# Towards a Fieldwork Methodology for Eliciting Distinctions in Lexical Aspect in Bantu
*Thera Crane and Axel Fleisch*
HALS 2016, South Africa

## 1  Introduction

Studies of contact linguistics have shed much light upon phenomena such as lexical borrowing and phonological change. Less is known, however, about the borrowing of semantic information. We set out to investigate the potential influence on semantics in isiNdebele and Sindebele, both spoken in long-term and intensive contact situations involving the Nguni and Sotho-Tswana language clusters.

We identified the lexical aspectual structure (also known as situation type, actionality, or aktionsart, among other labels) of verbs as a fruitful area for investigations of contact-induced semantic change. Because of its intimate interactions with grammatical aspect, lexical aspect is a domain in which infinite meaning possibilities meet a closed set of grammatical categories; understanding these interactions is a step towards bringing the cognitive semantic "architecture" of eventualities to light.

As described in detail below (section 3), Bantu languages typically have systems of lexical aspect that deviate significantly from the classification described by Vendler (1957). Even across Bantu languages, verbs that are the nearest translation equivalent may have different lexical aspectual structures in different languages. Our research questions, then, relate to how these differences in semantic and conceptual structure play out in language, and how multilingual speakers negotiate conceptual differences.

Lexical aspect is notoriously difficult to categorise. Verbs may belong to more than one category, depending on context, and speakers are very good at construing or coercing meanings to resolve seeming infelicities (e.g. the famous *"i'm lovin' it"* (sic) marketing campaign). There seem to be as many exceptions as rules – or even more – when applying standard tests of lexical aspect cross-linguistically (see Bar-el 2015 for numerous examples).

Despite these important cautions, we believe that lexical aspectual structure can (and should) be meaningfully compared across languages. In this paper, we describe our investigations of lexical aspect in isiNdebele, and our adaptation of the tests we developed to a related language, Sindebele, and some of the subtle semantic differences that were revealed. We argue that developing and applying lexical aspect tests requires long, ethnographic-style discussions with speakers regarding the potential meaning(s) and use(s) of verbs in various linguistic frames. Although this style of research is less amenable to quickly producing neat categorisations of verbs, we argue that it both helps to avoid artificially straightforward analyses, and allows us to discover which distinctions are worth comparing.

The purpose of this paper is, therefore, not to offer definitive theories of the systems of lexical aspectual classification in the languages discussed – such studies are ongoing – but rather to describe the investigative processes and the insights that emerged, in the hope that some of our

experiences and the research principles we suggest will be of use to researchers of lexical aspectual semantics in other languages.

The remainder of this paper is organised as follows: In Section 2, we discuss basic principles and challenges related to the investigation of lexical aspect. Section 3 briefly describes the most common research strands on lexical aspect in Bantu languages. In section 4, we develop the basis of a research methodology for studying lexical aspect in isiNdebele, based on principles that can apply to studies of lexical aspect in other languages, as well. We describe research desiderata for obtaining robust results (§4.1) and the semi-structured interview process we used for eliciting most of our data (§4.2). Section 5 describes the adaptation of our tests to a related language, Sindebele, the challenges encountered, and some of the insights gained in the adaptation process. Adapting the tests allowed not only for fine-grained comparisons of the lexical aspectual "structures" associated with particular verbs in each of the languages, but also for deeper insights into the workings of the tense and aspect systems of each language. The paper concludes in section 6.

We write isiNdebele sentences using the standard orthography for that language (see Mahlangu 2016); for Sindebele, where the standard orthography is still being developed and disseminated, we attempted to conform to speaker preferences. One area of divergence is that we generally write Sindebele examples conjunctively in this paper so they more closely mirror their isiNdebele counterparts, while speakers tend to adopt more disjunctive writing styles, in which verbal elements may be written as separate words. We have not yet made a thorough analysis of Sindebele phonology, and in particular, have not resolved all of the issues regarding vowel quality, but we have aimed for internal consistency. Sindebele transcriptions should thus be taken with a grain of salt with regard to phonology. In sections 2 and 3, all examples are from isiNdebele. Starting in section 4, where both languages are discussed, examples are labelled either isiNdebele or Sindebele.

## 2   Investigating lexical aspect

Analyses of lexical aspect have traditionally relied on Vendler's (1957) typology and expansions thereof (e.g. Smith 1997, Croft 2012). Vendler's original classification included states (e.g. 'love'), activities (e.g. 'run'), accomplishments (e.g. 'eat an apple', 'run a mile') and achievements (e.g. 'reach the summit', 'arrive'). Smith added the category of semelfactive, for verbs like 'cough' and 'kick' that usually have iterative meanings in the present progressive.  However, much recent work has shown Vendler's classes to be insufficient for characterising event types in many languages (see Bar-el 2015 for an overview). It has been shown (see e.g. Bar-el 2015 and references therein) that for many languages, Vendler's categories do not have enough detail to satisfactorily categorize situation types as they are linguistically instantiated.

This is certainly the case for Bantu languages, which typically have large classes of "change-of-state" (COS) verbs (or verbal predicates) (Botne & Kershner 2000; Kershner 2002; Nurse 2008; Persohn 2017a). Many Bantu languages have relatively small, closed adjective classes, and adjectival meanings are expressed with COS verbs. In general, COS verbs are interpreted as present states when paired with past or perfect(ive) aspectual morphology, as seen in the contrast between the isiNdebele examples in (1) and (2).

(1)  Ngi-ya-kwat-a
1SG.SP-DJ-get.angry-FV
'I am getting angry'

(2)  Ngi-kwat-ile
1SG.SP-get.angry-PFV[1]
'I am angry'

COS verbs are frequently classified as "achievement" verbs, due to the punctual nature of the change from one state to another. However, many of these verbs represent meanings quite different from the prototypical examples of achievements usually given in Vendlerian classifications (e.g. 'reach the summit' and 'win the race'). Furthermore, COS verbs are not a monolithic group. For example, some verbs in isiNdebele contrast with -*kwata* 'get angry' above in that they do not lexically encode an onset (coming-to-be) phase leading up to the state change. When used with the present tense, such verbs behave as habituals (3a) or even have conventionalised figurative meanings (3c).

(3)  a. U-ya-thul-a            b.  U-thul-ile
1.SP-DJ-be/get.quiet-FV        1.SP-be/get.quiet-PFV
'S/he keeps quiet'            'S/he is quiet / he is being quiet'

c. U-ya-lamb-a            d.  U-lamb-ile
1.SP-DJ-get.hungry-FV          1.SP-get.hungry-PFV
'S/he is poor'               'S/he is hungry'

Given these basic facts, it becomes clear that more detailed investigation of lexical aspect in Bantu languages is warranted. Bantu languages are excellent "laboratories" for studies of lexical aspect, both because of their (typically) large classes of COS verbs and because of their (typically) extensive inventory of verbal tense and aspect marking. However, relying on standardly-cited tests for Vendlerian lexical aspectual types is unlikely to produce sufficiently nuanced results, and may even be misleading. The latter is the case for several reasons.

The first, and lesser, problem is with the tests themselves. As has been repeatedly noted (and is convincing demonstrated in Bar-el 2015), lexical aspect tests do not function the same way in every language, or even for all predicates in the same "class" within a language, including English. Below, we give a few examples of how Vendlerian tests fail or are misleading in isiNdebele.

---

[1] The present and perfective paradigms in isiNdebele exhibit a morphological contrast between "conjoint" and "disjoint" forms, where conjoint morphology indicates shared constituency with the following element. See Buell (2006) for details. In this article, we gloss the present-tense disjoint marker as DJ (the conjoint form is not segmentally expressed). The disjoint perfective form is "long" -*ile*, while the conjoint perfective is "short" -*e*. This distinction is not explicitly indicated in our interlinear glosses, and both forms are glossed as PFV. The perfective marker sometimes "imbricates" (see Bastin 1983) into the stem, conditioning vowel changes; these imbricated forms are also glossed as PFV. See Authors (forthcoming) and Botne & Kershner (2000) for more details.

In English, temporal adverbials are said to distinguish activities and accomplishments (see e.g. Smith 1997; Van Valin 2006), as in (4).

(4) The knight fought dragons for five years / # in five years. [activity]
     The knight defeated the dragon #for two days / in two days. [accomplishment]

IsiNdebele, however, duration temporal adverbials such as *iimveke ezimbili* 'two weeks' can be translated into English either as (e.g.) 'for two weeks' or 'in two weeks', depending on the context.

(5)   a. U-khamb-e       iimveke      ezimbili
          1.SP-go-PFV      10.week      10.two
          'S/he left (i.e. was gone) for two weeks'

      b. U-tlol-e          incwadi      iimveke     ezimbili
         1.SP-write-PFV    9.letter     10.week     10.TWO
         'S/he wrote a book in (/ for) two weeks'

      c. U-dl-e           umengo      imizuzu     elitjhumi
         1.SP-eat-PFV     3.mango     4.minute    4.ten
         'S/he ate the mango in / for ten minutes'

In some predicates, the *-ile* form does not combine naturally with a durative temporal adverbial, although the predicates are durative. For example, *-khohlela* 'cough' can describe either a semelfactive event (one cough) or a temporally-extended (iterative) activity.

(6)   a. U-ya-khohlel-a
          1.SP-DJ-cough-FV
          'S/he is coughing'

      b. ?U-khohlel-e       iimveke      ezimbili
          1.SP-cough-PFV    10.week      10.two
          intended: 'S/he coughed for two weeks'
          (Speaker comment: "Then what? Did he die?")

The natural way of expressing 's/he coughed for two weeks' is as in (7), with a past imperfective form.

(7)   Be-ka-khohlel-a         iimveke      ezimbili
      IPFV-1.SP-cough-FV      10.week      10.two
      'S/he coughed for two weeks'

In fact, isiNdebele (unlike many other Bantu languages) has a morphological means for expressing 'in X time', using the "inner-space" (Fleisch 2005) locative adverbial prefix *nga-*, as in *ngemizuzu elitjhumi* 'in ten minutes'. However, even this does not reliably distinguish between translations of English activity verbs like 'sing' and accomplishment verbs like 'eat a mango'. This is because

speakers seem to easily construe (elided) bounding objects for potentially transitive verbs in such contexts. Note that such elisions are also possible in English, with sufficient context; however, they seem to be somewhat more natural in isiNdebele.

