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What's in a Bantu verb? Actionality in Bantu languages

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Abstract: The lexical and phrasal dimensions of aspect and their interactions with morphosyntactic aspectual operators have proved difficult to model in Bantu languages. Bantu actional types do not map neatly onto commonly accepted categorizations of actionality, although these are frequently assumed to be universal and based on real-world event typologies. In this paper, we describe important characteristics and major actional distinctions attested across Bantu languages. These, we argue, include complex lexicalizations consisting of a coming-to-be phase, the ensuing state change, and the resultant state; sub-distinctions of coming-to-be phases, and other issues of phasal quality. Despite these fine-grained distinctions in phasal structure and quality, evidence for a principled distinction between activity- and accomplishment-like predicates is mixed. We review the current state of evidence for these characteristics of Bantu actionality and sketch methodological directions for future research.

Keywords: Bantu, aspect, actionality, lexical semantics

1 Introduction

1.1 The challenge of Bantu actionality

Typological research suggests that languages privileging inchoative verbs, which encode the transition into a state rather than simply the state itself, may be more common than languages that treat states themselves as basic (Nichols 2015). In most languages with large numbers of inchoative verbs,

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ongoing states are expressed using imperfective morphology, while perfective morphology is used to target the state change itself,¹ as in the Squamish (Salish, Canada; squ)² example in (1).

- (1) Squamish³
Chen t'ayak' ti natlh i chen na7-xw wa t'a-t'ayak'
 1S.SG angry DET morning and 1B.SG RL-still IPFV REDUPL-angry
 'I got angry [PFV] this morning and I'm still mad [IPFV].'
 (Bar-el 2005: 94)

In the Bantu language family, as in the broader Niger-Congo phylum (see e.g. Welmers 1973), most languages show a somewhat reversed general pattern: many ongoing states are expressed using perfective (or perfect) morphology, while imperfective morphology with these verbs expresses a coming-to-be phase (among other readings). Some examples are shown in (2)–(3) for Badiaranke (pbp), an Atlantic language spoken in Senegal, Guinea, and Guinea-Bissau. In Badiaranke, the perfective is used with both stage-level (2a) and individual-level states (2b).⁴ (2c) shows that with a more activity-like verb, the perfective gives a reading of a state of affairs that has already passed. In contrast, the imperfective form in (3a) denotes the process preceding a state change. With activity-like 'sing' in (3b), the imperfective, as expected, construes the activity of singing as ongoing.

¹ However, variations and complications abound (see e.g. Weber 2016 on Blackfoot [Algic, Canada; bla]), and most in-depth research shows sub-classes of stative and inchoative verbs (e.g. Tatevosov 2002; Arkadiev 2009; Kiyota 2008).

² At their first mention, we give language names along with information on language family, approximate geographic locations, and three-letter ISO 639–3 codes. For Bantu languages, we first list "Guthrie codes" based on Guthrie's (1971) classification, most recently updated by Maho (2009); we take our codes from this latter work. Generally speaking, the initial letter represents a geographical area or "zone", while the numbers represent smaller groups (the first digit) followed by individual language numbers (the second digit) and occasionally specific dialects or varieties (a third number or letter). We generally write Bantu language names without the initial prefixes that are obligatory in the languages' autonyms, except when the prefixed version is the most common English term (e.g. Kinyarwanda).

³ We have standardized interlinear glosses, which therefore might differ from the original sources. Where no morpheme-by-morpheme glosses were available, we have used available descriptions and personal knowledge.

⁴ The terms *stage-level* and *individual-level* were coined by Carlson (1977) to distinguish between predicates that hold only for a certain time (stage-level) vs. the entire lifespan of existence of an entity (individual-level).

(2) Badiaranke

- a. *pa:ki rəs-akō de*
 yesterday be_tired-PST.1SG.PFV AFF.DECL
 'Yesterday I was tired[PFV]' (But now I'm not tired)
 (Cover 2010: 63)
- b. *na:jē ŋka na:jemma mi:rə-bə de*
 your_mother and my_mother resemble.RECP-PL.PFV AFF.DECL
 'Your mother and my mother resemble[PFV] each other.'
 (Cover 2010: 68)
- c. *jāka raŋ-ə de*
 here study-1SG.PFV AFF.DECL
 'Here, I studied[PFV].'
 (Cover 2010: 64)

(3) Badiaranke

- a. *pa:ki mpə-lēb-ā wē waina mpə-fitf-o:*
 yesterday 3SG.IPFV-call-1SG.NSBJ DET that_time 3SG.IPFV-be_clean-PASS
 'Yesterday when he called me, he was becoming clean[IPFV].'
 (Cover 2010: 72)
- b. *ka-je:r-e k-ə mpə-tfīm-a*
 INF-go_home-INF be-3SG.PFV 3SG.IPFV-sing-DETRANS
 'She was heading home, singing[IPFV] to herself.'
 (Cover 2010: 71)

This phenomenon is also pervasive in Bantu, where the use of perfective or perfect-like morphology to describe present states has been observed in descriptions from as early as the eighteenth century (see e.g. Cuénot 1776: 32; Torrend 1891: 238–239; Schumann 1899: 64–65; Cole 1955: 277; Nurse 2008: 97). The general pattern is illustrated in (4)–(5) with examples from Southern Ndebele (S407, South Africa; nbl). (4) shows that the activity-like verb *cula* 'sing', which does not encode entry into a state, depicts a past state of affairs with the perfective suffix *-ile* (as in (4a), which can be rendered in English as Perfect or Simple Past, depending on the context) and as an ongoing state-of-affairs with the present (imperfective) (4b).

(4) Southern Ndebele

- a. *uSipho u-cul-ile*
 1A.Sipho SP₁-sing-PFV.DJ
 'Sipho sang.' (or 'Sipho has sung')

- b. *uSipho u-ya-cul-a*
 1A.Sipho SP₁-DJ-sing-FV
 ‘Sipho is singing.’
 ‘Sipho sings.’
 (Crane fieldnotes)

In contrast, the verb *hlakanipha* ‘be(come) clever’ has a present state reading (‘be clever’) with the perfective suffix (5a). In the present (imperfective) form in (5b), the process leading to the state is highlighted.

- (5) Southern Ndebele
 a. *uSipho u-hlakaniph-ile*
 1A.Sipho SP₁-be(come)_clever-PFV.DJ⁵
 ‘Sipho is clever.’ (he’s wise/intelligent)
 b. *uSipho u-ya-hlakaniph-a*
 1A.Sipho SP₁-DJ-be(come)_clever-FV
 ‘Sipho is becoming clever.’ (e.g. his test scores are showing improvement)
 (Crane fieldnotes)

Verbs such as Southern Ndebele *hlakanipha* – which we will call *change-of-state* verbs (see Section 1.2 for more detailed definitions) – are common across Bantu, and are used to express characteristics that are frequently expressed adjectivally in languages like English.⁶

Membership in the class of change-of-state verbs is not always consistent across languages. For example, Kwanyama (R21, Namibia and Angola, kua) *hala* ‘want’ behaves as a change-of-state verb (with the present state invoked with Past morphology), while Totela (K41, Namibia and Zambia; ttl) *saka* ‘want, like, love’ does not, using the present (unmarked) form to convey a current state (6)–(7).

⁵ The term *disjoint*, in general terms, refers to a verbal form that stands in alternation to a formally distinguishable form (typically called *conjoint*), the two of which are often associated with an information-structural difference in the interpretation of the verb and/or a following element (Van der Wal 2017: 15). The conjoint is typically analyzed as having co-constituency with and/or focus on the following element, while the disjoint indicates a lack of co-constituency and/or verbal focus. See the papers in Van der Wal & Hyman (2017) for an overview of this phenomenon along with language-specific studies.

⁶ One exception we are aware of is Nzadi (B865, DRC, mis), which appears to have very few change-of-state verbs. The two documented change-of-state verbs, *kwa* ‘suffice’ and *lé* ‘be(come) tired’, have present state readings with perfect morphology (Crane et al. 2011: 123–124).

- (6) Kwanyama
O-nda hal-a eenghaku edi
 IV-SP_{1SG}.PST want-FV 10.shoe DEM₁₀
 'I want these shoes.'
 (Zimmermann & Hasheela 1998: 118)
- (7) Totela (Zambian variety)
ndi-sak-á echiyuni
 SP_{1SG}.want-FV 7.bird
 'I want a bird.'
 (Crane 2011: 174)

As pointed out by Koptjevskaja-Tamm et al. (2007: 179), differences such as those between Kwanyama *hala* and Totela *saka* suggest differences in the lexical semantics of the verbs in question. Differences between the nearest translational equivalents highlight the importance of careful and cross-linguistically comparable study of actional structures. Crane & Fleisch (2016, forthcoming) show that even cognate forms in closely related languages can evince important differences at the level of actionality.

Since they have to account for phenomena such as change-of-state verbs, analyses of Bantu verb classes have frequently deviated from classic systems such as that presented in Vendler (1957, 1967). Persohn (2018) argues that the Vendlerian system, which has dominated much of the cross-linguistic literature on actionality (Bar-el 2015) is inadequate to capture actionality in Bantu, masking crucial distinctions and making imprecise predictions. Various analytical solutions to the problem of Bantu actionality have been pursued; these are detailed at some length in the online appendix to this paper.

