THE REVERSIVE DERIVATION IN SWAHILI

Deo Ngonyani   Nancy Jumwa Ngowa

Michigan State University   *Pwani University*

Abstract. This is a study of the reversive verb derivation –ul- in Swahili, with particular attention to its meaning and its place among derivational suffixes. This article describes its phonological, morphological, syntactic, and semantic features. It is noted the affix is associated with several other meanings: among these intensive, causative, iterative, and separative. For this reason, the reversive is often described as unproductive and lexicalized. We argue that the causative reading is a result of homophony and is not reversive. Using the prototype approach we argue that these diverse meanings form a family for which the reversive sense is a good exemplar. They result from polysemy, which has also been shown to exist in the semantics of productive derivations, including the causative, applicative, and reciprocal. This study also explores the reversive suffix's position to other verb derivational suffixes. It reports on the findings of a search for pairwise combinations of the reversive and other extensions (applicative, causative, reciprocal, passive, and stative) from the Helsinki Corpus of Swahili. In all cases, the reversive appears before any other suffixes. We conclude that this is consistent with both scope theory and relevance theory.

Keywords: Reversive, Verb Extensions, Affix Order, Scope Composition, Prototype Theory

Languages: Swahili

1.   INTRODUCTION

The reversive, also known as the conversive, the separative, or the inversive, is one of the derivational affixes for verbs in Swahili that does not change the category of the verb. An example of this derivation is shown in (1b).

1. (a)   Ch-ama   hiki   ki-li-fich-a   ma-ovu.
            7-party   7.this 7SM-PT-hide-FV   6-evil[3].
            'This party concealed evil'

    (b)   Ch-ama   kile   ki-li-fich-u-a   ma-ovu
            7-party   7.that 7SM-PT-hide-REV-FV   6-evil
            'That party exposed evil.'

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[3] Abbreviations

APP	Applicative	CAUS	Causative	FV	Final vowel
INF	Infinitive	LOC	Locative	OM	Object marker
PASS	Passive	PF	Perfect aspect	PR	Present tense
PT	Past tense	REC	Reciprocal	REV	Reversive
SM	Subject marker	ST	Stative	SUBJ	Subjunctive

From the root *fich* 'hide', as found in (1a), the derived verb is *fichua* 'expose' (1b). The reverse of the action denoted by the root is created by the suffixation of –*u*- before the final vowel –*a*.

The reversive is just one of the verb derivational suffixes that are also known as verb extensions in the Bantu languages. Other extensions include the applicative, causative, passive, reciprocal, and stative. The reversive extension has not received much attention in prior studies of Bantu verb extensions. In Swahili, it has been characterized as unproductive and lexicalized in contrast to the applicative, causative, passive, reciprocal, and stative (Shepardson, 1986). Dictionaries do not even list it as a derivational affix—ostensibly because of its diverse meanings and apparent lexicalization (see, for example, Mdee, Shafi, Kiango, and Njogu, 2009; TUKI, 2004). Schadeberg (1973:2) and Ngonyani and Ngowa (2016) however, argue that the reversive is still productive. There is a consensus that the reversive can be associated with several different meanings. These meanings include the reversive, iterative, intensive, causative, and other meanings that are not well defined. Schadeberg (2003:73) notes that only a small subset of derived reversive forms actually express reversed actions. Because of this and because many derived reversive forms express actions that do not have reversion, Schadeberg prefers the term "separative." There is a sense in which the term "separative" may be more broadly applied than "reversive." (Givón 1971:151-152) suggests that the reversive may have originated as a negative verb or particle. He also notes the similarities with the English reversive *un*-. There are many cases in which the reversive meaning is transparent. Further, the reversive's behavior concerning lexicalization and semantic diversity is also evident in the productive suffixes. This calls for further investigation into the forms, meanings, and functions of this extension.

This article has two main objectives. First, it seeks to describe the phonological, morphological, syntactic, and semantic characteristics of the reversive in Swahili. We argue that, like other verb extensions, the reversive has a central sense with a cluster of related meanings associated with the best exemplar, the reversive meaning. The meanings are best understood with the exemplar, as described in the prototype approach (Panther and Köpcke 2008; Partee and Moder 1983; Taylor 2003). The reversive meaning is only a reference point for similar forms exhibiting a range of meanings that can be described as polysemic. Secondly, this article seeks to account for the reversive's position relative to other verb extensions, namely, the applicative, causative, passive, reciprocal, and stative. Using data from the Helsinki Corpus of Swahili (HCS), we demonstrate that the reversive appears before all extensions and is consistent with Bybee's semantic relevance theory (Bybee 1985) and Rice's semantic scope theory (Rice 2000).

These views are developed in the following five sections. We begin by outlining the assumptions of the prototype theory in §2. In §3, we present verb extensions in Swahili and the morphological characteristics of the reversive. Following this, we examine the semantic features of the reversive extension and identify the ambiguous aspects of its meaning in §4. Results of a search for pairwise combinations of the reversive and other extensions in the Helsinki Corpus of Swahili are presented in §5. We conclude that these results are consistent with the semantic predictions of the affix with a narrow scope. §6 presents concluding remarks and ideas for further investigation.

2.   SOME ASSUMPTIONS OF PROTOTYPE THEORY

The prototype approach arose out of the need to define categories whose definitions did not have clear boundaries or that are difficult to conceptualize (Berlin and Kay 1969; Rosch 1975; Taylor 2003). Such categories were challenging to classical Aristotelian categorization. Classical categorization of concepts was based on essential features. For example, the word *bachelor* could conveniently be defined by its features: [+human], [+male], [+adult], [-married]. If any of these features are missing, then the person is not a bachelor. However, there are few categories that can receive such a neat classical definition. Concepts with fuzzy boundaries pose a particular challenge to this approach to categorization. For example, the color term *red* cannot conceivably be defined with such features. The word denotes perceptual cues that are not one unique color. The boundaries of 'red' (or of any color for that matter) are fuzzy and are best represented by some reference points that are prototypical of this color.

