

Aspectuality in Bantu: On the limits of Vendler's categories

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In current-day aspectology, there is a strong tendency towards bi-dimensional approaches in which aspectual meaning is understood as arising through the selection of abstract lexically specified temporal phases through morphosyntactic aspectual operators. This leads to the question how much of a state-of-affairs can be represented in the lexical phase structure. By looking at data from three Bantu languages this paper shows how the widely received categories stipulated by Vendler (1957/1967) fail to capture the behaviour of a class of lexemes commonly called 'inchoative verbs' in the Bantuist tradition. This paper further shows how the essential limits of Vendler's categories are reflected in most mainstream radical selection theories of aspect and argues in favour of a more fine-grained understanding of the lexical dimension. Thereby I aim to draw the attention of the general linguistic audience to the situation in this language family, which previously has been somewhat overlooked in typological studies of aspectuality.

1. The dimensions of aspect

1.1 Introduction

In the study of the semantics of aspect, especially in languages with a rich aspectual morphology, there is a growing agreement towards bi-dimensional approaches (Sasse 2002; also see Croft 2012).¹ In these approaches an essential distinction is made between aspect as a morphosyntactic device (Sasse's aspect₁) and the lexical (and verb phrase) dimension (Sasse's aspect₂). The latter is often termed 'verb aspect', 'lexical aspect', or 'Aristotelian aspect'. This dimension is best understood as the lexical aspectual potential, namely the abstract phases that make up the state-of-affairs as encoded in the lexical verb (Binnick 1991).

A dominant paradigm within bi-dimensional approaches is the so-called “radical selection theories” (Sasse 2002, based on Bickel 1997); see Croft (2012: 48–52) for an overview. In these theories, the lexical dimension and aspect as a morphosyntactic device are understood as standing in a strict correspondence relationship: grammatical aspect serves as phase-selector that selects matching temporal phases from the lexical dimension. As Sasse (2002: 223ff) points out, other types of bi-dimensional approaches, e.g. the one put forward by Smith (1991), are conceptually closely related to radical selection theories or might even constitute only a notional variant of them. It is thus a central question for our understanding of aspectuality in human language, how many and which phases of a state-of-affairs may be encoded in the lexical dimension and may then be selected by aspectual operators. This need for identifying the language-specific lexical configurations has also been pointed out by Tatevosov (2002) and Bar-el (2015), amongst others.

The most widely received classification of verbal expressions, which has been taken up as an approach to the lexical dimension of aspects by many scholars, are the four categories stipulated by Vendler (1957/1967). This classification will therefore be taken as a jumping off point. In §§1.2–1.3, Vendler's categories and their prominence in aspectology will be discussed, followed by an introduction into the notion of 'inchoative verbs' in Bantu

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languages (§1.4). In a case study comparing data from three eastern Bantu languages, these two strands will then be brought together and it will be shown that Vendler's categories, in their original formulation, fail to describe the phase structures of many verbs in these languages (§2). Lastly, the findings of the case study will be viewed against more recent proposals of verb classifications within radical selection theories (§3). The overall goal of this paper is to point the general linguistic audience towards Bantu languages, which have so far received little attention in typological discussions of aspectuality.

1.2 Vendler's classification

The most influential classification of the temporal constituency of verbal expressions, which has come to be understood as a classification of the lexical dimension of aspect, goes back to the works of Zeno Vendler (1957; reprinted in 1967). In an attempt to explain the semantic and syntactic behaviour of different verbal expressions in English, Vendler proposes four categories based on temporal criteria and their behaviour in specific syntactic frames: activities (*run, eat*), accomplishments (*grow up, recover from illness*), achievements (*find, die*), and states (*want, know*). A major split between these categories is along the line of telicity (end-orientedness): achievements and accomplishments are understood as telic, whereas states and activities are understood as atelic. The latter two again differ in regards to the parameter of dynamicity, while accomplishments and achievements differ in regards to their duration.

1.3 Vendler's heritage

Vendler's categories have been accepted by a great number of scholars –albeit with minor tweaks (e.g. Dowty 1979; Smith 1991; see Tatevosov 2002: 320f for an overview)– as valid for all human languages; An explicit example is van Valin (2006), who discusses the Vendlerian categories, augmented by Smith's category of semelfactives, under the title of “[...] universals of verbal semantics”. This wide acceptance of Vendler's categories also holds in the field of descriptive linguistics. 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”; see Bar-el (2015) for more discussion. A symptomatic case is Chelliah & de Reuse's (2011) fieldwork manual, according to which “[t]he defining characteristics of verbs are captured by the semantic classification of Vendler (1967), which has stood the test of time” (p. 92).

Notwithstanding the widespread acceptance of the Vendlerian categories, criticism has also been expressed. A contentious point is the question of the universality of these categories. As noted above, Vendler was primarily concerned with verbal expressions in English. Tatevosov (2002: 322), however, observes 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.” This general criticism is probably made most explicit in Filip's (2011) review article, where she concludes that “Vendler's classification, despite its prominence, should not be taken for granted” (p. 1193).

A notoriously problematic category is that of achievements. In a purely Vendlerian understanding, as echoed by Binnick (1991: 195) “an achievement is all culmination; although the achievement is possibly preceded by some activity [...] the verb refers only to the achievement phase, not the preceding activity”. One of the most cited diagnostics for this assumed lack of duration, put forward by Vendler (1957/1967) himself, is the putative incompatibility with progressive aspect. Even in English, however, numerous supposedly prototypical cases of achievements can be shown to be acceptable in the progressive (e.g. Mourelatos 1978), as illustrated in (1).

- (1) English:
S/he is winning the race.
S/he is dying.

An important point is made by Botne (2003), a case study of 'to die'-verbs across genetically and typologically distinct languages. Botne shows that the translational near-equivalents of this verb, often considered a prototypical achievement, may not only lexicalize the pivotal transition from life to death, but also a coming-to-be phase of being moribund and/or the ensuing state of death.

