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## Copulas, Possession, and the Temporary-Permanent Distinction in Mashi: Evidence for decompositional HAVE

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It is cross-linguistically common to find a distinction between “temporary” vs. “permanent” states in copular verbs, e.g., Spanish *estar* and *ser* (see Deo et al. 2017). In Mashi [shr] (Bantu, JD53; Maho 2009), a similar temporary-permanent distinction holds not only of the two copular *be*-verbs in the language, *-li* (temporary state) and *-ba* (permanent state), but also of the two possessive *have*-verbs, *-dwiire* and *-jira*; *-dwiire* indicates temporary possession, while *-jira* instead indicates permanent possession. This parallelism provides a novel argument in favor of a decompositional approach to possessive verbs (Freeze 1992; Kayne 1993; Harley 1998). The analysis is further supported through patterns of allomorphy where HAVE is realized in its decomposed form, BE + comitative, in Mashi. I analyze the patterns using a Spanning Insertion analysis (Williams 2003; Svenonius 2012; 2016; Merchant 2015).

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## 1 Introduction

From a typological perspective, it is relatively common to find languages that make semantic distinctions using distinct copular verbs in non-verbal predication; there is a substantial literature suggesting that copular verbs may reflect or encode the semantic properties of the predication relation they help realize (Ramchand 1997; Greenberg 1998; Green 2000; Bochnak et al. 2011; Deo et al. 2017, a.o.). For example, many languages are reported to distinguish between stage- and individual-level predication using different copular verbs. The Spanish copular *be*-verbs *estar* and *ser* exhibit distributional and interpretational differences akin to the stage-individual contrast (Carlson 1977; Diesing 1990; 1992; Kratzer 1995; Arche 2006 a.o.), with *estar* being preferred with properties that hold of stages (1), and *ser* being preferred with properties that hold of individuals (2).<sup>1</sup>

- (1) *El artista* *✓está/#es* *presente/ausente/lejos*  
 The artist *estar/ser.PRES.3SG* present/absent/far away  
 ‘The artist is present/absent/far away’ Spanish (Maienborn 2005: 173)
- (2) *Maria* *#está/✓es* *inteligente/altruista*  
 Maria *estar/ser.PRES.3SG* intelligent/altruistic  
 ‘Maria is intelligent/altruistic’ Spanish (Deo et al. 2017: 8)

Another distinct line of research has investigated the distribution of copulas in ostensibly possessive constructions (Freeze 1992; Kayne 1993, a.o.). The central observation in these works is that some languages, like Russian (3), express possession via the combination of a copular *be*-verb and a locative or adpositional element, rather than a distinct *have*-verb.

- (3) *U menja* *byla* *sestra*  
 at 1SG.GEN COP sister.NOM  
 ‘I had a sister’ Russian (Freeze 1992: 577)

In yet other languages, e.g., Portuguese (4)–(5), lexical *have*-verbs are sometimes found to be interchangeable with BE + locative/comitative ‘with’ constructions.

- (4) *O menino* *tem* *fome*  
 the child has hunger  
 ‘The child is hungry’
- (5) *O menino* *esta com* *fome*  
 the child COP with hunger  
 ‘The child is with hunger’ Portuguese (Freeze 1992: 587)

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<sup>1</sup> See Carlson (1977) and Kratzer (1995) for discussion of these terms.

Based on these observations, works such as Freeze (1992); Kayne (1993); Ritter & Rosen (1997); Harley (1998); Beavers et al. (2009); Myler (2016; 2018), a.o., attempt to connect abstract BE and HAVE compositionally, i.e., HAVE is built from BE.

In this paper, I bridge the gap between these two distinct lines of research — namely, the semantic contribution of copulas, and the relationship between abstract BE and HAVE — through an investigation of copular predication and possession in Mashi [shr] (Bantu, JD53; Maho 2009), a Great Lakes Bantu language spoken in South Kivu, Democratic Republic of Congo.<sup>2</sup> Similar to Spanish, we find what appears to be a stage/individual distinction between the two copular verbs in Mashi, *-li* and *-ba*; *-li* lexicalizes a stage-level description, while *-ba* lexicalizes an individual-level description.

However, unlike other languages that make similar copular distinctions (e.g., Spanish), the interpretive contrast shown to hold of the two *be*-verbs in Mashi extends to possession and possessive predication as well. That is, just as *-li* and *-ba* lexicalize a distinction between temporary states and permanent states, the two *have*-verbs in the language, *-dwiire* and *-jira*, lexicalize a distinction between temporary possession (*-dwiire*), and permanent possession (*-jira*). To my knowledge, this is the first time that such an interpretive overlap has been reported of *be*- and *have*- verb pairs in a Bantu language.

Following previous work relating abstract BE and HAVE, I suggest that the interpretational overlap between the copular *be*-verbs and possessive *have*-verbs in Mashi provides support for a decompositional approach to HAVE in which it is fundamentally composed from BE. In this paper, I will specifically model this as incorporation: HAVE is composed of a verbal head  $v_{BE}$  that incorporates a relational element  $P_{HAVE}$  that relates two DPs in a possessive relationship (Freeze 1992; Kayne 1993; Harley 1998, a.o.). In support of this analysis, I provide morphological evidence to show that HAVE has an underlyingly locative structure in Mashi. Specifically, I show that in subjunctive and infinitival clauses, the lexical *have*-verbs in Mashi exist in complementary distribution with the copular possessive construction BE + comitative *na* (i.e., so-called WITH-possessive Freeze 1992). Given that the comitative particle is commonly used in conjunction with copular BE to yield the possessive in Bantu (Gibson 2012; Halpert & Diercks 2014; Myler 2016), I argue that *na* is an overt exponent of the relational element  $P_{HAVE}$  presented in incorporation accounts of HAVE (Freeze 1992; Kayne 1993; Harley 1998).

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<sup>2</sup> Mashi (JD53) is spoken by over 650,000 people primarily in South Kivu (Lewis 2009), though sizeable Bashi communities can also be found in neighboring East African countries and the United States. There is very little documentation on the language overall, and relatively few descriptions of the grammar can be found (see however Polack-Bynon 1975). The data presented in this paper were collected via direct elicitation with a native speaker consultant living in Kansas City. All judgements are assumed to reflect a single variety of Mashi, and therefore may not be representative of all other varieties of the language. Elicitation involved a combination of direct translation, well-formedness judgement tasks, and semantic judgement tasks — the latter being comprised of truth-value and felicity-judgment tasks, which provide a salient context against which an utterance may be judged (Matthewson 2004).

The goal of this paper is to present a novel decompositional approach to abstract HAVE by extending previous analyses of the stage-individual contrast (Carlson 1977; Diesing 1990; 1992; Kratzer 1995; Arche 2006, a.o.), to HAVE constructions. In doing so, this paper does not attempt to explain the semantics of the stage-individual contrast, but rather show that whatever underlies this contrast is involved in the derivation of both BE and HAVE in Mashi. As such, the major takeaway from this paper is that the distribution and interpretation of the BE/HAVE forms in Mashi can only be explained if HAVE is composed from BE.

## 2 Copular Predication

Though property concepts are often expressed as verbs in Bantu languages, non-verbal predicates — in the form of property denoting nominals/adjectives — are also attested (Schneider-Zioga 2018; 2021; Gibson et al. 2019 a.o.). Generally speaking, Bantu languages exhibit significant morphosyntactic variation in how non-verbal property concepts are predicated, i.e., how they express non-verbal predication (Gibson et al. 2019). Though various morphosyntactic strategies may be employed across the different sub-types of non-verbal predication (Higgins 1979; Schneider-Zioga 2018; 2021; Gluckman et al. 2022), Bantu languages tend to express “pure” predication via an overt copular *be*-verb (Gibson et al. 2019). In many languages, such as Digo (E73), an invariant form of the copula — generally *ni* or *nu* — is used to establish a predication relation between the predicate and its subject, regardless of subject noun class (6).<sup>3</sup>

- (6) *Mutu hiyu ni daktari*  
 1.person 1.DEM be 1.doctor  
 ‘This person is a doctor’ Digo (Nicolle 2013: 298)

In contrast, other languages employ an inflectional copula (or copulas) that agree(s) with the noun class of the subject.<sup>4</sup> Such is the case in Mongo (C61); in (7) the copula *-le* obligatorily expresses class 1 agreement with the subject, *nkómbé* ‘kite’.

- (7) *Nkómbé a-le mpúlu*  
 1.kite 1SM-be 9.bird  
 ‘The kite is a bird’ Mongo (Hulstaert 1965: 340)

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<sup>3</sup> Per Bantuist tradition, noun class identity is marked in the gloss via noun class number. Proper names are morphologically unmarked, but behave otherwise as class 1 nouns since their referents belong in class 1. Subject noun class agreement is expressed via a subject marker (SM). Agreement with class 1/2 nouns (e.g., human nouns) is subdivided by person: 1SG/PL for 1st person, 2SG/PL for 2nd person, and 1SM/2SM for 3rd person. Glossing otherwise follows the Leipzig Glossing Rules.

<sup>4</sup> Bantu languages vary significantly in the number of copular forms they employ in non-verbal predication, with some languages reported to use up to three distinct inflectional copulas, e.g., Kifuliiru (JD63; Finholt 2023). See Schneider-Zioga (2018); Gibson et al. (2019) for further discussion.

Like Mongo, Mashi falls into the category of language that utilizes an inflectional copula to establish a predication relation between a non-verbal property concept and its subject. In fact, Mashi exhibits two distinct copular verbs that may be used in non-verbal predication: *-li* and *-ba*.<sup>5</sup> As illustrated in (8), both *-li* and *-ba* may be used to predicate a non-verbal property concept, e.g., the adjective *-bulee* ‘blue’. Again, both copulas obligatorily exhibit subject noun class agreement in such contexts.<sup>6</sup>

- (8) *O-ma-lunga ga-ʹli/ʹba ga-bulee*  
 AUG-6-sky 6SM-be<sub>-LI</sub>/be<sub>-BA</sub> 6AGR-blue  
 ‘The sky is blue’

While both copulas are generally available in examples like (8), they do not exist in free-variation. At first glance, we find that the distribution and interpretation of the two Mashi copulas aligns with the differences observed between the Spanish copulas *estar* and *ser* — which are famously reported to encode a stage-individual-level contrast (Carlson 1977; Diesing 1990; Kratzer 1995; Diesing 1992; Arche 2006 a.o.). In such descriptions of the Spanish copular system, *ser* is treated as an individual-level copula in that it is used to predicate an inherent/permanent property of the subject, while *estar* is treated as a stage-level copula, as it is instead used to predicate a transient/temporary property of the subject. As such, the two copulas are reported to exhibit distributional differences in non-verbal predication, with *estar* co-occurring with stage-level predicates, e.g., *presente* ‘present’ (9), and *ser* with individual-level predicates, e.g., *inteligente* ‘intelligent’ (10).

- (9) *El artista ʹestá/#es presente/ausente/lejos*  
 The artist estar/ser.PRES.3SG present/absent/far away  
 ‘The artist is present/absent/far away’ Spanish (Maienborn 2005: 173)

- (10) *Maria #está/ʹes inteligente/altruista*  
 Maria estar/ser.PRES.3SG intelligent/altruistic  
 ‘Maria is intelligent/altruistic’ Spanish (Deo et al. 2017: 8)

Likewise, we find that the two copular *be*-verbs in Mashi exhibit distributional differences in terms of the predicates they may co-occur with. When uttered out of the blue, *-li* is used to describe time-bounded, stage-like properties, e.g., ‘sick’, (11), while *-ba* is instead used to describe inherent properties, e.g., ‘tall’, (12).

<sup>5</sup> The copular forms *-li* and *-ba* are reconstructed in proto-Bantu as the copulas *\*de* and *\*bà*, respectively (Meeussen 1967; Wald 1973). Cognates of both can be found throughout Bantu, although their distributions vary significantly across languages (Gibson et al. 2019).