Our main purpose in the present article is to abstract away from particular theories and describe the ingredients – the verbal phasal structures and their characteristics – that we think are necessary for an adequate understanding of actionality in Bantu. In particular, we argue that Bantu languages allow for complex lexicalizations in which the same basic lexical form can encode the lead-up to a state-change, the change itself, and the resultant state. Not all change-of-state verbs encode all of these elements, however, and which phases are encoded by which change-of-state verbs can differ from language to language. The qualitative features (see e.g. Dik 1997) of the phases can also differ, and these differences can have morphosyntactic ramifications. By describing some of the diversity seen in Bantu actional categories and identifying issues for further research, we aim to advance the description and analysis of Bantu actionality –

and with it, the typological understanding of which aspectual distinctions verbs can lexically encode.

Because of the analytical challenges they present, we focus particularly on the class of change-of-state verbs and the variation seen within that class, while also noting some prominent characteristics of other kinds of Bantu verbs. While we draw on literature from across the Bantu family, we give examples primarily from the Bantu languages we know best: Kwanyama, Totela, Southern Ndebele, Nyakyusa (M31, Tanzania; nyy), and Xhosa (S41, South Africa, xho). These languages represent different geographic and genetic subgroupings within Narrow Bantu,⁷ but they nevertheless show striking resemblances in the domain of actionality, and may therefore be considered reasonably representative, at least of languages outside of the North-Western group, where more research is required.

We focus on the denotations of single occurrences (*single event readings*) of the lexicalized state-of-affairs. Iterative or series readings, as well as habitual/generic ones, tend to be more predictable and therefore offer less insight into the dimension of actionality.

The remainder of this paper is organized as follows: In Section 1.2, we discuss our basic theoretical assumptions and define key terminology as we use it throughout the paper. In Section 2, we describe the possible readings of imperfective and perfective forms in many Bantu languages. These patterns, we argue, provide strong indications of complex phasal lexicalizations. In Section 3, we describe the parts that make up these complex lexicalizations and some of their qualitative variations; we also suggest tests to target the various phases and their qualities. We also discuss non-change-of-state verbs and some of their distinguishing characteristics. The aim of Section 3 is not to offer an exhaustive classification of actional types in Bantu, but rather to describe some of the basic elements that need further study in order to enhance our understanding of actionality as a Bantu-wide phenomenon, as well as within particular Bantu languages. Section 4 contains notes on the methodology of testing for actionality; the paper concludes in Section 5. The online appendix describes the theoretical approaches that have been most prominently applied to Bantu languages, along with a brief problematization of each.

⁷ See e.g. Nurse (2008: 9–10), Maho (2009), Grollemond et al. (2015) for more on the Narrow Bantu classification, which we take as excluding Grassfields Bantu, Ekoid Bantu, and other Bantoid languages.

1.2 Theoretical and terminological preliminaries

Our subject matter goes by many names. Throughout this paper we speak of *actionality*, following Johanson (2000) and Tatevosov (2002) among others. Other labels found in the literature include *lexical aspect* (e.g. Olsen 1994), *verb aspect* (e.g. Dowty 1979), *Aristotelian aspect* (Binnick 1991), *situation type* (Smith 1997 [1991]), *aktionsart* (e.g. Goedsche 1940; Garey 1957) or *aspect₂* (Sasse 2002); for a list of additional labels see Sasse (2002: 203).

We adopt the basic assumption of what Sasse (2002), drawing on Bickel (1997), calls *radical selection theories* (see Croft 2012: 48–51 for a basic overview). As Sasse (2002: 262–263) points out, aspectual meaning can be understood to arise through the interaction of several strands or tiers of meaning. Following Binnick (1991), actionality can be understood as the aspectual potential of a lexical verb (Sasse's first tier), including its possible argument configurations and their bounding potential (Sasse's third tier). That is, actionality encodes the constituent phases and boundaries that make up a state-of-affairs.

According to radical selection theories, the dimension of actionality and that of morphosyntactic operators – the latter dimension is also commonly referred to as *aspect proper* (Binnick 1991) or *viewpoint aspect* (Smith 1997 [1991]) – stand in an operator-operandum relationship. The layers of actionality, as noted above, contain the subparts (phases and boundaries) that make up a state-of-affairs. Morphosyntactic operators in turn “pick out” or “select” (Sasse 2002: 223) a specific phase or phases from the lexical dimension of actionality and relate them to a point of reference, thus creating what Comrie (1976: 3) famously described as “different ways of viewing the internal temporal constituency of a situation”.⁸ Radical selection theories therefore provide a useful framework for considering the essential contributions of lexical items to aspectuality, and to comparing actional categories within and across languages.

We also assume that actional meaning is language-specific rather than determined by logical universals based on real-world events. That is, verbs that at face value seem to be translational equivalents may, in fact, have different underlying phasal structures. For example, Spanish (Romance; spa) and Squamish (Salish, Canada; squ) both have verbs that can translate into English as ‘get angry’. However, Spanish *enfadarse* ‘get angry’ yields a coming-to-be reading in the (imperfective) progressive aspect (8), while its Squamish translational equivalent

⁸ See the online appendix for a discussion of some of the different ways in which this operator–operandum relationship has been understood in the literature, especially regarding Bantu languages.

t'ayak' has a stative reading with imperfective aspect (9). Since in both Spanish and Squamish, the imperfective aspect is normally used to refer to states (when such a reading is available), this behavior indicates that Squamish *t'ayak'*, but not Spanish *enfadarse* encodes the resultant state of anger. The fact that the formally unmarked Squamish perfective has a state-change meaning is further indicative of the fact that Squamish *t'ayak'* is not a Vendlerian state, but additionally lexicalizes a left boundary (the entrance into the state of anger).

(8) Spanish

Se est-á enfada-ndo (y se va a
REFL COP-PRS.3SG get_angry-GER and REFL go.PRS.3SG PREP
enfad-ar)

get_angry-INF

'She is getting angry (and she is going to get angry).'

NOT: 'She is angry.'

(Marín & McNally 2011: 486; personal knowledge)

(9) Squamish

Chen t'ayak' ti natlh i chen na7-xw wa t'a-t'ayak'

1S.SG angry DET morning and 1B.SG RL-still IPFV REDUPL-angry

'I got angry this morning and I'm still mad.'

(Bar-el 2005: 94)

Although *enfadarse* and *t'ayak'* have the same logical entailment – becoming angry leads to a state of being angry – the verbs in (8) and (9) have different aspectual scopes. Based on similar cases, Bickel (1997, 2000) emphasizes the need to separate logical form and aspectual scope, stressing that morphosyntactic aspect operates on (sometimes pragmatically enriched) semantic representations, rather than on universal logical forms. In a similar vein, Botne (2003) discusses verbs that translate as 'to die' across a genetically and geographically diverse set of languages and shows that their specific interactions with morphosyntactic aspect are indicative of different lexicalized phasal configurations. Languages may therefore differ in the phasal configurations they lexicalize (i.e. how much and which specific parts of a state-of-affairs are lexicalized), as well as in the more specific semantic characteristics of these phases (Bar-el 2015; Botne 1981: 77–100, Botne 2003; Bickel 1996, Bickel 1997; Tatevosov 2002).

We therefore follow typologically oriented semantic research on aspect and actionality (e.g. Bar-el 2015; Filip 2011; Tatevosov 2002) that rejects the a priori assumption of universal actional classes. Tatevosov (2002: 393–394), for instance,

exhorts researchers to recognize that actional characteristics are “linguistic facts that have to be recognized via investigation, and not to be taken as pre-theoretical assumptions”. As Krifka (1998: 207) reminds us, speakers of a language do not communicate real world events, but rather apply language-specific tools to shape their linguistic construals. Similarly, Dik (1997: 124–125) notes that “[states-of-affairs] present a certain codified ‘view’ of reality rather than being a part of reality themselves [...] and may thus receive different interpretations and representations across different languages”.

Despite these warnings, academic discourse about actionality has traditionally centered around Vendler’s (1957, 1967) pioneering classification of verbal expressions as states, achievements, accomplishments, or activities (see also the online appendix to this paper). Vendler’s classification originally dealt with verbal expressions in English and was not intended as a classification of lexemes. However, it has come to be understood by many researchers – albeit with minor tweaks, such as Smith’s (1997 [1991]) addition of semelfactives – as a universal classification of actionality (see e.g. Behrens 1998: 286). Although numerous other frameworks have been proposed that either add to or diverge from Vendler’s system (e.g. Breu 1984, Breu 1994, and Breu 1998; Tatevosov 2002; Croft 2012), Tatevosov (2002: 322) notes that “the study of actionality since Vendler’s (1957, 1967) pioneering work has shown but little typological awareness ... [A] common (often tacit) assumption is that notions on which Vendlerian classes are based are logically universal, hence are not subject to crosslinguistic variation”. It is therefore not surprising, as Ebert (1995: 186) observes, that in descriptive grammars “[m]ost often it is assumed that a verb or verb phrase has the same actional character as its closest English counterpart”. Noteworthy positive exceptions include Nichols (2010) on Ingush (Nakh-Dagestanian, Ingushetia; ISO 639–3: inh), and Hellwig (2011) on Goemai (Chadic, Nigeria; ank).

Throughout this paper, we use the following definitions:

- We use *state-of-affairs* as a cover term for *events*, *situations*, *actions* and the like. This corresponds to Comrie’s (1976) use of *situation*.
- The term *change-of-state* is used to refer to those verbs whose aspectual potential includes a transition from one state to another on the part of the subject. This definition differs from Marín & McNally’s (2011) usage, for whom the term corresponds to what we call a *coming-to-be phase*, that is, the lexically encoded phase consisting of the lead-up to the point of change.
- The term *state change* is used to refer to a type of reading in which the change from one state to another is profiled, in opposition to an ongoing-state reading. Jerro (2017) refers to this as an *inchoative* reading and Botne (2010) calls it a *situation-centered* reading.