It is also noteworthy that those few descriptive studies which dig deeper into verb categorization do not always reflect Vendler's categories; see e.g. Nichols (2010) on Ingush (Nakh-Dagestani) or Hellwig (2011) on Goemai (Afro-Asiatic).

1.4 The lexical dimension in Bantu

Recent years have seen a growing interest in Bantu temporality and aspectuality. A major influence have been the works of Robert Botne and Tiffany Kershner (e.g. Botne 1983; Botne & Kershner 2000, 2008; Kershner 2002). Scholars working on aspectuality in Bantu have been well aware of the limits of the Vendlerian categories. As Crane (2011: 34) puts it, Bantu languages in general appear to divide verbs differently. This is due to a distinction between non-inchoative verbs (roughly corresponding to Vendler's states, activities, and accomplishments) and inchoative verbs, which encompass many of Vendler's achievements and other verbs.

The notion of 'inchoative verbs' that Crane refers to is a central one for this paper. In descriptive works on Bantu languages it is often observed that there are numerous verbal lexemes which are used mainly in specific verbal paradigms commonly called 'perfect', 'perfective' or 'completive',² in which they normally denote a state. Cole (1955), in a grammar of Tswana, notes:

Inchoative verb stems indicate an action which can continue for only a limited period of time before attaining completion [...] whereupon some type of mental or physical state results. [...] such verbs when occurring in [imperfective aspect, BP], predicate the idea of 'becoming' or entering into a state, whereas the completed action and the resultant state is expressed by their use in [perfective/completive aspect, BP] (p. 277)

Common cases of inchoative verbs across Bantu include expressions of concepts such as 'hold', 'know', 'lie/sleep', 'sit', 'be angry', 'resemble', 'be various colours' (Nurse 2008: 97). (2) is representative.

- (2) Totela (K41; Crane 2011: 123)³
ndá-kàtálà
 1SG.CMPL-tire
 'I am tired.'

It is important to note that inchoative verbs in Bantu languages are not limited to typical

²The exact labels for these paradigms tend to differ according to tradition, the tense of the construction in question (e.g. present/non-past vs. far past), or even within the works of the same author; see §2.3 for a discussion of their selectional properties.

³Combinations of a letter plus digits within parenthesis indicate the code these languages receive in the updated version of Guthrie's referential system for Bantu languages (Maho 2009).

experiencer verbs. Thus in the Wanga example (3) *chi:nja* 'carry' is an inchoative verb, unlike its English near-translation, which would suggest a Vendlerian activity.

(3) Wanga (JE34; Botne 2010: 46) (glosses adapted)

<i>axá-yóni</i>	<i>xa-ny'óóla</i>	<i>mw-ene</i>	<i>táála</i>	<i>na-li</i>
NCL2-bird	NCL2.RM.PST-find	NCL1-owner	NCL9.home	NCL1.SEQ-COP

<i>xu:-njirá</i>	<i>náá-[†]chi:nj-ire</i>	<i>efy-áxulya</i>
NCL17(LOC)-NCL9.path	NCL1.SEQ-carry-PFV	NCL8-food

'The little bird found the owner of the home along the road, carrying food.'

Note how this interplay of aspectual operators and the lexical dimension in Bantu languages runs counter to what has been widely observed from other language families, where imperfective aspect is used to depict a state, whereas its aspectual counterpart, depending on the specific lexeme and verb phrase, either denotes the entrance into a state or “can only have a rather restricted semantic range – reference to a state with its inception and termination” (Comrie 1976: 50; also cf. Tatevosov 2002). The question of selecting a mere changes-of-state vs. denotation of a lexically encoded state will be dealt with in §2.3. A situation comparable to the Bantu one is found in many branches of the Niger-Congo phylum (Welmers 1974: ch. 12). For a descriptive case study see e.g. Toews (2015) on Siamou (Kru, Burkina Faso). In §2.3–2.5 it will be shown that it is especially this group of inchoative verbs which precludes the application of Vendler's categories.

While the shift away from the Vendlerian categories in current Bantuist research has provided valuable insights, the focus of studies since Botne (1983) has been descriptive and/or oriented towards the development of alternative classifications (see §3 on the latter). The intermediate step, namely explicitly showing in which cases the application of the Vendlerian categories fails, has not yet been taken. This is the enterprise of the following section.

2. The case study

2.1 The languages

The case study for this paper draws on data from three Bantu languages spoken in a coherent area in southern Tanzania and northern Malawi: Nyakyusa (M31), Ndali (M301) and Sukwa (M202). Nyakyusa data comes mainly from the author's original fieldwork (also Persohn 2017). Some 50 verbs and verb phrases have been examined with at least two language assistants each. Where available, data from texts and a draft translation of the Bible by SIL International (kindly made available by Helen Eaton) were included in the analysis. Ndali data comes from Botne (2008), who unfortunately provides no further information about his sample. Lastly, Kershner (2002) examines around 200 lexical verbs in Sukwa.

The three languages to be considered share a similar inventory of basic tense-aspect categories with nearly identical selectional properties. All three have an imperfective present which typically allows for a progressive, a habitual/generic as well as a futurate reading and which is formed by a prefix *ko-/ku-*. They also have a present perfective/completive⁴ marked by a suffix *-ile/-ite*. The surface realizations of the latter are subject to complex morphophonemic alternations and the suffix often fuses with the verb base ('derivational stem'). While Nyakyusa has the same functional opposition in the past tense, the situation is more complex in Ndali and Sukwa, which further distinguish between the past of an adjacent

⁴Persohn (2017) uses the label (present) *perfective* while Botne (2008) and Kershner (2002) speak of a (current) *completive*.

time unit and a far past. Additionally, all three languages have a periphrastic progressive formed by a copula plus a locative-marked infinitive, as illustrated in (4).