Studies by psychologists and cognitive linguists have further illustrated the inadequacy of the classical approach (Rosch 1975; Berlin and Kay 1969). Continuing with the example of the word 'red,' a feature composition analysis of this word cannot define the essence of the color in terms of the features that make it up. Given the word 'tree' as another example, oaks, elms, and maples make better reference points than palms, even though all of them are trees. The development of the prototype approach accords more prominence to the core examples, or exemplars.

Based on the work of Taylor (2003), the assumptions of the prototype approach can be summarized as follows:

(a)   The categories that we use are built around the best examples of each category, prototypical instances of each category, or focal points.

(b)   Members of a category do not have the same status. Some are perceived as better examples than others.

(c)   Boundaries of categories may be vague. A prototype, therefore, serves as a point of reference when the boundaries are not so clear.

(d)   Properties of a category have different degrees of importance in defining the category.

Some writers have linked the multiple meanings to polysemy by extending the idea of the prototype approach to morphsyntactic categories (see, for example, Taylor 2003; Panther and Köpcke 2008; Partee and Moder 1983). Taylor (2003) highlights the presence and prevalence of polysemy in morphosyntactic categories. Polysemy is 'the property of a single word, which has two or more distinct but related senses' (Matthews 2014). For example, the word *paper* in English has several senses. Here are some of them in their specific contexts.

2. (a)   The **paper** used in making the brochure was of poor quality.
    (b)   The Daily News of Tanzania is a government **paper**.
    (c)   The **paper** hired journalists fresh from college.
    (d)   Students are required to write a term **paper** for this course.

All these instances of paper have some connection with the material that is made of wood and used for writing. The word *paper* may be the material that is made from wood that we write on (2a). It may be a newspaper such as *The Daily News* (2b). Newspapers are made of paper, the material. In (2c), it is a company that publishes a newspaper, an object that is made of paper. The paper in (2d) is a long assignment that a student writes on paper, the material. While not all instances of paper refer to the material that is made from wood, all the senses have some connection to that physical material. The word *paper*, therefore, is polysemous.

Polysemy is not limited to lexical items. Related senses are often expressed by single linguistic forms. Clusters of related meanings may be associated with an affix, for example. An interrogative form, for example, does not always denote a question. It may be a request or it might express some other communicative function. Taylor (2003) demonstrates the polysemy of morphological and syntactic categories, with examples from case marking, diminutive morphology, past tense, and *yes-no* questions. For example, the diminutive *–ino* in Italian, he argues, is a polysemous category that links the central sense of small to physical, metaphorical, and metonymic smallness. The sense is not necessarily about the smallness of a physical space, as in *paese → paesino* 'small village' where the smallness is interpreted in the actual physical size: this affix is also found in cases where it refers to reduced intensity, as in, *bello* 'beautiful' → *bellino* 'pretty cute' or in *bene* 'well' → *benino* 'quite well' (Taylor 2003:173). The affectionate use of the diminutive in instances such as *mammina* 'little mother' (from *mamma* 'mother') is described as a metonymic transfer reflecting our general attraction to small cuddly creatures and small children (Taylor 2003:174). Such an extension of the senses is possible in multiple directions. Several other examples are provided with different affixes of the diminutive that demonstrate a notion of smallness referring to both physical smallness and to non-spatial smallness. The various meanings form a family of meanings with varying degrees of similarity to the spatial exemplar.

We are convinced the verbal derivations or extensions in Swahili are equally characterized by opaque readings. Verb extensions in the Swahili and Bantu languages, in general, are labeled as applicative, causative, reciprocal, reversive, passive, and stative. Most studies of these extensions have focused on only one or two of their meanings. When this is applied to an extension such as the reversive, its multiple and diverse senses render it incoherent. We argue here that such an approach is based on the essentialism of the classical categorization. When we examine various meanings that share the form and distribution of the semantic reversive, a prototype and peripheral meanings emerge. In order to achieve that goal, we will first describe the shape of the reversive in words found in the three dictionaries *Kamusi ya Kiswahili Sanifu* (TUKI, 2004), *Kamusi ya Kiswahili-Kiingereza* (TUKI, 2001), and *Kamusi Kamili ya Kiswahili* (Mdee, Shafi, Kiango, and Njogu, 2009). Next, we will identify the clusters of different meanings associated with the extension. We attempt to identify the polysemy that links them to the prototype.

3.   THE MORPHOLOGY OF THE REVERSIVE

As in other Bantu languages, verbs in Swahili display a rich morphology that includes 10 morphological slots. The following template is based on Schadeberg (1973:16) and Vitale (1981:17).

   3.   NEG – SM – NEG – Tense – RM – OM – Root – EXT – FV – PF

The first element is the negative *ha-,* which is followed by the subject marker. In our glosses, the subject marker (SM) appears with a number to indicate the noun class of the subject. Another negative marker may appear after the subject marker. Tense is marked in the fourth position. One of the relative clause constructions marks agreement (RM) with the head in the post-tense position. The next slot is for object marking (OM). Like subject marking, relative marking and object marking include a number marking the class of the noun in the relevant position. The root of the verb is the next element that is followed by derivational suffixes, commonly referred to by Bantuists as verb extensions. The final affix is the default –*a,* and postfinal (PF) suffixes (such as the second-person plural suffix –*eni*) are the very last element. The final vowel –*a* is generally used in the citation forms of the verbs.

   There are several verb extensions of diverse meanings and different degrees of productivity in the Swahili language. The extensions and examples, which are based on Ashton (1947) and Schadeberg (1973), appear in (4).