- *Inchoative verbs* form a subclass of change-of-state verbs, namely those verbs that lexicalize a resultant state. An established alternative term is *ingressive* (e.g. Comrie 1976). The term *inchoative*, however, is the most widely used in current literature on Bantu languages (Rose et al. 2002, among others).
- A *resultant state* denotes a state, applicable to the subject, that forms part of the aspectual potential of a verb, and that follows a preceding phase or boundary denoting the change-of-state. This approximately corresponds to Parson's (1990) *target state*, which has been prominently employed by Kratzer (2000). For instance, in (5) above the resultant state is that of being clever. Our definition of resultant state differs from Parson's (1990: 234) use of the term: "for every event *e* that culminates there is a corresponding state that holds after ... If Mary eats lunch, then there is a state that holds forever after: The state of Mary's having eaten lunch." Rather than such experiential states, we refer to states of being that, we argue, are part of the phasal make-up of some verbs but not of others. For a discussion of resultant states and the grammatical and semantic elements involved from a different theoretical angle, see Nedjalkov (1988).
- The terms *left* and *left-delimited*, as well as their counterparts *right* and *right-delimited*, refer to the presence of boundaries that precede (left) or follow (right) a phase in the dimension of actionality.
- The term *phasal qualities* denotes semantic features that a specific phase may have (vis-à-vis phasal configurations) (see e.g. Dik 1997; Verhoeven 2010).

2 (Im)perfectivity and change-of-state verbs in Bantu

As noted in the introduction, change-of-state verbs have typologically uncommon interactions with markers of grammatical aspect. In this section, we give the most commonly attested possible readings with imperfective and perfective forms. For discussion of how the perfective and imperfective aspectual operators have been modelled for Bantu languages, see the online appendix.

Change-of-state verbs often have non-stative readings when paired with imperfective aspect. With most change-of-state verbs, imperfective forms can have iterative and/or habitual readings, as in (10a), as long as the state-change

is one that can be construed as repeatable. Some change-of-state verbs additionally have coming-to-be readings in imperfective frames, as in (10b).

(10) Nyakyusa

a. *i-kv-hobok-a*

SP₁-PRS-be(come)_angry-FV

‘S/he becomes happy.’ (e.g. on each particular occasion)

(Persohn 2017: 132)

b. *i-kv-kalal-a*

SP₁-PRS-be(come)_angry-FV

‘S/he becomes angry.’

‘S/he is becoming angry.’

(Persohn 2017: 128–129)

Example (11) shows possible readings of the Totela completive (perfective) prefix *a-* and the change-of-state verb *komokwa* ‘be/get surprised’. As noted above, perfective morphological forms are frequently used with change-of-state verbs to describe ongoing states (11a). Perfectives can often also be used to describe the state change itself (11b).

(11) Totela

a. *Ndā-komok-w-a!*

SP₁.CMPL-surprise-PASS-FV

‘I am surprised!’

b. *Ndā-komok-w-á sunu!*

SP₁.CMPL-surprise-PASS-FV today

‘I got surprised today!’

(Crane 2011: 116, 127)

Perfective forms can also refer to the process leading up to (and including) the state change, as shown in the Southern Ndebele examples in (12) with *nona* ‘grow fat’, where the temporal adverbial must refer to the entire period of growth, and not just the point of change.

(12) Southern Ndebele

a. *Ikomo i-non-ile*

9.cow SP₉-grow.fat-PFV.DJ

‘The cow is fat.’

‘The cow got fat.’ (e.g. last year)

b. #Izolo *i-komo i-non-ile*⁹

yesterday 9-cow SP₉-grow.fat-PFV.DJ

Intended: ‘Yesterday, the cow became fat.’ (i.e. after a period of growth, it passed the subjective point where it could be called fat)

(Crane fieldnotes)

Therefore, depending on context, even identical verb forms can target both the phase prior to the state change and the resultant state. That is, a single verb can lexically encode not only the change and the resultant state, but also the preceding phase encoding the lead-up to the change, which we call the (temporally extended) coming-to-be phase. Such complex lexicalizations are, in general, not accounted for in mainstream radical selection theories, or indeed, in the vast majority of approaches to actionality (see online appendix for further details).

Before we describe these phases and their properties in further depth, we wish to make one more analytical note. In some languages, forms described as perfects (or anteriors) have the present-state readings we describe as arising with perfective morphology, and it is often assumed that the state readings arise through implicature (see e.g. Nurse 2008: 97–98): a past change leads to an ongoing state. As is cross-linguistically common (Bybee et al. 1994: 105), Bantu forms that are now labeled perfect or perfective often have their roots in resultative forms, although grammaticalization paths may differ from the simple resultative > perfect (anterior) > perfective pattern of change described by Bybee et al. (1994; see also Crane 2012; Botne 2010 for discussion). The line between perfects and perfectives is often somewhat blurry, with the same form being used with both kinds of functions. In any case, it is clear that in many languages, the grammatical markers that have ongoing-state readings with change-of-state verbs do not imply continued relevance when used with non-change-of-state verbs: that is, they do not have the semantics typically ascribed to forms labeled “perfect”. Crucially, whether or not the relevant markers – however they are labeled – can target an ongoing state appears to depend on the verbs themselves. We therefore analyze this possibility as a property of the verbs’ phasal make-up rather than solely the effect of perfect or perfective (or resultative) semantics.

⁹ We use the # symbol to indicate examples that are grammatical but semantically anomalous.

3 Ingredients of Bantu actionality

While Bantu verbs can lexically encode (at least) a coming-to-be phase and its resultant state, not all change-of-state verbs appear to encode both of these phases (see e.g. Botne 2003; Botne & Kershner 2008). Change-of-state verbs are not a monolithic group, but show significant diversity. Some essential points of divergence are the lexical encoding (or lack thereof) and qualitative features of the coming-to-be phase, the change itself, and the resultant phase. In Sections 3.1–3.3, we illustrate some of this diversity, and suggest tests that show promise of broad cross-Bantu applicability for targeting these phases.

We also discuss the phenomenon, evident in at least some languages, of a smaller group of stative verbs that express stative meanings with imperfective, rather than perfective morphology (Section 3.4), as well as the question of the relative prominence of the activity/accomplishment distinction (Section 3.5).

In the following discussion, when we say that a phase is lexically encoded, we mean that it can be targeted by morphosyntactic operators in non-coerced contexts.

3.1 Coming-to-be phase

In most Bantu languages with a large set of change-of-state verbs, there appear to be differences in how these verbs interact with imperfective forms, as seen for Southern Ndebele in (13)–(16). In (13a), the default reading of the present form depicts the coming-to-be as in progress. A habitual reading is also available.

- (13) Southern Ndebele
- a. *Ikomo i-ya-non-a*
 9.cow SP₉-PRS.DJ-become_fat-FV
 ‘The cow is getting fat.’
 ‘The cow gets fat.’ (e.g. every year)
 - b. *Ikomo i-non-ile*
 9.cow SP₉-become_fat-PFV.DJ
 ‘The cow is fat.’
 (Crane fieldnotes)

In contrast, in (14a) and (15a), the only possible reading for most speakers is that of a habitual state change.

(14) Southern Ndebele

a. *uSipho u-ya-thul-a*1A.Sipho SP₁-PRS.DJ-keep_quiet-FV

‘Sipho keeps quiet.’

NOT: ‘Sipho is growing quiet.’

b. *uSipho u-thul-ile*1A.Sipho SP₁-keep_quiet-PFV.DJ

‘Sipho is quiet.’ (stage or individual-level interpretation)

(Crane fieldnotes)

(15) Southern Ndebele

a. *uSipho u-ya-qumb-a*1A.Sipho SP₁-PRS.DJ-get_constipated-FV

‘Sipho gets constipated.’ (frequently)

NOT: ‘Sipho is getting constipated.’

b. *uSipho u-qumb-ile*1A.Sipho SP₁-get_constipated-PFV.DJ

‘Sipho is constipated.’

(Crane fieldnotes)

With *lambda* ‘be(come) hungry’, the habitual reading has been metaphorically extended to give the idiomatic reading seen in (16a), in which the subject is described as being ‘poor’, a straightforward extension of an inference about someone who habitually goes hungry.

(16) Southern Ndebele

a. *uSipho u-ya-lamb-a*1A.Sipho SP₁-PRS.DJ-get_hungry-FV

‘Sipho is poor.’

Generally NOT: ‘Sipho is getting hungry.’¹⁰b. *uSipho u-lamb-ile*1A.Sipho SP₁-get_hungry-PFV.DJ

‘Sipho is hungry.’

(Crane fieldnotes)

We interpret these differences as suggesting that some change-of-state verbs lexically encode a coming-to-be phase (13), and that others merely encode the

¹⁰ Speakers differed in their judgments of whether such a reading is possible. In any case, it is not the default reading or usage of the construction.

(point of) change itself (14)–(16), possibly followed by a resultant state. While most change-of-state verbs have habitual readings (assuming the verb refers to a state change that can occur more than once across a subject's lifetime), only a subset of change-of-state verbs also allow for a progressive-like coming-to-be reading. The difference is illustrated again in (17) for Nyakyusa, in which most change-of-state verbs additionally have future-oriented readings. Examples (17a) and (17b) show verbs that allow a coming-to-be reading, while (17c) shows a verb where only future-oriented and habitual readings are allowed. Past imperfective forms often show a similar divide (although future-in-the-past readings may not be available).