(8)   a. U-dl-e          umengo     ngemizuzu    elitjhumi
        1.SP-eat-PFV     3.mango    LOC.4.minute  4.ten
        'S/he ate a/the mango in ten minutes'

      b. U-cul-e         ngemizuzu    elitjhumi
        1.SP-sing-FV     LOC.4.minute  4.ten
        'S/he sang in ten minutes' (e.g. a song, or the set program)

These and other examples raise the question of whether the activity/accomplishment distinction is less important in isiNdebele, or whether it simply needs to be captured using other tests. It's worth noting that even in English, (8b) is completely acceptable if a specific singing program is already contextually invoked. Although the temporal adverbial test does not straightforwardly distinguish activities and accomplishments, as it is said to do in English, acceptability judgments and translations into English, taken carefully, can still shed light on aspectual properties of different predicates.

More insidiously challenging to apply is a test like the imperfective paradox, which in English distinguishes activities from accomplishments (and possibly achievements).

(9)   a. Sipho was eating ENTAILS Sipho ate [activity]
      b. Sipho was eating a mango DOES NOT ENTAIL Sipho ate a mango [accomplishment]
      c. Sipho was reaching the summit DOES NOT ENTAIL Sipho reached the summit [achievement]

In isiNdebele, this test has several potential pitfalls. While it works as expected for activity verbs, as in (10), objects are not necessarily quantized, so that many predicates are ambiguous between activity and accomplishment readings. The entailment test can therefore depend on which interpretation is salient in the speaker's mind (see interpretation (i) vs. (ii) in (10c)).

(10)  a. USipho      be-ka-cul-a      ENTAILS      U-cul-ile
        1A.Sipho    IPFV-1.SP-sing-FV              1A.Sipho    1.SP-sing-PFV
        'Sipho was singing'     ENTAILS    'He sang'

      b. USipho      be-ka-akh-a      indlu    DOES NOT ENTAIL     Wa-akh-e          indlu
        1A.Sipho    IPFV-1.SP-build-FV  9.house                   1.SP.PST-build-PFV 9.house
        'Sipho was building a house'     DOES NOT ENTAIL     'He built a house'

      c. USipho      be-ka-dl-a       umengo   COULD ENTAIL   U-dl-e       umengo
        1A.Sipho    IPFV-1.SP-eat-FV  3.mango                 1.SP-eat-PFV 3.mango
     i.   'Sipho was eating a mango'           DOES NOT ENTAIL 'He ate a mango'

ii.  'Sipho was eating mango'          ENTAILS          'He ate mango'
(Speaker's comment regarding this example: "They're not the same. Actually, they're similar.  They're basically the same.")

Furthermore, the test seems to work for some achievements (11), but it is difficult to construct with many change-of-state verbs, which are typically classified in the Vendlerian model as achievement predicates (see e.g. Botne 2003) (12).

(11)  USipho      be-ka-khamb-a      DOES NOT ENTAIL   U-khamb-ile
      1A.Sipho    IPFV-1SG.SP-leave-FV                 1.SP-leave-PFV
      'Sipho was leaving'         DOES NOT ENTAIL   'He left'[2]


(12)  USipho      be-ka-lamb-a           ???            U-lamb-ile
      1A.Sipho    IPFV-1SG.SP-get.hungry-FV            1.SP-get.hungry-PFV
      'Sipho used to get hungry' /   DOES NOT ENTAIL   'He is hungry'
      'Sipho was poor'

However, the predicates in (12) are not straightforwardly related.

With many COS predicates, the perfective *-ile* form is ambiguous between a state-change reading (e.g. 'got fat') and a current state reading (e.g. 'is fat'), which makes the test even more difficult to reliably apply. In any case, this test – like adverbial tests – is instructive, but must be applied with great care.

Even if the tests were perfected for application within a particular language, their success in elicitation contexts would not be assured. For example, a speaker might reject an utterance outright because not enough contextual information is provided, as in (13). (See Matthewson 2004 for arguments that in semantic elicitation, sentences should never be presented for translation without additional contextual information).

(13)  U-pheze     wa-fik-a (utterance offered for judgment)
      1.SP-nearly  1.SP.PST-arrive-FV
      Intended: 'S/he almost arrived'
      Speaker judgment: "You can't say that. You should say *upheze weza* 'he almost came'."
      Subsequent context provided to the speaker: "What would you say if Sipho was climbing a mountain and almost reached the top, but didn't quite make it?"
      Speaker response: *Upheze wafika*

The more serious issue in relying on tests used to distinguish Vendler's lexical aspectual types in English is the underlying assumption that the categories themselves are universal. We return to this point throughout the following sections.

---

[2] Note that *-khamba* also means 'go', 'travel' or 'walk', so this test is only meaningful if speakers have the COS meaning, rather than the ongoing activity meanings, in mind.

## 2.1    Which characteristics need to be investigated?

A first step in investigating lexical aspect is determining what semantic properties of a lexical expression have the potential to make aspectual contributions relevant for grammar and the interpretation of utterances. Since we do not want to assume the universality of Vendlerian distinctions, we need to take a more basic approach. As noted by Bar-el (2015:105), "what may be universal is an inventory of building blocks that languages use to construct aspectual classes". Therefore, one of our starting points was the idea that both phases (and the transitions between them) and the internal "structures" of phases can be linguistically significant (see also Croft 2012 and references therein). The following discussion describes these components and some of their potential variations.

Botne (2003) shows that languages can construe the phasal structure of events quite differently, even when the verbs encoding them are translation equivalents. He posits that achievement verbs can maximally encode the following phases: a pre-state (A); a dynamic stage (B) leading up to the "pivot" or point of transition (C); the "denouement" (D); representing entry into the result state (E). In general, the nucleus represents the primary lexical content of an expression; in the words of Botne and Kershner, the "characteristic and prominent feature of the event" (Botne & Kershner 2000). The key feature of achievement verbs, Botne argues, is that the nucleus (the point of transition, or C, in this verb type) is construed as temporally punctual; other phases may or may not be lexically encoded. In other verb types, with the exception perhaps of semelfactives, the nucleus is not construed as punctual, but rather as extended in time.

[Insert Figure 1 here]
Figure 1: Phases of achievements (Botne 2003:237)

Botne shows that languages differ significantly as to which phases are lexically encoded (i.e. can be linguistically targeted by grammatical forms) in an achievement verb like 'die'. Noting that, in general, only three major phases – onset (A/B), nucleus (C), and coda (D/E) – are necessary in the analysis of verbs like 'die', Botne proposes four major types of achievements: "acute" (only the nucleus is encoded), "inceptive" (onset phase + nucleus), "resultative" (nucleus + coda phase), and "transitional" (onset + nucleus + coda) (2003:238). These types are largely consonant with the types of "punctive" verbs proposed in Kershner (2002); see Section 3 below for further discussion.

An additional consideration that may have grammatical ramifications is the internal structure of phases. Croft's (2012) treatise on verbal aspectual and causal structure argues that aspectual structure must be understood as two-dimensional: the phases as they are instantiated across time, (*t* dimension) and the internal qualitative structure of the phases, including a qualitative change in state (*q* dimension).

For example, Croft distinguishes two types of activities: "directed" and "undirected" (or cyclic) activities. Directed activities such as 'the soup cooled' have a "continuous" or "incremental" qualitative change across time, while undirected activities like 'the girls chanted' do not have a directed qualitative change over time (Croft 2012:60-61; see Croft's text for visual depiction of the differences.).

Accomplishments are analogous to activities, except that they are bounded by a completion phase. Croft argues that accomplishments "profile" three phases: "the inception and the completion phase as well as the directed change phase" (Croft 2012:62). Some accomplishments (in Croft's terms, "incremental accomplishments", e.g. 'I ate an apple pancake') involve continuous change towards the result phase; others ("runup achievements" or "nonincremental accomplishments", e.g. 'Harry repaired the computer') profile an undirected activity leading to the result state (Croft 2012:62).

States and achievements have similarly analogical structure; some qualitative distinctions in evidence include whether the state (or result state) is the result of a state change or not, and whether the state change is permanent or reversible.

Verbs in isiNdebele may be sensitive to the contrast between incremental and non-incremental coming-to-be phases. This can be seen in the contrast between two senses of the verb *-phola*, which can mean both 'cool down' and 'recover'. It is compatible with persistive marker *-sa-* 'still' in the present tense only with the meaning 'cool down'. Whether this contrast has to do with incrementality or some other quality feature is still under investigation, but the need to distinguish quality within coming-to-be phases is clear.

(14)  a.  USipho      u-ya-phol-a
          1A.Sipho    1.SP-DJ-recover-FV
          'Sipho is recovering'

      b.  Umratha     u-ya-phol-a
          3.porridge  3.SP-DJ-cool.down-FV
          'The porridge is cooling'

      c.  #USipho     u-sa-phol-a
           1A.Sipho    1.SP-PERS-recover-FV
          Intended: 'Sipho is still recovering'

      d.  Umratha     u-sa-phol-a
          3.porridge  1.SP-PERS-cool.down-FV
          'The porridge is still cooling'

The permanency or irreversibility of the result state also makes a semantic difference, and is also testable with *-sa-*. COS verbs with a temporary result state are compatible with *-sa-* and an *-ile* ending.

(15)  U-sa-lamb-ile
      1.SP-PERS-get.hungry-PFV
      'S/he is still hungry'

(16)  U-sa-phakam-ile
      1.SP-PERS-rise.up-PFV

'S/he is still standing / in a place of prominence / angry'

Verbs that do not allow targeting of a result state are incompatible with *-sa-* with an *-ile* ending, at least with a current-state reading. An example is the semelfactive-like *-khohlela* 'cough'.

(17)  #U-sa-khohlele
       1.SP-PERS-cough.PFV
       Intended: ~ 'S/he has still coughed'

Also infelicitous are irreversible COS verbs, where the result state is permanent.

(18)  #?Inja    i-sa-f-ile
        9.dog  9.SP-PERS-die-PFV
       Intended: 'The dog is still dead' (only allowed if a resurrection is expected; this predicate is possible with idiomatic uses of *-fa* to indicate e.g. flat batteries)

Croft's inventory of aspectual types applies to the interpretation of utterances, while we are more concerned with the possible interpretations of lexical items in different grammatical contexts.[3] Despite this important difference in approaches, we take from Croft the important insight that the internal qualitative structure of phases plays a significant role in the interaction between lexical and grammatical aspect.

