to be a difference in tone between the possessive₁ form (*ní*) and the possessive₂ form (*nì*).

³⁶ I would like to thank Marjo Sutinen for providing me with these data.

- d. *Libru-s Tom-pata ka-n-ku.* (Possessive₂ Construction)
 book-PL Tom-GEN be-3SUBJ-PL
 ‘The books are Tom’s.’

Since the Possessive₁ construction in a language of this type is just a subtype of existential construction (as Myler 2016: Chapter 3 shows for Cochabamba Quechua), the distribution of allomorphs here can be captured as follows:

$$(69) \quad v_{BE} \Leftrightarrow \text{tiya-} / \text{__Pred}_{\text{exist}}$$

$$(70) \quad v_{BE} \Leftrightarrow \text{ka-}$$

Clark (1978) also documents languages in which predicate locatives and existential constructions share a copula which is different from the copula used with nominal predicates (the (65c) type). Santiago del Estero Quechua, a Quechua language spoken in the north of Argentina (not discussed by Clark; for descriptive studies see Bravo 1956; Alderetes 2001; Nardi 2002; Prezioso & Torres 2006; Albarracín 2011), displays such a system. Maria Kouneli points out to me (*pers. comm.*) that Nandi, a variety of Kalenjin, has the same system (see Creider & Creider 1989). The Santiago del Estero Quechua system is displayed in (71).

- (71) *Santiago del Estero Quechua Locationals*
- a. *Mesa-pi libru tiya-n.* (Existential Construction)
 Table-on book be_{exist}-3SUBJ
 ‘There is a book on the table.’
- b. *Libru mesa-pi tiya-n.* (Locative Construction)
 Book table-on be_{estar}-3SUBJ
 ‘The book is on the table.’
- c. *Tom libru-ta api-n.* (Possessive₁ Construction)
 Tom book-ACC have-3SUBJ
 ‘Tom has a book.’
- d. *Libru Tom-pa ka-n.* (Possessive₂ Construction)
 Book Tom-GEN be_{ser}-3SUBJ
 ‘The book is Tom’s.’

The schematic Vocabulary Insertion rules that give rise to such a system are as follows:³⁷

$$(72) \quad v_{BE} \Leftrightarrow \text{api-} / \text{Voice}_{\{D\}, \phi _}$$

$$(73) \quad v_{BE} \Leftrightarrow \text{ka-} / \text{__Pred}_{\text{indiv}}$$

$$(74) \quad v_{BE} \Leftrightarrow \text{tiya-}$$

Let us now turn to those imaginable patterns which are not attested in Clark’s survey (and which are not attested in the surveys of Stassen 1997 or Creissels 2016 either, as far as I can tell). These are repeated in (75) for convenience.

³⁷ The analysis of copula allomorphy in Cochabamba Quechua and Santiago del Estero Quechua given here is an improvement upon Myler (2016: 233–235), who does not make use of $\text{Pred}_{\text{exist}}$. Myler (2016) is instead forced to allow disjunctive environment specification in Vocabulary Insertion rules to analyze these patterns, an overly powerful mechanism which the present account dispenses with.

- (75) *Unattested syncretism patterns*
- Existential and possessive₂ are never marked with the same BE verb to the exclusion of the others.
 - Locatives and possessive₁ are never marked with the same BE verb to the exclusion of the others.
 - Possessive₁ and possessive₂ are never marked with the same BE verb to the exclusion of the others.

To illustrate what these patterns would look like if they existed, pseudo-English examples are provided in (76)–(78).