- (4) Nyakyusa
a-li pa-ko-bopa
 NCL1-COP NCL16(LOC)-NCL15(INF)-run
 's/he is running'

2.2 Tests for lexical classes

Since the advent of Vendler's categories a number of standard tests have been developed; for an overview see Binnick (1991: 173–197). As Bar-el (2015) points out, there is an element of circularity, as standard tests often assume the existence of a universal set of classes instead of documenting them. Moreover, not all of these tests are universally applicable. Based on the tenets of radical selection theories, Persohn (2017), and –implicitly– Kershner (2002) and Botne (2008) apply a number of language-specific tests aimed at unveiling the range and characteristics of the lexicalized temporal phases. For the most part, these tests consist of checking the compatibility of verbal lexemes with either common tense-aspect constructions or as the complements of phasal verbs (e.g. 'to begin', 'to stop'), as well as considering the range of readings available in these morphosyntactic frames.

While the analysis presented in this paper is much influenced by the works of Botne and Kershner, the core argument, namely that a theory of the lexical dimension of aspect needs to allow for more complex types than those of the Vendlerian tradition, should prove valid outside of this specific framework.

2.3 Punctual changes-of-state with additional phases

As pointed out in §1.3, a notoriously difficult category within Vendler's classification is that of achievement verbs, which supposedly encode only a punctual change-of-state. In §1.4, the notion of inchoative verbs in Bantu has been introduced. In this section, these two strands will be brought together. It will be shown that many verbs in Nyakyusa, Ndali, and Sukwa, whose approximate translations into English suggest a classification as Vendlerian achievements, additionally encode a coming-to-be phase and/or a resultant state phase.

Concerning the encoding of a coming-to-be phase, one of Vendler's most famous negative criteria for achievement verbs is their acceptability with progressive aspect (see §1.3). Many verbs in Nyakyusa that at first glance appear to be straight-forward candidates for Vendlerian achievements (e.g. 'to die', 'to become angry', 'to grasp'), are, however, perfectly compatible with the periphrastic progressive construction and have a pre-culminative reading in it. Note that this behaviour is independent of argument structure: while the verbs in (5a) and (5b) are both unaccusative, (5c) illustrates the case of a prototypical two-place verb. An entirely parallel situation is found in Sukwa.

- (5) Nyakyusa
 (5a) *a-li pa-ko-fwa*
 NCL1-COP NCL16(LOC)-NCL15(INF)-die
 's/he is dying'
 (5b) *a-li pa-ko-kalala*
 NCL1-COP NCL16(LOC)-NCL15(INF)-be(come)_angry
 's/he is getting angry / about to be angry'

- (5c) *n-di pa-ko-kola ii-bwe*
 1SG-COP NCL16(LOC)-NCL15(INF)-grasp/hold NCL5-stone
 'I am grasping a/the stone.'

Note, however, that not all Nyakyusa verbs which appear achievement-like at first sight can be used in the periphrastic progressive. At least the verb *-aga* 'find, encounter' – just as its English counterpart – was unanimously judged ungrammatical in this construction (6). Kershner (2002: 70, 249) observes the same for a few more lexical verbs in Sukwa.⁵ This can be taken as a first indication that the availability of a pre-culminative reading depends on the lexicalized phase structure, and that the class of apparent achievements is thus a heterogeneous one.

- (6) Nyakyusa
**tɔ-li pa-kw-aga bi-ko-lya*
 1PL-COP NCL16(LOC)-NCL15(INF)-find NCL2-PRS.IPFV-eat
 (intended: 'We are about to encounter that they are eating.')

The fact that the verbs in (5) can be employed with a single-event reading as the complement of the ingressive phasal verb *-anda* 'begin, start' also indicates a lexicalized coming-to-be phase, as in(7)

- (7) Nyakyusa

- (7a) *om-oojo gw-angɔ bo gw-and-ile oko-fwa*
 NCL3-soul NCL3-POSS.1SG as NCL3-begin-PFV NCL15(INF)-die

n-dinko-ko-komboka ugwe gwe N-TWA
 1SG-NARR-2SG-remember PRON.2SG PRON.2SG NCL1-lord

'When my life was ebbing away (lit. My soul, when it had begun to die), I remembered you, LORD!' (Jonah 2:7)

- (7b) *and-ile oko-kalala*
 NCL1.begin-PFV NCL15(INF)-be(come)_angry
 1. 'S/he has begun to get angry.' (now)
 2. 'S/he has begun to get angry (e.g. frequently).'

- (7c) *n-and-ile oko-kola iibwe*
 1SG-begin-PFV NCL15(INF)-grasp/hold NCL5-stone
 1. 'I have begun to grasp a/the stone (now).'

As indicated in examples (7b,c), depending on context, phasal verbs like *-anda* 'begin, start' in Nyakyusa can have both a single-event reading and a series/plurality of events reading. It is the single-event reading that is indicative of the lexically encoded aspectual potential. Again a comparison with a verb like *-aga* 'find, encounter', which does not allow for a single event reading, is indicative of the fact that the denotation of a pre-culmination phase is not merely a function of the morphosyntactic device, but requires such a phase to be available in the lexical dimension.

⁵The verbs listed by Kershner (2002) are: *-kika* 'be loose', *-lekela* 'be ahead of; surpass', *-lemala* '(be) lame', *-songopa* '(be) sharp', and *-syelémuka* '(be) steep'.

- (8) Nyakyusa
tw-and-ile okw-aga bi-ko-lya
 1PL-COP NCL15(INF)-find NCL2-PRS.IPFV-eat
 'We have begun to find them eating (e.g. each time we pass by their house).'
 not: 'We have just begun to find them eating.'

In summary, for a number of lexical verbs in Nyakyusa the interaction with the periphrastic progressive operator as well as with the phasal verb 'begin, start' indicates a lexicalized coming-to-be phase.