   4.   (a)   Applicative   *-il-*   (introduces a new object)
           -funga 'fasten, shut'   *-fungia* 'fasten for/with'

        (b)   Causative   *-y-, -is-h* (introduces a causer, expresses causation)
           -pika 'cook'   *-pikisha* 'cause to cook'

        (c)   Contactive   *-at-*   (tenacious)
           -fumba 'shut, close'   *-fumbata* 'grasp in hand'

        (d)   Passive   *-w-*   (suppresses logical subject)
           -piga 'hit'   *-pigwa* 'be hit'

        (e)   Reciprocal   *-an-*   (binds the object to subject, suppresses object)
           -ona 'see'   *-onana* 'see each other'

        (f)   Reversive   *-ul-*   (reverses action)
           -choma 'stab'   *-chomoa* 'pull out'

        (g)   Static   *-am-*   (expresses a fixed position)
           -inama 'stoop'

        (h)   Stative   *-ik-*   (suppresses the agent)
           mwaga 'spill'   *-mwagika* 'get spilled'

For most of the extensions, the root and the extension are clearly demarcated. For example, with -*funga* 'fasten, shut' and -*fungia* 'fasten for/with,' the applicative suffix –*i*- appears between the root –*fung*- and the final vowel –*a*. There are many cases, however, where morphological segmentation does not yield a recognizable root. This is the case for the static (4g). While -*inama* 'stoop' can be said to have the suffix –*am*-, the remaining part –*in*- is not a recognizable Swahili root. Most affixes are recognizable because of the prevalent phonological structure of the root in Swahili, which is –CVC-. Longer verbs are more than likely derived using one or more extensions.

The reversive is realized in four allomorphs: -*u*-, -*o*-, -*ul*-, and –*o-l.* The first two allomorphs, -*u* and –*o,* appear in the following examples obtained from dictionaries of Standard Swahili or Kiswahili Sanifu. The two most frequently consulted dictionaries for this study are Mdee, et. al. (2009) and TUKI (2001). The first set of allomorphs is conditioned by the vowel of the root.

5.	(a)	fumba	'shut, close'	fumbua	'decipher, solve'
		umba	'create, shape'	*umbua*	'deface, shame someone'
		funga	'fasten, shut'	*fungua*	'unfasten, open'
	(b)	*choma*	'stab[4]'	*chomoa*	'pull out'
		konga	'assemble'	*kongoa*	'extract, disengage'
		koma	'stop'	*komoa*	'unbar'
	(c)	*tata*	'tangle'	*tatua*	disentangle'
		panga	'arrange'	*pangua*	'disarrange'
		tanza	'complicate'	*tanzua*	'solve a puzzle'
	(d)	*tega*	'set a trap'	*tegua*	'disassemble a trap'
		tenga	'set aside'	*tengua*	'annul'
		jenga	'build'	*jengua*	'demolish'
	(e)	*ficha*	'hide'	*fichua*	'uncover, disclose'
		ziba	'plug'	*zibua*	'unplug'
		chimba	'dig'	*chimbua*	'dig up'

Consider –*tega* 'set a trap' and –*tegua* 'disassemble a trap,' which appear in (5d). The root –*teg*- has a –CVC- structure to which the final vowel –*a* is attached. The derived form is –*teg-u-a*, with the derivational suffix –*u*- appearing between the root and the final vowel. In –*chom-o-a* 'pull out' (5**Error! Reference source not found.**b), the allomorph for the reversive is -*o*-. These two allomorphs (-*u*-, -*o*-) are attached to verb roots that end in consonants. The allomorph –*o* appears in verbs that have /*o*/ in the root, while –*u* appears in verbs that contain other vowels. Swahili has five vowels, as presented in the inventory in (6).

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[4] The verb *choma* is ambiguous. It may mean 'burn' or 'grill.'

6.

	FRONT	BACK
HIGH	i	u
	ε	ɔ
LOW	a	

Of the five vowels, only the mid-back rounded vowel /ɔ/ triggers assimilation or vowel harmony. In this paper, we use orthographic **e** and **o** for /ε/ and /ɔ/ respectively.

The second set of allomorphs is *–ol* and *–ul*. These appear when there are other suffixes after the reversive. In the following examples, it is a causative suffix that follows the reversive.

7. (a) *chomoa*   'pull out'   *chomolesha*   'cause to pull out'
   (b) *tegua*   'disassemble trap'   *tegulisha*   'cause to disassemble'
   (c) *zibua*   'unplug'   *zibulisha*   'cause to unplug'
   (d) *tatua*   'disentangle'   *tatulisha*   'cause to disentangle'
   (e) *fumbua*   'decipher'   *fumbulisha*   'cause to decipher'

The causative suffixes *–ish* and *–esh* are associated with *–ol* and *–ul*. The same allomorphs appear after the applicative *–i/-e*.

8. (a) *chomoa*   'pull out'   *chomolea*   'pull out for'
   (b) *tegua*   'disassemble trap'   *tegulia*   'disassemble trap for'
   (c) *zibua*   'unplug'   *zibulia*   'unplug with, for'
   (d) *tatua*   'disentangle'   *tatulia*   'disentangle with, for'
   (e) *fumbua*   'decipher'   *fumbulia*   'decipher '

Also, after the passive *–w,* which alternates with *–ew* and *–iw,* the reversive suffixes are *–ol* and *–ul.*

9. (a) *chomoa*   'pull out'   *chomolewa*   'be pulled out'
   (b) *tegua*   'disassemble trap'   *teguliwa*   'be disassembled'
   (c) *zibua*   'unplug'   *zibuliwa*   'be unplugged'
   (d) *tatua*   'disentangle'   *tatuliwa*   'be disentangled'
   (e) *fumbua*   'decipher'   *fumbuliwa*   'be deciphered'

Therefore, the basic allomorph is *–ul,* which appears as *–o* when the root contains /o/ and is followed by the final vowel. When the root contains other vowels, the allomorph /u/ expresses the reversive. The allomorphs *–ul-* and *–ol-* appear when the reversive is followed by a causative, applicative, or passive affix. In other contexts *–u-* and *-o-* are used. Excluding the suffixes that follow, they are both triggered by the vowel of the root, as summarized below.