<sup>6</sup> The present tense in Mashi is marked by the absence of tense morphology (i.e.,  $T_{[+PRES]}$  is unpronounced at PF). In other tenses, overt tense morphology surfaces between the subject marker and the verb root (see discussion of past tense in section 3).

- (11) *Maria a-ʹli/#ba mu-lwala*  
 Mary 1SM-be<sub>-li</sub>/be<sub>-ba</sub> 1AGR-sick  
 ‘Mary is sick’
- (12) *Johne a-#li/ʹba mu-liri*  
 John 1SM-be<sub>-li</sub>/be<sub>-ba</sub> 1AGR-tall  
 ‘John is tall’

Though the above examples point toward a lexicalized stage-individual contrast in both Spanish and Mashi, the true nature of this distinction turns out to be much more complicated. In Spanish for example, it is unclear whether the distributional differences between *estar/ser* (9)–(10) are indicative of a true stage-individual contrast, as the two copulas do not fundamentally determine which genre of predicate is available.<sup>7</sup> As presented in Deo et al. (2017), both Spanish *estar* and *ser* may be used with canonically stage-level predicates and canonically individual-level predicates, they simply yield a distinction in the particular context in which the predication relation holds. Put simply, it is argued that the semantic properties of the predicate (alone) do not dictate which copula will be employed, but rather the semantics of the copula dictate the interpretation of the predicate.

Like what Deo et al. (2017) report with Spanish, we find that both *-li* and *-ba* in Mashi may be used with canonically stage-level predicates or canonically individual-level predicates, depending on the context. For example, while *-ba* is infelicitous with the stage-level predicate ‘sick’ in (12), it may be used if the property ‘sick’ holds indefinitely of the subject. In this sense, the use of *-ba* does not yield an individual-level property *persay per se*, but rather a “permanent” state; the property ‘sick’ holds permanently of Mary (13).

- (13) *Maria a-ba mu-lwala*  
 Mary 1SM-be<sub>PERM</sub> 1AGR-sick  
 ‘Mary is sick’ (Mary is chronically ill)

Similarly, while *-li* is dispreferred with individual-level descriptions uttered out of the blue (11), it can be used with canonically individual-level predicates (e.g., ‘tall’) to yield a “temporary”

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<sup>7</sup> Going back as far as Ramsey (1894), *estar* and *ser* are reported to coincide with distinct interpretations of certain predicative adjectives that allow for either copula. In (i)–(ii), the predicate *sucio* ‘dirty’, does not restrict which copula may be used, but rather the choice of copula restricts the interpretation of the predicate.

(i) *El reporter está sucio*  
 The reporter estar.PRES.3SG dirty  
 ‘The reporter is dirty (they need a shower)’

(ii) *El reporter es sucio*  
 The reporter ser.PRES.3SG dirty  
 ‘The reporter is dirty-minded/corrupt’

(Ramsey 1894: 313)

state reading. As such, we find that *-li* may be used with the predicate ‘tall’ in (14), but it crucially yields a reading in which the denoted property holds only of a specific (limited) context of evaluation (e.g., John is taller than Mary *only* at this moment). Such a reading is naturally unavailable with *-ba*, which yields a permanent state (13).

(14) *Context: John is normally shorter than Mary, but right now he’s wearing shoes that make him taller than her.*

*Johne a-’li/#ba mu-liri kulisha Maria*  
 John 1SM-be<sub>TEMP</sub>/be<sub>PERM</sub> 1AGR-tall than Mary  
 ‘John is taller than Mary’ (right now, but not usually)

Moreover, while both copulas were shown to be available in our original example (2, repeated below), they crucially coincide with distinct readings. With the temporary state copula *-li*, the speaker describes a property that temporarily holds of ‘sky’; the sky is blue right now, but it may not be later. With the permanent state copula *-ba*, the speaker instead states a general fact about — or a permanent property of — the sky; it is known that the sky is blue (even if it is dark and stormy at the utterance time).

- (2) a. *O-ma-lunga ga-li ga-bulee*  
 AUG-6-sky 6SM-be<sub>TEMP</sub> 6AGR-blue  
 ‘The sky is blue’ (outside right now)
- b. *O-ma-lunga ga-ba ga-bulee*  
 AUG-6-sky 6SM-be<sub>PERM</sub> 6AGR-blue  
 ‘The sky is blue’ (a general fact about the world)

Given the more flexible use of *-li/-ba* than what is generally described in Spanish, I use the terms “permanent state” (*-ba*) and “temporary state” (*-li*), as opposed to “stage-level” and “individual-level”, to describe the meanings of the two Mashi copulas.<sup>8</sup>

### 3 Possession and Possessive Predication

In this section, I will draw a direct line between the copulas *-li/-ba* and the two possessive *have*-verbs in Mashi by showing that they share the same interpretive contrast.

Like with copular predication, Bantu languages vary with respect to the particular strategies they use to encode both pure possession and possessive predication. Nonetheless, we generally

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<sup>8</sup> This terminology captures the fact that *-ba* does not correlate with “genericity”. Use of *-ba* in (i) yields a reading where John *lives* in the lake, but not one where John routinely goes to the lake (generic reading).

(i) *Johne a-ba omu-nyanja*  
 Johne 1SM-be<sub>PERM</sub> 18LOC-9.lake  
 ‘John is in the lake’

find that Bantu languages fall into two distinct categories in terms of how they express possession (Gibson et al. 2019).

For many Bantu languages like Herero (R30), possessive HAVE is expressed via a prefixal subject agreement marker and the comitative particle *na*, meaning ‘and/with’ (15).

- (15) **U-na**      *omu-tima omu-wa*  
 1SM-COM 3-heart 3AGR-good  
 ‘S/he has a good heart’ Herero (Möhlig & Kavari 2008: 214)

Other languages, e.g., Rangi (F33) in (16), instead employ an overt agreeing copula alongside the comitative to express possession (Halpert & Diercks 2014; Myler 2016).

- (16) **A-ri na**    *vi-jombulo vi-kuulu*  
 1SM-be COM 8-calves 8AGR-big  
 ‘S/he has big calves’ Rangi (Gibson 2012: 101)

Though these two strategies for encoding possession both employ the comitative particle — which yields a comitative ‘accompanying’ meaning elsewhere — it is important to note that the above examples encode genuine possession.<sup>9</sup> That is, the subject in (15) is canonically interpreted to *possess* a good heart herself, as opposed to simply being in the presence of a good heart that is not her own (the comitative reading). While these two readings are often conflated in Bantu languages that employ comitative *na* in the possessive, the crucial point here is that the genuine possession reading is necessarily available.

Unlike languages like Herero and Rangi that make use of comitative *na* in possession, Mashi exemplifies a much less common strategy for encoding possession in Bantu: it employs a lexical *have*-verb. Moreover, what is particularly interesting about Mashi is the fact that it exhibits two distinct *have*-verbs, *-dwiire* and *-jira* (17).<sup>10</sup>

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<sup>9</sup> This extends to possessive predication as well; (i) is interpreted as a predication relation, despite the presence of the comitative particle.

- (i) **Ndi-ri na njala**  
 1SG-be COM 9.hunger  
 ‘I am hungry’ (Lit., ‘I have hunger.’) Rangi (Gibson 2012: 92)

<sup>10</sup> Following Halpert & Diercks (2014), I take the availability of pre-stem object marking to be a transitivity diagnostic in Bantu languages. In contrast to what Halpert & Diercks (2014) show for the copular (*be* + comitative *na*) possessives in Swahili (G41) and Zulu (S42), pre-stem pronominal object markers are available with both *-dwiire* and *-jira* in Mashi, suggesting they are true transitive *have*-verbs.

- (i) a. **Johne a-ka-soma e-bi-tabu**  
 John 1SM-HAB-read AUG-8-book  
 ‘John reads books’  
 b. **Johne a-ka-bi-soma**  
 John 1SM-HAB-2OM-read  
 ‘John reads them (books)’



- (17) *Johne a-ʼdwiire/ʼjira i-wazo li-nja*  
 John 1SM-have<sub>TEMP</sub>/have<sub>PERM</sub> 5-idea 5AGR-good  
 ‘John has a good idea’

Though both available in examples like (17), these two *have*-verbs are crucially not in free-variation. In fact, they lexicalize the same temporary-permanent distinction observed of the two *be*-verbs in section 2; *-dwiire* encodes temporary possession, while *-jira* encodes permanent possession. Considering the relative infrequency of lexical *have*-verbs across Bantu languages (Halpert & Diercks 2014; Myler 2016; Gibson et al. 2019), such an interpretive contrast is unsurprisingly quite rare; this is to my knowledge the first time that such a system has been reported in Bantu.

Let us first consider the interpretive overlap between the temporary state copula *-li* and the temporary possessive *-dwiire*. Just as the copula *-li* describes a property that holds exclusively of a limited context of evaluation, *-dwiire* expresses a time-bounded associative relationship between two individuals; since the relationship between John and ‘a child’ in (18) is not permanent (i.e., the child doesn’t live in his arms), only the *temporary* possessive *-dwiire* is available.

- (18) *Johne a-ʼdwiire/#jira oo-mw-ana omu-boko*  
 John 1SM-have<sub>TEMP</sub>/have<sub>PERM</sub> AUG-1-child 18LOC-5.arm  
 ‘John has a child in his arms’

On the other hand, we find that just as the copula *-ba* encodes a permanent state, the *have*-verb *-jira* expresses an inherent associative relationship between two individuals, viz. permanent

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- (ii) a. *Johne a-ʼdwiire/jira a-ba-ana*  
 John 1SM-have<sub>TEMP</sub>/have<sub>PERM</sub> AUG-2-child  
 ‘John has children’  
 b. *Johne a-ba-ʼdwiire/ʼjira*  
 John 1SM-2OM-have<sub>TEMP</sub>/have<sub>PERM</sub>  
 ‘John has them (children)’
- (iii) a. *Oo-mutugari gu-ʼdwiire/ʼjira bi-gondo*  
 AUG-3.car 3SM-have<sub>TEMP</sub>/have<sub>PERM</sub> 8-tire  
 ‘The car has wheels’  
 b. *Oo-mutugari gu-bi-ʼdwiire/ʼjira*  
 AUG-3.car 3SM-8OM-have<sub>TEMP</sub>/have<sub>PERM</sub>  
 ‘The car has them (wheels)’

As pointed out by an anonymous reviewer, this raises questions about the status of the copular possessive construction (e.g., *be* + comitative *na*) in Mashi, which obligatorily appears in place of a *have*-verb in irrealis environments (see section 4). This in turn gets at other issues related to transitivity and object marking in Bantu languages that need further study. For this reason, I will leave any further discussion of these issues to future work.

possession. As such, only *-jira* is available in contexts where an associative relationship between two individuals holds indefinitely, e.g., the inherent associative relationship between a father and child (19).<sup>11</sup>

- (19) *Johne a-#dwiire/'jira oo-mw-ana*  
 John 1SM-have<sub>TEMP</sub>/have<sub>PERM</sub> AUG-1-child  
 'John has a child (John is a father)'

While it may be tempting to treat the two *have*-verbs as encoding solely alienable/inalienable possession based on the data above, I analyze (in)alienability, like the stage-individual contrast, as a sub-case of the broader temporary-permanent distinction. Accordingly, both *have*-verbs may describe alienable/inalienable possession, albeit with different interpretations. For example, while *-dwiire* and *-jira* are both available in examples like (17), they yield distinct interpretations of the possessive relationship; with *-dwiire* (20a), the relationship between John and 'good idea' is new (e.g., he just came up with it), while with *-jira* (20b), this relationship is long-term (e.g., John has had this good idea his whole life).

- (20) a. *Johne a-dwiire i-wazo li-nja*  
 John 1SM-have<sub>TEMP</sub> 5-idea 5AGR-good  
 'John has a good idea' (a new idea)
- b. *Johne a-jira i-wazo li-nja*  
 John 1SM-have<sub>PERM</sub> 5-idea 5AGR-good  
 'John has a good idea' (he's profited on it for a long time)

Similarly in (21)–(22), the two *have*-verbs are distinguishable only in that *-jira* yields a “permanent” possession reading, and *-dwiire* a “temporary” possession reading. In both cases, the possession relationship between the car and the wheels is inalienable.