- (76) *Unattested pattern (75a)*
- There BLAH a book on the table. (Existential Construction)
 - The book is on the table. (Locative Construction)
 - Tom has a book. (Possessive₁ Construction)
 - The book BLAH Tom's. (Possessive₂ Construction)

- (77) *Unattested pattern (75b)*
- There is a book on the table. (Existential Construction)
 - The book BLAH on the table. (Locative Construction)
 - Tom BLAH a book. (Possessive₁ Construction)
 - The book is Tom's. (Possessive₂ Construction)

- (78) *Unattested pattern (75c)*
- There is a book on the table. (Existential Construction)
 - The book is on the table. (Locative Construction)
 - Tom BLAH a book. (Possessive₁ Construction)
 - The book BLAH Tom's. (Possessive₂ Construction)

The unattested patterns (77) and (78) are predicted to be impossible in my system – there are no commonalities in the structures picked out by BLAH which are not shared by the other constructions. Since the complement set of environments has no unifying feature either, it will not be possible to derive (77) and (78) by having BLAH be the elsewhere case. To see in detail why this is so, take (77) as an illustrative example. Let us assume for the sake of illustration that we are dealing with a language in which the existential is intransitive and the Possessive₁ construction is of the existential BE-based type (as in Russian, Hungarian, Cochabamba Quechua, and many other languages). Now, v_{BE} would occur with a $\text{Pred}_{\text{stage}}$ complement in (77b), but with a $\text{Pred}_{\text{exist}}$ complement in (77c), so no unified conditioning environment for BLAH can be stated with reference to the complement. While both constructions involve v_{BE} in the environment of Voice_{I} , this property is also shared by the Existential construction and the Possessive₂ construction, making it impossible to pick out BLAH using this feature of the environment also. Nor is there any way to derive (77) by setting up BLAH as the elsewhere case – this route would require formulating a conditioning environment which unites the Existential and Possessive₂ constructions to the exclusion of the others. Since these two constructions involve different Pred heads, this cannot be done with reference to the complement of v_{BE} . Once again, since all four constructions involve Voice_{I} , appealing to the presence of this head also fails.³⁸ Similar demonstrations can be made for (78), and for versions of (77) in a language

³⁸ Here and throughout, I am assuming that Vocabulary Insertion rules cannot contain disjunctively specified environments. I thank an anonymous reviewer for underlining the importance of being explicit about this point.

that exhibits HAVE in Possessive₁ and/or the Existential construction, although I will not include such demonstrations here for reasons of space.

On the other hand, (76) is predicted to be possible in my system, but only in very narrow circumstances: namely, in a HAVE language which has BE in its existentials, and in addition has a distinction between individual level and stage level predication in its predicative copula constructions. A schematic set of Vocabulary Insertion rules for such a system is provided in (79b).

(79) a. *Derivation of unattested pattern (76)*

Construction	Form
Existential	A
Locative	B
Possessive ₁	C
Possessive ₂	A

- b. $v_{BE} \Leftrightarrow B / _ \text{Pred}_{stage}$
 $v_{BE} \Leftrightarrow C / \text{Voice}_{\{D\}, \phi _}$
 $v_{BE} \Leftrightarrow A$

We can see that this system is a lot like the one attested in Santiago del Estero Quechua, except that the existential verb is identical in form with the individual-level copula, rather than the stage-level copula. Although not attested in existing surveys to my knowledge, it seems plausible that this is an accidental gap. Given that HAVE languages themselves are in the minority, it is perhaps unsurprising that a language of this kind (which combines HAVE with a further copula split) is not easy to find.

Another system predicted to be possible by the present system, but which is as yet unattested, is shown in (80). In this system, there is a split between stage-level predication and all other subtypes. I must leave it to future research to discover whether the apparent absence of (80) is truly an accidental gap, as predicted by my system.

(80) a. *Predicted attern (haven't found an example yet)*

Construction	Form
Existential	A
Locative	B
Possessive ₁	A
Possessive ₂	A

- b. $v_{BE} \Leftrightarrow B / _ \text{Pred}_{stage}$
 $v_{BE} \Leftrightarrow A$

Before moving on, let me note that there is a striking similarity between (76) and (80): they have in common that the Existential and the Possessive₂ construction are united to the exclusion of the Locative construction. One might question whether this similarity is a coincidence, and whether the absence of such systems is truly an accidental gap, as my approach predicts.³⁹

³⁹ I would like to thank two anonymous reviewers for urging closer scrutiny of this issue, and one in particular for suggesting that a *ABA generalization might be at work.