## 3  A brief research history of lexical aspect in Bantu

As noted in the introduction, Bantu languages frequently have a large class of verbs that (in the unmarked case) receive a present state interpretation when marked with perfect(ive) (/anterior) aspect; that is, they describe a resultant state; we call these change-of-state (COS) verbs. Note that the result state need not be linked to a process leading to that state, at least not as such processes are typically construed in human understanding.

(19)  Ilitje       **li-qin-ile**
       5.stone  5.SP-become.strong-PFV
       'the rock **is hard / solid / strong**'

(20) Indlela      **i-vulek-ile**
      9.road    9.SP-open-PFV
      'the road **is wide'**

(21) Umntwana    u-bheleth-iwe            **a-hlubule**
      1.child        1.SP-give.birth-PASS.PFV    1.SP.SUBORD-undress.PFV
      'the child was born **naked'**

---

[3] Croft also approaches this question through a computational analysis of the interplay of "lexical aspectual potential" and grammatical aspect, using multidimensional scaling (Croft 2012). Such an approach may ultimately prove enlightening in isiNdebele and other Bantu languages.

**Towards a Fieldwork Methodology for Eliciting Distinctions in Lexical Aspect in Bantu**
*Thera Crane and Axel Fleisch*
HALS 2016, South Africa

An explicit description of COS verbs is given by Botne & Kershner (Botne & Kershner 2000), who characterise isiZulu "inchoative" verbs as "express[ing] a change of condition or location of the experiencer or patient, many expressing the change or transition from one state to another". In this classificatory system, inchoative verbs contrast with non-inchoative verbs, the latter of which correspond to "Vendler's activities, accomplishments, and states" (Botne & Kershner 2000). Other work (e.g. Botne 2008; Persohn 2017) groups some COS verbs with Vendlerian achievements (Botne & Kershner 2000) and other COS verbs with accomplishments, thereby mirroring more closely the widely assumed telic/atelic dichotomy where achievements and accomplishments group together in contrast to activities and states.  An important and seldom explicitly asked question is whether COS verbs comprise subtypes of one or more Vendlerian categories, or whether they have some crucial property that both groups them together and separates them from the more prototypical accomplishment and achievement lexical types.[4] If the former is true, then we can (at least in this instance) maintain Vendlerian categories and simply argue for subcategorisations within them. If the latter turns out to be true, the Vendlerian framework cannot be applied to languages with COS verbs.

Regardless of what is assumed or argued regarding their relationship to Vendler's categories, most work on lexical aspect in Bantu languages has focused on understanding and subcategorising COS verbs. One of the most rigorous studies is Kershner (2002). Kershner's work is based on a framework outlined in Botne (1983) and Botne & Kershner (2000), which in turn takes inspiration from Freed (1979). Kershner systematically investigates approximately 200 verbs in Sukwa (M301). Kershner proposes three overall categories of lexical aspect (states, punctives, and duratives), including four major categories of ("punctive") COS verbs, the latter of which may differ on whether an onset and/or coda phase is encoded in addition to the point of state change. As noted in Section 2.1, Botne (2003) shows that Kershner's four-way classification of COS verbs (which he subsumes under "achievements") has cross-linguistic relevance.

Botne & Kershner's system is adopted, modified, and expanded upon in Seidel (2008), who collapses Kershner's tripartite basic distinction into a two-way distinction between "durative" and "change-of-state" verbs in Yeyi (R41). Seidel uses tests similar to those set out in Kershner, and finds evidence for a somewhat different sub-classification of COS verbs. Crane's (2011) study of Totela (K41) also adopts the bipartite "durative" vs. "change-of-state" distinction and illustrates that these macro-categories have distinct sub-classes within them, but does not offer a maximal set of possible lexical aspectual types. After a detailed comparison of various classifications of lexical aspect in Bantu, Lusekelo (2016) echoes Kershner (2002) and Botne (2003) in proposing for Swahili (G42) three macro-categories (stative, inchoative and activity) and four subcategories of inchoative verbs, based on whether the onset and coda phases are lexically encoded.

---

[4] A rigorous answer to this question will have to take into account the role of participant structures. For example, are 'Jack baked a cake' and 'The cake cooled to room temperature' fundamentally different apart from the affected object in the former and the affected subject in the latter? We do not attempt to address this question in this paper, but see Author A (in prep) for an approach to this and similar questions in isiNdebele, and Croft (2012) for an extremely thorough treatment of aspect and causal structure in English.

**Towards a Fieldwork Methodology for Eliciting Distinctions in Lexical Aspect in Bantu**
*Thera Crane and Axel Fleisch*
HALS 2016, South Africa

Persohn (2017b:117–140) proposes seven lexical aspectual classes, the last two of which are somewhat putative, as each class has only one member in Persohn's sample of fifty verbs: activity, simple accomplishment (as in Vendler, extended nucleus with inherent terminal point), transitional accomplishment (extended nucleus phase plus result state), transitional achievement (extended onset phase, punctual nucleus, and result state), resultative achievement (punctual nucleus plus result state), inceptive achievement (extended onset phase plus punctual nucleus), and acute achievement (punctual nucleus only).

Ongoing work suggests that extended onset and nucleus phases may not necessarily be ontologically distinct, but may be distinguished by other features (e.g. dynamicity and participant roles), so tests need to take these factors into account, as well. For the purposes of this paper, we will use the onset-nucleus-coda structure, as this is most frequently employed in recent descriptions of lexical aspect in Bantu (Persohn 2017a; Persohn 2017b; Lusekelo 2016; Seidel 2008; Kanijo 2017). However, we recognize that the need to distinguish between extended onset and extended nucleus phases still requires further investigation. With COS verbs, extended "onset" phases can be understood as encoding the coming-to-be phase; "codas" the resultant state, and the "nucleus" the (sometimes subjectively construed) point of change itself.

Fleisch (2000) takes a somewhat different approach, basing his classifications on the categorizations in Sasse (1991) and Breu (1984; 1994), along with insights from Dik (1989). Fleisch proposes that the classification of verb types in Lucazi (K10, Angola) is based not only on phases and their boundaries (following Sasse and Breu), but also on the characteristics of those phases, such as dynamicity and subject control. Fleisch posits three major classes in Lucazi: Actions, which are dynamic events that are usually controlled by their logical subjects (this class includes motions, activities, and verbs of communication, along with weather events); Processes, which do not have an agentive/controlling subject, and depict telic events leading to a result state, which Fleisch claims is not lexically encoded but rather pragmatically implicated (this class includes verbs of perceptions, of mental faculties and attitudes, and physical conditions; modal expressions also belong to this class); and Situations, a small, atelic class with verbs that encode a subject's physical position, or character or some other quality. These classes, Fleisch argues, are confirmed by their divergent behaviour with various tense/aspect forms and partially regular interactions with derivative verbal extensions, the latter leading to a situation where in some cases formal properties strongly suggest the verbal lexical item is of a particular lexical aspect type.

The classifications discussed in this section are some of the few significant exceptions to the general tendency in Bantu language descriptions of either making no mention of lexical aspect, or merely noting the distinction between change-of-state and other verbs. This lack of attention is unfortunate for several reasons, but especially because the semantics of grammatical aspect cannot be fully understood without a clear picture of how grammatical aspectual forms interact with lexical event types. Furthermore, as suggested by Nichols' (2015) pilot typological study of resultative constructions, inchoative forms, rather than the corresponding states, are basic in many languages and language families. Nichols concludes that "the received view of event structure may be Eurocentric", and that "transitions", rather than "states", may be "basic to lexical meaning" (2015:25; note that not all the languages in question necessarily have the kind of complex lexical structures as Bantu, which seems to lexically encode both the coming-to-be phase and the result state in the same lexical verb). Nichols further tentatively suggests that languages

in which inchoative forms are more basic may also tend to have restrictions on the adjective word class (2015:24); this is certainly the case for many Bantu languages.

## 4  Developing and applying tests for lexical aspect, the role of the researcher, and tractability

In this section, we describe our preliminary research on lexical aspect in isiNdebele, and more broadly, the kind of research methodologies we think are called for in investigating this intersection of finite grammar and infinite meaning.

In developing models of lexical aspect, logical considerations have led theoreticians to formulate models intended to have universal applicability and to cover the maximal set of possible situation types (Vendler 1957; Smith 1997; Croft 2012). However, just as Smith (1997) added a category of "semelfactives" overlooked by Vendler (1957), and Croft (Croft 2012) showed that the internal nature of phases (and not just phase length or inherent boundaries) also leads to crucial differences between types of situations, we suspect that these "maximal" sets may still be missing significant ingredients (see also Bar-el 2015). Even more, we consider it likely that different languages may have different and incommensurate systems of categorising lexical aspectual types (see e.g. Nichols 2015 for a typological study pointing in that direction), and the interaction of lexical and grammatical aspect is surely language specific. Current theoretical debate on aspect therefore provides us with a range of conceptual tools for understanding the mechanics of lexical-grammatical aspect interactions (see section 2 above), but not for testing these interactions straightforwardly. In our fieldwork, we thus turned to an inductive-empirical approach, aiming to avoid imposing theoretical moulds too early and thereby missing important insights.

The only way to approach our research, then, was to engage in in-depth interviews. This high-resolution process of semantic understanding is time consuming and data driven, and is, in a sense, closer to ethnographic work than to traditional linguistic elicitation.

The insights gained through the interview process then require systematic framing, so that natural categories of lexical aspect become apparent. We believe that lexical aspectual types are more like prototype categories than clear-cut classes (Croft 2012). Even so, categories do emerge, and making predictions about behaviour regarding grammatical tense and aspect becomes reasonably possible.

Once this point is reached, we believe that one can more confidently propose an empirically substantiated and accurate view of lexical aspectual categories in an individual language, and, furthermore, frame it in a way that allows for a rich contrastive and even comparative analysis of lexical aspect across languages, especially, as in our study, across geographically and genetically proximate languages.

The remainder of this section mirrors the process described in the preceding paragraphs. We first discuss the considerations that went into developing our tests, interwoven with some results that helped us to refine our understanding of what we were testing for in each instance and to develop further tests. We then describe our fieldwork interviews, showing that our most interesting results were obtained when we went beyond a checklist-style interview and took an ethnographic

approach. Throughout, we attempt to integrate this narrative with discussion of what we believe is needed for a broader framework for eliciting lexical aspect, and achieving a balance between research tractability and completeness.