10. Root vowel   Extension Allomorph
        i   →   *-u, -ul*
        e   →   *-u, -ul*
        a   →   *-u, -ul*
        o   →   *-o, -ol*
        u   →   *-u, -ul-*

Ngunga (2000) calls this vowel harmony the "Mid-Back Identity" rule. This rule states that the presence of a mid-back vowel triggers the use of *–ol-.*

11. Mid-Back Identity Rule
    [+round]
    |
    -CVC]$_{Root}$ – VC
    | -----------
    [-back]
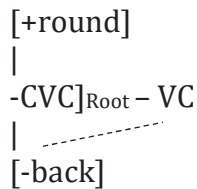
The form of the suffix remains *–ul-* unless the root contains the mid-back vowel /o/, in which case the suffix harmonizes to *–ol-,* as shown by the examples in (5) and as summarized in (10). Comparative studies of the Bantu languages have established **-ʊd-* as the Proto-Bantu form of the reversive (Meeussen 1967) (Schadeberg 2003). The contemporary form is a result of changes that followed the trajectory **-ʊd-* > -ul- > -u-. Many related languages, such as Ciyao (Ngunga 2000), have retained */–ul- /*. Swahili exhibits alternation between –ul-/-ol- and –u-/-o-. The alternation between /l/ and ø in several environments in Swahili is well documented (Nurse and Hinnebusch 1993; Schadeberg 1973).

    Some descriptions of the reversive identify two reversive extensions: namely, the transitive reversive *–ul-* and the intransitive reversive *–uk-* (Schadeberg 1973; Ashton 1947; Meeussen 1967). These are illustrated in the following examples.

12. *-bandika*   'stick on'   →   *-banduka*   'come unstuck'
    -tandika   'spread out' →   *-tanduka*   'become gathered up'
    -angika   'hang up   →   *-anguka*   'fall'
    (Ashton 1947:239)

These, however, are a result of combining the reversive and the stative extensions. For example, *-tandika* 'spread out' is a derivation of *–tanda* 'spread.' The reversive form of *–tanda* is *–tandua* 'remove what is spread out.' Therefore, *-tanduka* 'become gathered up' is a stative form of the reversive. Likewise, *-chomoka* 'become pulled out' is the stative form of *–chomoa* 'pull out.' Combining the two derivations is realized as follows.

13. *-ul*   -   *ik-*   →   *-uk-*
    -ol   -   *ik-*   →   *-ok-*

Changes to the argument structure associated with the stative support our claim that the intransitive reversive is a combination of the reversive and stative. Consider the following sentences based on the root *–ziba* 'plug.'

14. (a)   *m-toto*   *a-li-zib-a*   *tundu*
          1-child   1SM-PT-plug-FV   5.hole
          'the child plugged the hole.'

    (b)   *ngedere*   *a-li-zib-u-a*   *tundu*
          1.monkey   1SM-PT-plug-REV-FV   5.hole
          'the monkey unplugged the hole.'

    (c)   *tundu li-li-zib-uk-a*
          5.hole 5SM-PT-plug-REV.ST-FV
          'the hole got unplugged.'

These examples demonstrate that we can identify the base *–ziba* 'plug' with two arguments. The reversive retains the two arguments. The stative *–ik-* can apply to *–ziba* to form *–zibika* 'get plugged,' as well as to *–zibua*, forming *–zibuka* 'become unplugged.' In either case, the agent is suppressed, leaving the derived verb with one argument. Therefore, a simpler description calls for *–uk-* to be analyzed as a merger of the reversive *–ul-* and the stative *–ik-*

4.   THE SYNTAX AND SEMANTICS OF THE REVERSIVE

The proto-typical reading of the reversive is 'undo X' or 'reverse X,' where X is the action expressed by the root. Thus *–choma* 'stab, stick' is reversed into *–chomoa* 'pull out.' This derivation exhibits some similarities with the English reversive *un-,* which is characterized by three features (Clark, Carpenter, Kathie L., and Deutsch 1995), the base verb must:

    (i)   express a change of state,
    (ii)   be transitive (i.e. with a direct object), and
    (iii) be telic (i.e. verbs must have an inherent endpoint).

As in English, the reversive in Swahili applies to bases that express a change of state. For example, the verb *–funga* 'close, shut, fasten' denotes an action that changes the object so it is no longer open. A verb with a direct object like this is, of course, transitive. This verb takes two arguments: the agent and the theme. There is a point when we can say the door or the window is closed, and there is a point when we can reverse it to 'not-closed.' This is the prototypical sense. Here are some more examples of the prototypical sense of the reversive:

15. *-bana*   'press, stick'   →   *-banua*   'unfasten, release'
    -changa   'collect'   →   *-changua*   'separate'
    -fuma   'weave, knit'   →   *-fumua*   'unstitch'
    -kenga   'deceive'   →   *-kungeua*   'misdirect'
    -fyata   'tuck between legs'   →   *-fyatua*   'snap shut'
    -pakia   'load'   →   *-pakua*   'unload'

-pamba	'decorate'	→	-pambua	'remove adornments'
-kunja	'fold, bend'	→	-kunjua	'unfold, unwrap'
-shona	'sew'	→	-shonoa	'unsew'
-konga	'assemble'	→	-kongoa	'dismantle'

For all of these examples, the reversive reading of the derived forms is clearly compositional. The verb *–kongoa* 'dismantle', for example, is derived from *–konga* 'assemble.'