There are strong indications that many of the verbs in question also lexicalize a resultant state. To begin with, these verbs in Nyakyusa, Ndali, and Sukwa when used in the present perfective/completive in out-of-context utterances (9) typically receive a stative reading, just as is characteristic of inchoative verbs in Bantu.

- (9) Nyakyusa
 (9a) *a-fw-ile*
 NCL1-die-PFV
 (default:) 's/he is dead'
 (9b) *a-kaleele*
 1SG-be(come)_angry.PFV
 (default:) 's/he is angry'
 (9c) *n-gol-ile ii-bwe*
 1SG-grasp/hold-PFV NCL5-stone
 (default:) 'I am holding a/the stone.'

Note that these verbs in the perfective/completive aspect may, however, also receive a change-of-state reading. Thus in (10a) the event time adverbial phrase 'last year' only allows for a change-of-state reading. In (10b), the question is about a previous event of turning angry, not about a present state.

- (10) Nyakyusa
 (10a) *a-fw-ile iky-mja iki ki-kind-ile*
 NCL1-die-PFV NCL7-year PROX.NCL7 NCL7-pass-PFV
 'S/he died last year.'
 (10b) *a-kaleele=mo siko baaba gw-ako?*
 NCL1-be(come)_angry.PFV=some ever father(NCL1) NCL1-POSS.2SG
 'Has your father ever become angry?'

Given the possibility of a posterior change-of-state reading as in (10), it might seem that the stative reading in (9) can be understood as an implicature. That is, one could assume that it is by conversational principles that a previous transition, e.g. into a state of anger, is understood as an expression of a current state of anger. Alternatively, we may assume that the aspectual operator is vague and selects a point in time or a time span following the change-of-state phase. According to such an understanding, the selected time may fall within a lexically encoded result phase (9) or follow the eventuality as a whole (10); see Welmers (1976: ch. 12) for an influential perspective and Botne (2010) as well as Crane (2011: 118–142) for insightful discussions.

At least for Nyakyusa and Ndali, a strong indication that the ensuing state indeed forms part of the lexical semantics of the verbs in question – and that the aspectual operator is thus semantically vague – comes from the combination of perfective aspect with persistent aspect.

As the latter is not a common cross-linguistic category, a short digression is at hand: persistent aspect denotes that a state-of-affairs continues to hold from an earlier point until a later point, by default the moment of speech. It thus approximately corresponds to the adverbial 'still'. Grammaticalized constructions for persistent aspect are very common in Bantu languages (Nurse 2008: 245). In Nyakyusa and Ndali persistent aspect is expressed by an auxiliary *kaali/kaali* which typically takes an inflected verb as its complement. Consider the following examples:

- (11) Nyakyusa
 (11a) *ii-ivvoka li-kaali li-fw-ile*
 NCL5-store NCL5-PERS NCL5-die-PFV
 'The store is still closed (lit. still dead).'
- (11b) *a-kaali a-kaleele*
 NCL1-PERS NCL1-be(come)_angry.PFV
 'S/he is still angry.'
- (11c) *n-gaali n-gol-ile ii-bwe*
 1SG-PERS 1SG-grasp/hold-PFV NCL5-stone
 'I am still holding a/the stone.'
- (12) Ndali (Botne 2008: 102)
li-kaali li-bal-ite
 NCL5-PERS NCL5-be(come)_bright-CMPL
 'It (sun) is still shining brightly.'

While verbs such as those in (11, 12) and many others in Nyakyusa and Ndali are acceptable in the syntactic frame of persistent aspect plus perfective aspect, not all verbs denoting a change-of-state are. Thus Nyakyusa verbs like *-fika* 'arrive' or *-bifwa* 'ripen' are entirely unacceptable in this frame (13). To express a persistent state other grammatical constructions have to be used, such as an existential construction (14a) or a nominal predicate featuring verb-to-adjective derivation (14b). This suggests that a resultant state needs to be available in the lexical dimension in order to be selected by the aspectual operator. Stated differently, we need to assume that 'to die', 'to be(come) angry' or 'to grasp/hold' but not 'to arrive' or 'to ripen' lexicalize a resultant state in these languages. A purely Vendlerian classification would not predict these differences in the combinatory possibilities.

- (13) Nyakyusa
 (13a) **a-kaali a-fik-ile*
 NCL1-PERS NCL1-die.PFV
 (intended: 'S/he is still present due to his/her arrival.')
- (13b) **ama-tooki ga-kaali ga-bififwe*
 NCL6-banana NCL6-PERS NCL6-ripen.PFV
 (intended: 'The bananas are still ripe.')
- (14) Nyakyusa
 (14a) *a-kaali a-li=po*
 NCL1-PERS NCL1-COP=NCL16(LOC)
 'S/he is still present.'

- (14b) *ama-tooki ga-kaali ma-bifw-e*
 NCL6-banana NCL6-PERS NCL6-ripen-ADJ
 'The bananas are still ripe.'

2.4 Indications of punctuality

While the evidence in §2.3 suggests that verbs such as *-fwa* 'to die', *-kalala* 'be(come) angry' and *-kola* 'grasp, hold' lexicalize a phase leading up to a change-of-state as well as a resultant state phase, there are indications that the relevant change-of-state encoded in these verbs nonetheless shows parallels to Vendlerian achievements. A comparison of verbs roughly corresponding to Vendler's activities and accomplishments shows that we are not dealing with processes⁶ leading to a new state, but rather with punctual changes-of-state accompanied by a coming-to-be phase plus a resultant state phase.

Nyakyusa verbs that denote a process, such as *-lya* 'eat' and *-tima* 'rain' can be used in the syntactic frame of persistive aspect plus the imperfective present (or, alternatively, the periphrastic progressive). In this frame, they denote the continuation of that process (15). Botne (2008) shows the same for Ndali (16).