## 4.1    Avoiding circularity and other pitfalls

Most studies of lexical aspect that aim to examine separately the contributions of lexical and grammatical aspectual meaning are plagued by a serious problem. Because lexical and grammatical aspect always interact, and each is hardly interpretable without reference to the other, the question of circularity is – or should be – always at the forefront. That is, lexical aspectual structure is determined through lexical items' interactions with grammatical morphemes, and the functions of the grammatical morphemes are in turn analysed in terms of how they interact with various lexical aspectual types. In fact, we do not believe that the lexical and grammatical aspect exist as purely independent systems, so in a sense, this kind of circularity in understanding each is necessary, and does not preclude trying to extrapolate the nature of each through observing their systematic interactions. We also attempted to avoid the worst kind of circularity by making our tests both rich and redundant, and by employing tests from outside of the verbal tense/aspect system.[5]

The richness of the tense-aspect systems in isiNdebele and Sindebele led to some useful redundancies in testing: in many cases, more than one aspectual marker targets the same phase or transition in verbs' lexical aspectual structures. For example, in (22)–(23), the past perfective form of an *-ile*-marked COS verb describes a state that held at a particular time in the past.[6]

(22)    Abantu       be-ba-hlangene
        2.person    IPFV-2.SP-come.together.PFV
        'People were meeting' (isiNdebele)

(23)    Be-ka-lamb-ile
        IPFV-1.SP-get.hungry-PFV
        'S/he was hungry' (isiNdebele)

With verbs that are not as clearly COS, such forms seem only to be licit if a relevant result state can be construed. In such cases, they translate best as pluperfects, as in (24)–(25). Speakers tend to reject these forms with many verbs, or at least struggle to provide a reasonable context (26)– (27).

---

[5] As noted by Sasse (2002) and others, aspect is not merely made up of the interactions between lexical and grammatical systems, but comprises many layers and dimensions, and communication of aspect is built up across discourse.

[6] The prefix *be-*, grammaticalized from the perfective form of 'be', selects a reference time in the past of the utterance time; we gloss it here as "imperfective" as a type of shorthand, because the forms in which it occurs can encode the typical range of imperfective meanings. However, imperfective-type meanings are really derived from the full constructions, rather than being encoded by this single morpheme.

(24) USipho       be-ka-wu-dl-ile            umengo
    1A.Sipho    IPFV-1SG.SP-3.OP-eat-PFV    3.mango
    'Sipho had (already) eaten the mango' (isiNdebele)

(25) Be-ka-tlol-e            incwadi
    IPFV-1SG.SP-write-PFV    9.letter
    'S/he had written a letter'
    (Speaker comment: "Maybe you're reading an obituary. Before he killed himself, he wrote a letter explaining why he died. *Bekatlole incwadi ethi "Ndidiniwe!"* 'He wrote a letter saying, *I'm tired/fed up!'"*) (isiNdebele)

(26) ?#Be-ka-khohlele
     IPFV-1SG.SP-cough.PFV
    Intended: 'S/he had coughed'
    (Speakers attempted to construe a context but were not able to imagine a rich enough scenario.) (isiNdebele)

(27) ?#Be-ka-buyele       ikukhu
     IPFV-1SG.SP-kill.PFV 9.chicken
    Intended: 'S/he had killed a chicken' (isiNdebele)
    (Speakers reject this example but in attempting to construe a construct, muse that this could perhaps be an answer if the subject killed a chicken by accident, and you ask, "Why is he running away?")

Therefore, this form seems to test for a result coda state in COS verbs, and the possibility of construing or coercing a reasonably relevant post-nuclear phase in other verbs.

Another form, discussed briefly in Section 2.1 above, tests more explicitly for a (non-permanent) lexically-entailed coda phase. (Note that the test only works in the context of the present stative 'still' reading; other readings may be possible with some predicates, as discussed in Section 4 below.)

(28) Ba-sa-hlangene
    2.SP-PERS-come.together.PFV
    'They are still together / in the meeting' (isiNdebele)

(29) U-sa-lamb-ile
    1.SP-PERS-get.hungry-PFV
    'S/he is still hungry' (isiNdebele)

(30) USipho       u-sa-khamb-ile
    1A.Sipho    1.SP-PERS-go-PFV
    'Sipho is still out there' (isiNdebele)

(31) #U-sa-yi-tlol-ile             incwadi
     1.SP-PERS-9.OP-write-PFV   9.letter

Intended: ~'S/he has still written the letter'[7] (isiNdebele)

(32)  #U-sa-khohlele
       1.SP-PERS-cough.PFV
       Intended: ~'S/he has still coughed' (isiNdebele)

(33)  #U-sa-bulal-e          ikukhu
       1.SP-PERS-kill-PFV     9.chicken
       Intended: ~'S/he has still killed a chicken' (isiNdebele)

Thus, the *-sa-…-ile* form and the past imperfective-*ile* form seem to be in a nearly implicational relationship, where the former requires a lexically-entailed coda state, while the latter strongly prefers one, but can also construe such a phase given a rich enough contrast. The relationship is not totally implicational, however, because the *-sa-…-ile* form requires that the coda state be temporary, or at least potentially so, while the past imperfective-*ile* form allows any coda state.

(34)  #?Inja    i-sa-f-ile
       9.dog   9.SP-PERS-die-PFV
       Intended: 'The dog is still dead' (only allowed if a resurrection is expected) (isiNdebele)

(35)  Inja        be-yi-f-ile            na-si-fik-a-ko
       9.dog       IPFV-9.SP-die-PFV   COM-1PL.SP-arrive-FV-REL
       'The dog was dead when we arrived' (isiNdebele)

Another way to mitigate the circularity of lexical and grammatical aspect is by using other types of tests, including adverbials (such as 'slowly' or 'yesterday') and verbal constructions that specifically target either phases or phasal transition, e.g. 'start to X', 'finish X-ing', 'nearly X', 'stop X-ing', or 'when we arrive(d), he X(ed)'. These, too, are subject to the circularity criticism. Adding adverbials or inserting verbs into more complex constructions may indeed change the aspectual interpretation of the utterance. But together with grammatical aspectual forms, such tests can at least strongly suggest the aspectual structure of a lexical form. See Authors (2016) for more detailed descriptions of some of the tests we used and their outcomes. We will not treat them in greater detail here because of their language specificity, but many examples can be seen in Section 4 below, which describes adapting the tests to Sindebele.

Circularity is not the only issue in investigating lexical aspect. We also needed, for example, to carefully distinguish lexical entailments from implicatures (see e.g. Smith 1997; Bar-el 2015). We did so by attempting to cancel or defease the implicatures in cases of doubt. We also needed to pay careful attention to quantized vs. non-quantized subjects and objects (Croft 2012) and interpret results accordingly. For the most part, we tried to constrain our tests to singular subjects and objects, but such a condition is not easy to fulfil with all verbs (e.g. *-hlangana* 'gather, come together, become mixed up, meet'), and, as seen in (5c) above, singular nouns are not always

---

[7] Note that these examples are also awkward in their English translations. In fact, we did not have an "intended" meaning in mind, and the translations of these infelicitous examples merely show one possible, fairly literally translated interpretation.

inherently quantized. Therefore, we also had to pay close attention to the effects of (non-)quantization, especially when working with transitive verbs.

We also had to take care that our own language intuitions, paired with English translations of isiNdebele forms, did not interfere with our interpretation of isiNdebele verbal semantics. Our thesis that lexical aspectual classifications are not purely based on world knowledge necessarily means that translations cannot always be exact. To some extent, the issue of researcher-native-language interference is mitigated by the redundancies in tests. We further attempted to avoid this pitfall by (à la Matthewson 2004; Bar-el 2015) making our discussions rich in contextual information, and, when possible, incorporating simple visual props (movable "characters" as participants, drawings) or physically acting out situations. Other clues of significant semantic differences between isiNdebele and English came in the form of awkwardly phrased English forms as our consultants tried to capture the meaning of isiNdebele sentences. For example, we think that -*khamba* 'leave, walk' lexically encodes a coda phase on the 'leave' meaning. The speaker translated a relevant example as in (36).

(36)  USipho        be-ka-khamb-ile
      1A.Sipho      IPFV-1.SP-leave-PFV
      Most natural English translation: 'Sipho had left'
      Translation by speaker: 'Sipho was already left' (isiNdebele)

The use of a stative 'be' form in the English translation, rather than the pluperfect, suggests that the construction targets a stative coda phase. This finding is confirmed by other tests (see e.g. (15)–(18) above).

We also had the fortunate research situation of having two different mother tongues ourselves: Author B is a native speaker of German, and Author A of American English. In cases in which our intuitions about isiNdebele verbs differed, we took it as an indication that our native intuitions might be interfering, and that we should take another look at the isiNdebele forms.

4.2  The interview process

An important first note about the interview process is that it is, at least initially, quite time consuming. A discussion of a particular verb could easily last an hour or more – a fascinating, but mentally exhausting, time. We believe that such lengthy interviews are a necessity at the beginning of the research process. With time, the researchers will come to understand what the important contrasts (or, in Bar-el 2015 's terms, the 'building blocks' of lexical aspect) are in the language being investigated, and the elicitation process can be streamlined. To attempt to streamline the system too soon is risky, because pre-conceived notions of what is important can act as significant blinders and result in a partial or even faulty understanding of the system.[8]

Of course, some streamlining will happen naturally as the researchers and consultants deepen their understanding of the material and the process. Since we started with an imperfect

---

[8] Of course, all understanding will inevitably be partial; the goal is to be initially as open as possible to the range of potential contrasts, and especially to welcome surprises.

knowledge of tense and aspect in isiNdebele, streamlining also happened for us as we corrected our misperceptions about the system. For example, we initially spent a great deal of time attempting to elicit past-tense forms in the frame *nasifikileko*, which we took to be a situative perfective form meaning something like 'when we had arrived' (cf. untensed *nasifikako* 'when we arrived / regularly arrive / arrive (in the future)'). Our polite consultants did their best in trying to make sense of these confusing forms, until we finally realised that *nasifikileko* always has a futurate orientation, meaning 'when we have arrived'. We were subsequently able to eliminate these examples from our tests, saving both time and needless frustration.