An important subtradition in work on syncretism identifies a recurring typological gap dubbed the **ABA Generalization* (see in particular Caha 2009; Bobaljik 2012; Smith et al. 2016; Bobaljik & Sauerland 2017; De Clercq & Vanden Wyngaerd 2017). Bobaljik & Sauerland (2017) give the following general definition of this effect:

- (81) **ABA Generalization* (Bobaljik & Sauerland 2017: 2)
 “[G]iven some arrangement of [morphological] forms in a structured sequence, the first and third may share some property “A” only if the middle member shares that property as well. If the middle member is distinct from the first, then the third member must also be distinct.”

The question that arises now is this: could the absence of the patterns in (76) and (80) be instances of (81), rather than being accidental? Both (76) and (80) could indeed be conceived of in this fashion. All that is required is that individual level predication (for which Possessive₂ is a proxy), stage level predication (for which Locative is a proxy), and existential predication be arrayed in a paradigmatic structure in that order (or its opposite), as shown in (82).

- (82) *A *ABA pattern in copula allomorphy?*

	I-level	S-level	Existential
a.	A	B	A
b.	A	A	B
c.	A	B	B
d.	A	B	C
e.	A	A	A

On this scheme, (76) and (80) are both instantiations of pattern (a.) in (82), and would be ruled out by the **ABA Generalization*. Other syncretism patterns would be predicted to be attested, as indeed they are: (b.) is instantiated by Cochabamba Quechua, (c.) by Santiago del Estero Quechua, (d.) by Spanish, and (e.) by English.

This is a tantalizing possibility, but I will leave open whether or not it is correct. My hesitation in adopting this idea is a methodological one, having to do with the predictions it makes about decomposition. In particular, deriving a **ABA* pattern on a theory like those of Caha (2009) and Bobaljik (2012) involves claiming that the paradigmatic array involved maps onto morphosyntactic structure transparently as a containment relationship.⁴⁰ In concrete terms, this could mean one of two things for present purposes. One possibility is that the syntactic structure involved in constructing individual level predication is a proper subset of the structure involved in building stage level predication, which in turn is a proper subset of the structure involved in existential predication. This hypothesis is schematized in (83).

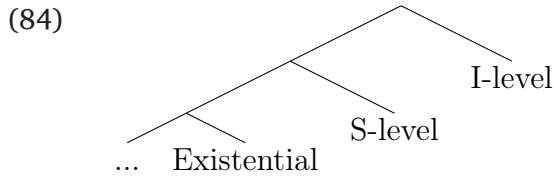
- (83)
-
- ```

graph TD
 Root[] --- I1[I-level]
 Root --- S[S-level]
 Root --- Ex[Existential]
 I1 --- Ellipsis[...]
 I1 --- I2[I-level]

```

<sup>40</sup> See Bobaljik & Sauerland (2017) for an alternative.

An alternative structure, also compatible with the scheme in (82), is simply an inversion of (83), with existential predication being properly included in stage level predication, which in turn is properly included in individual level predication, as in (84).



The methodological difficulty inherent in pursuing (82) further is that I know of no independent morphological or syntactic evidence that either of the two containment relationships in (83) or (84) is correct. That is, neither the version of the decomposition prediction which emerges from (83), nor that which emerges from (84), is supported to my knowledge. This contrasts with the situation we find with well-established \*ABA patterns in the literature, where independent evidence for the morphosyntactic decomposition required is forthcoming (see Caha 2009: 37 and elsewhere on case; also Bobaljik 2012: 50 on the transparent containment relationship between the superlative and the comparative in some languages).

For this reason, I will not go down the route of ruling out (76) and (80) in this way here. However, if independent decompositional evidence for either (83) or (84) should emerge in the future, this possibility will have to be re-evaluated.

This section has set out the specific predictions of the present approach for possible and impossible syncretisms. These are fully listed in the online appendix, where every possible syncretism pattern given the syntax I have proposed for copula predications is listed, along with examples when these are known to me.<sup>41</sup> Testing these predictions in full is not possible given existing typological surveys, but the predictions themselves are clear, and can be tested by future typological work. Having dealt with the *possible and impossible syncretisms* prediction, we move on to the *Impoverishment* prediction in the next section.