(17) Nyakyusa

a. *i-kv-gaal-a*

SP₁-PRS-be(come)_drunk-FV

'S/he is getting drunk.' (coming-to-be reading)

'S/he gets drunk.' (regularly)

'S/he will get drunk.'

b. *i-kv-kalal-a*

SP₁-PRS-be(come)_angry-FV

'S/he is getting angry.' (coming-to-be reading)

'S/he gets angry.' (regularly)

'S/he will get angry.'

c. *i-kv-hobok-a*

SP₁-PRS-be(come)_happy-FV

'S/he becomes happy.' (regularly)

'S/he will become happy.'

NOT: 'S/he is becoming happy.' (no coming-to-be reading)

(adapted from Persohn 2017: 126–132)

Similarly, Persohn (2017) argues, the phasal verb 'begin' can also select lexically encoded coming-to-be phases when available with change-of-state verbs in Nyakyusa; otherwise, only incipient state and habitual readings (when felicitous) are allowed (18).

(18) Nyakyusa

a. *and-ile* *vkv-gaal-a*

SP₁.begin-PFV INF-be(come)_drunk-FV

'S/he has begun to get drunk.' (regularly or right now)

b. *and-ile* *vkv-kalal-a*

SP₁.begin-PFV INF-be(come)_angry-FV

'S/he has started to become angry.' (regularly or right now)

- c. *and-ile* *ɔkv-hobok-a*
 SP₁-begin-PFV INF-be(come).happy-FV
 ‘S/he has begun to be happy.’
 ‘S/he has begun to become happy.’ (regularly; NOT: right now)
 (adapted from Persohn 2017: 127–133)

Examples (17)–(18) are from Nyakyusa, but imperfective forms and collocation with ‘begin’ show cross-linguistic promise as tests for the availability of a coming-to-be phase.

Verbs that lexically encode coming-to-be phases, such as those in (18a–b), show class-internal variations that suggest further subdivisions. For example, Persohn (2017, 2018), following Botne’s (2008) work on the Malawian variety of Ndali (M301; ndh), proposes two types of change-of-state verbs with temporally extended coming-to-be phases in Nyakyusa, which he terms “transitional accomplishments” and “transitional achievements”, respectively.¹¹ These two subtypes of verbs show consistently different behavior in several contexts, although both encode coming-to-be phases, as shown in (19). We only consider coming-to-be readings in the present tense, setting aside iterative, habitual, and future-oriented readings.

- (19) Nyakyusa
 a. *i-kv-gaal-a*
 SP₁-PRS-be(come)_drunk-FV
 ‘S/he is getting drunk.’
 (Persohn 2017: 126)
 b. *i-kv-fugam-a*
 SP₁-PRS-kneel-FV
 ‘S/he is kneeling down.’ (i.e. in the process of entering a kneeling position)
 (Persohn fieldnotes)

Transitional accomplishments depict an ongoing coming-to-be phase with the persistive (‘still’) (imperfective) simple present form, as well as with the phasal auxiliary verbs *mala* ‘finish’ (available with agent or force subjects) and *leka* ‘cease’. With transitional achievements, the coming-to-be phase cannot be selected in these contexts: the forms are either infelicitous or “can be resolved through repair readings” that target the result state or the

¹¹ See the online appendix for discussion of the model-internal implications of these labels, which we adopt for convenience of exposition.

Table 1: Transitional accomplishments vs. transitional achievements in Nyakyusa.

Test	Transitional accomplishment	Transitional achievement
Persistent of present	<i>a-kaali i-kɔ-gaal-a</i> SP ₁ -PERS SP ₁ -PRS-be(come)_drunk-FV 'S/he is still getting drunk.' [process] (Persohn 2017: 127)	<i>a-kaali i-kɔ-fugam-a</i> SP ₁ -PERS SP ₁ -PRS-kneel-FV 'S/he is still kneeling.' [result] (Persohn 2017: 129)
-mala 'finish'	<i>a-mal-ile ɔkɔ-gaal-a</i> SP ₁ -finish-PFV 15-be(come)_drunk-FV 'S/he has finished getting drunk (purposefully).' [process complete] (Persohn 2017: 128)	<i>a-mal-ile ɔkɔ-fugam-a</i> SP ₁ -finish-PFV 15-kneel-FV 'S/he has finished kneeling.' [result state terminated] (Persohn 2017: 130)
-leka 'cease'	<i>a-lek-ile ɔkɔ-gaal-a</i> SP ₁ -cease-PFV 15-be(come)_drunk-FV 'S/he has ceased to get drunk (e.g. stopped drinking).' [process interrupted] (Persohn 2017: 128)	<i>a-lek-ile ɔkɔ-fugam-a</i> SP ₁ -cease-PFV 15-kneel-FV 'S/he has ceased to be kneeling.' [result state interrupted] (Persohn 2017: 131)

entire situation (Persohn 2017: 117, 130). Table 1 illustrates these differences. Only single-event readings have been included; comments in square brackets are our own notes.

Other languages also show evidence for different types, or qualities, of coming-to-be phases. For example, in Southern Ndebele, both *hlubula* ‘get dressed’ and *hlananipha* ‘be(come) clever’ lexicalize a coming-to-be phase, as shown in (20).

- (20) Southern Ndebele
- a. *uFinn u-ya-hlubul-a*
1A.Finn SP₁-PRS.DJ-undress-FV
'Finn is getting dressed.'
 - b. *uFinn u-ya-hlananiph-a*
1A.Finn SP₁-PRS.DJ-be(come)_clever-FV
'Finn is growing clever.'
(Crane fieldnotes)

Although they both lexicalize a coming-to-be phase, these verbs – and others like them – show systematic differences in their interactions with temporal adverbials. In their bare form, temporal adverbials in Southern Ndebele can be translated as either ‘for X time’ or ‘in X time’. Another form, with the locative adverbial prefix *nga-* (indicating inner space; see Fleisch 2005), has only the reading ‘in X time’. With the *nga-* prefix, both types of verb refer to the (completion of the) pre-

culmination phase (21a–b). Note that even though some verbs do not allow such a reading in normal circumstances (21c), the interpretation is always of a pre-culmination period. This is shown again in (21d): the verb *fika* ‘arrive’ does not appear to lexicalize a coming-to-be phase, and the interpretation is that the arrival occurred after a ten-minute period, not that the arrival itself took place over ten minutes (see e.g. Croft 2012: 105–106).

(21) Southern Ndebele

- a. *uFinn u-hlubul-e ng-emizuzu elitjhum*
 1A.Finn SP₁-undress-PFV.CJ LOC-4.minute 4.ten
 ‘Finn got undressed in/within ten minutes.’ (pre-culmination reading)
- b. *uJack u-hlakaniph-e ng-eminyaka emibili*
 1A.Jack SP₁-be(come)_clever-PFV.CJ LOC-4.year 4.two
 ‘Jack became clever in two years.’ (pre-culmination reading) (This example sounds a bit strange to the language consultant but is accepted.)
- c. *?uSipho w-ethuk-e ng-emizuzu elitjhum*
 1A.Sipho SP₁-be(come)_frightened-PFV.CJ LOC-4.minute 4.ten
 Intended: ‘Sipho got frightened in ten minutes.’
 Speaker comment (paraphrased): “It sounds so scientific, as if you’re in a lab measuring how fast Sipho can get frightened, as compared to Jane.”
- d. *Ngi-fik-e ng-emizuzu elitjhum*
 SP₁-arrive-PFJ.CJ LOC-4.minute 4.ten
 ‘I arrived after ten minutes.’
 (Crane fieldnotes; Peter Mabena p.c.)

With the bare duration temporal adverbial, however, *hlakanipha* ‘be(come) clever’ only allows a reading in which the result state is targeted (22a). Verbs like *hlubula* ‘undress’, on the other hand, allow for both pre-culmination and result-state readings (22b). Neither kind of verb patterns exactly like non-inchoative verbs (21c–d), which only target the process and not a post-state. With verbs like *fika* ‘arrive’, lexicalizing neither a coming-to-be phase nor a result-state, the construction is judged as odd or infelicitous (22e).

(22) Southern Ndebele

- a. *uSipho u-hlakaniph-e iminyaka emibili*
 1A.Sipho SP₁-be(come)_clever.PFV.CJ 4.year 4.two
 ‘Sipho was clever for two years.’ (result state reading)
 Speaker comment (paraphrased): “It means that for these two years, Sipho was clever, but then perhaps something happened, and his IQ dropped down and he is no longer that clever.”

- b. *uFinn u-hlubul-e imizuzu elitjhum*
 1A-Finn SP₁-undress-PFV.CJ 4.minute 4.ten
 'Finn got undressed in ten minutes.' (pre-culmination reading)
 'Finn was undressed for ten minutes.' (result state reading)
- c. *U-cul-e iimveke ezimbili*
 SP₁-sing-PFV.CJ 10.week 10.two
 'S/he sang for two weeks.' (pre-culmination reading)
- d. *W-akh-e indlu iimveke ezimbili*
 SP₁-build-PFV.CJ 5.house 10.week 10.two
 'S/he built a house for/in two weeks.' (pre-culmination reading)
- e. *#U-fik-e i-iri loke*
 SP₁-arrive-PFV.CJ 4-hour 4.one
 Intended: 'S/he arrived in/for one hour.'
 (Crane fieldnotes)

We believe that unravelling distinctions such as whether a pre-culmination reading is available with a bare temporal adverbial will require attention to other characteristics of the coming-to-be phase and the participant-role structure of the utterance, especially issues such as subject agency (see e.g. Verhoeven 2010 for an exploration of agentivity in experienter verbs).