In our experience, the most productive elicitation sessions in the early stage take the form of "semi-structured interviews". The researcher's goal is to hold the thread of the elicitation goal and make sure that all of the test frames are elicited, while also allowing for conversational detours, which are likely to provide additional insights.

One particularly vivid example of this came in a discussion with a Sindebele-speaking consultant, Jerry, who is a professional actor and community organiser. The target sentence was (37), which Jerry eventually judged as infelicitous.

(37) #U-les-e          ku-tsh-a   /   #U-les-ele      ku-tsh-a
       1.SP-stop-PFV  INF-burn-FV         1.SP-stop-PFV  INF-burn-FV
       Intended: 'S/he stopped burning'       (Sindebele)

Jerry spent some time mulling this example over, at one point evoking the image of a religious person engaging in self-immolation, but decided that even in this case, (37) would be infelicitous. Two important insights came out of our somewhat tangential discussion. First, the verb *-lesa* 'stop', at least when used with agents, conveys a sense of intentionality: you can only stop doing something you are intentionally doing. Second, *-tsha* 'burn (intr.)' is in a sense analogous to a door's opening: once the door has opened even a bit, it is open, although it might continue to open further. Similarly, in Jerry's words, "once you're burned, you're burned".

This kind of elicitation is cognitively hard on the interviewer, who has to allow for genuine and interesting conversation, while also keeping constant track of what theoretical ground still needs to be covered, and where verb meanings and uses do and do not match with our hypotheses. Without the latter aspect, the interviews stop being meaningful. Without the former, though, the interviews can quickly revert to a rote exercise in filling out a paradigm, which are far less engaging and risk losing the crucial focus on real-life meaning and usage.[9] When the researcher and consultants can maintain both strands, the results are often fantastic. Everyone can work longer, the work is more interesting, and, despite many double-checking questions and requests for repetition, all parties remain alert.

The conversational interview style can be augmented when more than one linguistic consultant is involved. Many new meanings, and meaning nuances, emerge when consultants converse with

---

[9] We do believe there is a place for this kind of interview, even in investigating lexical aspect, but especially in the initial stages, the more elicitation sessions can be like a natural conversation, the better.

each other, and such conversations can be a rich source of semi-targeted, naturalistic language data, as well. Consultants also can serve as a check on each other's potential natural tendencies to be either too literal or too liberal in their interpretations (for example, one of our consultants might say to another, "Well, *you* might say that, but normal people wouldn't!"), and, working together, they frequently come up with contexts where initially rejected forms would be felicitous.

The following excerpt is roughly transcribed from an interview between Author B (A) and Sindebele consultants Jerry (J) and Mmadi (M). Although the interaction is very simple, it illustrates several important advantages to working with two consultants at a time.

Author B's goal was to find out whether the persistive perfective form of *-hlonipha* 'respect' is felicitous, and what it means. First, Jerry gives an example of a context in which the form might be used, and then Jerry and Mmadi enact the scene described by Jerry. In line 25, Mmadi produces the present persistive form *usahlonipha* rather than the target form *usahloniphile*. He is subsequently corrected by Jerry (line 26) and the ensuing discussion shows that the two forms have at least some overlap in their usage domains. Further investigation was necessary to start to pin down the subtle differences in usages, but even this small interchange is of significance. In a more traditional one-on-one elicitation setting, the investigator might also suggest a correction such as Jerry's in line 26, but the consultant's response is far more likely to be ambiguous or confusing; for example, the consultant might agree to the correction out of politeness, or more easily misinterpret the investigator's intent. In contrast, a second native speaker's correction is less intrusive, and shows that the construction in question is, in fact, felicitous in this context, a judgment that is reinforced by the discussion in lines 29–33. Additionally, several interesting constructions are introduced (e.g. *abakuhloniphi nokuhlonipha* in line 24) that might have been less likely to surface in one-on-one elicitation between a non-native investigator and a native speaker.

(38)   ED-AuthorB-20160516-002-Jerry and Mmadi_eventtyp-hlonipha_1089.wav, 29:22–31:28)
  1  A: Usahloniphile.
  2  J: Same situation, you know, there are three boys, and yeah, and then...maybe someone generalizes. He says, 'those boys don't respect. they just enter the house and they...don't take their hats off'. And you would say 'Lisiba usahloniphile'. You know, because, once again, you know, he took off his hat.
  3  A: Can you try, now I'm asking you to become actors. Can you try to enact that? Because basically I think what you did...
  4  J/M: Okay, alright
  5  A: I think what you just suggested is that
  6  J/M: Yeah
  7  A: Uh, one person complains,
  8  J: Yeah
  9  M: Mm
  10 A: that that these three guys
  11 M: that they're rude (?)
  12 A: They didn't respect
  13 J/M: Yes
  14 A: And then the other person says, well, there was one of them who did, right
  15 J/M: Yeah
  16 A: So Lisiba did.

17 J: Yeah.
18 A: Can you do, let me just check the vo...the noise...
19 …
20 A: …Okay, now I try...I would like you to become actors.
21 J: Okay
22 A: And try to enact this particular situation.
23 J: Alright
24 J: Okay. Batlhangana laba abaphumekala. Abakuhloniphi nokuhlonipha.
   *('Those boys aren't successful(?). They don't respect you')*
25 M: Kodwa Lisiba **usahlonipha**.
   *('But Lisiba is still respectful')*
26 J: **Usahloniphile**.
   *('He is still being respectful')*
27 M: **Usahloniphile**.
   *('He is still being respectful')*
28 J: Yeah.
29 A: You preferred the other one in this sentence...
*J&M indicate visually that they don't prefer one or the other.*
30 A: Both work.
31 M: Yeah both
32 J: Yeah they [both work.
33 M: [they are interchangeable.
34 A: Can you do it once again?
35 J: Batlhangana laba abaphumekala. Abasahloniphi nokuhlonipha.
   *('Those boys aren't successful(?). They don't respect anymore')*
36 M: Kodwa Lisiba usahloniphile.
   *('But Lisiba is still being respectful')*
37 A: Okay, thank you so much. (Sindebele)


## 5 Adaptation to Sindebele and results

Since testing for lexical aspectual structure 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 lexical aspectual categories do not map one-to-one across languages, we must certainly also recognize that lexical aspect tests may function differently, and that markers of grammatical aspect, even if superficially similar, may in fact "target" different phases of the verb.

For example, in most varieties of Spanish, present perfect forms with the auxiliary *haber* 'have' and the past participle of the main verb have roughly the same range of functions as the English present perfect, and are subject to similar restrictions (e.g. are incompatible in many cases with a past temporal adverbial). However, in (European) Peninsular Spanish and several South American Spanish varieties, perfect forms appear to be gaining functions as near-past perfectives (typically within the hodiernal domain, although some varieties also allow use with hesternal events) (Howe & Schwenter 2003).

(39) Me *he levantado* esta mañana a las siete (uttered at three o'clock in the afternoon)

'I got up (lit. have gotten up) this morning at seven' (Howe & Schwenter 2003:63 example (3))

Because even varieties of the same language can have such different uses for the same morphology, simply translating tests from one language to another and expecting speaker judgments to produce reliable results is foolhardy.

Still, as we said in the introduction, we believe that cross-linguistic studies of lexical aspect are both feasible and valuable. The so-called "Southern" and "Northern" varieties of Ndebele (isiNdebele and Sindebele, respectively) are particularly well suited to comparative study. They are relatively closely related, although their genetic status is far from settled, and therefore have many cognate forms and fairly similar verbal morphology. On the other hand, they have significant differences in the size of their speaker communities, their official recognition, and their contact situations, as discussed in several other papers in this volume. Therefore, if contact-induced change can influence the semantics of lexical aspectual structures, we might reasonably expect to see differences between isiNdebele and Sindebele.

As a starting point in adapting the isiNdebele tests to Sindebele, after exploring basic Sindebele TAM morphology, we attempted – with the above caveats in mind – to directly translate the isiNdebele tests to Sindebele. Because the tests had proved useful in exploring lexical aspectual structure in a closely-related language, we wanted to see how (and if) they would work in translation.

In most cases, adapting morphological tests involved similar or identical morphology. Examples are shown in Table 1.

| isiNdebele | Sindebele |
|---|---|
| USipho…. | Sipho…. |
| u-**ya**-phakam-**a**<br>1.SP-DJ-rise.up-FV<br>'he stands/is standing up'<br>'he gets/is getting angry'<br>'he rises / is rising to prominence'<br><br>u-**ya**-khohlol-**a**<br>1.SP-DJ-cough-FV<br>'he is coughing' | u-**ya**-jam-**a**<br>1.SP-DJ-stand.up-FV<br>'he stands up'<br><br><br><br>u-**ya**-khohlol-**a**<br>1.SP-DJ-cough-FV<br>'he is coughing' |
| u-phakam-**ile**<br>1.SP-rise.up-PFV<br>'he is standing / angry / prominent'<br><br>u-khohlol-**ile**  / u-khohl**ele**<br>1.SP-cough-PFV   1.SP-cough.PFV<br>'he coughed' | u-jam-**ile**<br>1.SP-stand.up-PFV<br>'he is standing'<br><br>u-khohlol-**ile**  / u-khohl**ole**<br>1.SP-cough-PFV   1.SP-cough.PFV<br>'he coughed' |

| | |
|---|---|
| **be**-ka-phakam-**ile**<br>IPFV-1.SP-rise.up-PFV<br>'he was standing / angry / prominent'<br><br>#**be**-ka-khohlol-**ile** / #**be**-ka-khohlol**ele**<br>IPFV-1.SP-cough-PFV    IPFV-1.SP-cough.PFV | u**be**       a-jam-**ile**<br>1.SP.IPFV  1.SP.SUBORD-stand.up-PFV<br>'he was standing'<br><br>#**be**-ka-khohlohl-**ile** / #**be**-ka-khohl**ole** / #u**be** a-khol**ole** etc.<br>(all forms are variations on IPFV-1.SP-cough-PFV |
| u-**sa**-phakam-**a**<br>1.SP-PERS-rise-up-FV<br>'he still stands up / gets angry / is rising in prominence'<br><br>u-**sa**-khohlol-**a**<br>1.SP-PERS-cough-FV<br>'he still coughs / is coughing' | u-**sa**-jam-**a**<br>1.SP-PERS-stand-up-FV<br>'he is still getting up / he still stands (is able to stand)'<br><br>u-**sa**-khohlol-**a**<br>1.SP-PERS-cough-FV<br>'he still coughs / is coughing' |

Table 1: Comparative TAM morphology in isiNdebele and Sindebele

However, there were also cases in which the same morphology had the potential for slightly different meanings in the two languages, at least for some speakers. For example, *-sa-* still + final *-ile* (see Section 4 above) in Sindebele was interpreted by at least one speaker as meaning 'did X again':

(40)  Jabu      u-sa-tjh-ile
      1A.Jabu  1.SP-PERS-burn-PFV
      'Jabu got burned again' (Oh, that Jabu!) [does not mean: he is still burned] (Sindebele)

(41)  Jabu      u-sa-bulele        nyoka?
      1A.Jabu  1.SP-PERS-kill.PFV   9.snake
      'Has Jabu killed yet another snake?' (Sindebele)

Several other Sindebele speakers did not seem to arrive at this reading with similarly non-COS predicates.