     There are several other meanings associated with this suffix. Schadeberg (2003), for example, prefers the term separative because of the diverse meanings. To him, the common meaning of these derivations is 'movement out of some original position' (Schadeberg 2003:78). This is consistent with the examples that are identified as prototypical reversives, as well as others whose derivations cannot be said to be compositional. For example, consider:

16.

-papatua	'remove forcefully'	-papata	'slap'
-pasua	'split open'	-pasa	'be obliged'
-komboa	'redeem'	-komba	'scrape, impoverish'
-kakatua	'break with teeth'	-kakata	'eat greedily'
-pekenyua	'disconnect'	*-pekenya	
-pekua	'scratch up'	*-peka	
-bandua	'detach'	*-banda	

The derived forms in this set of examples clearly denote some movement or detachment, as suggested by the term 'separative'. However, *–bandua* 'detach' cannot be said to come from **-banda*, a non-existent verb.

     Schadeberg's concept of the separative is also consistent with the way the derivation can introduce a sense of intensification. This is shown in the following examples.

17.

-sumba	'worry, be confused'	→	-sumbua	'annoy'
-mega	'take a bit off'	→	-megua	'take a bit off'
-punga	'decrease in heat'	→	-pungua	'be less, decrease'
-nyaka	'catch'	→	-nyakua	'snatch'

The derived verbs bear a sense of the separative and re-focus on the reversion. For example, *-mega* 'take a bit off' is intensified as *–megua*.

     This sense of intensification may also be conveyed for actions that involve some form of repetition or iteration, as in the following examples. Ashton (1947:243) identifies such forms as augmentatives and does not consider them to be part of the reversive or conversive.

18.

-puma	'exhale'	→	-pumua	'breath'
-kama	'squeeze out'	→	-kamua	'squeeze out, milk'
-chimba	'dig'	→	-chimbua	'dig up'
-chonga	'carve'	→	-chongoa	'sharpen'

For *–pumua* 'breath,' breathing is done by repeated inhaling and exhaling. Milking involves repeated squeezing out of milk. The verb *–chimba* 'dig' refers to the action of making a hole, while *–chimbua* 'dig up' involves bringing something to the surface as a result of digging.

      After examination of these different senses of the derivation, it is clear the reversive sense is the clearest and, therefore, the best exemplar of all forms that are considered separative, intensive, and iterative. The reversive reading is not the meaning that applies in all cases. However, for a class of verbs, the undoing associated with the reversive suffix is the clearest. It is the prototype. For this reason, we retain the use of the term 'reversive' in the present study.

      The reversives should not be confused with a causative that has the same form as the reversive. The best examples of this are nouns and adjectives, as the following examples illustrate.

19.
-chafu	*'dirty'*	→	*-chafua*	*'make dirty'*
-pana	*'wide'*	→	*-panua*	*'widen'*
-pevu	*'mature'*	→	*-pevua*	*'force to mature'*
bungo	*'beetle'*	→	*-bungua*	*'bore holes in grain'*
foto	*'photo'*	→	*-fotoa*	*'take a photo'*
paa	*'roof'*	→	*-paua*	'thatch'

The adjective and nominal bases are transformed into verbs. For example *–chafu* 'dirty' becomes *–chafua* 'make dirty.' Only a few adjectives can be derived in this way. Some nouns also can be causitivized with *–ul-*. The verb *–bungua* 'bore holes in grain' is derived from the noun *bungo* 'a beetle or insect.' Some of these insects make holes in grain, hence *–bungua*.

      Several verbs are apparently derived words but whose synchronic senses cannot be linked to the underived forms. Given the canonical structure of most of the verb roots is -CVC-, longer verbs terminating with /u/ can be reasonably considered to have the reversive suffix. However, in many cases, none of the meanings associated with the reversive suffix can be discerned.

20.
-chaga	'work hard'	*-chagua*	'choose'
-kaga	'protect by charm'	*-kagua*	'inspect'
-gota	'get stuck'	*-gotoa*	'summarize'
-oka	'bake'	*-okoa*	'save'
-unga	'join'	*-ungua*	'burn'
-tenga	'isolate'	*-tengua*	'annul'

The meanings of the derived forms are not compositional. Yet, they bear a sense of undoing something.

      Some reversive forms may not have their base in the language itself but can be traced to historical forms that may not be available synchronically. We are aware that there may have been diachronic changes that obscured some of the origins of the derivations. One example is the verb *–chopoa* 'pull out.' In contemporary Swahili, the verb *–chopa* 'scoop, retain' does not seem to be related to *–chopoa*. However, in the Bantu language Ciyao, the verb *–chopa* 'stab, jab' does exist (Ngunga 2000). We may safely assume that the Swahili

word has the same origin as the Ciyao word. The evidence may just not be found in contemporary forms.

A large number of verbs with an apparent reversive suffix but a causative reading may be traced to ideophones.

21. *-timtimu*   'ruffled'   →   *-timua*   'disarrange'
    -kwapu   'snatch'   →   *-kwapua*   'snatch'
    -lipu   'spark a fire'   →   *-lipua*   'explode, blow up'
    -kwanyu   'rip off twig'   →   *-kwanyua*   'rip off'
    -chapu   'fast'   →   *-chapua*   'accelerate'

The only part that is added to the idiophone, which ends with the vowel –*u*, is the final vowel –*a*. This phenomenon can be detected in related languages. For example, in Ciyao, a Bantu language spoken in southern Tanzania, Mozambiqe, and Malawi, there are the ideophones *mosoo* (expressing the action of breaking something that is soft) and *tupuu* (expressing the action of extraction). From these ideophones, the verbs *-mosola* 'break something soft' and –*tupula* 'uproot' are derived (Ngunga, 2000). Although both indicate a causative sense, these are not derived from **-mosa* or **-tupa*, both of which are words that do not exist in the language. Notice also that such cases do not necessarily involve movement from another position, nor do they result in a reversive reading. For this reason, we consider them to be causative, especially when only a homophone of the reversive.