3.2 The “point” of change

Every change-of-state verb has a point – usually subjectively determined to at least some extent – at which the subject can be said to have attained the result state, whether the latter is lexically encoded or not. However, as shown in Jerro (2017), some verbs encoding resultant states require reference to a prior state change (traversing the point of change), while others do not. That is, all change-of-state verbs *allow* a state-change reading, but only some *require* such a reading. The difference is illustrated in (23), where the change-of-state verb *sukuya* ‘be(come) clean’ does not necessarily reference a past state change, while *shwanyutsa* ‘shatter’ does.

(23) Kinyarwanda

- a. *Icy-umba cya Nkusi gi-hora gi-sukuy-e*
 7-room CON₇ Nkusi SP₇-always SP₇-clean-PFV
 'Nkusi's room has always been clean.'

- b. #*Iki gi-kombe gi-hora gi-shwanyuts-e*
 DEM₇ 7-cup SP₇-always SP₇-shatter-PFV
 Intended: ‘This cup has always been shattered.’
 (Jerro 2017: 8)

Examples (24)–(26) further show that not all verbs interpreted as present states with perfective morphology require reference to a prior state change. The Swahili (G42d; East Africa, swh) example in (24) does not refer to a past change (filling with stones) leading to a state (being full of stones). Similarly, although the Southern Ndebele verb *hlubula* means ‘undress’, the perfective form in (25) cannot refer to the result state of having removed one’s clothes when it refers to the state of a newborn child. Likewise, in (26), the proximity of the towns of Bathurst and Port Alfred is expressed with the verb *sondela* ‘approach, be close’, although their geographic distance has been a constant throughout their existence.

(24) Swahili

- Milima hii i-li-ku-w-a i-me-jaa mawe*
 4.mountain DEM₄ SP₄-PST-INF-be-FV SP₄-PRF-get_full-FV 6.stone
 ‘These mountains were full of stones.’
 NOT: ‘These mountains have been filled with stones.’
 (Drolc 1992: 74)

(25) Southern Ndebele

- Umntwana u-beleth-iw-e a-hlubule*
 1.child SP₁-give.birth-PASS-PFV.CJ SP₁.SUBORD-undress.PFV.DJ
 ‘The child was born naked.’
 (Crane ms.)

(26) Xhosa

- e-Bathurst i-sondel-e e-Port Alfred*
 LOC-B. SP₉-approach/be_close-PFV.CJ LOC-P.A.
 ‘Bathurst is near Port Alfred.’
 (Persohn fieldnotes)

Such examples raise the question of whether the contrast between change-of-state verbs that require the assumption of a previous change and those that do not is a (semi-)arbitrary language-internal factor (requiring special modelling in a theory of Bantu actionality), or whether it is derivable from real-world knowledge and therefore consistent across languages. More cross-linguistic data are required to answer this question. Either way, the frequency of such examples

makes an implicature-based account – in which the state is not lexically encoded but rather pragmatically implicated by reference to the past change – difficult to defend (see the online appendix for more details).

While every change-of-state verb encodes a change, verbs that encode *only* the change, and neither coming-to-be nor resultant-state phases, appear to be quite rare across Bantu. Such verbs would appear to be closest in spirit to Vendlerian achievement verbs. Persohn (2017: 137) proposes that in Nyakyusa, *aga* ‘find’ may be a pure “acute” achievement. *Aga* does not lexically encode a coming-to-be phase and can only translate as future-oriented or habitual with present-tense morphology, as in (27).

(27) Nyakyusa

tʊ-kw-ag-a *ɪfungulo* *jr-lɪ* *paa-meesa*

SP_{1PL}-PRS-find-FV 9.key 9-COP 16(LOC)-9.table

‘We will find that a/the key is on a/the table.’ (e.g. thus we’ve been informed)

‘We find that a/the key is on a/the table.’ (e.g. each time we search for it)

NOT: ‘#We are finding that a/the key is on a/the table.’

(Persohn 2017: 139)

Neither does *aga* allow for a resultant state reading with the perfective, as shown in (28).

(28) Nyakyusa

#tʊ-kaalɪ *tw-ag-ile* *bi-kʊ-ly-a*

SP_{1P}-PRS SP_{1PL}-find-PFV SP₂-PRS-eat-FV

Intended: ‘We are still informed [i.e. in a state of having found – Authors] that they are eating.’

(Persohn 2017: 139)

The set of purely point-of-change verbs also varies from language to language. For example, Southern Ndebele *fika* ‘arrive’ appears to lexically encode neither a coming-to-be phase nor a resultant state, while Nyakyusa *fika* ‘arrive’ does include a lexically encoded coming-to-be phase of at least some duration (Persohn 2017: 137 for Nyakyusa; Crane fieldnotes for Southern Ndebele). Botne (2003) similarly shows that the translational equivalents of *die* across languages can vary dramatically in which phases are encoded, in addition to the point of transition. In Southern Ndebele, the apparently purely punctive *fika* ‘arrive’ has unusual interactions with present and persistent (‘still’) morphology, as shown in (29). The change-of-state verb *phola* ‘cool down’ (29a) encodes a coming-to-be

phase, targeted by the present persistive form; in contrast, *fika* ‘arrive’ in the same frame yields an immediate past reading (29b).

(29) Southern Ndebele

a. *Umratha u-sa-phol-a*

3.porridge SP₁-PRS-cool-FV

‘The porridge is still cooling.’

b. *uSipho u-sa-fik-a*

1A.Sipho SP₁-PRS-arrive-FV

‘Sipho just arrived.’

Perhaps because the set of purely point-of-change verbs is small, variable, and exhibits atypical interactions with tense/aspect morphology, its analysis across languages has also varied significantly. For example, some analyses place these verbs in the same class as more semelfactive-like verbs such as English ‘cough’ and ‘kick’, while others group the latter type of verbs with other non-change-of-state verbs, and analyze verbs like Nyakyusa *aga* as a separate class (see the online appendix for further discussion).

The point of change raises other important questions for modeling change-of-state verbs in Bantu. For example, at least in many cases, the point of change does not seem to be detachable (that is, targetable by morphology of grammatical aspect) from the coming-to-be phase that proceeds it, as shown in (12b), repeated here as (30).

(30) Southern Ndebele

#*Izolo i-komo i-non-ile*

yesterday 9-cow SP₉-grow.fat-PFV.DJ

Intended: ‘Yesterday, the cow became fat.’ (i.e. after a period of growth, it passed the subjective point where it could be called fat)

Further cross-linguistic testing is needed to understand if and when the point of change can be targeted separately from the process leading to that change, and, if different classes emerge, to what extent these correlate with the different types of coming-to-be phases shown in Section 3.1. Punctual adverbials may be enlightening in this respect.

Additionally, predicates of minimum-standard closed scales (see e.g. Kennedy & McNally 2005)¹² show temporal and therefore interpretive overlap between coming-to-be and resultant state readings, as in the Nyamwezi (Tanzania, F22; nym)

¹² Thanks to an anonymous reviewer for pointing out this difference in gradable predicate scales.

examples in (31). Note that in Nyamwezi, the *-ile* form does not correspond exactly to what is typically considered perfective in Bantu, but it nevertheless targets the result state of change-of-state verbs (Kanijo forthcoming).

(31) Nyamwezi

a. *miendá yi-lu-dot-a*

4.clothing SP₄-PROG-be_wet-FV

‘The clothes are wet!’ (that is, they are wet and are continuing to get wet)
(Kanijo p.c.)

b. *zi-dot-ilé*

SP₁₀-be.wet-ILE

‘They (e.g. clothes) are wet.’
(Kanijo p.c.)

Investigation and modeling of the point of change must therefore consider differences in scales, including the behavior of absolute vs. relative gradable predicates regarding the point of change (e.g. getting dressed/naked vs. getting fat).

3.3 The resultant (state) phase

As with the coming-to-be phase, some change-of-state verbs appear to lexically encode a grammatically targetable resultant state phase, while others do not. The presence vs. absence of a resultant phase cannot be ascertained merely through interpretations with the perfective, as these can be obscured through translation effects. For example, the Southern Ndebele verb *rhaba* ‘hurry, be fast’ encodes a resultant phase, but the English translation of the perfective form (32) does not make this fact obvious.

(32) Southern Ndebele

U-rhab-ile

SP₁-hurry-PFV

‘S/he was fast.’

‘S/he (has) rushed off.’

(Crane fieldnotes)

A clearer picture can be attained using persistive morphology along with the perfective aspect. Persistive aspect expresses that a state-of-affairs holds true from an earlier point in time through a later point in time, by default the moment of speech. Persistive aspect therefore approximately corresponds to the English

phasal polarity adverb ‘still’. The assumption underlying this test is that only a resultant state, but not a transition from one state into another, should be able to hold over time (see Jerro 2017). Dahl (1985: 134) states that resultatives, but not anteriors (perfects) should be compatible with the notion of *still*, as the former, but not the latter, target a state (see also Johanson 2000: 112). Hence only those verbs that encode a resultant state are predicted to be felicitous in the frame of persistive aspect plus perfective aspect. The contrast can be seen in the difference between the Nyakyusa examples in (33): while *hoboka* ‘be(come) happy’ can be used in the morphosyntactic frame of persistive aspect plus perfective aspect (33a), the use of *fika* ‘arrive’ in this frame yields an unacceptable sentence (33b).

(33) Nyakyusa

a. *a-kaalɪ a-hobwike*

SP₁-PRS SP₁-be(come)_happy.PFV

‘S/he is still happy.’ (Persohn 2017: 133)

b. *#a-kaalɪ a-fik-ile*

SP₁-PRS SP₁-arrive-PFV

[Intended: ‘S/he has arrived’ (and is still here). – Authors]

(Persohn 2017: 138)

The persistive-plus-perfective test has been applied by (at least) Botne (2008) in Ndali, by Crane & Fleisch (2016, forthcoming) in Southern Ndebele, by Persohn (2017, 2018) in Nyakyusa and by Jerro (2017) in Kinyarwanda. A preliminary survey shows that the syntactic frame of persistive aspect plus perfective aspect is available in languages of most of Guthrie’s zones (Table 2).