- (15) Nyakyusa

- (15a) *a-kaali iko-lya*
 NCL1-PERS NCL1.PRS.IPFV-eat
 'S/he is still eating.'

- (15b) *ii-fula ji-kaali ji-ko-tima*
 NCL9-rain NCL9-PERS NCL9-PRS.IPFV-rain
 'It is still raining.'

- (16) Ndali (Botne 2008: 97)
a-kaali a-ku-kama
 1-PERS 1-PRS-milk
 'S/he is still milking.'

Inchoative verbs of the type discussed in §2.3, however, are not generally acceptable in this syntactic frame or only give a habitual/generic reading (17).⁷ The same holds for a verb such as *-fika* 'arrive', which according to the criteria employed above also lexicalizes a coming-to-be phase (18). This behaviour can be taken as an indication that the characteristic act as lexically encoded is not composed of subintervals: there is no earlier and later point of time at which the transition from one state to another can be said to be occurring. Hence the change-of-state that lies at the heart of these verbs should be considered punctual.

- (17) Nyakyusa

- (17a) **a-kaali iko-fwa*
 NCL1-PERS NCL1.PRS.IPFV-die
 (intended: 'S/he is still dying/moribund.')

⁶Throughout this paper, the term *process* will be used as an umbrella term for Vendler's activities and accomplishments. This differs from Tatevosov's (2002) definition, which reserves the term process for Vendlerian activities.

⁷A few verbs such as *-kola* 'grasp, hold' or *-fugama* 'kneel' are exceptions and can be used in this frame, in which they then denote the active continuation of the result phase. This appears to be a clear case of coercion; see Michaelis (2004) for a theory of coercion.

- (17b) *a-kaali iko-kalala*
 NCL1-PERS NCL1.PRS.IPFV-be(come)_angry
 'S/he still gets angry (frequently).' not: 'S/he is still getting angry.'
- (18) Nyakyusa
- (18a) *a-li pa-ko-fika*
 NCL1-COP NCL16(LOC)-NCL15(INF)-arrive
 's/he is arriving'
- (18b) *and-ile oko-fika*
 NCL1.begin-PFV NCL15(INF)-arrive
 'S/he has begun to arrive.'
- (18c) *a-kaali iko-fika*
 NCL1-PERS NCL1.PRS.IPFV-arrive
 'S/he still arrives (habitually).' not: 'S/he is still arriving/getting close.'

Further indication of the punctual nature of the change-of-state encoded in verbs such as 'to die', 'to be(come) angry' and 'to grasp, hold' in Nyakyusa comes from their interaction with the phasal verb *-leka* 'cease, stop'. Verbs denoting a process such as 'to eat' or 'to rain' can occur as the complement of *-leka*, in which case the process is denoted as interrupted or over.

- (19) Nyakyusa
- (19a) *a-lek-ile oko-lya*
 NCL1-cease-PFV NCL15(INF)-eat
 'S/he has stopped eating.'
- (19b) *ii-fula ji-lek-ile oko-tima*
 NCL9-rain NCL9-cease-PFV NCL15(INF)-rain
 'It has stopped raining.'

Verbs such as 'to die', 'to be(come) angry' and 'to grasp, hold', on the other hand, only marginally allow for a single-event reading. In this case the whole eventuality, not the development leading up to the change-of-state is construed as past (20). Similarly, *-fika* 'arrive' only gives a series reading, but not one of an interrupted development in this syntactic frame (21). Again, this behaviour can be taken as an indication of a lack of a lexicalized durative act and thus as an indication of a punctual change-of-state.⁸

- (20) Nyakyusa
- (20a) **a-lek-ile oko-fwa*
 NCL1-cease-PFV NCL15(INF)-die
 (intended: 'S/he has ceased to die.')

⁸A more natural way of referring to a state of anger, e.g. of anger, which has come to an end would be the following:

a-a-kaleele, looli si-mal-iike
 NCL1-PST-be(come)_angry.PFV but NCL10-finish-NEUT.PFV
 'S/he was angry, but now it is over.'

- (20b) *a-lek-ile* *okv-kalala*
 NCL1-cease-PFV NCL15(INF)-be(come)_angry
 1. 'She has stopped becoming angry (e.g. habitually).'
 2. 'S/he is not angry anymore.' (less common)
- (20c) *n-dek-ile* *okv-kola* *ii-bwe*
 NCL1-cease-PFV NCL15(INF)-grasp/hold NCL5-stone
 1. 'I have given up grasping a/the stone.'
 2. 'I am not holding a/the stone anymore.' (less common)
- (21) Nyakyusa
a-lek-ile *okv-fika*
 NCL1-cease-PFV NCL15(INF)-arrive
 'S/he does not arrive anymore.'
 not: 'S/he has stopped arriving (sic!).'

In summary, it has been seen that a number of achievement-like verbs in Nyakyusa, Ndali and Sukwa encode phases additional to a mere change-of-state. With verbs such as 'to die', 'to be(come)' angry' and 'to grasp, hold', their compatibility with progressive aspect and the single-event reading with the phasal verb 'to begin, start' indicate the lexicalization of a coming-to-be phase. The possibility of expressing a persistent ensuing state in the syntactic frame of persistive aspect plus perfective aspect is indicative of a lexicalized resultant state. In each case, a comparison with other verbs has shown that the respective behaviour is not solely a function of the morphosyntactic device but sensitive to the lexical phase structure. Evidence for the punctual nature of the change-of-state comes from the behaviour in the syntactic frame of persistive aspect plus the imperfective present as well as from their behaviour with the phasal verb 'to cease, stop' when compared to durative verbs.