## 6 Testing the *Impoverishment* prediction: A Quechua case study

The present approach predicts that distinctions between copulas should sometimes be subject to neutralization in certain marked morphological environments – that is, complex copula systems are predicted to be subject to *Impoverishment* (Bonet 1991; Halle 1997). This section employs a case study from Cochabamba Quechua to show that this prediction is correct. It should also be noted that such neutralization is by no means unique to Cochabamba Quechua (see Stassen 1997: 336, his (72)).

First, recall the basic structure of the Cochabamba Quechua copula system, as established in the previous section (this is repeated from (68) and (69)).

- (85) *Cochabamba Quechua Locational*
- a. Mesa-pi libru tiya-n. (Existential Construction)  
 Table-on book be<sub>exist</sub>-3SUBJ  
 ‘There is a book on the table.’
  - b. Libru-s mesa-pi ka-n-ku. (Locative Construction)  
 book-PL table-on be-3SUBJ-PL  
 ‘The books are on the table.’

<sup>41</sup> Postma (1993: 32) proposes a generalization about suppletion in past participle forms of BE crosslinguistically which merits some discussion. For space reasons this discussion appears in the online appendix.

- c. Tom-pata libru-n **tiya-n.** (Possessive<sub>1</sub> Construction)  
 Tom-GEN book-3POSS be<sub>exist</sub>-3SUBJ  
 ‘Tom has a book.’
- d. Libru-s Tom-pata **ka-n-ku.** (Possessive<sub>2</sub> Construction)  
 book-PL Tom-GEN be-3SUBJ-PL  
 ‘The books are Tom’s.’

(86)  $v_{BE} \Leftrightarrow tiya- / \_Pred_{exist}$

(87)  $v_{BE} \Leftrightarrow ka-$

The basic generalization is that, in the present tense (as well as infinitives, nominalized subordinate clauses, and adverbial clauses), *tiya-* is used in existential sentences, and *ka-* is used for all predicative copula constructions. This is further illustrated from outside the domain of locationals by the following examples (examples (88), (89), and (91) are from Myler 2016: 350; (90) comes from my fieldnotes).

- (88) Noqa lingüista **ka-ni.** (Nominal Predicate)  
 I linguist be-1SUBJ  
 ‘I am a linguist.’
- (89) Noqa jatun **ka-ni.** (Individual-level Adjectival Predicate)  
 I big be-1SUBJ  
 ‘I am big.’
- (90) Noqa kuisqa **ka-sha-ni.** (Stage-level Adjectival Predicate)  
 I happy be-DUR-1SUBJ  
 ‘I am happy.’
- (91) Noqa Inglaterra-manta **ka-ni.** (I-level PP Predicate)  
 I England-from be-1SUBJ  
 ‘I am from England.’

The examples in (89) and (90) are given to show that Cochabamba Quechua does not make a distinction of the *ser/estar* type in the copula system itself. Instead, a similar distinction can be made using the durative aspectual morpheme.

Things are rather different in the past tense and the future tense. In these tense forms, we find *ka-* rather than *tiya-* in existential sentences.<sup>42</sup>

<sup>42</sup> There are some other environments in which *ka-* can optionally be used where *tiya-* would otherwise be expected. One of these is in the environment of the applicative suffix *-pu*. Both of the following are grammatical, although the syntactic structure is demonstrably existential rather than predicative (see Myler 2016: Chapter 3).

- (i) Juan-pata auto tiya-pu-n.  
 Juan-GEN car be<sub>exist</sub>-APPL-3SUBJ  
 ‘Juan has a car.’
- (ii) Juan-pata auto ka-pu-n.  
 Juan-GEN car be<sub>exist</sub>-APPL-3SUBJ  
 ‘Juan has a car.’

This can be accounted for by postulating an optional Impoverishment rule, similar to the one below in the main text, but with a different conditioning environment.