- (21) *Context: You're naming all the things you know are true about cars.*  
*Oo-mutugari gu-jira bi-gondo bi-nne*  
 AUG-3.car 3SM-have<sub>PERM</sub> 8-tire 8AGR-four  
 'The car has four wheels'
- (22) *Context: You see a car driving down the road with only three wheels. Shocked that it is driving with a missing wheel, you point and exclaim:*  
*Oo-mutugari gu-dwiire bi-gondo bi-sherho*  
 AUG-3.car 3SM-have<sub>TEMP</sub> 8-tire 8AGR-three  
 'The car has three wheels'

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<sup>11</sup> Note that *-dwiire* can be used in (19) if the possessive relationship is transient, e.g., if John is watching over the child temporarily.

While the use of the permanent possessive *-jira* in (21) follows from the general expectation that cars have four wheels (i.e., a permanent associative relationship), the context in (22) presents a context dependent associative relationship; since a car having only three wheels is exceptional and holds only of this context, only temporary *-dwiire* is available.

In the previous sections, I have demonstrated that both the *be*-verbs and the *have*-verbs in Mashi lexicalize the same temporary-permanent distinction. That is, just as the copula *-li* encodes a temporary state and the copula *-ba* encodes a permanent state, the *have*-verb *-dwiire* encodes temporary possession, and *-jira* permanent possession. To conclude this section, I would like to discuss one additional observation that nicely illustrates this interpretive overlap: when two predicates that convey the same (general) property exhibit different syntactic requirements, the choice of *be/have*-verb coincides with the interpretational restrictions of the property they both denote.

Consider the adjectival predicate *ndaa* ‘pregnant’, and the nominal predicate *izimi* ‘pregnancy’. Though these two predicates differ in category, they attribute the same general property, ‘pregnant’, to their subject. Nonetheless, the two crucially differ in which predicational strategy they employ; *ndaa* requires copular predication (23), while *izimi* requires possessive predication (24). Moreover, since the property ‘pregnant’ holds only of a limited context of evaluation, both predicates require the “temporary” copula/possessive; *ndaa* obligatorily occurs with the temporary state copula *-li*, while *izimi* obligatorily occurs with the temporary possessive *-dwiire*.

- (23) *Maria a-’li/#ba ndaa*  
 Mary 1SM-be<sub>TEMP</sub>/be<sub>PERM</sub> 1AGR.pregnant  
 ‘Mary is pregnant’
- (24) *Maria a-’dwiire/#jira izimi*  
 Mary 1SM-have<sub>TEMP</sub>/have<sub>PERM</sub> 9.pregnancy  
 ‘Mary is pregnant’ (Lit., ‘Mary has pregnancy.’)

Given that the two predicates *ndaa* and *izimi* describe the same general property, and necessarily require the “temporary” copula/possessive, the only difference between the two is predicational strategy. As such, the data in (23)–(24) again suggest a significant interpretive overlap between the temporary state *be*-verb *-li*, and the temporary possessive *-dwiire*. While *-li* and *-dwiire* may differ in terms of the morphosyntactic environment in which they may be realized (i.e., they vary according to the predicational requirements of the predicate), they are interpretively quite similar, since they may both be used to describe a single property like ‘pregnant’.

#### 4 The link between BE and HAVE

To this point, I have shown that the *be/have*-verbs in Mashi exhibit a significant overlap in interpretation. While this interpretive overlap alone is perhaps sufficient to make the claim that

(abstract) BE and HAVE are compositionally related in Mashi, there is also significant distributional evidence to suggest that these forms are quite closely linked. Though the *be*-verbs (*-li/-ba*) and *have*-verbs, (*-dwiire/-jira*) generally lexicalize a temporary-permanent distinction, their realization is sensitive to Mood and Tense. Specifically, we find that the temporary-permanent distinction is morphologically neutralized for both BE and HAVE in two specific contexts: the past tense, and the subjunctive/infinitival (irrealis) moods. In each of these neutralizing contexts, BE and HAVE exhibit similar invariant surface forms, e.g., the prototypical “temporary” forms *-li/-dwiire* obligatorily surface in the past tense, while *-ba* (along with the comitative particle *na* in the case of HAVE) surface in the subjunctive/infinitival moods (see **Table 1**).

	<i>Environment</i>		<i>Surface Form</i>	
	<b>Mood</b>	<b>Tense</b>	<b>Temporary</b>	<b>Permanent</b>
BE	+ INDIC	+ PRES	<i>-li</i>	<i>-ba</i>
	+ INDIC	+ PAST	<i>-li</i>	<i>-li</i>
	+ SBJV	–	<i>-ba</i>	<i>-ba</i>
	+ INF	–	<i>-ba</i>	<i>-ba</i>
HAVE	+ INDIC	+ PRES	<i>-dwiire</i>	<i>-jira</i>
	+ INDIC	+ PAST	<i>-dwiire</i>	<i>-dwiire</i>
	+ SBJV	–	<i>-ba (+ na)</i>	<i>-ba (+ na)</i>
	+ INF	–	<i>-ba (+ na)</i>	<i>-ba (+ na)</i>

**Table 1:** Distribution of BE/HAVE allomorphs.

As we have seen, Mashi encodes a temporary-permanent distinction in its *be*- and *have*-verb pairs. This contrast is salient in the present indicative, where both *be*-verbs and both *have*-verbs are available. In the past tense however, BE and HAVE obligatorily surface as *-li* and *-dwiire* — their “temporary” forms in the present indicative. Crucially, these forms are invariable; they surface regardless of the interpretation of the predication relation. This can be seen illustrated for BE below; *-li* ([*-ri*]) co-occurs with both temporary (25) and permanent interpretations (26) in the past tense.<sup>12</sup>

<sup>12</sup> That BE surfaces as *-ri* in the presence of the past tense marker *-li* is taken to be a purely phonological process. This reflects a common observation in Bantu languages that [l] and [r] exist in an allophonic relationship (Maddieson & Sands 2019). This is true in related Kinyarwanda and Kinyamulenge (JD61; author notes), which exhibit a similar tense-conditioned neutralization pattern: though two copular forms are attested in the present tense, only *-ri* (in free variation with [*-li*]) appears in the past tense. As such, I argue that treating *-ri* as a phonological variant of copular *-li* — as opposed to a distinct vocabulary item — better fits the broader typological picture. See however footnote 26 for discussion of an alternative approach. Note also that past tense *-li* is not a copula synchronically (c.f. Swahili), though it may have a diachronic source as a copula.

(25) *Context: Mary had a cold yesterday, but now she's feeling better.*

*Maria a-li-ri mu-lwala*  
 Mary 1SM-PAST-be<sub>TEMP</sub> 1AGR-sick  
 'Mary was sick'

(26) *Context: Mary has had a chronic illness her whole life, but she's been miraculously cured.*

*Maria a-li-ri mu-lwala*  
 Mary 1SM-PAST-be<sub>TEMP</sub> 1AGR-sick  
 'Mary was sick'

Likewise, HAVE may only surface as *-dwiire* in the past tense, again regardless of the interpretation of the possession relation; the permanent *have*-verb form *-jira* is crucially unavailable (27).

(27) *Johne a-li-ʹdwiire/\*jira o-mu-lali oku a-ja e Kinshasa*  
 John 1SM-PAST-have<sub>TEMP</sub>/have<sub>PERM</sub> AUG-3-plan COMP 1SM-go LOC Kinshasa  
 'John had a plan to go to Kinshasa'

Much like the past tense, we find that the subjunctive mood serves as a neutralizing environment for both BE and HAVE. In this environment, BE is obligatorily realized as the permanent state copula *-ba*; the temporary state copula *-li* is unavailable (28).<sup>13</sup>

(28) *O-shinganine o-\*(e)ʹbe mu-liri o-twa a-ma-lehe*  
 2SG-must.SBJV 2SG-be<sub>TEMP</sub>.SBJV/be<sub>PERM</sub>.SBJV 1AGR-tall 2SG-pick AUG-6-fruit  
*oku-gu-murhi*  
 15LOC-3DEM-3-tree  
 'You must be tall to pick fruit from this tree'

Likewise, HAVE is also limited to one possible realization in the presence of the subjunctive mood. However, this form is distinct from the two *have*-verb forms we find in the present indicative; both *-dwiire* and *-jira* are crucially unavailable.<sup>14</sup> Instead, HAVE is obligatorily realized as the combination of the permanent state copula *-ba* and the comitative particle *na*, meaning 'and/with' (29)–(30).

(29) *Bi-kuhunire o-be na oo-mutugari*  
 8SM-require 2SG-be<sub>PERM</sub>.SBJV COM AUG-3.car  
 'It is required that you have a car'

<sup>13</sup> Like many other Bantu languages, Mashi generally expresses mood contrasts via a change in the final vowel (FV) of the verb. The subjunctive mood is marked via the subjunctive final vowel, *-e*. This competes with the underlying vowel in the verb root, yielding a surface form of *-be* (from *-ba*) for BE.

<sup>14</sup> Given that subjunctive mood is generally marked via the final vowel *-e*, there should be no morphological difference between the indicative and subjunctive forms of *-dwiire*, however, *-dwiire* is shown to be incompatible with the subjunctive environment in (30). Correspondingly, the expected subjunctive-marked form of *-jira*, i.e., *-jire*, is also unavailable in this environment, suggesting that the subjunctive imposes a general restriction on overt *have*-verbs.

- (30) \**Bi-kuhunire o-dwiire/jire oo-mutugari*  
 8SM-require 2SG-have<sub>TEMP</sub>.SBJV/have<sub>PERM</sub>.SBJV AUG-3.car  
 ‘It is required that you have a car’

Importantly, BE (28) and HAVE (29) both realize the permanent state copula *-ba* in the subjunctive mood. The only difference between the two in this context is the presence of the comitative particle *na*; HAVE is realized as BE + comitative.

We find a similar pattern to the subjunctive in the infinitival mood: both BE and HAVE realize the permanent state *be*-verb form *-ba* — namely its infinitival form *okuba* (31), with HAVE being realized as the combination of *-ba* and comitative *na* (32).

- (31) *Bi-ri bi-nja oku-ba mu-liri*  
 8SM-be<sub>TEMP</sub> 8AGR-good INF-be<sub>PERM</sub> 1AGR-tall  
 ‘It is good to be tall’

- (32) *Bi-kuhunire oku-ba na oo-mutugari*  
 8SM-require INF-be<sub>PERM</sub> COM AUG-3.car  
 ‘It is required to have a car’

The important point here is that, just as in the past tense, the surface forms of BE and HAVE are invariable in the subjunctive and infinitival moods, as they do not morphologically encode the temporary-permanent distinction.

While both Tense and Mood condition the realization of BE/HAVE, it is worth noting the distinct effect of Mood on the realization of HAVE. As illustrated above, neither of the lexical *have*-verbs (*-dwiire/-jira*) are available in the subjunctive/infinitival moods. Instead, possessive HAVE is obligatorily realized as the copular possessive construction, BE + comitative *na*. From a Bantu perspective (see section 3), it is not surprising to find such a copula-based possessive construction in Mashi, as this sort of possessive strategy is commonly attested in Bantu languages (Halpert & Diercks 2014; Myler 2016; Gibson 2012; Gibson et al. 2019). Although this copular possessive construction is exceptionally limited to subjunctive and non-finite clauses in Mashi, the fact remains that it exists in a complementary relationship with the *have*-verbs *-dwiire/-jira*; when lexical HAVE is unavailable, BE surfaces (with the comitative particle *na*) in its place.