To sum up, the reversive extension is also associated with the reversative, separative, iterative, and intensive senses. We reject the causative and do not consider it as part of the reversive because it does not carry the sense of reversing an action, nor does it express movement from an initial position. Furthermore, we speculate that the forms that express causative senses are derived from ideophones and other nouns and adjectives.
We now turn our attention to discuss the different senses of the reversive as polysemy. We are guided by four considerations: (a) compositional interpretation of reversion; (b) the clear reversive –*ul-*; (c) semantic proximity of the readings to compositional reversion; and (d) morphological consistency.

The reversive reading is the core or prototypical sense of this suffix. It is the 'undo' or 'reverse' reading found in words such as –*funga* 'shut' and –*fungua* 'open', -*tata* 'tangle' and –*tatua* 'disentangle,' and –*tega* 'set a trap' and –*tegua* 'disassemble a trap.' Some of the prototypical readings are consistent with the separative concept of 'movement from a position.' Others may not be so clear. For example, from -*umba* 'create, mold,' –*umbua* 'deface, embarrass' is derived. The change that is expressed is not clearly related to movement. The verb –*tatua* 'disentangle' (derived from –*tata* 'entangle') can be considered as a form of movement in an abstract, nearly metaphorical sense. All these are forms of reversion, the core of the derivation.

We consider that the separative encompasses some of the prototypical reversives discussed previously, but also non-compositional derivations, for example, -*oka* 'bake' and –*okoa* 'save, redeem.' This suggests movement from some position, perhaps from the oven or from some undesirable position, respectively. From –*tenga* 'isolate,' we get –*tengua* 'annul.' This derived verb suggests a movement from a designated position. Even verbs without identifiable underived roots show a separative reading. One example is –*bandua* 'detach,'

while there is no underived **-banda*. Detaching involves movement or a change from a certain state or position.

Iterative readings involve repeating an event or performing an action just after a similar one. The polysemy can be discerned by the fact that in the prototypical reversive, the reversion takes place after another action or state. For example, *–zibua* 'unplug' happens after *–ziba* 'plug.' The notion of redoing is found in *–pumua* 'breath' from *–puma* 'exhale.' From *–kama* 'squeeze out,' we get *–kamua* 'milk,' which expresses the repeated action of squeezing. Moving on from the sense of repetitive actions, we can consider intensification as a similar, but distinct, feature. Verbs such as *–megua* 'take a bit off' from *–mega* 'take a bit off' and *–nyakua* 'snatch off' from *–nyaka* 'catch' express not only intensification but also a sense of movement from an initial position. But *–pungua* 'be less, decrease' from *–punga* 'decrease in heat' simply expresses intensification and does not express movement from *–punga*.

Once again, the readings identified here as reversive, separative, iterative, and intensive are not mutually exclusive, nor do they have sharp boundaries. They overlap without clear boundaries, with the sole exception being the prototypical reversive, which appears clearly in many compositional derivations. The other readings are results of polysemy with the reversive or readings that are close to the reversive. This is certainly not an exclusive feature of the reversive. It is also found in other verbal derivations, which we will now discuss.

5.   PROTOTYPES OF OTHER EXTENSIONS

When this view of polysemy is applied to Swahili verb extensions, it becomes abundantly clear that the reversive shares striking similarities with other extensions. Let us consider three of the productive extensions: the reciprocal, causative, and applicative. The reciprocal, for example, is associated with 'each other,' and several other senses have been noted. Ashton (1947:240) notes some other meanings, including concerted action, interaction, interdependence, and even disassociation.

22. (a)   *shikama*   'be in a state of holding'
            shikamana   'to be in a state of holding together'

    (b)   *ambata*   'adhere to'
           ambatana   'adhere together'

    (c)   *fumuka*   'come undone'
           fumukana   'disperse'
           (Ashton 1947:141)

The reading of the reciprocalized forms does not include a symmetry that is otherwise implied by the reciprocal. Symmetry would mean doing to each other. An example of the symmetrical reciprocal is *–onana* 'see each other' where X sees Y and Y sees X. The asymmetrical *–fumukana* 'disperse' can hardly be interpreted as something becoming undone by each other. Another example is *–fukuzana* 'running after one another' from *–fukuza* 'chase.' It is not necessarily the case that X chases Y and then Y chases X. It may involve X, Y, and Z all running one after the other. Seidl and Dimidiatris (2002) discuss this

phenomenon extensively. In this particular case, the actions are not strictly reciprocal. There are two or more participants involved in the action. In contrast, the prototypical reciprocal would have 'X doing to Y and Y doing to X.' (Mwangi, 2001)

The causative extensions in Bantu have been demonstrated to create a diverse range of meanings. Recent studies include Meeuwis (2008) on Lingala; Mugisa (2009) on Kihema; and Mwangi (2001) on Gikuyu, Kimeru, Kiembu, and Kikamba. Ashton (1947:233) recognizes several shades of causation, permission, compulsion, etc. in readings of the causative extension.

23. (a) *Ni-me-u-ja-z-a*   *m-tungi*
         I-PF-3OM-be full-CAUS-FV   3-pot
         'I have filled the pot.'

    (b) *Ni-kop-esh-e*   *mi-kate*   *mi-tatu*
         me-borrow-CAUS-SUBJ   3-bread   3-three
         'Allow me to borrow three loaves.'

    (c) *A-me-ni-pang-ish-a*   *nyumba*   *yake*
         1SM-PF-me-let-CAUS-FV   9.house   9-3sg
         'He has let his house to me.'