Like virtually all tests, however, this one has limitations. While we believe that felicity with the persistive perfective is good evidence for a lexically encoded resultant state, it is not a necessary one. In many Bantu languages, the construal of an ongoing resultant state with ‘still’ + perfective seems to require that the state be (at least potentially) non-permanent or reversible (see Croft 2012 for general discussion of reversibility as an important phasal quality). For example, Southern Ndebele (where persistive aspect is expressed with a prefix *sa-*) allows predicates like *sisathambile* ‘it is still wet’ and *usadakiwe* ‘s/he is still drunk’, but not *#usaluphele* ‘s/he is still old’, *#usakhulile* ‘s/he is still grown (up)’, or *#(ikomo) isaphusile* ‘it (the cow) is still weaned’ (Crane fieldnotes). Although the limits of reversibility may be construed differently by different speakers, or in different languages and/or cultural contexts (e.g. a speaker allowed (*inja*) *isathambile* ‘the dog is still tame’, commenting, “You never know”), examples like (34) make it clear that this parameter is important in the application of the ‘still’ + perfective test.

Table 2: Some languages that allow for persistent plus perfective aspect.^a

Zone	Language	Form	Source
Zone C	Lingala C30b (lin)	SP-VB-í + <i>nanu</i>	Nico Nassenstein (p.c.)
Zone D	Holoholo D28 (hoo)	SP-ké-VB-ile	Coupez (1955), Nurse (2008, appendix)
Zone F	Bende F12 (bdp)	SP-syá-li SP-VB-ilé	Abe (2014)
Zone G	Shambala G24 (ksb)	SP-ke-VB-té	Nurse (2008, appendix)
	Sango G61 (sbp)	SP-pii-VB-ile	Kajaan (2012)
	Swahili G42 (swh)	<i>bado</i> SP-me-VB-a	Nurse & Hinnebusch (1993)
Zone J	Kinyawanda JD61 (kin)	SP-cya-VB-ye	Jerro (2017)
	Fumbira JD61 (kin)	SP-racya-B-ye	Sauder (n.d.)
	Tooro JE12 (ttj)	SP-kya-VB-ire	Muzale (1998)
	Ganda JE15 (lug)	SP-kya-VB-ye	Crabtree (1923)
	Saamia JE34 (lsm)	SP-síí-VB-íré	Botne et al. (2006)
Zone K	Luvale K14 (lue)	SP-na-ci-VB-Vowel	Horton (1949)
Zone M	Nyiha M23 (nkt)	SP-li <i>she</i> SP-VB-ile	Helen Eaton (p.c.)
	Malila M24 (mgq)	SP-li <i>she</i> SP-VB-ile	Helen Eaton (p.c.)
	Nyakyusa M31 (nyy)	SP-kaali SP-VB-ile	Persohn (2017)
	Ndali M301 (ndh)	SP-kaali SP-VB-ite	Botne (2008)
Zone N	Manda N11 (mgs)	SP-(a)kona SP-VB-ili	Bernander (2017, p.c.)
Zone R	Kwanyama R21 (kua)	SP-a-VB-a <i>natango</i>	Hafeni Dioma (p.c.)
Zone S	Shona S11 (sna)	SP-châ-kâ-VB-a	Fortune (1984)
	Northern Sotho S32 (nso)	SP-sa-VB-ile	Louwrens et al. (1995)

^a This list is based on a first brief survey of the literature, along with personal communication with linguists and native speakers. We have excluded some cognate forms that clearly do not encode perfective aspect as understood in this study. On the other hand, we have included some constructions (e.g. the case of Swahili) that are commonly labeled anterior or perfect, but which share some essential characteristics with the markers we and others analyze as perfectives. Due to the lack of in-depth descriptions, we cannot exclude the possibility that some forms included differ significantly from our working definition. The uneven distribution of the different zones is partially a function of the available descriptions and is partially due to our familiarity with the languages of each zone.

(34) Southern Ndebele

a. #Inja i-sa-f-ile

9.dog SP₉-PRS-die-PFV.DJ

Intended: 'The dog is still dead.' (outside of a fantasy resurrection scenario)

b. Ibhetri li-sa-f-ile

5.battery SP₅-PRS-die-PFV.DJ

'The battery is still dead.'

(Crane fieldnotes)

The inherent reversibility or terminability of resultant states (e.g. the state of being tired vs. the state of being dead) is therefore an important qualitative parameter.

Some verbs also appear to allow for result states to be coerced or construed in some cases, although the result-state reading with the perfective is not accepted in pragmatically neutral conditions. In such contexts, as in all other cases known to us, the result state must refer to the grammatical subject; as shown by the contrast between (35a) and (35b).

(35) Southern Ndebele

- a. #*U-s-akh-e* *indlu*
 SP₁-PRS-build-PFV.CJ 9.house
 Intended: ‘S/he has built a house and the house is still standing.’
- b. *U-s-akh-e* *umuzi*
 SP₁-PRS-build-PFV.CJ 3.village
 ‘S/he is still living in the village.’ (lit. ‘S/he is still built [in] the village.’)
 (Crane ms.)

Example (36) similarly shows that in normal contexts, the root *bekela* ‘lay eggs’ has an activity-like reading (36a,b). In (36c), in contrast, the resultative-like reading highlights the state of the chicken – between laying eggs and the brooding period – rather than the activity itself.

(36) Southern Ndebele

- a. *I-kukhu* *i-ya-bekel-a*
 9-chicken SP₉-DJ-lay_eggs-FV
 ‘The chicken lays / is laying eggs.’
- b. *I-kukhu* *i-bekele*
 9-chicken SP₉-lay_eggs.PFV.DJ
 ‘The chicken (has) laid eggs.’
- c. *I-kukhu* *i-sa-bekele*
 9-chicken SP₉-PRS-lay_eggs.PFV.DJ
 ‘The chicken has (only) laid these eggs.’ (i.e. it has not yet started brooding)
 (Crane ms.)

Furthermore, the portion of an eventuality that is construed as the result phase can vary, and is affected by argument structure and participant roles, as seen in (37)–(38) with the verb *oma* ‘become dry’. When the subject is an agent (requiring a causative suffix), the persistive present has an active interpretation (37a), while the persistive perfective – though still referencing the period of drying –

invokes the passive period (i.e. state) of waiting for the object to dry (37b). Crucially, it is always the subject to which the state is attributed.

(37) Southern Ndebele

- a. *uSipho u-s-om-is-a irhembe*
 1A.Sipho SP₁-PRS-become_dry-CAUS-FV 9.shirt
 'Sipho is still [actively] drying a/the shirt.' (e.g. waving it in the wind)
- b. *uSipho u-s-om-is-e irhembe*
 1A.Sipho SP₁-PRS-become_dry-CAUS-PFV.CJ 9.shirt
 'Sipho is still [passively] drying a/the shirt.' (e.g. he hung it up, now he is in a state of waiting for it to dry)
 (Peter Mabena, p.c.)

In (38a), where the subject is a theme, the persistive perfective form of the bare root indicates a result state in which the drying process is complete. In contrast, (38b), with a passivized causative (invoking a causing agent which is then demoted from subject position by the passive), indicates a state in which the subject is still passively undergoing a process. The utterance in (38b), like those in (35b), (36c), and (37b), can be used when the subject's current condition is under question: here, the state of having been caused to commence the drying process.

(38) Southern Ndebele

- a. *Irhembe i-s-om-ile*
 9.shirt SP₉-PRS-become_dry-PFV.DJ
 'The shirt is still dry.'
- b. *Irhembe i-s-om-is-iwe*
 9.shirt SP₉-PRS-become_dry-CAUS-PASS.PFV.DJ
 'The shirt is still [in a state of] being dried.' (it is not dry yet)
 (Crane fieldnotes)

The inherent stativity of resultant phases is still an important open question, however. In his review of Mreta's (1997) monograph on tense and aspect in Chasu (G22, Tanzania; asa), Bertinetto notes, "... the fact that in Chasu this [inchoative/change-of-state] class contains both initio-statives and initio-activities may be inferred from the short list provided by the author (p. 91; cf. *manyā* 'learn, discover / know' vs. *shínjia* 'fall asleep / sleep')" (2003: 149). Although we dispute the notion that the result of 'fall asleep' (i.e. 'be asleep') is necessarily an activity, it is worth noting that it is not yet clear whether Bantu languages are sensitive to the dynamic vs. stative nature of the resultant phase. Examples such as those in (39) are best translated from Southern Ndebele using dynamic-seeming English verbs in the perfective form, but they do not seem to

show any morphosyntactic or combinatorial differences from other change-of-state verbs that have resultant phases that are more canonically stative.

(39) Southern Ndebele

- a. *U-sa-pethe* *isikotlelo*
 SP₁-PRS-carry.PFV.CJ 7.dish
 ‘He is still carrying a dish.’
- b. *Ba-sa-hlangene*
 SP₂-PRS-meet.PFV.DJ
 ‘They are still (having a) meeting.’
 (Crane fieldnotes)

Both *phatha* ‘take, hold, carry’ and *hlangana* ‘come together, meet’ can have active state-change readings, as well, although only *hlangana* appears to encode a coming-to-be phase (40a). The state change with *phatha* is somewhat difficult to invoke outside of fairly artificial contexts such as (40b).