(42)  #Lindiwe      u-sa-gul-ile
       1A.Lindiwe    1.SP-PERS-get.sick-PFV
      Intended: 'Lindiwe got sick again' (Sindebele)

(43)  #Malose        u-sa-theng-e       tibhanana
       1A.Malose    1.SP-PERS-buy-PFV  10.banana
      Intended: 'Malose bought (yet) more bananas' (Sindebele)

This difference may either reflect a semantic extension of the use of *-sa-* (from 'still' to 'again') for some speakers, or its lack of availability to other speakers may indicate that the 'again' meaning was simply not salient enough to be triggered for this latter group of speakers in the context of our elicitation situations.

In isiNdebele, speakers identified a different reading for similar constructions: the notion that something has 'only' occurred to a certain extent. The two readings are not entirely unrelated, although their effects seem to be somewhat opposite. 'Only' cancels the presupposition that something happened more frequently, or to a greater extent (although it maintains the presupposition that the event is expected to occur more, or again, in the future; see Poulos & Msimang 1998 for similar examples). In contrast, '(yet) again' cancels the presupposition that something would *not* occur any more. Examples from isiNdebele are given in (44)–(46).

(44) U-Jabu       u-sa-bulele       inyoka       #(eyodwa)
      1A-Jabu       1.SP-PERS-kill.PFV       9.snake       9.one
      'Jabu has only killed one snake' (Maybe he's going to kill another one.) (isiNdebele)

(45) Umnganami       uJohn       ngi-sa-m-bon-e       kabili
      1.my.friend       1A.John       1SG.SP-PERS-1.OP-see-PFV       twice
      'My friend John, up to now, I've seen him (only) twice' (I expect to see him again.) (isiNdebele)

(46) Ngi-sa-dl-e       kancani       nje
      1SG.SP-PERS-eat-PFV       little       now
      'I've just eaten a little portion for now' (I expect to eat more.) (isiNdebele)

The 'again' reading may also be available in isiNdebele, but does not appear to be as salient, at least to the speakers we interviewed.

Some morphological markers in isiNdebele can only be translated as full lexical items in Sindebele. For example, isiNdebele has a situative marker *na-*(…-*ko*), best translated as 'when' (and sometimes 'if') in English. Situatives form a temporal subordinate clause. The situative-marked eventuality is not marked for tense (although it can have an *-ile* ending as in (51)–(52)), and derives its tense interpretation from the main-clause, as seen in the examples below. We used this context to select a single point in time against which the temporality of the main clause could be evaluated. Present-tense main clauses are evaluated as habitual/generic or futurate (as in (47)–(48) and (51)–(52)); perfective main clauses (49) are evaluated as commencing at the time of arrival (and, generally speaking, being completed within a reasonably short time thereafter); imperfective clauses (including those with resultative-like perfective interpretations) are interpreted as ongoing at the time of arrival (50).

(47) Abantu       na-ba-hlangan-a-ko,       ba-ya-phumelel-a
      2.person       COM-2.SP-meet-FV-REL       2.SP-DJ-succeed-FV
      'When people come together, they succeed' (isiNdebele)

(48) USipho       na-ka-phol-a-ko,       si-y-a       ePitori
      1A.Sipho       COM-1.SP-recover-FV-REL       1PL.SP-go-FV       LOC.Pretoria
      'When Sipho recovers, we're going to Pretoria' (isiNdebele)

(49) Na-wu-fik-a-ko       ngi-wahl-e       izandla
      COM-2SG.SP-arrive-FV-REL       1SG.SP-clap-PFV       8.hand

'When you arrived, I clapped my hands' (isiNdebele)

(50) Na-wu-fik-a-ko          be-ngi-ku-lind-ile
COM-2SG.SP-arrive-FV-REL    IPFV-1SG.SP-2SG.OP-wait.for-PFV
'When you arrived, I was waiting for you' (isiNdebele)

(51) Na-si-thuthumb-ile-ko,        si-ya-nuk-a
COM-1PL.SP-explode-PFV-REL    7.SP-DJ-smell-FV
'When it has exploded, it smells bad' (isiNdebele)

(52) Na-ka-lamb-ile-ko,          a-ka-cabang-i
COM-1.SP-get.hungry-PFV-REL   NEG-1.SP-think-FV.NEG
'When he is hungry, he doesn't think' (isiNdebele)

Although Sindebele lacks this situative marking, it forms if/when clauses in a similar fashion, with subordinating conjunction *lokhwa* 'if, when' and an untensed verb in the participial form.

(53) Lokhwa  Sipho     a-khohlol-a,       u-phum-a          tinyembeli
when    1A.Sipho  1.SP.SUBORD-cough-FV    1.SP-come.out-FV 10.tear
'When Sipho is coughing, tears come out' (Sindebele)

(54) Lokhwa  Jabu     a-fik-ile,        banrwana      eba-dlaluk-a
when    1A.Jabu  1.SP-arrive-PFV    2.child       2.SP.IPFV-play-FV
'When Jabu arrived, the children were playing' (Sindebele)

(55) Lokhwa  Jabu     a-bulele        nyoka,   ku-lung-ile
if      1A.Jabu  1.SP-kill.IPFV    9.snake  17-be(come).good-PFV
'If Jabu has killed a snake, it's fine' (Sindebele)

Although the 'when/if' forms in Sindebele are lexical rather than morphological, the constructions are similar and no meaning differences were observed, so the test was easily translatable. That is, the functional equivalence of testing frames is more significance than their formal correspondence.

Other lexical items (such as auxiliary verbs) are non-cognate, but exhibit no significant differences in meaning. For example, in tests involving 'start to X' we substituted isiNdebele *-thoma* 'begin, start' with Sindebele *-kxwala* 'begin, start' and obtained comparable results. Other lexical non-cognates reflected significantly different grammaticalization. For example, in isiNdebele 'almost do X' is expressed with an adverbial form *pheze* 'nearly, almost' inflected with a subject marker, followed by a consecutive-marked main verb, as in (56).

(56) U-pheze     wa-gul-a
1.SP-nearly  1.SP.CONS-get/be.sick-FV
'he almost got sick' (isiNdebele)

Sindebele expresses the concept of 'almost do X' quite differently, using a perfective form of the lexical verb *-funa* 'want, look for, need' followed by an infinitive verb, as in (57).

(57) Lucky      u-fun-e        ku-gwal-a      ligwalo
     1A.Lucky   1.SP-want-PFV  INF-write-FV   5.letter
     'Lucky nearly wrote a letter' (never started) (Sindebele)

cf.
(58)  Lucky     u-fun-a        ku-gwal-a      ligwalo
      1A.Lucky  1.SP-want-FV   INF-write-FV   5.letter
      'Lucky wants to write a letter' (Sindebele)

(59) Bull      e-fun-e         ku-f-a
     1A.Bull   9.SP-want-PFV   INF-die-FV
     'Bull [a dog] nearly died'  (Sindebele)

Although the above 'almost' constructions can also have the meaning 'wanted to X' but didn't, there are clear signs of semantic bleaching; for example, the form can also be used with non-agentive subjects. There is at least one other way of expressing 'almost' in Sindebele, illustrated in (60). Further investigation is needed to determine whether, and how, the forms differ in their semantics and pragmatics.

(60) Lucky      u-phos-e         a-gwal-e         ligwalo
     1A.Lucky   1.SP-throw?-PFV  1.SP-write-PFV   5.letter
     'Lucky nearly wrote a letter' (same as ufune - almost started but didn't) (Sindebele)

There were also cases in which different lexical items introduced significant complications in the tests. For example, we used the adverb *buthaka* 'slowly' in isiNdebele to test whether there was a (non-coda) phase that could be construed as both extended in time and non-stative, i.e. involving activity or change. (Which phase is targeted is a – sometimes pragmatic  – function of the interaction between tense/aspect marking and lexical aspectual structures.)

With non-COS states, *buthaka* is infelicitous (61)–(62).

(61) #USipho    u-gul-a             buthaka
      1A.Sipho  1.SP-get/be.sick-FV slowly
     Intended: '#Sipho is sick slowly' [state] (isiNdebele)

(62) #USipho    u-gul-e             buthaka
      1A.Sipho  1.SP-get/be.sick-PFV slowly
     Intended: 'Sipho was/got sick slowly' [state] (isiNdebele)

With active, temporally extended nuclear phases, *buthaka* is licit and has the meaning that the active phase is carried out slowly (63)–(65).

(63) USipho      u-cul-a          buthaka

1A.Sipho     1.SP-sing-FV     slowly
'Sipho sings slowly' [active, extended nuclear phase] (isiNdebele)

(64)  U-tlol-e        incwadi     buthaka
      1.SP-write-PFV  9.book      slowly
      'S/he wrote a book slowly' (he took a long time to write it) [active, extended nuclear phase]
      (isiNdebele)

(65)  U-bulele       ikukhu       buthaka
      1.SP-kill.PFV  9.chicken    slowly
      'S/he killed the chicken slowly' (the knife wasn't sharp, so s/he really had to saw) [active,
      extended nuclear phase] (isiNdebele)

Similarly, with COS verbs, if the onset phase is extended, *buthaka* is licit, as in (66)–(67). Without extended onset phases, *buthaka* is infelicitous or more difficult to construe (68)–(69), although with some verbs, it may be used in certain contexts such as the habitual (70)–(71).