Summarizing the above, we find that in the past tense, BE and HAVE are realized as their “temporary” forms *-li/-dwiire*. In irrealis moods, BE forms are realized as the “permanent” form *-ba*, and HAVE forms are realized as permanent copula *-ba* with the comitative particle. When considered alongside the general interpretational overlap between the *be/have*-verbs, the parallel effects of Mood and Tense on the realization of BE and HAVE provide a strong case for a

decompositional approach to possessive HAVE (Freeze 1992; Kayne 1993; Ritter & Rosen 1997; Harley 1998; Beavers et al. 2009; Myler 2016; 2018 a.o.). The alternation between the lexical *have*-verbs and the copular possessive construction, BE + comitative, provides particularly strong support for a decompositional approach in which HAVE is built via the incorporation of a locative element by BE, as I will discuss in subsection 4.1. Importantly, an incorporation-based approach to decompositional HAVE provides a straightforward analysis of the interpretational overlap between the Mashi *be/have*-verbs; if HAVE is built from BE, then the temporary-permanent distinction shown to hold of the *have*-verbs falls out of the fact that the *be*-verbs lexicalize the same distinction.

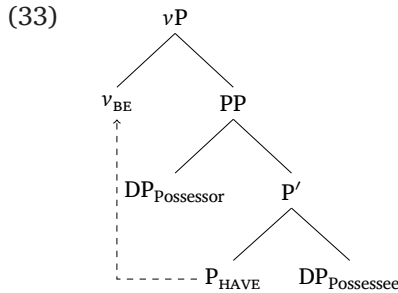
#### 4.1 Decomposing HAVE

Following previous decompositionalist analyses of possessive HAVE (Freeze 1992; Kayne 1993; Ritter & Rosen 1997; Harley 1998; Beavers et al. 2009; Myler 2016; 2018 a.o.), I argue that the overlap between the Mashi *be/have*-verbs is best accounted for under an approach where HAVE is directly composed from BE.

In this section, I will introduce two previous decompositional analyses of possessive HAVE — one that posits incorporation (Freeze 1992; Kayne 1993; Harley 1998), and another that posits contextual allomorphy (Myler 2016; 2018) — and discuss how each could fit the Mashi data. Ultimately I will demonstrate that both of these analyses fail to capture the fact that the lexical *have*-verbs, *-dwiire/-jira*, are strictly unavailable in the presence of irrealis mood (e.g., in subjunctive and infinitival clauses). In light of this sensitivity to Mood, I will instead present a decompositional analysis of possessive HAVE that defines the domains for Vocabulary Insertion and allomorphic conditioning according to *spans* — or contiguous strings — of terminal nodes in a single extended projection (Williams 2003; Svenonius 2012; 2016; Merchant 2015; Hanink 2018). By defining locality conditions on allomorphy according to adjacent spans of terminal nodes rather than adjacent heads, the analysis accounts for the fact that stem selection is sensitive to morphosyntactic information in various places, which renders it unable to be otherwise derived cyclically.

##### 4.1.1 The P-Incorporation Account

Given the crosslinguistic tendency for languages to either encode possession via an overt lexical *have*-verb, or the combination of copular BE + locative, accounts like Freeze (1992), Kayne (1993), and Harley (1998) suggest that HAVE is underlyingly composed of two verbal heads:  $v_{BE}$  and a functional element P (or  $P_{HAVE}$ ) that serves to relate two DPs in a possessive relationship. The core idea of these accounts is that HAVE is realized through the incorporation of a lower functional element  $P_{HAVE}$  by a stative verbal head  $v_{BE}$  (33).



When one considers that Bantu languages often express HAVE via the combination of copular BE and an overt prepositional element, usually the comitative particle *na* meaning ‘and/with’ (see section 3 for discussion), it makes sense to treat the parallelism between the copular *be*-verbs and the possessive *have*-verbs in Mashi as being fundamentally built into the syntax. That is, the overlap between copular *-li/-ba* and possessive *-dwiire/-jira* makes sense if the two *have*-verbs are realized as BE + P<sub>HAVE</sub>, and only differ in which *be*-verb incorporates P<sub>HAVE</sub>: if BE<sub>PERM</sub> (*-ba*) incorporates P<sub>HAVE</sub>, it realizes the permanent possessive *-jira* (42), whereas if BE<sub>TEMP</sub> (*-li*) incorporates P<sub>HAVE</sub>, it instead realizes the temporary possessive *-dwiire* (34b).

- (34) a. [  $v_{-ba}$  P<sub>HAVE</sub> ] → /*jira*/  
 b. [  $v_{-li}$  P<sub>HAVE</sub> ] → /*dwiire*/

Note that, under this genre of analysis, there are two possible ways to derive the temporary-permanent distinction. On one analysis, there are two semantically distinct  $v_{BE}$  heads that may enter into the derivation:  $v_{-li}$  encodes a temporary state, while  $v_{-ba}$  encodes a permanent state. The second approach instead treats  $v_{BE}$  as a meaningless copula, and attributes the temporary-permanent (or stage-individual) contrast to the existence of two distinct Pred heads (Myler 2016; 2018).<sup>15</sup> Under this approach, the distinction between BE<sub>TEMP</sub>/BE<sub>PERM</sub> depends on which Pred head moves/incorporates into  $v_{BE}$ ; the combination  $v_{BE}$  + Pred<sub>STAGE</sub> yields the temporary state copula *-li*, whereas  $v_{BE}$  + Pred<sub>INDIV</sub> yields the permanent state copula *-ba*. Deriving the two *have*-verbs remains largely the same under this approach, with the sole difference being that a now complex head  $v_{BE}$  + Pred incorporates P<sub>HAVE</sub> (as opposed to just  $v_{BE}$ ). For the sake of consistency, I will

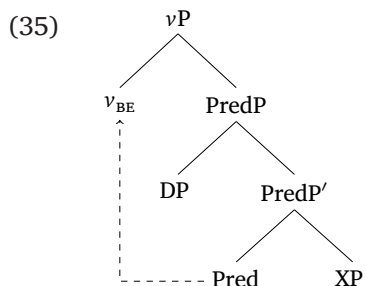
<sup>15</sup> Following Wood (2015) and Myler (2016; 2018), I assume that  $v_{BE}$  carries no semantic meaning, but instead serves a purely syntactic function. As such, I take  $v_{BE}$  to denote a type-neutral identity function (Myler 2016; 2018).

- (i) Copula  $v_{BE}$   
 $v_{BE} \Leftrightarrow \lambda x.x$

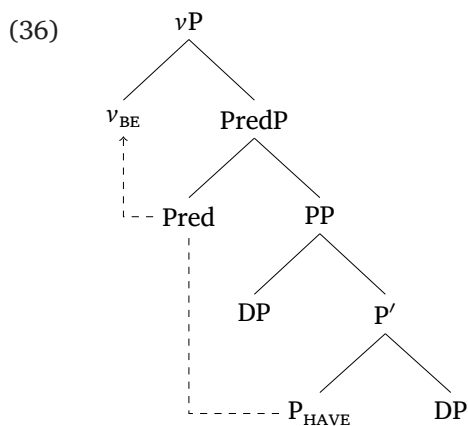
This meaningless head serves to integrate non-verbal predicates into the verbal domain, since PredP — being non-verbal — cannot directly merge with clausal functional projections (see Myler 2016; 2018).



assume that the latter approach — which posits a syntactically represented  $\text{Pred}_{\text{STAGE/INDIV}}$  head below  $v_{\text{BE}}$  — applies to both copular and possessive constructions in Mashi.<sup>16</sup>



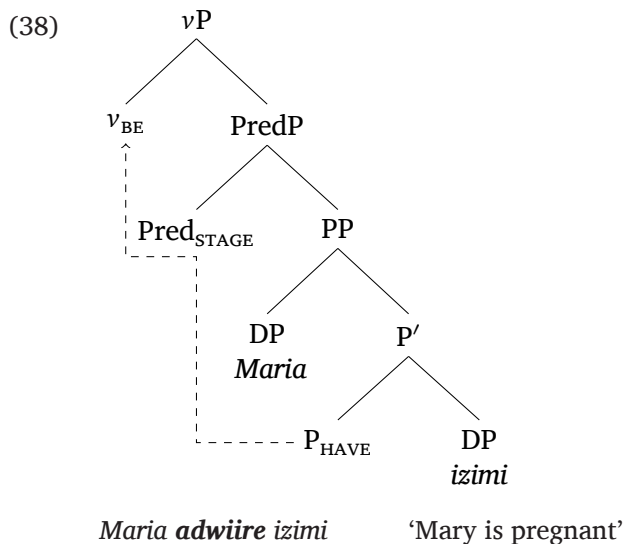
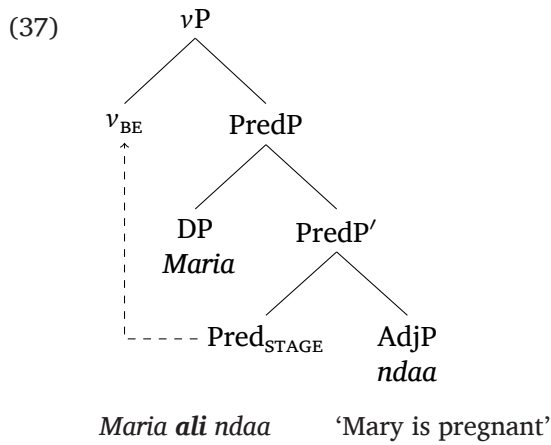
*Copular Predication*



*Possessive Predication*

The idea here is that the overlap between the *be*- and *have*-verbs in Mashi is the direct result of there being two derived forms of BE. Depending on which *be*-verb — whether the complex head  $v_{\text{BE}} + \text{Pred}_{\text{STAGE}}$  or  $v_{\text{BE}} + \text{Pred}_{\text{INDIV}}$  — incorporates  $P_{\text{HAVE}}$ , a different *have*-verb surfaces. As such, the P-incorporation account directly explains the overlap that we see between the temporary state copula *-li* and temporary possessive *-dwiire* with the near synonyms *ndaa* ‘pregnant’, and *izimi* ‘pregnancy’, in section 4. Crucially, the verbal head  $v_{\text{BE}}$  and the predicative head  $\text{Pred}_{\text{STAGE}}$  are involved in both constructions. With *ndaa* ‘pregnant’ — which requires copular predication — the combination of  $v_{\text{BE}}$  and  $\text{Pred}_{\text{STAGE}}$  surfaces as the temporary state copula *-li* (37). However, since the nominal predicate *izimi* ‘pregnancy’, requires possessive predication, it exists within a possessive relationship with the subject (e.g., Mary) — a relationship which is mediated by the relational element  $P_{\text{HAVE}}$ . Under the incorporation account,  $P_{\text{HAVE}}$  is then incorporated by the complex head  $v_{\text{BE}} + \text{Pred}_{\text{STAGE}}$ , yielding the temporary possessive *-dwiire* (38).

<sup>16</sup> This approach also provides a neat explanation of the stage-individual collapse observed in certain environments (see section 5).



This same process also holds of the relationship between the permanent state copula *-ba* and the permanent possessive *-jira*. If we instead found near synonyms that require the permanent *be/have*-verbs, their structural representations would be identical to those in (37)–(38), with the sole change being the presence of a  $\text{Pred}_{\text{STAGE}}$  head. In both cases, the relationship between the *be/have*-verbs is compositional; the syntactic material that yields BE is also present in the composition of HAVE.

Now, while the incorporation approach does well to account for the interpretational overlap between the *be/have*-verbs, it crucially fails to capture the allomorphic effects of Tense (25) and Mood (28)–(29). As I will show, the P-incorporation account has no way of accounting for the fact that the surface realization of  $v_{\text{BE}}$  — as either a *be* or *have*-verb — is simultaneously sensitive to which Pred head is merged, the features associated with the Mood/Tense head(s), and also whether  $P_{\text{HAVE}}$  is present. To illustrate, let us walk through a derivation of BE and HAVE.