2.5 Processes with a resultant state

So far the limitations of Vendlerian achievements have been discussed. Vendler's other category of telic verbs is accomplishments. In Nyakyusa and Ndali, a number of verbs and verb phrases, such as *-talalila* 'cool (intr.)' or *-lya ingvko joosa* 'eat a whole chicken', come close to the definition of intrinsically delimited processes. Concerning some of the criteria used in the preceding sections, these verbs are compatible with the syntactic frame of persistive aspect plus imperfective present (or, alternatively, the periphrastic progressive), in which they denote a persistent ongoing process. They can also have a reading of an interrupted process with *-leka* 'cease, stop'. Both facts indicate a lexicalized durative act.

Apart from their near-translations of a process delimited at the right edge, at least in Nyakyusa with these verbs the time span phrase 'take X time' unambiguously denotes the time up to the culmination of the process (22), which distinguishes these verbs from activity-type verbs. Also, in Nyakyusa and Ndali these verbs readily obtain a single-event reading of a process that has come to total culmination when they are used as the complement of *-mala* 'finish (tr.)'. In Nyakyusa this is constrained to subjects occupying the semantic role of agent or force (23); Botne (2008) does not discuss possible semantic constraints of the Ndali cognate. Again, this fact does not hold for the type of verbs discussed §2.3–2.4. The only possible single event reading for those verbs is one of an egression out of the result state, which, however, was considered uncommon by the language assistants and which also hinges on the thematic role of the subject (24).

(22) Nyakyusa

(22a) *ifi-ndv fy-eg-ile aka-balilo aka-pimba oko-talalila*
 NCL8-food NCL8-take-PFV NCL12-time NCL12-short NCL15(INF)-cool
 'The food became cold in a short time.'

(22b) *eeg-ile aka-balilo aka-pimba oko-lya in-gokv j-oosa*
 NCL1.take-PFV NCL12-time NCL12-short NCL15(INF)-eat NCL9-chicken NCL9-all
 'S/he took a short time to eat a whole chicken.'

(23a) **ifi-ndv fi-mal-ile oko-talalila*
 NCL8-food NCL8-finish-PFV NCL15(INF)-cool
 (intended: 'The food finished (sic!) cooling.')

(23b) *a-mal-ile oko-lya in-gokv j-oosa*
 NCL1-finish-PFV NCL15(INF)-eat NCL9-chicken NCL9-all
 'S/he finished eating a/the whole chicken.'

(24a) **ii-lvoka li-mal-ile oko-fwa*
 NCL5-store NCL5-finish-PFV NCL15(INF)-die
 (intended: 'The store is not dead/closed anymore.')

(24b) *?a-mal-ile oko-kalala*
 NCL1-finish-PFV NCL15(INF)-be(come)_angry
 'She has finished being angry.' (not common)

(24c) *a-mal-ile oko-kola ii-bwe*
 NCL1-finish-PFV NCL15(INF)-grasp/hold NCL5-stone
 'She has finished holding a/the stone.' (not common)

A closer look reveals an important subdivision within apparent accomplishment verbs. Some verbs, such as Nyakyusa *-fwala* 'dress, wear', *-gaala* 'be(come drunk)' or Ndali *-fuula* 'undress', typically receive a stative reading with perfective aspect. The collocation with persistent aspect indicates that the resultant state is available in the lexical dimension (25, 26).

(25) Nyakyusa

(25a) *(a-kaali) a-gaal-ile*
 NCL1-PERS NCL1-be(come)_drunk-PFV
 'S/he is (still) drunk.'

(25b) *(a-kaali) a-fwele (ii-koti)*
 NCL1-PERS NCL1-dress/wear.PFV (NCL5-coat)
 'S/he is (still) dressed (wearing a/the coat).'

(26) Ndali (Botne 2008: 99)

(a-kaali) a-fuul-ite
 NCL1-PERS NCL1-undress-PFV
 'S/he is (still) undressed.'

Compare this to verbs and verb phrases such as Nyakyusa *-talalila* 'cool (intr.)' or *-lya ingokv joosa* 'eat a whole chicken':

(27) Nyakyusa

(27a) **fi-ndv* *fi-kaali* *fi-talaliile*
 NCL8-food NCL8-take-PERS NCL8-cool.PFV
 (intended: 'The food is still cold.')

(27b) **a-kaali* *a-l-iile* *m-gvkv* *j-oosa*
 NCL1-PERS NCL1-eat-PFV NCL9-chicken NCL9-all
 (intended: 'S/he is still full from eating a whole chicken.')

Again it must be assumed that the presence or absence of such a result state is a question of phase structure. Just as those verbs discussed in §2.3 and §2.4, the group of verbs that suggest themselves as Vendlerian accomplishments is not a heterogenous one in the languages in question.

2.6. Summary of the case study

By looking at inchoative verbs in three Bantu languages, the previous sections have shown that Vendler's categories in their original fourfold formulation are insufficient to capture the behaviour of numerous of these lexemes. It was shown that punctual changes-of-state may additionally be accompanied by a coming-to-be phase and a resultant state phase. Likewise, it was shown that end-oriented processes ('accomplishments') may also lexicalize a resultant state.

3. Theoretical implications

Having found that Vendler's categories are insufficient to capture the aspectual behaviour of various verbs (and verb phrases) in the three Bantu languages considered in the case study, these findings should be viewed from a broader theoretical perspective. As discussed in §1.3, Vendler's categories, in spite of their widespread acceptance, have been subject to criticism and modifications. It is thus worthwhile to consider alternative proposals, especially those within radical selection theories.