(66)  U-phakam-e      buthaka
      1.SP-rise.up-PFV  slowly
      'S/he stood up slowly' (like an old man) [extended, active onset/coming-to-be phase]
(isiNdebele)

(67)  U-lele           buthaka
      1.SP-fall.asleep  slowly
      'It took him time to sleep [fall asleep]' [extended, non-active onset/coming-to-be phase]
(isiNdebele)

(68)  #U-lamb-a            buthaka
       1.SP-get.hungry-FV   slowly
      Intended: 'S/he gets hungry slowly' [apparently, no extended onset (or nuclear) phase]
      (isiNdebele)

(69)  #U-fik-e             buthaka
       1.SP-arrive-PFV      slowly
      Intended: 'S/he arrived slowly' [apparently, no extended onset or nuclear phase]
(isiNdebele)

(70)  U-ya-dan-a                buthaka    na-wu-m-beth-a-ko
      1.SP-DJ-get.disappointed  slowly     SIT-2SG.SP-1.OP-beat-FV-REL
      'S/he takes a long time to become disappointed when you beat him/her' [possibly indicating
      an extended onset/coming-to-be phase, at least when used iteratively] (isiNdebele)

(71)  #U-dan-e                       buthaka    na-wu-m-beth-a-ko
       1.SP-get.disappointed-PFV     slowly     SIT-2SG.SP-1.OP-beat-FV-REL
      Intended: 'S/he took a long time to become disappointed when you beat him/her' [no access
      to extended onset/coming-to-be phase in single event] (isiNdebele)

The nearest equivalent we found to *buthaka* in Sindebele was *kugasigenge* '(do) a little (bit), little by little', which extends to mean 'slowly' with certain unbounded predicates. (This adverbial is sometimes possible as *gasigenge*, with a meaning more like 'slowly' than 'a little'.) This difference in meaning produced significantly different results. With some unbounded predicates, the meaning 'slowly' is licit and salient (72)–(73). With states, 'a little' can be interpreted as 'for a short period' (74); compare (68). With bounded predicates and many COS verbs (78), only the meaning 'a little' is possible, making the adverb truly infelicitous with fully quantized predicates (76)–(79).

(72)  Sipho       u-dl-a       kugasigenge
      1A.Sipho    1.SP-eat-FV  slowly
      'Sipho eats slowly' (Sindebele)

(73)  Sipho       u-gidim-a    kugasigenge
      1A.Sipho    1.SP-run-FV  slowly
      'Sipho runs slowly' (Sindebele)

(74)  Lindiwe       u-gul-e                    kugasigenge
      1A.Lindiwe    1.SP-be/get.sick-PFV       slowly
      'Lindiwe was sick for just a short period' (Sindebele)

(75)  Sipho       u-nyam-e                      kugasigenge
      1A.Sipho    1.SP-get.disappointed-PFV    slowly
      'Sipho is a little bit disappointed' (Sindebele)

(76)  #Sipho      u-jam-a            kugasigenge
       1A.Sipho   1.SP-stand.up-FV   slowly
      Intended: 'Sipho stands up slowly' (Sindebele)

(77)  #Jabu      u-bulele       nyoka    kugasigenge
       1A.Jabu   1.SP-kill.PFV  9.snake  slowly
      Approximate meaning: 'Jabu killed the snake, but he didn't kill it enough' (Sindebele)

(78)  #Jabu      u-fik-e            kugasigenge
       1A.Jabu   1.SP-arrive-PFV    slowly
      Intended: 'Jabu arrived slowly'
    (Speaker comment: "You can't arrive a little – you arrive!") (Sindebele)

(79)  #Lucky     u-gwal-e          ligwalo     kugasigenge
       1A.Lucky  1.SP-write-PFV    5.letter    slowly
      Intended: 'Lucky wrote a letter slowly'
    (Speaker comment: "You can't write *kugasigenge*") (Sindebele)

One speaker offered what may have been a closer equivalent to isiNdebele *buthaka* 'slowly'. *Gegunyana* is a Sesotho sa Leboa borrowing meaning 'slowly'.

(80)    Jabu        u-bulele       nyoka     gegunyana
        1A.Jabu    1.SP-kill.PFV   9.snake    slowly
        'Jabu killed the snake slowly' (Sindebele)

However, because speakers frequently had strong feelings against using known borrowings from Sesotho sa Leboa and other languages, we did not conduct extensive testing with *gegunyana*. Instead, we added a test with *gambila* 'quickly, early' which – while still not behaving identically to *buthaka* – gave more comparable results. In many cases, interpretation as 'quickly' or 'early' gave clues as to whether a targeted phase was active and extended.

(81)    Jabu    u-fik-e          gambila
        1A.Jabu  1.SP-arrive-PFV   early
        'Jabu arrived early / #quickly' [no extended phase] (Sindebele)

(82)    Sipho       u-jam-a         gambila
        1A.Sipho   1.SP-stand.up-FV  quickly
     'Sipho stands up quickly / #early' [active, extended onset phase] (Sindebele)

(83)    Sipho       u-bin-e          gambila
        1A.Sipho   1.SP-dance-PFV  quickly/early
        'Sipho danced quickly / early' [active, extended nuclear phase] (Sindebele)

(84)    #Lindiwe     u-gul-e            gambila
         1A.Lindiwe   1.SP-get/be.sick-PFV  quickly/early
        Intended: 'Lindiwe got/was sick quickly' (NB: this utterance would be possible in unusual situations, e.g. if you planned to make Lindiwe sick at 4 PM, but she already got sick at 1 PM and had already recovered by 4 PM: 'Lindiwe got/was sick early') [state: no active phase] (Sindebele)

Although neither test was a perfect match for the isiNdebele *buthaka* test, using both *(ku)gasigenge* and *gambila* allowed us to test similar facets of a verb's lexical aspectual structure, and also gave us additional insights into Sindebele verbal (and adverbial) semantics.

Finally, no direct Sindebele equivalent could be found for at least one TA marker in isiNdebele. The 'inceptive' prefix *se-* in isiNdebele has a strong contrastive sense (as in 'this situation holds now, and it did not hold previously'). Speakers sometimes also translate it as 'already', especially for non-COS verbs in non-present tenses (88)–(90). Both isiNdebele and Sindebele have a longer preverbal form *sele* (from *-sala* 'remain behind') with related 'already' semantics, but it is not clear whether the meanings of the prefix and the auxiliary form are completely mappable.

(85)    Se-ka-ya-cul-a
        INC-1.SP-DJ-sing-FV
        'S/he is now singing' (s/he wasn't before) (isiNdebele)

(86)    Se-ka-ya-gul-a

INC-1.SP-DJ-get/be.sick-FV
(S/he wasn't sick, but) 's/he's now sick' (isiNdebele)

(87)  Se-ka-ya-dan-a
INC-1.SP-DJ-get.disappointed-FV
'S/he now becomes sad/disappointed' (as a habit – s/he previously didn't have this habit)
(isiNdebele)

(88)  Se-ka-cul-ile
INC-1.SP-sing-PFV
'She has already sung' (isiNdebele)

(89)  #?Se-ka-gul-ile
INC-1.SP-get/be.sick-PFV
Intended: 'she has already been/become sick' (isiNdebele)

(90)  Se-ka-dan-ile
INC-1.SP-get.disappointed-PFV
'She's now/already sad' (she wasn't sad the last time you saw her) (isiNdebele)

The semantics of *se-* marking and their interactions with lexical aspect are complex and interesting. However, because we found no equivalent marker in Sindebele, we had to abandon this test.

As noted above, it is important not to assume that cognate forms have identical meanings and identical interactions with lexical aspect. To mitigate this possibility, we tried to test with enough verbs that at least some redundancies would be introduced, so that we could see whether differences were due to different meanings of specific lexical items, or whether they were systematic. Conversely, the built-in redundancies of our tests (see Section 4.1) helped to test for the possibility that there could be systematic differences between lexical aspectual classes. That is, if lexical aspectual classes are systematically different between isiNdebele and Sindebele, we would expect lexical items in that class to behave in the same way (and differently between the two languages) with all tests that target a certain facet of lexical aspect. If, on the other hand, adverbial tests give similar results in both languages, but a morphological TA marker gives systematically different results between the two languages, we can assume that the cognate TA marker has different semantics in isiNdebele and Sindebele, but that the lexical aspectual types themselves are similar.

It should be noted that we had not previously conducted extensive research into the meaning of tense and aspect forms in Sindebele. An experienced researcher of a language would presumably already have a good understanding of the meanings of tense and aspect morphemes in that language, and could therefore avoid some of the potential pitfalls in adapting the tests. On the other hand, systematic testing of lexical aspectual contrasts at the beginning of a study of tense and aspect will likely prove invaluable in developing a robust understanding of the roles of TA forms. Many of a TA form's meanings emerge naturally through this kind of testing, so we contend

that extensive previous study of the tense/aspect system a language – while valuable – is not an absolute prerequisite.

The methodology we followed proved useful for investigating semantic differences and potential contact-induced changes between two closely related languages. Although investigations involving more distantly related languages, or languages from different families, would likely encounter far greater challenges regarding translatability, we believe that following the general principles described in this study – introducing redundancies in testing; developing tests that incorporate (at least) adverbial constructions, auxiliary verbs, and tense/aspect marking; and testing for both temporal phases (and boundaries) and qualitative changes – will provide insights into contrasts in lexical aspectual structures and lexical aspectual classes even between quite different languages. (See also Bar-el 2015 for further ideas about contrasts that can be tested.)

Indeed, several basic differences emerged. Two will be illustrated here.

First, consider the COS verbs meaning expressing 'get/be hungry' in the two languages.

(91)  U-lamb-ile
      1.SP-get.hungry-PFV
      'S/he is hungry' (isiNdebele)

(92)  U-phethwe          ndlala
      1.SP-hold.PASS.PFV    9.hunger
      'S/he is hungry' (Sindebele)

As discussed above, the isiNdebele word -*lamba* 'get hungry' does not, in general, seem to encode an extended onset phase. When used in the present tense, it receives a habitual reading which in isiNdebele has been conventionalized with the metaphorical meaning 'be poor, be lacking'.

(93)  USipho      u-ya-lamb-a
      1A.Sipho    1.SP-DJ-get.hungry-PFV
      'Sipho is poor' (isiNdebele)

One speaker suggested that (93) could also mean 'Sipho is getting hungry', but this reading is marginal at best; some speakers reject it outright.