- (iii)  $Pred_{exist} \Rightarrow \emptyset / \_ \{ \dots \} APPL$  (optional)

(92) Mesa-pi libru **ka-rqa-∅**.  
Table-on book be-PAST-3SUBJ  
'There was a book on the table.'

(93) Mesa-pi libru **ka-n-qa**.  
Table-on book be-3SUBJ-FUT  
'There will be a book on the table.'

This has the profile of a typical case of Impoverishment, since (i) past and future are marked feature values for tense, relative to present, and (ii) neutralization is in favor of *ka-*, which is the elsewhere allomorph of  $v_{BE}$  in Cochabamba Quechua in the inventory of Vocabulary Items given in (86) and (87). The Impoverishment Rule needed to account for this situation is as follows. This rule deletes the  $\text{Pred}_{\text{exist}}$  head from the PF representation when the T head bears a marked feature value.

(94)  $\text{Pred}_{\text{exist}} \Rightarrow \emptyset / \text{---}\{\dots\}\text{T}_{[\text{fut/past}]}$

The *Impoverishment* prediction is thus confirmed.

## 7 Prospects for a non-suppletive approach

Sections 4, 5, and 6 have introduced a new version of the suppletive allomorphy approach to complex copula systems, and shown that it makes correct predictions concerning the crosslinguistic morphological profile of such systems. This section considers whether a non-suppletive approach – that is, one that analyses complex copula systems by postulating more than one BE verb in the lexicon, rather than having them be allomorphs of the same element – can capture the same generalizations. This approach will differ from mine in assuming that the different BE verbs are syntactically distinct (though equally meaningless) elements, and that their varying distributions are encoded in terms of c-selection. Hence, whereas my approach says that *estar* and *ser* are the realization of the same  $v_{BE}$  in the environment of  $\text{Pred}_{\text{stage}}$  and  $\text{Pred}_{\text{indiv}}$  respectively, this approach will list *estar* and *ser* as lexically distinct verbs, with *estar* c-selecting a PredP headed by  $\text{Pred}_{\text{stage}}$  and *ser* c-selecting a PredP headed by  $\text{Pred}_{\text{indiv}}$ .<sup>43</sup> It will turn out that this non-suppletive approach is not capable of fully replicating the predictions of the suppletive allomorphy approach. To see this, we will consider in turn how Spanish, Santiago del Estero Quechua, and Cochabamba Quechua might be analyzed on this approach.

Spanish can be rather straightforwardly analyzed using the lexical entries below (stipulations on what Voice can c-select will be necessary in order to ensure that *ser* and *estar* are found only with  $\text{Voice}_{\langle \rangle}$ , and that *haber* and *tener* are found only with  $\text{Voice}_{\langle \{D\}, \phi \rangle}$ ).

(95) *The Spanish copula system: Non-suppletive analysis*

- a. *ser*<sub>v</sub>  
[ $\text{---Pred}_{\text{indiv}}$  P]  
Meaning:  $\lambda x.x$
- b. *estar*<sub>v</sub>  
[ $\text{---Pred}_{\text{stage}}$  P]  
Meaning:  $\lambda x.x$

<sup>43</sup> An alternative version of the non-suppletive approach would abandon the decompositional syntax I have proposed here, and assign different lexical semantics to each of the copulas in a complex copula system. It is possible to show that this “Meaningful BE” version of the non-suppletive approach does even less well than the version discussed in the ensuing paragraphs, but for reasons of space I cannot undertake this here.



- c. haber<sub>v</sub>  
 [ \_\_\_ Pred<sub>exist</sub> P ]  
 Meaning:  $\lambda x.x$
- d. tener<sub>v</sub>  
 [ \_\_\_ DP ]  
 Meaning:  $\lambda x.x$

The sorts of structure assigned to constructions containing these copulas will be geometrically identical to the ones assigned by my own analysis in Section 4. The resulting analysis of the Spanish copula system is just as descriptively successful as the suppletive allomorphy-based analysis given in Section 4.4. It is also clear that this version of the non-suppletive approach succeeds in capturing the Decomposition prediction, since it assumes the same inventory of heads as my analysis. However, grave problems arise when it comes to the possible and impossible syncretism prediction and the Impoverishment prediction.