In the present indicative, either  $v_{BE}$  and Pred (BE) or  $v_{BE}$ , Pred, and  $P_{HAVE}$  (HAVE) are realized as one complex head. This is accomplished by having Pred move to  $v_{BE}$  to create a complex head,  $v_{BE} + \text{Pred}$ , that then incorporates  $P_{HAVE}$  in the case of HAVE, or by having Pred incorporate  $P_{HAVE}$  if present, before then moving to  $v_{BE}$ . In either case, if  $P_{HAVE}$  is present, it incorporates with  $\text{Pred}_{STAGE}$  or  $\text{Pred}_{INDIV}$ . However, as discussed above, the possible surface realizations of BE/HAVE are restricted when Mood or Tense is modulated. In the presence of irrealis mood for example, incorporation crucially does not occur;  $v_{BE}$  is obligatorily realized as the permanent state copula *-ba* (alongside the comitative *na* in the case of HAVE), regardless of interpretation (i.e., no matter which Pred head is merged). Similarly, the presence of past tense restricts the realization of BE/HAVE to their temporary forms, *-li* and *-dwiire*, again regardless of interpretation.

Herein lies the problem faced by the P-incorporation approach; if we assume cyclical derivation, we can't explain what does — and does not — incorporate, nor how those heads may be realized. If HAVE is built cyclically,  $v_{BE}$  first encounters Pred, which determines the temporary-permanent interpretation, and  $P_{HAVE}$ , which distinguishes BE from HAVE, before interacting with Mood/Tense later in the derivation. This is problematic however, since the features associated with Mood/Tense may fundamentally determine the realization of  $v_{BE}$ , regardless of what is present lower in the structure (e.g.,  $\text{Pred}/P_{HAVE}$ ).

At this point, I would like to head off two alternative analyses. The first has to do with the hierarchical order of Mood and Tense: perhaps the incorporation account doesn't work because Mood is non-adjacent to  $v_{BE}$  (e.g., the two are mediated by Tense). Note however that the observed issues with incorporation would persist even if we reorder Mood and Tense, as we still need some way to block incorporation countercyclically. The second alternative attributes the blocking effects of Mood to linearization: maybe the subjunctive FV *-e* linearizes to right of the verb, and blocks *post-syntactic* incorporation of *na*. This genre of analysis doesn't work because the infinitival form of the *be*-verb, *okuba*, doesn't display this kind of morphological intervention, despite exhibiting the same blocking effects as the subjunctive.

#### 4.1.2 Contextual Allomorphy Account

An alternative approach to the parallelism between the *be/have*-verbs in Mashi would be to take HAVE as a contextually conditioned allomorph of  $v_{BE}$  (Myler 2016; 2018). Under this analysis, we would assume the *be/have*-verb forms in Mashi to be four allomorphs of  $v_{BE}$  that are conditioned by the presence of lower Pred head as well as the presence of a transitive Voice head. Much like the P-incorporation approach discussed previously, the contrast between the copular *be*-verb allomorphs, *-li/-ba*, coincides with which Pred head is merged;  $\text{Pred}_{STAGE}$  yields the temporary state copula *-li* (39a), while  $\text{Pred}_{INDIV}$  yields the permanent state copula *-ba* (39b).

- (39) a. [  $v_{BE}$  ]  $\rightarrow$  /li/ / \_\_\_ Pred<sub>STAGE</sub>  
 b. [  $v_{BE}$  ]  $\rightarrow$  /ba/ / \_\_\_ Pred<sub>INDIV</sub>

The derivation of HAVE is slightly more complicated. Myler (2016; 2018) presents HAVE as an allomorph of  $v_{BE}$  that appears in the context of a transitive Voice head. To capture the fact that Mashi exhibits two *have*-verbs that distinguish between temporary/permanent possession, however, we need to posit that Mashi HAVE is sensitive to both the presence of a transitive Voice head and a lower Pred head. As such, the temporary *have*-verb is an allomorph of  $v_{BE}$  that appears in the context of a transitive Voice head and Pred<sub>STAGE</sub> (40a), whereas the permanent *have*-verb is an allomorph of  $v_{BE}$  that appears in the context of a transitive Voice head and Pred<sub>INDIV</sub> (40b).

- (40) a. [  $v_{BE}$  ]  $\rightarrow$  /dwiire/ / Voice<sub>D</sub> \_\_\_ Pred<sub>STAGE</sub>  
 b. [  $v_{BE}$  ]  $\rightarrow$  /jira/ / Voice<sub>D</sub> \_\_\_ Pred<sub>INDIV</sub>

This analysis therefore accounts for the fact that the temporary-permanent distinction applies to both the *be*- and *have*-verbs via the combination of a lower allomorphic trigger, e.g., Pred, which serves to capture the temporary-permanent distinction, and a higher allomorphic trigger, e.g., the transitive Voice head, which yields *have* from either  $v_{BE} + \text{Pred}_{\text{STAGE}}$  or  $v_{BE} + \text{Pred}_{\text{INDIV}}$ . Under the assumption that this sort of contextual allomorphy can be sensitive to both higher and lower triggers simultaneously (e.g., if allomorphy can “look both ways”; see Merchant 2015), and that the allomorph of  $v_{BE}$  that surfaces under transitive Voice retains/projects the lower Pred<sub>STAGE/INDIV</sub> head, then such an account should be able to capture the Mashi data, as it would crucially yield the same four way contrast.

That being said, there are two significant problems faced by the contextual allomorphy account. The first is an issue of locality; given the observed effects of Mood/Tense, both heads must be sufficiently local to condition allomorphy of  $v_{BE}$ . To illustrate, let us consider the effect of Mood on the realization of HAVE. In the indicative mood, we find a temporary-permanent distinction in the two *have*-verbs, *-dwiire/-jira*. This contrast is however neutralized in the irrealis mood(s), as HAVE obligatorily surfaces as the copular possessive construction, BE + comitative (e.g., *-ba + na*), regardless of interpretation. Assuming that Mood is above Voice, we can derive the three observed HAVE forms with the Vocabulary Insertion rules in (41).

- (41) a. [  $v_{BE}$  ]  $\rightarrow$  /dwiire/ / Mood<sub>[+INDIC]</sub> Voice<sub>D</sub> \_\_\_ Pred<sub>STAGE</sub>  
 b. [  $v_{BE}$  ]  $\rightarrow$  /jira/ / Mood<sub>[+INDIC]</sub> Voice<sub>D</sub> \_\_\_ Pred<sub>INDIV</sub>  
 c. [  $v_{BE}$  ]  $\rightarrow$  /ba/ / Mood<sub>[-INDIC]</sub> Voice<sub>D</sub> \_\_\_ Pred<sub>STAGE/INDIV</sub>

The issue here is that, given general locality conditions on contextual allomorphy (Embick 2012), it is surprising that the features associated with the Mood head fundamentally determine the realization of  $v_{BE}$ , as Mood is crucially non-adjacent to  $v_{BE}$  (41c). Put simply, it is unexpected that

the surface realization of  $v_{BE}$  may be conditioned by a non-adjacent head, Mood, as allomorphic triggers are generally taken to be strictly local (Embick 2012; Merchant 2015).

One way around this adjacency issue is to define insertion and locality relative to *spans* of consecutive heads, rather than individual terminal nodes (Merchant 2015; Myler 2018). The idea here is that, like Merchant (2015) demonstrates for Greek stem allomorphy, sensitivity to a non-adjacent head (e.g., Mood) renders it impossible to predict the surface realization of Mashi BE/HAVE based solely on elements immediately adjacent to  $v_{BE}$ . If however, we take insertion to target a span of heads, e.g., [Mood-Voice- $v_{BE}$ -Pred], then said non-adjacent heads, e.g., Mood, would be close enough to condition allomorphy of  $v_{BE}$ , thus resolving any locality issues.

The second problem faced by the contextual allomorphy account concerns the Mood-conditioned alternation between lexical HAVE and the copular possessive construction, BE + comitative *na*. The issue here is that, if we take possessive HAVE to be an allomorph of  $v_{BE}$  that appears in the environment of a transitive Voice head, we have no explanation for why HAVE should sometimes surface as a lexical *be*-verb, and sometimes as BE + comitative *na*. By defining the distinction between BE/HAVE according to Voice — as opposed to the presence/absence of an adpositional element like  $P_{HAVE}$  (Freeze 1992; Kayne 1993; Harley 1998) — it becomes much more difficult to account for the complementary distribution of lexical HAVE and BE + comitative, as these would crucially correspond to distinct structures.<sup>17</sup> In contrast, this alternation is quite amenable to the aforementioned P-incorporation approach, which assumes that HAVE is underlying BE +  $P_{HAVE}$  (e.g., *-ba* + comitative *na*).

In this section, I have shown that a portmanteau analysis where heads are collected onto a single complex head, e.g., P-incorporation, cannot account for the surface patterns unless it sometimes allows for collection/incorporation to be counter-cyclically blocked. Likewise, a contextual allomorphy account cannot derive the surface patterns unless it posits non-locally conditioned allomorphy and also explains why HAVE may be realized as BE + comitative. Given these observations and the fact that the derivation of Mashi HAVE is simultaneously sensitive to four distinct elements — namely Mood, Tense, Voice, and Pred — I conclude that the present data are incompatible with standard approaches to P-incorporation and contextual allomorphy, and instead propose an analysis that bridges the gap between them. In the following section, I

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<sup>17</sup> To account for the fact that Bantu comitative *na* may be used to express possessive HAVE, Myler (2016) proposes two allomorphs of *na*: one with a comitative semantics (like  $p_{sym}$  in Levinson 2011), and one that is expletive.

- (i) *Allosemy of na*  
 a.  $na \Leftrightarrow \lambda P_{st}.\lambda y_e.\lambda e_s.P(e)\wedge\text{companion}(e,y) / \_s,t$   
 b.  $na \Leftrightarrow \lambda x.x$

While this accounts for the interpretive flexibility of the Bantu comitative, it does not resolve the issue that the copular possessive construction, BE + comitative, alternates with the lexical *have*-verbs in Mashi. If HAVE is not built from BE +  $P_{HAVE}$ , we shouldn't expect these forms to be in complementary distribution.

lay out an analysis that takes the Mashi BE/HAVE forms to be allomorphs of  $v_{BE}$ , and HAVE to be derived from  $BE + P_{HAVE}$ . Moreover, following accounts like Williams (2003); Svenonius (2012; 2016); Merchant (2015); Hanink (2018), I suggest that the Mashi data conform to an analysis that takes the domain for Vocabulary Insertion to be not a single terminal node, but rather a span of consecutive nodes in a maximal projection (Merchant 2015).

## 4.2 The case for span-conditioned allomorphy

As I have shown, the Mashi BE/HAVE data is incompatible with approaches that assume strict locality conditions on allomorphic conditioning, and take lexical insertion to target individual terminal nodes. Instead, similar to Myler (2018), I assume that locality may be defined according to contiguous spans of heads. In light of previous work on cases of non-locally conditioned allomorphy (Williams 2003; Svenonius 2012; 2016; Merchant 2015; Hanink 2018), I specifically adopt the Spanning Insertion Hypothesis presented in Merchant (2015) and suggest that the Mashi BE/HAVE data is best accounted for as a case of span-conditioned allomorphy. In this section I show that it is possible to derive the correct BE/HAVE forms by defining lexical insertion domains and locality conditions according to contiguous spans of terminal nodes, rather than single terminal nodes. This analysis ensures that lexical insertion has access to/can be conditioned by the four (sometimes non-adjacent) heads constraining the realization of  $v_{BE}$ : namely Mood, Tense, Pred, and  $P_{HAVE}$ .

Though the suggestion that lexical insertion may target a string of consecutive nodes has its roots in earlier works (Williams 2003; Svenonius 2012), I will treat the formal approach laid out in Merchant (2015) as the baseline for the present analysis. In brief, Merchant (2015) shows that certain transitive verbs in Greek show simultaneous sensitivity to both Voice and Aspect, despite Aspect being syntactically non-local. Specifically, he shows that verbs like *troo* ‘eat’, exhibit distinct forms that vary according to the features associated with Voice — namely [+/-active] — and also the features associated with Aspect — namely [+/-perfective]. To illustrate, I have replicated the VI rules for *troo* ‘eat’, first presented in Merchant (2015) below (42). As Merchant points out, these VI rules quite clearly violate standard locality conditions on contextual allomorphy.<sup>18</sup>

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<sup>18</sup> Though many previous accounts have proposed strict adjacency requirements on allomorphic conditioning (Allen 1978; Siegel 1978; Embick 2010; 2012; Bobaljik 2012), Merchant (2015) specifically frames this as a violation of the “concatenation” condition (Condition A2) proposed in Embick (2010; 2012). This condition broadly states that the features of one morpheme may only condition the realization of another morpheme if the two morphemes are adjacent.