(40) Southern Ndebele

- a. *Ba-sa-hlangan-a*
 SP₂-PRS-meet-FV
 ‘They are still gathering.’ (i.e. coming together)
- b. *uSipho u-phethe* *isikotlelo ng-emizuzu elitjhum*
 1A.Sipho SP₁-PRS-carry.PFV.CJ 7.dish LOC-4.minute 4.ten
 ‘It took Sipho ten minutes to take/carry the dish.’
 Speaker comment (paraphrased): “This can be used in a context in which Sipho perhaps was in a competition, and it took him ten minutes to run from point A to point B where the dish was.”
 (Crane fieldnotes / Peter Mabena p.c.)

In Section 3.4 below, we raise further questions about the salience of the state/activity contrast in Bantu grammar.

Further tests that may target lexically encoded resultant states include the addition of measure adverbials, which in at least some languages can encode the duration of the resultant state when such a phase is lexically available, as with the Southern Ndebele examples in (22) above. An additional useful test may be to determine whether the perfective form with the expression of ‘since’ (indicated by a source-oriented verb of motion in many Bantu languages) can have a single-event reading (41), as would be predicted with lexically encoded resultant states (see also Johanson 2000: 112).

- (41) Nyakyusa
n-galeele *uko-fum-a* *no lobvunj*
 SP_{1SG}-be(come)_angry.PFV INF-come_from-FV at.morning
 ‘I have been angry since this morning.’
 (Persohn fieldnotes)

Crane & Fleisch (2016, forthcoming) also use constructions that force a perspective time to test for resultant states, as in (42). In most cases in Southern Ndebele, the continuing resultant state is non-cancellable in this context, if it is lexically encoded.

- (42) Southern Ndebele
Na-si-fik-a=ko, si-m-thol-e a-lamb-ile
 COM-SP_{1PL}-arrive-FV=REL SP_{1PL}-OP₁-find-PFV.CJ SP₁-get.hungry-PFV
 ‘When we arrived, we found him/her feeling hungry.’
 (Crane fieldnotes)

In some languages (e.g. Nyakyusa), as seen in the discussion of coming-to-be tests above, phasal verbs like 'begin' may provide additional evidence for a resultant state phase in verbs that lack a coming-to-be phase. Recall example (18c), repeated in (43).

- (43) Nyakyusa
and-ile *ɔkw-hobok-a*
 SP₁.begin-PFV INF-be(come)_happy-FV
 ‘S/he has begun to be happy.’
 ‘S/he has begun to become happy.’ (regularly; NOT right now)
 (Persohn 2017: 133)

Although verbs like *hoboka* do not allow for a processual reading ('growing happy'), they do allow reference to the beginning of a resultant state.

3.4 Non-change-of-state states

In some Bantu languages, a set of verbs have stative readings in imperfective contexts (and/or contexts with no overt encoding morphological aspect), while perfective morphology yields the perspective that the state of affairs is entirely in the past. As in numerous other languages (see e.g. Smith 1997 [1991] for examples), an ingressive (entry-into-state) reading is frequently also available. An example of this verb type is seen with Southern Ndebele *gula* 'be sick' (44). (44b)

shows the entry-into-state reading; note that this reading does not entail current relevance, nor does it allow for an ongoing state at speech time.

(44) Southern Ndebele

a. *uPhumzile u-ya-gul-a*

1A.Phumzile SP₁-DJ-be.sick-FV

‘Phumzile is sick.’

b. *uPhumzile u-gul-ile*

1A.Phumzile SP₁-be.sick-PFV.DJ

‘Phumzile was sick.’

‘Phumzile got sick.’

NOT: ‘Phumzile is sick.’

(Crane fieldnotes)

While numerous languages appear to have this class of verbs, the set of verbs within the class is not isomorphic across languages. For example, as shown in Section 1.1 above, Kwanyama *hala* ‘want’ is a change-of-state verb, with the present state expressed using perfective morphology, while the nearest translational equivalent *saka* ‘want, like, love’ in Totela does not seem to encode a state change or resultant state.

Researchers have taken various approaches as to whether these state verbs are grouped with other durative, non-change-of-state verbs, or whether they are treated as a separate group (see the online appendix), again raising the question of the importance of the dynamic/static contrast across Bantu. For example, in Persohn’s (2017) analysis, as in Seidel (2008), these stative-like verbs are claimed not to show any consistent grammatical differences from other non-change-of-state verbs. On the other hand, in languages like Southern Ndebele, the inceptive readings of non-change-of-state states (44b) may be evidence of a principled distinction.

Additional cross-linguistic research is therefore needed to understand the behavior of non-change-of-state state verbs. Tests like compatibility with the imperative (assumed to be incompatible with state verbs; see Dowty 1979) may be helpful, but do not necessarily point to a separate actional class, as they may target semantic properties that are orthogonal to actional characteristics.

3.5 Other non-inchoative verbs

Regarding verbs not lexically encoding a result state, some evidence suggests that the divide between Vendlerian accomplishments and activities along the lines of telicity shows a certain degree of fluidity in Bantu.

First, in many cases, activity-like verbs behave very similarly to accomplishment-like verbs on tests of telicity, provided other semantic and contextual factors allow for the necessary construals. For example, compatibility with the auxiliary ‘finish’ may depend more on factors such as subject volition than it does on an inherent endpoint (see e.g. Persohn 2017: 121; Freed 1979: 135). Examples from Nyakyusa and Southern Ndebele show that as long as a bounded or single task-like reading is available, both activity-like (45) and accomplishment-like (46) verbs can give a terminative reading with the phrase ‘in X time’ / ‘take X time’. Persohn (2017: 120–121), following Binnick (1991: 176) refers to such activity verbs as having “quasi-accomplishment” senses.

(45) Activity-like verbs

a. Southern Ndebele

uSipho u-cul-ile ng-emizuzu elitjhumu

1A.Sipho SP₁-sing-PFV.DJ LOC-4.minute 4.ten

‘Sipho sang in ten minutes.’ (i.e. he finished that song or portion of the music in that time)

(Crane ms.)

b. Nyakyusa

eeg-ile akabalilo akapimba ukv-kosomol-a

SP₁.take-PFV 12.time 12.short INF-cough-FV

‘S/he took a short time to finish coughing.’ (i.e. overcome illness)

(Persohn 2017: 120)

(46) Accomplishment-like verbs

a. Southern Ndebele

uSipho u-tlol-e i-ncwadi ng-amalanga amabili

1A.Sipho SP₁-write-PFV.CJ 9-letter LOC-6.day 6.two

‘Sipho wrote a letter in two days.’ (he finished it)

(Crane ms.)

b. Nyakyusa

eeg-ile nsala joosa ukv-lembuk-a

SP₁.take-PFV 9.hour 9.all INF-awaken-FV

‘S/he has taken a whole hour to wake up.’

(Persohn 2017: 124)

Second, for a number of languages, especially of Eurasia and the Americas, it has been shown that Vendlerian accomplishments in their most basic sense – that is, the combination of an activity-like root plus a linguistic element introducing a boundary – may allow for an internally unbounded (i.e. activity) interpretation

even with the perfective aspect (see Martin et al. 2016 and references therein). This phenomenon has heretofore received scant to no attention in studies of Bantu languages but is evident in languages like Xhosa. In its default interpretation, (47a) is understood as the subject having read the entirety of the book. (47b), however shows, that this interpretation can be canceled without introducing inconsistency.

(47) Xhosa

- a. *ndi-fund-e le ncwadi*
 SP_{1SG}-read-PFV.CJ PROX₉ 9.book
 ‘I (have) read this book.’
- b. *ndi-fund-e le ncwadi kodwa a-ndi-gqib-anga*
 SP_{1SG}-read-PFV.CJ PROX₉ 9.book but NEG-SP_{1SG}-finish-NEG.PFV
 ‘I read (engaged myself in reading) this book, but I did not finish it.’
 (Savić 2017: 66)

As Martin et al. (2016; following work by Talmy 2000; Levin 2015) point out, certain accomplishments trigger an inference that the act described by the root affects the object at least partially. In some languages, this inference is cancelable. The (degree) of agentivity of the subject plays an important role here (see Martin et al. 2016). Preliminary elicitation shows that subject agentivity is important in Xhosa, too. Thus in (48a), with a fully agentive human subject, the inference is cancelable, allowing for an activity interpretation of engaging in washing. (48b), however, with *invula* ‘rain’ as the subject, was unanimously judged to be contradictory by the Xhosa speakers interviewed.

(48) Xhosa

- a. *uSipho u-hlamb-e imoto yakhe, kodwa*
 1A.Sipho SP₁-wash-PFV.CJ 9.car 9.POSS₁ but
i-sa-ngcol-e njenga-ku-qal-a
 SP₉-PRS-be(come)_dirty-PFV.CJ like-15(INF)-begin-FV
 ‘Sipho washed (engaged in washing) his car, but it is still as dirty as before (sic!).’
- b. *#invula i-hlamb-e indlela, kodwa*
 9.rain SP₉-wash-PFV.CJ 9.road but
i-sa-ngcol-e njenga-ku-qal-a
 SP₉-PRS-be(come)_dirty-PFV.CJ like-15(INF)-begin-FV
 Intended: ‘The rain washed the street but it is still as dirty as before (sic!).’
 Speaker comment (paraphrased): “If the street is as dirty as before then all the rain did was to rain.”
 (Persohn fieldnotes)

4 Further notes on testing for actionality

In the previous sections, we have argued that Bantu languages are both an indispensable data source for a cross-linguistic understanding of actionality and the grammar–lexicon interface, and an ideal testing ground for theories of actionality. We have also offered tests that show some promise of cross-linguistic applicability. To round out our discussion, we lay out some desiderata for the investigation of actionality, both for the understanding of the role of verbal phasal structure within an individual language, and for cross-linguistic comparison.