The issue that arises for the possible and impossible syncretisms prediction is that this version of the non-suppletive theory has no notion of an *elsewhere* case which is in complementary distribution with other (more richly specified) cases, which is crucial to deriving the predicted syncretisms in the online appendix. One illustration will suffice to convey the general problem. Consider again the copula system of Santiago del Estero Quechua, repeated here in (96).

- (96) *Santiago del Estero Quechua Locationals*
- a. Mesa-pi libru **tiya**-n. (Existential Construction)  
 Table-on book be<sub>exist</sub>-3SUBJ  
 ‘There is a book on the table.’
- b. Libru mesa-pi **tiya**-n. (Locative Construction)  
 Book table-on be<sub>estar</sub>-3SUBJ  
 ‘The book is on the table.’
- c. Tom libru-ta **api**-n. (Possessive<sub>1</sub> Construction)  
 Tom book-ACC have-3SUBJ  
 ‘Tom has a book.’
- d. Libru Tom-pa **ka**-n. (Possessive<sub>2</sub> Construction)  
 Book Tom-GEN be<sub>ser</sub>-3SUBJ  
 ‘The book is Tom’s.’

In this system, *tiya-* covers two types of configuration: existential and stage level predication. This pattern is captured on the suppletive allomorphy approach by setting up *tiya-* as the elsewhere allomorph (recall rules (72)–(74)). One might first think to replace this idea in the non-suppletive approach by proposing lexical entries with subcategorization frames of the following sort (with stipulations on Voice ensuring that *api-* and only *api-* appears in transitive configurations, and that *ka-* and *tiya-* only appear in intransitive ones).

- (97) *The Santiago del Estero Quechua copula system: Non-suppletive version*
- a. ka<sub>v</sub>  
 [ \_\_\_ Pred<sub>indiv</sub> P ]  
 Meaning:  $\lambda x.x$
- b. api<sub>v</sub>  
 [ \_\_\_ DP ]  
 Meaning:  $\lambda x.x$

- c.  $tiya\text{-}_v$   
 [ \_\_\_ XP ]  
 Meaning:  $\lambda x.x$

The idea is that  $ka\text{-}_v$  can select  $\text{Pred}_{\text{indiv}}P$  only, but that  $tiya\text{-}$  is effectively unrestricted. But this does not have the same effect as the Vocabulary Insertion rules in my analysis, because  $tiya\text{-}_v$  could also select  $\text{Pred}_{\text{indiv}}P$  given the frames above. The subcategorization frame of  $tiya\text{-}_v$  is less specific than that of  $ka\text{-}_v$ , but because subcategorization frames do not *compete* in the same way that Vocabulary Items do, this fails to have the desired effect. The system in (97) thus falsely predicts that  $tiya\text{-}_v$  should be able to convey both individual level and stage level predication. The same issue will arise for all systems in the appendix which make reference to an “elsewhere” case.

It seems that this approach can only describe the Santiago del Estero Quechua system correctly by postulating two accidentally homophonous versions of  $tiya\text{-}_v$ , as in (98), or by allowing disjunctions in c-selection statements of the form in (99).

(98) *Accidental homophony*

- a.  $tiya\text{-}_v$   
 [ \_\_\_  $\text{Pred}_{\text{stage}}P$  ]  
 Meaning:  $\lambda x.x$
- b.  $tiya\text{-}_v$   
 [ \_\_\_  $\text{Pred}_{\text{exist}}P$  ]  
 Meaning:  $\lambda x.x$

- (99)  $tiya\text{-}_v$   
 [ \_\_\_ {  $\text{Pred}_{\text{stage}}P/\text{Pred}_{\text{exist}}P$  } ]  
 Meaning:  $\lambda x.x$

However, a theory that countenances these possibilities can also model any imaginable syncretism (including ones that appear to be unattested, like (77) and (78)), and thus makes no predictions at all about what syncretisms should be (im)possible. I conclude that the non-suppletive approach has fatal problems in replicating the possible and impossible syncretisms prediction.