    (d) *Ku-mw-ugu-z-a*   *m-tu*
         INF-1OM-be sick-CAUS-FV   1-person
         'To tend a person in sickness.'
         Ashton (1947:232f)

In (23a), the causative extension instantiates the reading of 'causing to be full.' The causee has no control over the action of filling. The causee in (23b) has some control over the borrowing in that he may decide not to borrow. The causer simply permits the borrowing action. This is similar to the example presented in (23c). The reading in (23d), however, does not involve causing a person to be sick. The reading invokes an assistive role for the causer. The polysemy is based on two events where one in some way leads to the other.

Several different readings of the applicative are clearly understood. Again, Ashton (1947) provides the following examples.

24. (a) *Wa-toto*   *wa-li-tu-imb-i-a*   *nyimbo*
         2-child   2SM-PT-us-sing-APP-FV   10.song
         'The children sang songs to us.'

    (b) *M-toto*   *a-li-m-kimbil-i-a*   *mama*   *wake*
         1-child   1SM-PT-1OM-run-APP-FV   1.mother   1.her
         'The child ran off to his mother.'

    (c) *N-a-tak-a*   *ki-su*   *ch-a*   *ku-kat-i-a*   *nyama*
         I-PR-want   7-knife   7-of   INF-cut-APP-FV   9.meat
         'I want a knife for cutting meat.'

(d)   *I-tup-i-e*   *mbali*
      3SM-throw-APP-SUBJ   far
      'Throw them right away.'
      Ashton 1941:217f

The applicative in (24a) expresses the idea 'to do to or for.' Other meanings that could be closely linked to this are 'on behalf of,' as well as 'to the detriment of.' The reading in (24b) is that of motion towards, while in (24c) we get an instrumental reading. The applicative in example (24d) triggers a sense of finality or completeness and, therefore, a directional reading. The different readings are all related to the prototype 'do X to Y', where X is the verb and Y is the new argument. Many other studies of applicatives in Swahili and other Bantu languages provide abundant examples of this polysemy.

       In this section, we have demonstrated that a lack of compositional meaning is not an exclusive feature of the reversive. We have shown that reciprocal, causative, and applicative derivations are also subject to wide-ranging meanings. The same derivational affixes give rise to diverse readings that may diverge from the prototypical reading. This reinforces our claim that the reversive is fuzzy category that should not be defined by strict demarcations or distinctive features, but it should instead be characterized based on prototypes.

6.   THE POSITION OF THE REVERSIVE IN RELATION TO OTHER EXTENSIONS

Apart from its meaning, the reversive provides very useful data about the order of affixes. In this section, we address two questions: (a) What is the placement of the reversive relative to other verb extensions? (b) What principles constrain the order of the affixes? Accounting for the order of morphemes is one of the central questions of morphological investigations. There have been a few studies that have attempted to account for the order of verb extensions in Bantu. Three approaches have been the most prominent in this kind of investigation: (a) a syntactic account, (b) a templatic account, and (c) a semantic account.

       Perhaps the best proponent of the syntactic approach is Baker (1985). Baker suggested that syntactic rules and constraints are responsible for the order of morphemes. This proposal was named the Mirror Principle (Baker, 1985): 'Morphological derivation must directly reflect syntactic derivation (and vice versa)' (Baker, 1985:375). This proposal was a direct result of his study of grammatical function changing morphology in diverse languages such as Chamoro (Austronesian), Quechua (South American), Chibemba, Chimwiini, and Kinyarwanda (Bantu). The following Chibemba examples illustrate variable affix order that is linked to variable meanings.

25. (a)   *Naa-mon-an-ya*   *Mwape*   *na*   *Mutumba*
         I-see-REC-CAUS   Mwape   na   Mutumba
         'I made Mwape and Mutumba see each other.'

       (b)   *Mwape*   *na*   *Chilufya baa-mon-eshy-ana*   *Mutumba*.
         Mwape   and   Chilufya 2SM-see-CAUS-REC   Mutumba
         'Mwape and Chilufya made each other see Mutumba.'
         (Baker 1985:395)

In (25a), the cause binds the direct object, indicating that the reciprocal merges with the root verb before the causative. The resulting order is V-REC-CAUS. Sentence (25b), however, shows that the causer binds the cause. The reciprocal merges with the causative first, and the two then merge with the root, resulting in V-CAUS-REC. In short, the principles that govern the composition of words are congruent to the principles that govern the composition of phrases and clauses. The order of morphemes in a complex word reflects the natural syntactic embedding of the heads that correspond to those morphemes (Baker 2002:326). Morphological processes are applied one after the other from the inside to the outside. Baker does not distinguish inflectional morphology from derivational morphology.

The syntactic approach has been shown to be consistent with the semantic approach, specifically with Bybee's (1985) theory of relevance and Rice's (2000) conceptions of semantic compositionality and scopal relations. Bybee suggests that "we would expect the most relevant to occur closest to the verb stem, and the least relevant to occur at the greatest distance from the verb stem" (Bybee, 1985:33-34). Rice (2000) claims the order of affixes reflects semantic compositionality and scope relations. According to this proposal, narrower scope affixes appear closer to the root while wider scope affixes appear further from the root. Something that modifies the root will be closer than the object that modifies the derived form because the modifiers of the root has a narrower semantic scope.

In a comprehensive review of the Mirror Principle and its application to Bantu verb extensions, Hyman (2003) noted that there were many cases where the extensions were not consistent with the predictions of the Mirror Principle and semantic scope, i.e. Chichewa CAUS-APP-its-il- represents both scopes, e.g. with an instrument.