Bar-el (2015: 105) states that “what may be universal is an inventory of building blocks that languages use to construct aspectual classes”; we propose, therefore, that tests for actionality should be developed that target different phases, boundaries, and the characteristics thereof, so that each language’s set of actional classes can be built up on a firm basis, and so that the classes can be meaningfully compared across languages.

Although each language needs to be dealt with on its own terms and allowing for its own “genius” (Sapir 1921) to emerge, we believe that many tests will be adaptable across Bantu languages, and that applying these tests will allow for a broader picture to emerge of possible actional types, and the limits of complex lexicalizations.

4.1 On methodology and the necessity of tests

Following Matthewson (2004), we understand elicitation as being more than a mere unidirectional translation task. As Mous (2007: 2) puts it, elicitation consists in “guided conversation about language data. It is not a questionnaire to be filled out”. In order to gain useful data, semantic elicitation should make use only of full sentences and employ detailed contexts, both in translation, as well as in judgement tasks (see Matthewson 2004 and the contributions in Bochnak & Matthewson 2015). Further, elicitation on semantics is best carried out using a variety of resources, such as storyboards and visual cues (see e.g. Louie 2015; Burton & Matthewson 2015). Also, as Matthewson (2004) and Rose Deal (2015) caution, in the interpretation of the gathered data, translations should be considered as useful clues about meaning, but in no case as meaning equivalents; the same holds for speaker comments about the data (which should, nevertheless, be recorded).

In her seminal article, Matthewson (2004) argues that the application of tests in elicitation is indispensable for semantic fieldwork, bringing forward two main

arguments. The first argument aims at the data sample as such: only through elicitation can the researcher obtain enough attestations of the linguistic elements under investigation. Furthermore, only elicitation allows us to systematically manipulate relevant patterns and thereby test working hypotheses about semantic structures in a targeted way. This point leads to Matthewson's second argument: it is only in elicitation that we can gather negative evidence, allowing the linguist to determine which theoretically possible combinations or contextual applications are ruled out by the system under investigation.

4.2 Principles of testing

While the literature abounds with tests for actional classes (mostly based on Dowty's 1979 work; see Binnick 1991: 173–197 for an overview), Bar-el (2015) points out that the majority of these tests are based on the Vendlerian classes and aim at assigning a given verb or verb phrase to one of these four classes. Therefore, standard tests for actionality are difficult to use as evidence for actional classes that diverge from the Vendlerian model. Apart from this principled problem, many common tests do not aim at phasal configurations, but rather at other semantic features (see Walková 2012 and references therein). For example, checking the compatibility with certain adverbials of manner, such as *deliberately* or *carefully* is in fact a test for agentivity; subject agentivity is also crucial in a verb's compatibility with the imperative. All this means that in order to uncover actional classes that go beyond the four Vendlerian ones, novel tests are needed. In Section 3, we noted some tests that show promise of broad applicability across Bantu for targeting the various phases of verbal actional structures. Below, we discuss more general principles for uncovering actional classes in Bantu and across languages.

A major issue inherent to studies of actionality is an intrinsic circularity: aspectual classes are defined based on their interactions with expressions of grammatical aspect, while categories of grammatical aspect are understood with reference to their behavior with different aspectual types (Crane & Fleisch forthcoming; see also Fleisch 2000: 225 and surrounding discussion; Ebert 1995: 186; Tatevosov 2002: 345–347). We agree with Tatevosov (2002: 347) that one can understand the “actional characteristic of a verb [as] a union of actional characteristics of its combinations with [morphosyntactic aspectual operators]”; that is, a categorization of actional types can be arrived at, minimally, through careful analysis of the possible meaning sets that verbs can have in combination with the set of a language's grammatical aspectual expressions.

However, for a fuller understanding of systems of actionality in Bantu, additional targeted testing is needed. Crane & Fleisch (forthcoming) suggest that, in addition to exploiting the full richness of the systems of tense and aspect marking in most Bantu languages, researchers can mitigate circularity by incorporating tests involving other linguistic features, such as adverbials and phasal verbs that target particular phases or boundaries. Thus, each boundary and phase can be explored through the lens of more than one test. Although each test may itself be circular, if several circles converge on the same groupings, the groupings themselves are more likely to be robust. That said, it is likely that no two tests will give precisely the same results, as each test is bound to have its own peculiarities, and complete redundancy is likely impossible. As pointed out in Fleisch (2000), if enough tests are applied, the number of actional classes proposed for a language will be near or equal to the number of lexical verbs (or verb–argument combinations) in that language, because each verb has idiosyncratic semantic properties. The linguist's task, then – as always – is to sort through the noise and propose meaningful and predictive generalizations.

Crane & Fleisch (forthcoming) further note that in administering tests, linguists investigating actionality should be careful to control for variables such as quantized vs. non-quantized subjects and objects, and to separate logical entailments from implicatures (see also Bar-el 2015 for discussion of this and further principles for eliciting actional characteristics). In addition, it is important to test not only whether an expression is grammatical and semantically felicitous, or which interpretation is most salient, but also for all possible interpretations. For example, Persohn (2018) notes that a number of inchoative verbs in Nyakyusa are felicitous with the phasal verb *anda* 'begin, start', but that some allow for both single-event and repetitive readings, suggesting a lexically encoded, temporally extended coming-to-be phase. Others allow only a repetitive reading, suggesting that the coming-to-be phase is not encoded in the verb's lexical semantics. Simply testing for compatibility with *anda* 'begin, start', without checking for possible readings, would miss this important distinction.

Of course, the adaptation of tests into different languages must be undertaken with great care; merely translating tests and expecting comparable results is foolhardy. As Crane & Fleisch (forthcoming) put it,

Since testing for [actionality] is so fraught with difficulties even within a particular language, attempts to compare structures across languages must be made with even greater care. Potential problems are obvious: if we take seriously the possibility that [actional] categories do not map one-to-one across languages, we must certainly also recognize that ... tests [for actionality] may function differently, and that markers of grammatical aspect, even if superficially similar, may in fact target different phases of the verb. (Crane & Fleisch forthcoming)

Thus, even closely related languages may show important differences in how tests function. Crane & Fleisch (forthcoming) suggest that if verb X from language A and verb Y from language B are translational equivalents, but belong to different actional classes in their respective languages, they should behave consistently within each language, and consistently differently across the languages. That is, verb X should pattern the same as other verbs in its actional class in language A, and verb Y should pattern with other verbs in its actional class in language B. In contrast, if translational equivalents behave differently on only one test, and this pattern of differences is consistent for numerous lexical items within each language, it may be assumed that the tests themselves function differently.

In practice, this means that a researcher should not blindly translate actional tests into the language of research (as all too commonly happens), but instead needs to examine carefully how each test functions in that language. However, this important caution does not entail the impossibility of developing tests that are broadly applicable across Bantu. Both typological and historical research (e.g. Nurse 2008; Dom et al. 2018) show that many of the building blocks of actional structure, such as a lexicalized result phase, have been consistent throughout the history of Bantu (and even beyond, in broader Niger-Congo), and that they are still evident in the great majority of Bantu languages today. We propose, then, that general tests can be developed that appear to target each phase and/or boundary in a large number of languages, and that these tests can be applied and evaluated in languages under investigation, always bearing in mind that a test may function differently from language to language.

5 Conclusion

Complex lexicalizations of state changes, along with the phases that lead up to them and follow them, are central to Bantu aspectuality. The complex lexicalizations seen in Bantu do not seem to be restricted to that language group alone, but likely have their roots in broader Niger-Congo patterns. Furthermore, research such as Breu (1994) on Russian, and Zúñiga (2001) on Mapudungun, suggests that such actional structures may be even more widespread, necessitating both the wider adoption of theories that account for them, and further research on this issue in languages around the world.

The complex tense/aspect systems typical of Bantu languages can be exploited to test for these phases and their characteristics. A better

understanding of actionality in Bantu is crucial for continuing to build theoretical models of grammar-lexicon interactions in Bantu, as well as improving our typological understanding of the limits of actional structures and the grammar-lexicon interface. As further detailed research is carried out on actional characteristics across Bantu languages, we will be better able to evaluate the cross-linguistic validity of models of aspect and actionality and understand the limits of what a single verb form can encode.

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Abbreviations

1...18	noun classes 1...18
1A	noun class 1a
1PL	first person plural
1S	first person subject
2PL	second person plural
3SG	third person singular
AFF	affirmative
CAUS	causative
CJ	conjoint
CMPL	completive aspect
COMP	complementizer
CON	connective
CONT	continuous aspect
COP	copula
DECL	declarative
DET	determiner
DETRANS	detransitivizer
DJ	disjoint
FV	final vowel

GER	gerund
INF	infinitive
IPFV	imperfective aspect
IV	initial vowel
LOC	locative
M	masculine
NEG	negative
NONPST	non-past
NSBJ	non-subject
OP	object prefix
PASS	passive voice
PERS	persistive aspect
PFCT	perfect
PL	plural
POSS	possessive
PREP	preposition
PRON	pronoun
PROG	progressive aspect
PROX	proximal demonstrative
PRS	present tense
PST	past tense
PTCP	participle
PFV	perfective aspect
RECP	reciprocal
REDUPL	reduplication
REFL	reflexive
REL	relative clause marker
RL	realis
SG	singular
SP	subject prefix
SUBORD	subordinate
VB	verb base

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Supplementary Material: The online version of this article offers supplementary material containing a review of theories of actionality in Bantu languages (<https://doi.org/10.1515/lingty-2019-0017>).