Moving on to the Impoverishment prediction, we find that an attempted analysis of the Cochabamba Quechua data also founders. To see this, we must first propose an analysis of the basic distribution of  $ka\text{-}$  and  $tiya\text{-}$  in that dialect in environments other than the past and future tense (and the environments where optionality is found mentioned in footnote 42). Already we encounter a version of the “elsewhere” problem that prevented this approach from replicating the possible and impossible syncretisms prediction, because we must somehow ensure that  $ka\text{-}_v$  can select both  $\text{Pred}_{\text{indiv}}P$  and  $\text{Pred}_{\text{stage}}P$  without also being allowed to occur in existential contexts (outside of the future and past tense). Let us lay that aside for now by postulating a disjunctive specification of the subcategorization frame of  $ka\text{-}_v$ . The lexical entries for the Cochabamba Quechua copula system would then be as follows:

(100) *The Cochabamba Quechua copula system: Non-suppletive version*

- a.  $ka\text{-}_v$   
 [ \_\_\_ {  $\text{Pred}_{\text{stage}}P/\text{Pred}_{\text{indiv}}P$  } ]  
 Meaning:  $\lambda x.x$
- b.  $tiya\text{-}_v$   
 [ \_\_\_  $\text{Pred}_{\text{exist}}P$  ]  
 Meaning:  $\lambda x.x$

From this position, we require two things in order to reproduce the effect of the Impoverishment rule in (94): (i) we need to explain why *tiya*-<sub>v</sub> cannot combine with past or future tense, and (ii) we need to explain why *ka*-<sub>v</sub>, which ordinarily cannot select  $\text{Pred}_{\text{exist}}\text{P}$ , becomes able to do so in precisely those tenses. Unfortunately, (i) cannot be achieved because c-selection is local, and (ii) violates assumptions about the immutability of selection relations which have been maintained in some form since at least the Projection Principle of Chomsky (1981). I conclude that the Impoverishment prediction cannot be replicated in the non-suppletive approach either.

Even if these problems were surmounted somehow, presumably the result would be a system which could just as easily have modeled a language like Cochabamba Quechua, except that the *ka*-/*tiya*- distinction is neutralized in favor of *tiya*- in the past and future tenses. This would then be a weaker prediction than the Impoverishment prediction made by the suppletive allomorphy approach, according to which Impoverishment should always lead to neutralization in favor of a less specified allomorph. I conclude that there are no prospects for a non-suppletive approach to the generalizations discussed here.

## 8 Conclusions

This paper began by outlining two potential approaches to cross-linguistic variation in the complexity of copula systems: the non-suppletive approach and the suppletive allomorphy approach. I have shown that the suppletive allomorphy approach to complex copula systems makes a number of morphological predictions which are plausibly correct: (i) we should see surface evidence of *decomposition* in copula predication, (ii) there will be universal restrictions on *possible and impossible syncretisms*, and (iii) complex copula systems should sometimes be subject to morphological neutralizations in marked morphological environments—what is known as *Impoverishment*. While a non-suppletive approach can capture the *decomposition* position, this approach is doomed to miss the generalizations at the heart of the *possible and impossible syncretism* prediction and the *Impoverishment* prediction. In each case, the problems stem from a core difference between the two approaches: only in the suppletive allomorphy approach are the different forms of  $v_{BE}$  competing to realize the same syntactic node.

## Abbreviations

1, 2, 3 = 1st, 2nd, 3rd person, ACC = accusative, AD = adessive, APPL = applicative, CAUS = causative, DAT = dative, DUR = durative, FUT = future, GEN = genitive, NEG = negator, NOM = nominative, PL = plural, POSS = possessive, SG = singular, SUBJ = subject

## Additional File

The additional file for this article can be found as follows:

- **Supplementary file 1.** Online Appendix to *Complex copula systems as suppletive allomorphy*. DOI: <https://doi.org/10.5334/gjgl.214.s1>

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### Competing Interests

The author has no competing interests to declare.

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