In most radical selection theories, the proposed verb categorizations and thus the alleged limits of possible phase structures are essentially derived from the Vendlerian categories. This becomes clear by taking a short overview over the most prominent manifestations of radical selection theories (also see Croft: 2011: 48–52). Walter Breu and the late Hans-Jürgen Sasse (Breu 1984; Sasse 1991) in their theory of aspect assume that any state-of-affairs can maximally include one extended middle phase, a left boundary that represents the ingression into this middle phase and a right boundary, that is, the egression out of the middle phase. This yields a maximum of five maximum types (Sasse 1991), the addition to Vendler's categories being 'ingressive states' (*inchoativ-statische Sachverhalte* in the original German) which feature a left boundary plus a middle phase. Vendler's achievements, which they label 'totally terminatives' are understood as consisting of a left and right boundary, which, however, coincide. Bickel's (1997) 'selection theory' in essence reflects Sasse & Breu's proposal, the main change being the annotation system. Likewise, Johanson (1996; 2000) uses the same primitives of a left boundary, a middle phase ('course' in his terminology) and a right boundary. He also postulates five categories, which minimally differ from Sasse & Breu. First, Johanson understands achievements as consisting of only a right boundary. Second, in Johanson's understanding both Vendlerian activities and states do not feature any boundaries, which requires the postulation of a non-phasal feature [\pm dynamic] to distinguish between these two. In a footnote Bickel (1997: 117) recognizes that such an additional semantic feature might be required to distinguish between achievements with a coming-to-be

phase on the one hand and accomplishments on the other, although he does not explore this in his phasal representations.

As can be gathered from the preceding overview, the three proposals by Breu & Sasse, Bickel and Johanson share a number of common denominators. To begin with, the essential addition to Vendler's categories consists of the recognition of a fifth type of verb, namely a state that is delimited to the left. This addition serves to explain the behaviour of certain lexemes and verb phrases in wide array of languages, such as Spanish *conocer* '(get to) know', Turkish (Turkic) *otur-* (sit down, sit) or Belhare (Sino-Tibetan) *misen nima* '(get to) know', which in perfective aspect either denote the transition into a state or the state within its inception and termination, and the state itself in imperfective aspect. Example (28) illustrates this; see Tatevosov (2002) for more on this class of verbs.

(28) Belhare (Bickel 1997: 122)

(28a) *misen nis-e-ŋ*
 know-PST-1SG.ACTOR
 1. 'I got to know him/her.'
 2. 'I knew him/her.'

(28b) *misen ni-yakt-he-ŋ*
 know-IPFV-PST-1SG.ACTOR
 1. 'I knew him/her.'
 2. 'I used to know him/her.'

Given the findings of the case study, two more points require discussion. First, all three proposals depart from the assumption that a verbal lexeme (or verb phrase) may maximally encode one middle phase, which may or may not be delimited to its left and/or right. By definition this excludes the transitional configurations attested in the case study. Second, the proposed phasal structures do not by themselves allow differentiation between a coming-to-be phase and an end-oriented process. A possible solution implicit in Bickel's and Johanson's frameworks is the assumption of an additional semantic feature of dynamicity for the leftmost phase.

Klein (1992, 1994) postulates a very different approach to the lexical dimension of aspectuality. His categorization is embedded in a complex theory of temporal reference, which in essence distinguishes between the *time of utterance*, a *topic time* ("the time span to which the speaker's claim on this occasion is confined", Klein 1994: 4), and a *time of situation*. In Klein's theory, aspect as a morphosyntactic device establishes a specific relation between the time of situation and topic time. To give an example, perfective aspect is understood as selecting a time span encompassing both the end of a specific time of situation and the beginning of its post-time as the topic time. Regarding the lexical dimension, Klein postulates a threefold categorization based on the number of available phases. The term *phase* is understood more narrowly in Klein's framework and excludes boundaries, which he assumes to be implicit. The possible phase structures are:

0-state-content: permanent properties, such as *be wooden*

1-state-content: properties that allow for a potential change, such as *be open*

2-state-content: a *source state* and a *target state*, e.g. *to die*

In light of the findings from the case study, the assumption of 2-state-content appears promising at first. There are, however, at least two problems with it. First, in Klein's framework one would have to assume that not only verbs such as Nyakyusa *-kalala* 'be(come) angry', but also *-fika* 'arrive' encode both a source state and a target state. This analysis does not explain the diverging behaviour of these lexemes in the diagnostic frame of

persistive aspect plus perfective aspect, according to which only the former, but not the latter lexeme encodes a target state. In the same fashion, Klein's framework does not allow to capture why the target state of a verb such as Nyakyusa *-fwala* 'dress, wear', but not *-talalila* 'cool (intr.)' can be referred to by use of the same lexeme as the one referring to the source state. Second, Klein's categorization does not distinguish between punctual transitions (§§2.3–2.4) and durative transitions (§2.5), which Klein considers to be a question of world knowledge but not lexical semantics (Klein 1994: 87ff). This impedes any semantic explanation for the different behaviours of these verbs with the phasal verb *-leka* 'cease, stop' and regarding the combination of persistive aspect plus imperfective aspect/progressive aspect in Nyakyusa and Ndali.

An understanding of the lexical dimension of aspect that has been very influential in recent studies of aspectuality in Bantu languages (e.g. Crane 2011; Seidel 2008; Persohn 2017) is the one developed by Robert Botne and Tiffany Kershner (e.g. Botne 2008; Kershner 2002; Botne & Kershner 2000, 2008), which has its roots in Botne's study of aspectuality in Ruanda (JD61; Botne 1981, 1983). Botne & Kershner's categorization of verbs adopts the representations of the Vendlerian categories developed in Freed's (1979) oft-neglected study of English phasal verbs ('aspectualizers' in her terms) and their interaction with verbal semantics and the syntax of the verbal complement. In analogy with syllable phonology Freed proposes that the underlying temporal structure of verbs can be understood as a combination of three phases ('segments' in her terminology), the Onset, Nucleus, and Coda. The Onset constitutes a preliminary or preparatory phase, while the Nucleus corresponds to the characteristic act encoded in the verb. The Coda constitutes a culminative phase following the characteristic act. In doing so, Freed subscribes to Vendler's understanding of achievements and accomplishments: she understands the first as pure transitions that consist of a punctual Nucleus phase, while the second are understood as consisting of an extended Nucleus phase delimited by a punctual Coda phase. These representations of phases mirror those of middle phases and boundaries in Sasse & Brey's, Bickel's and Johanson's frameworks. Botne & Kershner modify Freed's understanding of phases by assuming that Onset and Coda phases may both be durative and that phases may combine in more complex ways. Thus in their understanding an achievement may additionally encode a durative Onset (i.e. a coming-to-be phase) and/or a durative Coda (the result state). Likewise, an accomplishment may also feature a durative Coda. In this understanding, verbs such as Nyakyusa *-kalala* 'be(come) angry' encode a durative Onset, a punctual Nucleus, and a durative Coda phase. Verbs such as Nyakyusa *-fwala* 'dress/wear', on the other hand, would encode an extended Nucleus plus a durative Coda. It is this extended Coda phase that distinguishes the latter from Vendlerian accomplishments such as *-talalila* 'cool (intr.)'. The possibility of a single-event reading with the phasal verb *-leka* 'cease, stop' and in the syntactic frame of persistive aspect plus imperfective/progressive aspect, on the other hand, can then be understood as a function of the durative Nucleus.