(i) *Condition A2*  
Contextual allomorphy requires concatenation (linear adjacency)

- (42) a.  $\sqrt{\text{EAT}} \rightarrow \text{fáy}(o) / \text{--- Voice}_{[+\text{ACT}]} \text{Aspect}_{[+\text{PERF}]}$   
 b.  $\sqrt{\text{EAT}} \rightarrow \text{fáy}o / \text{--- Voice}_{[-\text{ACT}]} \text{Aspect}_{[+\text{PERF}]}$   
 c.  $\sqrt{\text{EAT}} \rightarrow \text{tro}(y)$

The idea here is that it is impossible to predict which stem form of  $\sqrt{\text{EAT}}$  will appear without having access to both the adjacent head Voice and also the higher head Aspect; without access to both heads, there is no way to differentiate between *fáy(o)*, *fáy**o*, and *tro(y)* — as the latter appears in all imperfective contexts. Note however that the conditioning elements in (42), namely Voice and Aspect, are discretely exponed. As such, the realization of  $\sqrt{\text{EAT}}$  is conditioned by the heads Voice and Aspect, despite not being jointly realized with them. This observation is at the heart of the distinction between *insertion* and *conditioning* spans (Merchant 2015). Canonical *insertion* spans represent the consecutive series of nodes that are jointly targeted by Vocabulary Insertion. However, spans are not uniquely a mechanism for insertion. In fact, spans of heads — specifically the features associated with those heads — may serve as local allomorphic triggers for an adjacent span (Merchant 2015; Hanink 2018, a.o.). So-called *conditioning* spans are characterized as a consecutive series of nodes whose features may condition the realization of an adjacent insertion span.<sup>19</sup> Crucially, these two types of spans can be distinct, but they need not be; insertion spans and conditioning spans may either target the same series of nodes, or they may target distinct — but potentially overlapping — series of nodes. Given this distinction, Voice and Aspect are argued to form a conditioning span in (42), as they condition the possible surface form of the adjacent insertion span which realizes  $\sqrt{\text{EAT}}$ .

Although the relevant features conditioning stem-alternation in Greek may be distinct from the features conditioning the realization of  $v_{\text{BE}}$  in Mashi, the general observation is the same. To capture the three possible realizations of HAVE — temporary possessive *-dwiire*, permanent possessive *-jira*, and the copular possessive *-ba + na* — Vocabulary Insertion need necessarily have access to the four distinct heads that condition the realization of  $v_{\text{BE}}$ . In light of the fact that many Bantu languages encode HAVE via the copular possessive construction BE + comitative *na*, I will assume, following the P-incorporation literature, that the relational element  $P_{\text{HAVE}}$  is involved in the derivation of HAVE in Mashi. Nonetheless, like Myler (2016; 2018), I will treat the BE/HAVE forms in Mashi as allomorphs of a single  $v_{\text{BE}}$  head, with the caveat that this head is realized as part of a span.

To capture the interpretive overlap between the BE/HAVE forms while also accounting for the effects of Mood and Tense, I define two distinct spans. Both the structural contrast between

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<sup>19</sup> Under the Spanning Insertion Analysis (Merchant 2015), the features of one span may condition the realization of another span so long as they are directly adjacent. As such, the features associated with the span [A1-A2-A3] may condition the realization of another span [B1-B2-B3] so long as there are no heads that intervene between them.

BE/HAVE and the interpretive temporary-permanent distinction arise from the single insertion span  $[v_{BE}\text{-Pred-P}_{HAVE}]$ , with Pred determining the interpretation, and the presence/absence of  $P_{HAVE}$  distinguishing BE and HAVE. To capture the effects of Mood and Tense, I also define a higher conditioning span, [Mood-T]. This span serves to restrict the possible surface forms of the adjacent insertion span that realizes  $v_{BE}$ . Importantly, the proposed multi-span analysis also ensures that both spans, [Mood-Tense] and  $[v_{BE}\text{-Pred-P}_{HAVE}]$ , may be discretely expounded. As I will discuss below, this turns out to be a crucial aspect of the analysis, as we find that overt exponents of [Mood-Tense] can co-occur with BE/HAVE forms. The basic idea of the multi-span analysis is laid out in (43).<sup>20</sup>

(43) *The Multi-span Analysis*

$$\underbrace{\text{MOOD} - \text{TENSE}}_{\text{conditioning}} \quad \underbrace{v_{BE} - \text{PRED} - (P_{HAVE})}_{\text{insertion}}$$

To illustrate how this works, consider first the effect that Tense has on the realization of BE and HAVE. In the present tense we need to distinguish temporary/permanent forms, a distinction which is neutralized in the past. This can be achieved with the following VIs (44a)-(44d). These VI rules assume that Mood and Tense form a conditioning span, and are not implicated in the insertion span that realizes  $v_{BE}$  (indicated by frame boxes).

- (44) a.  $[v_{BE}] \rightarrow jira / \text{Mood}_{[+indic]} + T_{[+pres]} \boxed{\text{Pred}_{INDIV} + P_{HAVE}}$   
 b.  $[v_{BE}] \rightarrow ba / \text{Mood}_{[+indic]} + T_{[+pres]} \boxed{\text{Pred}_{INDIV}}$   
 c.  $[v_{BE}] \rightarrow dwiire / \text{Mood}_{[+indic]} \boxed{\text{Pred} + P_{HAVE}}$   
 d.  $[v_{BE}] \rightarrow li / \text{Mood}_{[+indic]} \boxed{\text{Pred}}$

The above VI rules are crucially ordered. As such, the highest rules apply in the most specific contexts, e.g., *-jira* surfaces exclusively in the present indicative when  $\text{Pred}_{INDIV}$  and  $P_{HAVE}$  are present (44a), while *-ba* surfaces in the present indicative when only  $\text{Pred}_{INDIV}$  is present (44b). The rules in (44c) and (44d) are underspecified for both Tense and Pred to reflect the more varied distribution of *-dwiire*/*-li*. That is, unlike *-jira* (44a) and *-ba* (44b), which are restricted to the present indicative and obligatorily yield a permanent interpretation, *-dwiire* and *-li* may appear in either the past or present indicative, and are only restricted to a temporary interpretation in

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<sup>20</sup> I acknowledge that the proposed analysis will ultimately need to explain how Aspect fits into the defined spans. Given that the relevant features for the data in this paper are Mood and Tense, I will not attempt to account for Aspect here.



the present tense; *-dwiire* and *-li* may co-occur with either  $\text{Pred}_{\text{STAGE}}$  or  $\text{Pred}_{\text{INDIV}}$  in the past tense.<sup>21</sup> By ordering (44a) and (44b) before (44c) and (44d), we ensure that *-dwiire* and *-li* appear in both the present tense, where they must co-occur with  $\text{Pred}_{\text{STAGE}}$  and yield a temporary interpretation, and also the past tense, where they are the only forms available.

Turning now to the effect of Mood, we need to add a default form of  $v_{\text{BE}}$  that appears just in case Mood is not indicative (45a), as well as a default form of  $\text{P}_{\text{HAVE}}$  that applies in cases where  $\text{P}_{\text{HAVE}}$  is not a proper part of the insertion span (45b).<sup>22</sup>

- (45) a.  $[v_{\text{BE}}] \rightarrow ba$   
 b.  $[\text{P}_{\text{HAVE}}] \rightarrow na$

The default  $v_{\text{BE}}$  rule in (45a) functions as the elsewhere condition; if no other rules apply, realize *-ba*. It is therefore ordered after (44d). This ensures that  $v_{\text{BE}}$  is realized as *-ba* in the subjunctive and infinitival moods, again regardless of what is present below it (e.g.,  $\text{Pred}/\text{P}_{\text{HAVE}}$ ). Note that this default form is crucially distinct from the homophonous form, *-ba* (44b), that strictly surfaces in the present indicative with  $\text{Pred}_{\text{INDIV}}$ . I will return to the discussion of this fifth, default form of  $v_{\text{BE}}$  in section 5.

Now, unlike the previous analyses presented in section 4, the spanning analysis presented here offers a built-in solution for the fact that Mood/Tense can not only trigger allomorphy of  $v_{\text{BE}}$ , but also be discretely exponed. As we have seen, the features associated with Mood/Tense can determine the realization of BE/HAVE; both past tense and irrealis mood serve to (morphologically) neutralize the temporary-permanent contrast for BE/HAVE. Importantly, the conditioning effects of Mood and Tense each correlate with overt exponence. For example, the conditioning effects of past tense correlate with an overt realization of the Tense head, e.g., past tense *-li* in 25). Similarly, the conditioning/blocking effects of the subjunctive and infinitival moods correlate with an overt exponent of the Mood head, e.g., subjunctive FV *-e* and infinitival prefix *(o)ku-* (29)-(30). Crucially however, overt exponents of Mood and Tense cannot co-occur

<sup>21</sup> It is outside the scope of this paper to explain the collapse of the temporary-permanent contrast in the past tense. It is an interesting question as to why the permanent forms of BE/HAVE are limited to the present tense. For the purposes of this paper, I will set aside any further exploration of this topic.

<sup>22</sup> It is theoretically possible that the default form of  $v_{\text{BE}}$  realizes the span  $[v_{\text{BE}}\text{-Pred}]$ , as opposed to just  $[v_{\text{BE}}]$ . I have chosen the latter conceptualization for two reasons. First, given that irrealis mood yields the copular possessive, BE + *na*, with HAVE, it is not clear whether  $\text{Pred}$  is realized with  $v_{\text{BE}}$  or is simply unpronounced. Second, if we attribute the “blocking” effect of irrealis mood to a shortening of the insertion span targeting  $v_{\text{BE}}$  — which would allow  $\text{P}_{\text{HAVE}}$  to be realized in isolation under the rule in (45b) — it is favorable to treat this shortened span as just  $[v_{\text{BE}}]$ , as this would ensure that the blocking effect applies to both BE and HAVE, rather than just the latter.

with each other; we find no contexts in which BE/HAVE forms appear with both overt tense morphology and overt mood morphology.<sup>23</sup>

Under the current analysis, the fact that Mood/Tense features trigger allomorphy of  $v_{BE}$ , and that Mood/Tense morphology may co-occur with an overt realization of  $v_{BE}$  follows if the heads Mood and Tense form a distinct conditioning span that is sometimes targeted for insertion. The idea here is that the specific combination of features present in the span [Mood-T] conditions the realization of the adjacent span [ $v_{BE}$ -Pred- $P_{HAVE}$ ], and, in some cases, receives its own exponent. Assuming that a span of heads may trigger allomorphy of another adjacent span (Merchant 2015; Hanink 2018), this analysis ensures that both Mood and Tense are sufficiently local to condition the realization of  $v_{BE}$  regardless of ordering, and that they are jointly realized (to the exclusion of  $v_{BE}$ ). As such, this analysis resolves the aforementioned issues with both countercyclic blocking (section 4.1.1) and locality (section 4.1.2). The following **Table 2** illustrates the possible BE/HAVE surface forms according to the features present in two proposed spans.