In Sindebele, in contrast, the onset phase seems to be accessible in common usage, as seen in the default reading of (94).

(94)  Frans       u-phath-w-a           ndlala
      1A.Frans    1.SP-hold-PASS-FV     (?COP.)9.hunger
      'Frans is getting hungry (lit. "is getting held by hunger") ' (Sindebele)

The isiZulu form -*lamba* 'get hungry' is cognate to the isiNdebele form, while it seems that the Sindebele form is most likely a calque from Sesotho sa Leboa -*swarwa ke tlala* 'be held by hunger' (-*swara* 'hold'). With the adoption of a different form came also a different aspectual structure.

Differences in aspectual structure can also be observed with the stem *-khamba*, which is cognate in both languages. The isiNdebele dictionary (IsiNdebele Dictionary Unit 2006) translates *-khamba* as 'go, travel, walk'. Speaker interpretations suggest that it has at least two different aspectual construals, depending on which meaning is intended. One is that of a durative, activity-like verb (walking, going, traveling) with an extended nucleus. This use is seen with the persistive *-sa-* marker.

(95)  USipho        u-sa-khamb-a
      1A.Sipho      1.SP-PERS-go-FV
      'Sipho is still walking' (isiNdebele)

In another construal of *-khamba* ('leave'), there is no onset phase, but rather a punctual nucleus and an extended coda phase.

(96)  USipho        u-sa-khamb-ile
      1A.Sipho      1.SP-PERS-go-PFV
      'Sipho is still gone' (isiNdebele)

*-khamba* in Sindebele behaves quite differently. Although the nuclear phase can also be construed as either punctual or extended (97), the *-sa-* form can only target a pre-nuclear phase (98), while the *-sa-….-ile* form is illicit, at least in the ongoing-state context (99); the form does not seem to allow for an extended coda phase.

(97)  Madimedja         u-khamb-a      kahle
      1A.Madimedja      1.SP-go-FV      well
      'Madimedja is going well' (e.g. on foot, by car, or on a bicycle) (Sindebele)

(98) Madimedja          u-sa-khamb-a
      1A.Madimedja      1.SP-PERS-go-FV
      'Madimedja will still go' (i.e. he hasn't left yet) (Sindebele)

(99) #Madimedja          u-sa-khamb-ile
       1A.Madimedja      1.SP-PERS-go-PFV
       Intended: 'Madimedja is still gone' (Sindebele)

While further study of the relevant verb in Sesotho sa Leboa is needed to establish semantic borrowing, the dictionary translations are also suggestive. A Northern Sotho–English dictionary translates *sepela* as 'walk, leave/go'.[10] It may be, then, that the 'leave' sense is more salient in Northern Sotho and Sindebele, while isiNdebele construes *-khamba*'s departure sense as the beginning of a coda state of being away.

## 6  Conclusion

---

[10] https://nso.oxforddictionaries.com/translate/northernsotho-english/sepela, accessed 26 Feb. 2018.

**Towards a Fieldwork Methodology for Eliciting Distinctions in Lexical Aspect in Bantu**
*Thera Crane and Axel Fleisch*
HALS 2016, South Africa

We hope that as more detailed investigations of lexical aspect are carried out across a variety of Bantu (and non-Bantu) languages, the investigative toolkit will grow both in size and robustness, and that we can deepen our understanding of lexical aspectual structures both within languages and as a phenomenon subject to contact-induced change. Our study attempted to increase the set of possible contrasts to examine when investigating lexical aspectual contrasts, but we are surely overlooking important criteria, and we hope that further research will bring more of these to light.

We also want to take seriously the possibility that different tense /aspect categories might not only interact differently with lexical aspectual types, or target different features in their conceptual architecture, but might rather "conceptualize" the entire system of lexical aspect differently.  Nichols (2015) noted that some languages privilege "transitions" and others "states" in their lexical aspectual systems; we wonder whether, somewhat akin to languages with split ergativity, some tense/aspect forms even within a single language could interact with a transition-based system of lexical aspect, and others with a state-based system. This is both a question for future research and an important starting point in investigations of lexical aspect: one should not assume a priori that a language's system will behave totally uniformly in context.

One further, non-theoretical point that we would like to make is that our methodology did not require that we work with the stereotypical fieldwork of "ideal" (near-)monolingual native speakers. In fact, in the populations that speak isiNdebele and Sindebele (and most other languages of South Africa), such speakers are virtually non-existent. Rather than attempting to reify a language and explore it in a sterile, unnatural context, we hope that methodologies like these (along with many described in e.g. Bochnak & Matthewson 2015) allow for the exploration of languages in their beautiful complexity, without losing the ability to draw generalizations and identify meaningful patterns.

**References**
AUTHORS 2016.
AUTHORS forthcoming.
AUTHOR A in prep.
BAR-EL, Leora. 2015. Documenting and Classifying Aspectual Classes Across Languages. In M .Ryan BOCHNAK & Lisa MATTHEWSON (eds), *Methodologies in semantic fieldwork*, 75–109. Oxford: Oxford University Press.
BASTIN, Yvonne. 1983. *La finale verbale -ide et l'imbrication en bantou*. Tervuren: Musée Royal de l'Afrique Centrale.
BOCHNAK, M. Ryan & Lisa MATTHEWSON. 2015. *Methodologies in semantic fieldwork*. Oxford: Oxford University Press.
BOTNE, Robert. 2003. To die across languages: Toward a typology of achievement verbs. *Linguistic Typology* 7(2). 233–278. doi:10.1515/lity.2003.016.
BOTNE, Robert D. 1983. On the notion 'inchoative verb' in Kinyarwand. In F. JOUANNET (ed), *Le Kinyarwanda: études linguistiques*, 149–180. Paris: SELAF.
BOTNE, Robert & Tiffany L KERSHNER. 2000. Time, tense, and the perfect in Zulu. *Afrika und Übersee* 83. 161–180.

BREU, Walter. 1984. Handlungsgrenzen als Grundlage der Verbalklassifikation. In Werner Lehfeldt (ed.), *Slavistische Linguistik 1984. Referate des X. Konstanzer Slavistischen Arbeitstreffens*, 9–34. München: Otto Sagner [Slavistische Beiträge 184].

BREU, Walter. 1994. Interactions between lexical, temporal and aspectual meanings. *Studies in Language* 18(1). 23–44.

BUELL, Leston. 2006. The Zulu Conjoint/Disjoint Verb Alternation: Focus or Constituency? *ZAS Papers in Linguistics* 43. 9–30.

CRANE, Thera Marie. 2011. Beyond time: temporal and extra-temporal functions of tense and aspect marking in Totela, a Bantu language of Zambia. Berkeley, California: University of California at Berkeley.

CROFT, William. 2012. *Verbs: Aspect and causal structure*. Oxford: Oxford University Press.

DIK, Simon. 1989. *The theory of Functional Grammar. Part I: The structure of the clause*. Dordrecht: Foris Press.

FLEISCH, Axel. 2000. *Lucazi grammar: a morphosemantic analysis*. Cologne: Rüdiger-Köppe Verlag.

FREED, Alice F. 1979. *The semantics of English aspectual complementation*. Dordrecht: Reidel.

HOWE, Chad & Scott A SCHWENTER. 2003. Present Perfect for Preterite across Spanish Dialects. *University of Pennsylvania Working Papers in Linguistics* 9(2). 61–75.

IsiNdebele Dictionary Unit. 2006. *isiNdebele – English isihlathululi-mezwi / English – isiNdebele bilingual and explanatory dictionary*. Cape Town: Phumelela Publishers (Pty) Ltd.

KANIJO, Ponsiano Sawaka. 2017. The interactions of -ø-…-íle with aspectual event class in Nyamwezi (tentative title). In Robert BOTNE & XXX (eds), *Selected papers from the 47th Annual Conference on African Linguistics*. Berlin: Language Science Press. (Reference to be updated upon publication.)

KERSHNER, Tiffany L. 2002. The verb in Chisukwa: Aspect, tense, and time. PhD thesis, Indiana University.

LUSEKELO, Amani. 2016. Lexical semantics and selection of TAM in Bantu languages: A case of semantic classification of Kiswahili verbs. *International Journal of Society, Culture & Language* 4(1). 89–102.

MAHLANGU, Katjie Sponono. 2016. The growth and development of isiNdebele Orthography and Spelling (1921-2010). University of Pretoria.

MATTHEWSON, Lisa. 2004. On the Methodology of Semantic Fieldwork. *International Journal of American Linguistics* 70(4). 369–415.

NICHOLS, Johanna. 2015. State-based vs.transitional-based lexical event structure. *Workshop on Resultative Constructions*. Stockholm University.

NURSE, Derek. 2008. *Tense and aspect in Bantu*. New York: Oxford University Press.

PERSOHN, Bastian. 2017a. Aspectuality in Bantu: On the limits of Vendler's categories. *Linguistic Discovery*.

PERSOHN, Bastian. 2017b. *The verb in Nyakyusa: A focus on tense, aspect and modality*. Contempora. Berlin: Language Science Press.

POULOS, George & Christian T. MSIMANG. 1998. *A linguistic analysis of Zulu*. Cape Town: Via Africa.

SASSE, Hans-Jürgen. 1991. Aspekttheorie. In Hans-Jürgen SASSE (ed), *Aspektsysteme*, 1–35. Köln: Institut für Sprachwissenschaft, Universität zu Köln [Arbeitspapier Nr 14 N.F.].

SASSE, Hans-Jürgen. 2002. Recent Activity in the Theory of Aspect: Accomplishments, Achievements, or Just a Non-Progressive State? *Language Typology* 6. 199–271.

SEIDEL, Frank. 2008. *A grammar of Yeyi: a Bantu language of southern Africa*. Cologne: Rüdiger-Köppe Verlag.

Sᴍɪᴛʜ, Carlotta S. 1997. *The Parameter of Aspect*. 2nd ed. Dordrecht: Kluwer Academic Publishers.

Vᴀɴ Vᴀʟɪɴ, Robert D. 2006. Some universals of verb semantics. In Ricardo Mᴀɪʀᴀʟ & Juana Gɪʟ (eds), *Linguistic Universals*, 155–178. Cambridge: Cambridge University Press.

Vᴇɴᴅʟᴇʀ, Zeno. 1957. Verbs and times. *The Philosophical Review* 66. 143–160.