While Botne & Kershner's framework allows one to capture the different behaviour of various classes of lexemes (and verb phrases) attested in the case study, it critically hinges on the assumption not only of a lexicalized semantic pivot (the Nucleus), but also on the temporal notion of durativity. Hence it requires postulating radically different phasal configurations to account for the change-of-state encoded in e.g. *-kalala* 'to be(come) angry' (a durative Onset plus a punctual Nucleus boundary that acts as a boundary) vs. the one denoted by *-fwala* 'dress/wear' (a durative Nucleus and no overt boundary). It needs to be critically examined in how far these differences can be accounted for in a more straightforward manner by other semantic features, e.g. dynamicity of the first phase, and, more generally speaking, how much of aspectual specification is strictly temporal and how much is linked to other conceptual domains (see Croft 2012). Further, Botne & Kershner's model has explicitly been designed for Bantu languages. Its suitability to languages outside this family has not yet been tested; the sole exception is Botne (2003) on 'to die' verbs.

4. Conclusion

In §1 the tenets of radical selection theories of aspect have been outlined. It was shown that within these theories the lexical and verb phrase dimension (Sasse 2002's aspect₂) and aspect as a morphosyntactic device (Sasse 2002's aspect₁) are understood as standing in an operator-operandum relationship. This calls for a deeper understanding of both, of which and of how many phases, of a state-of-affairs may be encoded in the lexical and verb phrase dimension and can then be selected by the morphosyntactic aspectual operators. This outline of radical selection theories was followed by a discussion of Vendler's (1957/1967) influential classification of verbal expressions, its impact as well as criticism towards it. In the next step, the notion of inchoative verbs in Bantu languages was introduced as a challenge for the Vendlerian categories.

In §2 a case study with data from three Bantu languages has been given. It was shown that a strictly Vendlerian approach to the lexical dimension in aspect fails to capture the behaviour of numerous verbs and verb phrases in these languages. It was shown that verbs denoting punctual changes-of-state can, contrary to Vendler's definition of achievements, additionally encode a coming-to-be phase as well as a resultant state. Likewise, it was shown that end-oriented processes ('accomplishments') may or may not also lexicalize a resultant state. While a similar claim concerning Vendler's achievements has been made by Botne (1983) for several lexemes in Kinyarwanda and by Botne (2003) for the crosslinguistic expression of 'to die', the present case study has taken into account a wider array of lexical verbs and a number of additional criteria in a smaller group of related languages. Furthermore, a wider scope has been taken by taking apparent accomplishments into account. Observations on the latter have so far remained merely implicit in Botne (2008) and Persohn (2017) and have not been measured against Vendler's categorizations.

In §3 it was shown that not only Vendler's original classification, but also more recent classifications within radical selection theories do not provide for the transitional types of verbs attested in the case study. Instead, most theories (Breu 1984; Sasse 1991; Bickel 1997; Johanson 1996, 2000) depart from the assumption that the lexical dimension may maximally denote one sole middle phase plus its potential boundaries. While the alternative proposal by Klein (1992; 1994) allows one to account for transitions between two lexically encoded states, it does not allow one to account for various of the differences in behaviour between different types of change-of-state verbs. Lastly, it was shown that Botne & Kershner's (e.g. 2008) elaboration of the Vendlerian categories does allow one to account for these differences, but that it requires more cross-linguistic research and that its basic assumptions call for a critical evaluation.

To put it in a nutshell, a cross-linguistically valid approach to aspectuality requires more fine-grained categories than those of the Vendlerian tradition. Also, it needs to take into account not only the possible boundaries of a sole characteristic middle phase, but to be able to account for the more complex transitional types of verbal lexemes that have been attested in the three Bantu languages under consideration. Closely related to this, it needs to be kept in mind that the lexicalization of states-of-affairs in human languages follows arbitrary patterns and cannot be assumed to mirror alleged extra-linguistic ontological universals; see also Bickel (1997) and Botne (1981: 77–100), among others. That is, speakers do not communicate real-world events, but apply the available language-specific tools to shape their linguistic portrayal of those events (e.g. Krifka 1998: 207).

More detailed studies on Bantu aspectology and the integration of data from this language family will doubtlessly provide important insights into the conceptualization of states-of-affairs in human language. Studies currently in progress such as the Ndebele project at the University of Helsinki (Crane & Fleisch 2016) promise such contributions.

Abbreviations

ADJ	deverbal adjective
CMPL	completive aspect
COP	copula
INF	infinitive
INTR	intransitive
IPFV	imperfective aspect
LOC	locative
NARR	narrative tense
NEUT	neuter derivation ('middle voice')
NCL	noun class
PERS	persistive aspect
PFV	perfective aspect
PL	plural
POSS	possessive
PRO	pronoun
PROX	proximal demonstrative
PRS	present tense
PST	past tense
RM.PST	remote past
SEQ	sequential
SG	singular
TR	transitive

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