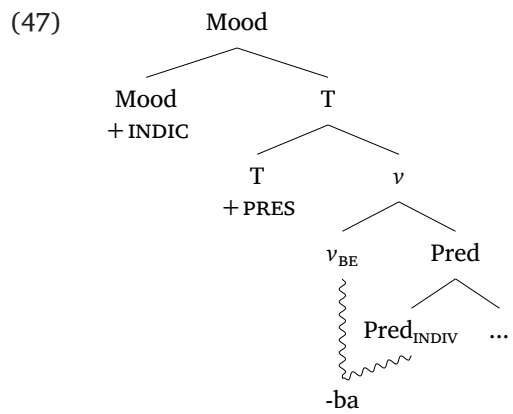
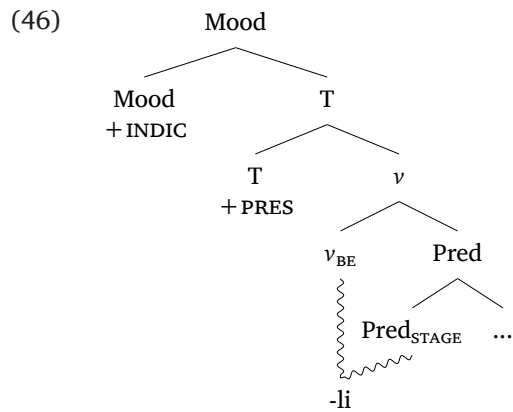
	<i>Conditioning Span</i>		<i>Insertion Span</i>			<i>Surface Realization</i>	
	<b>Mood</b>	<b>Tense</b>	$v_{BE}$	<b>Pred</b>	$P_{HAVE}$	<b>[Mood-T]</b>	<b>[<math>v_{BE}</math>-Pred-<math>P_{HAVE}</math>]</b>
BE	+ INDIC	+ PRES	–	INDIV	×	–	<i>-ba</i>
	+ INDIC	+ PRES	–	STAGE	×	–	<i>-li</i>
	+ INDIC	+ PAST	–	STAGE/INDIV	×	<i>-li</i>	<i>-li</i>
	+ SBJV	–	–	STAGE/INDIV	×	<i>-e</i>	<i>-ba</i>
	+ INF	–	–	STAGE/INDIV	×	<i>(o)ku</i>	<i>-ba</i>
HAVE	+ INDIC	+ PRES	–	INDIV	✓	–	<i>-jira</i>
	+ INDIC	+ PRES	–	STAGE	✓	–	<i>-dwiire</i>
	+ INDIC	+ PAST	–	STAGE/INDIV	✓	<i>-li</i>	<i>-dwiire</i>
	+ SBJV	–	–	STAGE/INDIV	✓	<i>-e</i>	<i>-ba + na</i>
	+ INF	–	–	STAGE/INDIV	✓	<i>(o)ku</i>	<i>-ba + na</i>

**Table 2:** Surface forms of BE/HAVE under the spans analysis.

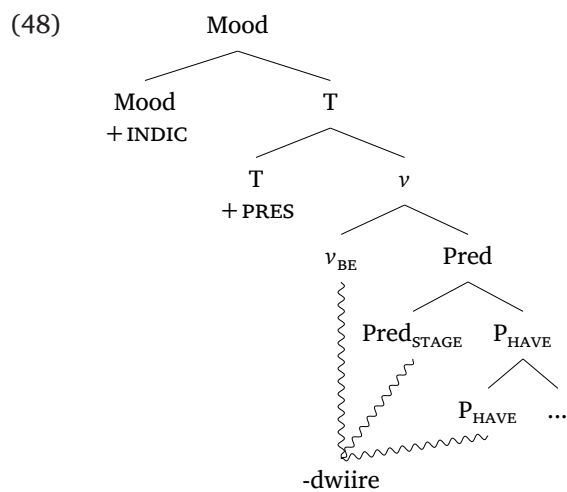
In the present indicative, Mashi encodes a temporary-permanent contrast in both its *be*-verbs and *have*-verbs. With respect to the current spans analysis, we can characterize this according to the features associated with the relevant spans; when the conditioning span [Mood-T] contains the features [+INDIC, +PRES], the temporary-permanent contrast is morphologically overt. When  $P_{HAVE}$  is absent, the Pred head that is merged determines which *be*-verb, *-li* or *-ba*, is realized

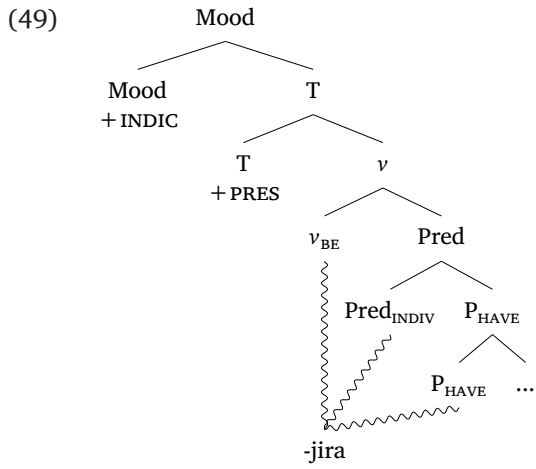
<sup>23</sup> In this context, I assume overt mood morphology to be any transparent realization of Mood features. As such, I assume that the feature [+INDIC] is generally null-marked in Mashi (as opposed to being realized by the final vowel *-a* (Nurse 2008)).

(46)-(47). Importantly, the conditioning span [Mood-T] is not targeted for insertion, as the present indicative is null marked in Mashi.

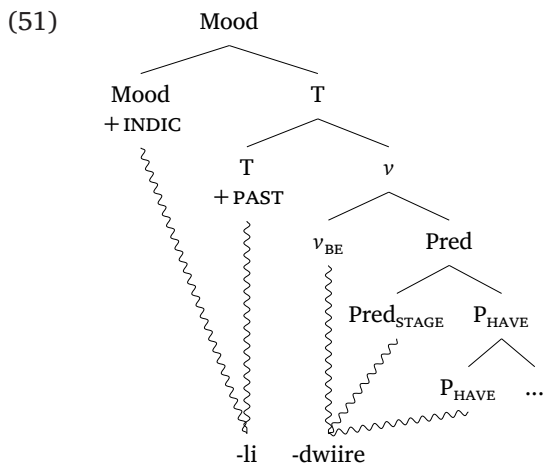
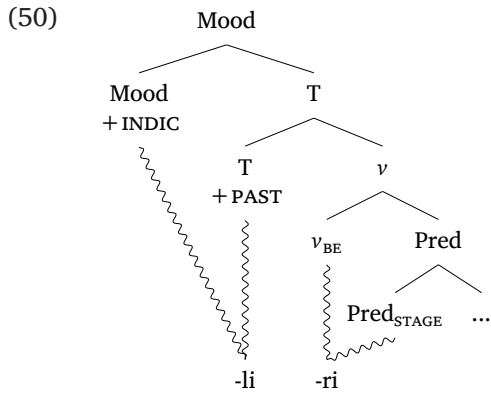


When  $P_{HAVE}$  is present, the Pred head instead determines which *have*-verb, *-dwiire* or *-jira*, is realized (48)–(49). As above, the span [Mood-T] is not targeted for insertion.

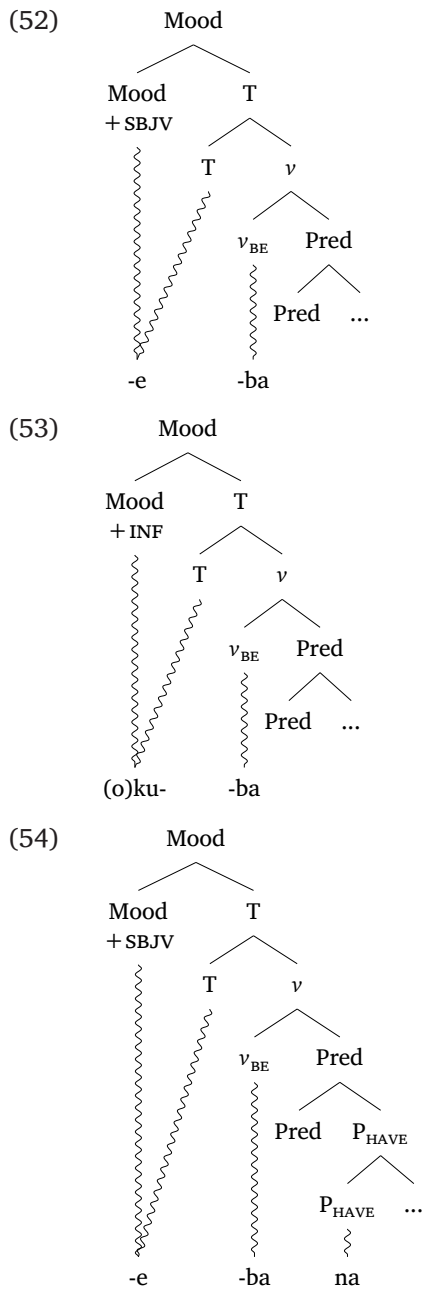




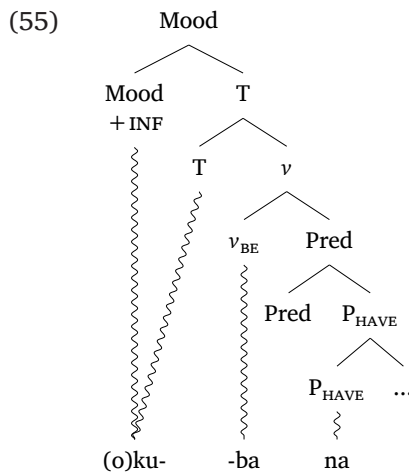
In contrast, when the conditioning span contains the features [+INDIC, +PAST], the temporary-permanent contrast is morphologically neutralized. In this context, BE obligatorily surfaces as the temporary *be*-verb form *-li* ([*-ri*]) (50), and HAVE obligatorily surfaces as the temporary *have*-verb form *-dwiire* (51), both regardless of which Pred head is present in the lower insertion span. In both cases, this neutralizing effect correlates with the overt realization of the span [Mood-T] as the past tense marker *-li*.



Finally, if the conditioning span [Mood-T] exhibits either the feature [+SBJV] or [+INF],  $v_{BE}$  is realized as the *be*-verb form *-ba*, regardless of what is below it (e.g., Pred/ $P_{HAVE}$ ). This results in the morphological neutralization of the temporary-permanent contrast, and also the blocking of “incorporation”; in (52)-(55), the insertion span is restricted to a single node,  $v_{BE}$ , leaving Pred unpronounced, and  $P_{HAVE}$  — if present — to be realized as the default *na* (see 45b). Like past tense, the conditioning effects of irrealis mood correlate with overt exponents of [Mood-T], e.g., infinitival *(o)ku-* and subjunctive *-e*.<sup>24</sup>



<sup>24</sup> For our purposes it is irrelevant that the linear order of  $v_{BE}$  and the exponent of [Mood-T] differs in the subjunctive (expressed by final vowel *-e*) and infinitive (expressed by prefix *oku-*). What matters here is that [Mood-T] conditions the realization of  $v_{BE}$  and may be discretely expounded.



To summarize this section, I presented an analysis of BE/HAVE allomorphy in Mashi that invokes the Spanning Insertion Hypothesis as presented in Merchant (2015). Specifically, I argued that the conditioning effects of Mood and Tense on the realization of BE/HAVE are best accounted for by stipulating the presence of two distinct spans: a higher span [Mood-T], and lower span, [ $v_{BE}$ -Pred- $P_{HAVE}$ ]. This analysis was shown to capture two distinct observations: that Mood/Tense features serve to jointly condition the realization of  $v_{BE}$ , and that overt Mood/Tense morphology co-occurs with surface realizations of  $v_{BE}$ . On the basis of this analysis I further defined an ordered set of VI rules that capture the full surface pattern of  $v_{BE}$  allomorphy.

## 5 Discussion

In this section, I would like to address two related consequences of the proposed VI rules (repeated below in 56), namely the existence of two homophonous  $v_{BE}$  allomorphs,  $-ba_1$  and  $-ba_2$ , and the ‘default’ status of the temporary forms  $-li$  and  $-dwiire$ .

- (56)
- $[v_{BE}] \rightarrow jira / \text{Mood}_{[+indic]} + \text{T}_{[+pres]} \boxed{\text{Pred}_{INDIV} + P_{HAVE}}$
  - $[v_{BE}] \rightarrow ba / \text{Mood}_{[+indic]} + \text{T}_{[+pres]} \boxed{\text{Pred}_{INDIV}}$
  - $[v_{BE}] \rightarrow dwiire / \text{Mood}_{[+indic]} \boxed{\text{Pred} + P_{HAVE}}$
  - $[v_{BE}] \rightarrow li / \text{Mood}_{[+indic]} \boxed{\text{Pred}}$
  - $[v_{BE}] \rightarrow ba$
  - $[P_{HAVE}] \rightarrow na$

Perhaps the most significant consequence of the proposed VI rules is that they result in two homophonous allomorphs ( $-ba$ ) of  $v_{BE}$  — one that applies strictly in the present indicative (56b) and one that serves as the elsewhere form (56e). While undesirable, this turns out to be a necessary stipulation in the analysis. The problem is that in the indicative,  $-ba$  must surface exclusively in the presence of  $\text{T}_{[+PRES]}$  and  $\text{Pred}_{INDIV}$ , but in the subjunctive/infinitive,  $-ba$  surfaces

regardless of what other material is present (e.g., Pred/P<sub>HAVE</sub>). By defining two distinct *-ba* allomorphs, we ensure that *-ba* — but not *-li* — surfaces with Pred<sub>INDIV</sub> in the present indicative (56b) and also that no other allomorph surfaces in the presence of Mood<sub>[-INDIC]</sub> (56e).<sup>25</sup> Crucially, these two environments cannot be captured by one synchronic rule; to keep the temporary-permanent contrast between *-li/-ba* in the present indicative and ensure that only *-ba* appears in Mood<sub>[-INDIC]</sub> contexts, we need to define two homophonous allomorphs, *-ba<sub>1</sub>* and *-ba<sub>2</sub>*.<sup>26</sup>

That being said, we do find reasonable support for the existence of two homophonous  $v_{BE}$  allomorphs in Mashi. First, we find analysis internal support in the fact that  $v_{BE}$  is sometimes realized in isolation rather than as part of a larger span. Consider the “blocking” effects of the subjunctive and infinitival moods; while *-ba* strictly realizes the span [ $v_{BE}$ -Pred<sub>INDIV</sub>] in the present indicative (56b), irrealis mood limits the size of the insertion span that realizes  $v_{BE}$ , resulting in  $v_{BE}$  being realized as *-ba* (56e) and P<sub>HAVE</sub> — if present — being realized as *na* (56f). Given that this blocking effect coincides with the morphological neutralization of the temporary-permanent contrast (i.e., only *-ba* is available), it is not unreasonable to suspect that *-ba* is the default realization of  $v_{BE}$  in isolation; Pred could simply be unpronounced. As such, one *-ba* allomorph realizes the span [ $v_{BE}$ -Pred<sub>INDIV</sub>] (56b), while the other realizes the span [ $v_{BE}$ ] (56e).

Assuming Mashi does exhibit three distinct copular verb forms, viz. *-li*, *-ba<sub>1</sub>* and *-ba<sub>2</sub>*, we would expect to find other languages that make a similar tripartite distinction. This is indeed what is observed; such a system is reported in closely related Kifuliiru (Bantu, JD63), which

<sup>25</sup> The distribution of *-ba* is another motivating factor in attributing the temporary-permanent contrast to distinct Pred heads (Myler 2016; 2018) rather than distinct  $v_{BE}$  heads. If *-li/-ba* coincide with distinct  $v_{BE}$  heads, it would be difficult to explain why *-ba* appears in irrealis environments regardless of interpretation; if  $v_{ba}$  is semantically specified as an individual-level copula, it should not appear in contexts where a stage-level (temporary) reading is available. If the temporary-permanent contrast instead stems from  $v_{BE}$  allomorphy, this distribution may be explained as the result of there being a default form of  $v_{BE}$  (56e).

<sup>26</sup> An anonymous reviewer rightfully points out that it is possible to capture the allomorphy facts in Mashi with an alternative analysis that does not posit two homophonous *-ba* allomorphs. In this alternative analysis, there is a single *-ba* allomorph in (ic), and it is the elsewhere form. Additionally, the past tense form of the copula [*-ri*], which I assume to be a phonological variant of *-li* (see footnote 12), is assumed to be a separate Vocabulary Item (ib). This analysis offers a straightforward account of why the temporary-permanent contrast is neutralized in the past tense; T<sub>PAST</sub> is included in the insertion span for *-ri*.

- (i) a. [ $v_{BE}$ ] → *li* / T<sub>[pres]</sub> \_\_\_\_\_ Pred<sub>STAGE</sub>  
 b. [ $v_{BE}$ ] → *ri* / T<sub>[past]</sub> \_\_\_\_\_ Pred  
 c. [ $v_{BE}$ ] → *ba* / \_\_\_\_\_ Pred  
 d. [ $v_{BE}$ ] → *dwiire* / T<sub>[realis]</sub> \_\_\_\_\_ Pred + P<sub>HAVE</sub>  
 e. [ $v_{BE}$ ] → *jira* / T<sub>[pres]</sub> \_\_\_\_\_ Pred<sub>INDIV</sub> + P<sub>HAVE</sub>  
 f. [P<sub>HAVE</sub>] → *na*

Though this analysis nicely accounts for the Mashi data, I ultimately adopt the VI rules in (56) since they better capture the parallelism between the BE and HAVE forms, which is one of the central observations in this paper. That said, these analyses do not necessarily need to be distinguished here. Importantly, both analyses capture the core theoretical proposal made in this paper: BE and HAVE are compositionally related.

exhibits three copular forms in predicative-environments, *-li*, *-ba*, and *-tula* (Finholt 2023). While the interpretative distinctions between these copulas differ from those in Mashi (see Finholt 2023 for discussion), the fact that a closely related language exhibits a three-way copular system at all provides significant typological evidence to support the analysis that there are two distinct *-ba* allomorphs in Mashi. Just like Kifuliiru, Mashi has three copular BE forms: *-li*, *-ba<sub>1</sub>*, and *-ba<sub>2</sub>*. The fact that there are two *-ba* allomorphs in Mashi may simply be attributed to a case of accidental homophony stemming from an unknown series of diachronic changes. I will leave any further explanation of such diachronic processes to future work. What is important here is that there is typological evidence to support the existence of three distinct copular BE forms in Mashi.

The second consequence of the proposed VI rules in (44) follows directly from the existence of two *-ba* allomorphs: if one *-ba* allomorph arises strictly in the present indicative (56b) and another serves as the elsewhere form (56e), then the temporary forms *-dwiire* (56c) and *-li* (56d) become de-facto default forms of HAVE and BE respectively, as they occur in much less specific contexts (e.g., [+/-PRES]). The exact reason why the temporary (“stage-level”) forms behave as default forms for BE/HAVE is unclear, and I will not attempt to resolve this issue here. That said, one possible analysis would be to assume that the temporary forms we see in the present indicative — where the temporary-permanent contrast is morphologically overt — realize unmarked forms of Pred. In this sense, the temporary-permanent distinction would be characterized by a distinction between unmarked Pred and marked Pred<sub>INDIV</sub>. This would allow for the temporary forms to surface in contexts where Pred is underspecified, e.g., in the presence of past tense (56c)–(56d). Of course, such an analysis would not explain why the temporary forms may appear with both temporary and permanent interpretations in the past tense, e.g., *-li* in (25)–(26). If the temporary forms realize unmarked Pred, we would expect them to be unavailable with permanent interpretations, which arise from the Pred<sub>INDIV</sub> head. I will leave any further discussion and/or account of such issues to future work.

## 6 Conclusion

In this paper, I present novel data on copular predication and possession in the Bantu language Mashi (JD53; Maho 2009). The central observation is that Mashi exhibits an interpretive overlap in its *be*-verbs and *have*-verbs; just as the two *be*-verbs, *-li/-ba*, lexicalize a distinction between “temporary” and “permanent” states, the two *have*-verbs, *-dwiire/-jira* lexicalize a distinction between “temporary” and “permanent” possession.<sup>27</sup> From these descriptive observations, this

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<sup>27</sup> What this says about languages that make a stage-individual distinction in their *be*- but not *have*-verbs (e.g., Spanish) is unclear. One possible interpretation of the analysis presented here is that such languages do extend the stage-individual contrast to HAVE, but this contrast is morphologically covert. I will not comment any further on this issue. What is important here is that the stage-individual (temporary-permanent) contrast must extend to HAVE constructions in at least some languages.



paper makes a theoretical point. Following a long line of previous research, I argue that the interpretive overlap between the *be/have*-verbs provides novel evidence of a compositional relationship between abstract BE and HAVE (Freeze 1992; Kayne 1993; Ritter & Rosen 1997; Harley 1998; Beavers et al. 2009; Myler 2016; 2018 a.o.). I specifically show that Mashi BE/HAVE allomorphy — which I characterize as  $v_{BE}$  allomorphy — provides strong support for an incorporation approach to decompositional HAVE whereby HAVE is derived via the incorporation of a locative element  $P_{HAVE}$  by a verbal head  $v_{BE}$  (Freeze 1992; Kayne 1993; Ritter & Rosen 1997; Harley 1998 a.o.). Under certain morphological conditions, e.g., in the presence of irrealis mood, both lexical *have*-verbs in Mashi are unavailable; in this environment HAVE is obligatorily realized as the copular possessive (i.e., WITH-possessive Freeze 1992) construction BE + comitative *na*. Given that the combination of BE and the comitative particle *na* is a common strategy for encoding possession in possession in Bantu languages in general (Gibson 2012; Halpert & Diercks 2014; Myler 2016 a.o.), I treat *na* as an overt exponent of the locative element  $P_{HAVE}$  described in incorporation accounts (Freeze 1992; Kayne 1993; Ritter & Rosen 1997; Harley 1998 a.o.).

To account for the interpretive overlap between BE/HAVE and fully capture  $v_{BE}$  allomorphy, I invoke a spanning insertion analysis modeled after that presented in Merchant (2015). This approach allows for a simpler analysis of complex allomorphic patterns by defining the target for Vocabulary Insertion as a contiguous series, or *span*, of heads, and defining locality conditions according to the adjacency of said spans. I propose two distinct spans of heads that are relevant to the realization of  $v_{BE}$  in Mashi. One span, namely [ $v_{BE}$ -Pred- $P_{HAVE}$ ], serves to directly realize  $v_{BE}$ . This span captures the general contrast between BE/HAVE, which is distinguished by the presence/absence of  $P_{HAVE}$ , and also the broader temporary-permanent distinction, which I attribute to a distinction between two Pred heads, Pred<sub>STAGE/INDIV</sub>. The second span, [Mood-T] is not directly involved in the composition of BE/HAVE, instead serving to condition its realization. By defining two distinct spans, [Mood-T] and [ $v_{BE}$ -Pred- $P_{HAVE}$ ] we account for both the conditioning effects of the features associated with Mood and Tense, and also the fact that Mood/Tense morphology may co-occur with overt exponents of  $v_{BE}$ .

In summary, this paper presents a novel decompositional approach to abstract HAVE that extends the stage-individual (or temporary-permanent) contrast (Carlson 1977; Kratzer 1995; Diesing 1990; 1992; Arche 2006 a.o.) to HAVE constructions, relates BE and HAVE via incorporation (Freeze 1992; Kayne 1993; Ritter & Rosen 1997; Harley 1998, a.o.), and defines the domain for insertion and allomorphic conditioning according to spans of heads (Merchant 2015).

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## Abbreviations

AGR : agreement

AUG : augment

COM : comitative

COMP : complementizer

COP : copula

DEM : demonstrative

INDIC : indicative mood

INF : infinitival mood

HAB : habitual

LOC : locative

MOD : modal

PERM : permanent

POSS : possessive pronoun

PRES : present tense

SBJV : subjunctive mood

SG : singular

SM : subject marker

TEMP : temporary

## Ethics and consent

The collection of human subject data was approved by the University of Kansas IRB Board. Data was collected as part of two separate IRB-approved projects: 00148259 - Bantu complementizers, and 00146220 - Documentation of African Languages in Kansas.

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## Competing interests

The author has no competing interests to declare.

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