26. (a) Applicativized causative: -lil-its-il [with [cause cry]]
      alenjé   *a-ku-líl-íts-il-a*   *mwaná*   *ndodo*
      hunters   3pl-prog-cry-CAUS-APP-fv   child   sticks
      'the hunters are making the child cry with sticks'

    (b) Causativized applicative: -takas-its-il- [cause [stir with]]
      alenjé   *a-ku-tíkís-its-il-a*   *mkází*   *mthíko*
      hunters   3pl-prog-stir-CAUS-APP-fv   woman   spoon
      'the hunters are making the woman stir with a spoon'
      (Hyman 2003:248)

A syntactic or semantic composition approach predicts the applicativized causative (26a). The applicative attaches after the root event is causativized. We would expect that the applicative would attach to the root 'stir' before the causative in (26b). However, the order of the affixes is the same as in (26a). Hyman further observes that there is a tendency for the four extensions to appear in the order Causative-Applicative-Reciprocal-Passive (CARP). He suggests that this is a default template that sometimes conflicts with semantic composition and the Mirror Principle.

Notice that the template does not include the stative and the reversive extensions, inviting further investigation. Templates are stipulated; there is no prediction that can be made from the template with respect to the reversive. But from the semantic approach, we can make a specific prediction for the reversive extension: the reversive cannot appear after

any argument structure changing extension because it changes the denoted action. It must merge before these other extensions. In this study, we will test that prediction.

To discover these combinations, we use data from the Helsinki Corpus of Swahili (HCS) and search for pairwise combinations using their Swahili Language Manager (SALAMA). The corpus consists of over 20 million words from texts from newspapers; books; and fictional, educational, and scientific texts from the second half of the twentieth century and the twenty-first century (Hurskainen 2008, 2009). The information analyzed by its morphological analyzer includes, among other things, parts of speech, inflections, derivations, and etymology. Using Lemmie2.0, a web-based tool from the Language Bank of Finland for working with language corpuses (CSC 2003), searches were conducted for combinations of the reversive and other extensions.

Only five extensions are tagged with morphosyntactic descriptors. These five extensions are listed below with their SALAMA tags.

27. Tags for extensions in SALAMA (Hurskainen 2009)
    Applicative   [appl]
    Causative   [caus]
    Passive   [pass]
    Reciprocal   [rec]
    Stative   [stat]

The reversive extension is not tagged. In order to search for combinations with other extensions, we identified the extension and searched for combinations as wordforms (wf). Examples of our search for combinations of reversive and causative are presented in (28) below.

28. (a)   [pos='v' wf='*ulisha']
    (b)   [pos='v' wf='*olesha']
    (c)   [pos='v' wf='*uza']
    (d)   [pos='v' wf='*oza']
    (e)   [pos='v' wf='*ishua']
    (f)   [pos='v' wf='*eshua']
    (g)   [pos='v' wf='*izua']
    (h)   [pos='v' wf='*zua']

Such searches took into consideration the different allomorphs of the two extensions. The causative appears as *–ish-, -esh-, -z-, -iz-,* and *–ez-*. We first searched for combinations in which the reversive appears before the other five extensions and then for combinations in which the other five extensions appear before it.

The results of the search for these combinations are presented in this section. Multiple examples of attested combinations are presented in order to eliminate some possible chance combinations. We begin with combinations with the applicative extension first. The applicative suffix *–il-* introduces an additional internal argument to the verb. As noted earlier, new internal arguments are open to diverse semantic roles. The only combinations involving the applicative and reversive that are reported in the data are REV-APP. Here are some examples of such combinations:

29. (a) **a-mesha-ni-fung-ul-i-a**   *kesi*
         1SM-already-me-close-REV-APP-FV   9.case
         'she/he has opened up a case against me' (she/he has charged me)
         Document: 639572

    (b) **ku-m-chom-ol-e-a**   *jamaa*   *fedha*   *z-ake*
         INF-1OM-stick-REV-APP-FV   1.someone   10.money   10.3SG
         'to pull out money from someone' i.e. 'steal from someone'
         Document: 639961

    (c) *ni-nge-tak-a*   **ku-wa-fumb-ul-i-a**   *w-atu*
         I-COND-want-FV   INF-2OM-close-REV-APP-FV   2-person

         m-oyo   *w-angu*
         3-heart   3-1SG
         'I would like to open up my heart to people'
         Document: 626870

The roots of the verbs exemplified here are –*funga* 'close, fasten, tie' for (29a), -*choma* 'stick, stab' for (29b), and –*fumba* 'conceal, close' for (29c). The reversive derivations represent different actions from those denoted by the roots. In contrast, when the applicative suffix is added to a verb, it does not change the action denoted by the root. Thus –*fungia* 'close for, with' is still about closing *(-funga)*. The change of meaning affected by the reversive suggests that it has a narrower scope than the applicative.

       The morphological causative extension in Swahili is realized by such shapes as –*ish-*, -*esh-*, and -*z-*. The causative introduces a causer that becomes the subject of the new causative predicate. The search for pairwise combinations of the reversive and the causative yielded only REV-CAUS.

30. (a) **ku-wa-fung-ul-ish-a**   *mashtaka*
         INF-2OM-close-REV-CAUS-FV   6-charges
         'to make them open up a case' (= to make them file charges)
         Document: 619266 **Corpus:** hcs_dwelle

    (b) **Ku-me-chom-o-z-a**   *ripoti*
         INF-PF-stick-REV-CAUS-FV 9.report
         'there has emerged a report'
         Document: 624710

As with the applicative, the causative does not change the action expressed by the root. It only adds participants and defines new participants to the root action. For example, from the root –*funga* 'shut, close, faster,' we can derive –*fungisha* 'to cause to shut.' The reversive expresses an event that is not 'to shut.' For this reason, the reversive has a narrower scope and, as predicted by the scope theory, appears only before the causative. Attaching the reversive after the causative is possible if we conceive of reversing causation.

The passive suffix is realized as *–w-, -iw-,* or *–ew-.* Semantically, this affix only helps to paraphrase what is expressed in the active sentence. The root expresses the same action, and the same participants appear in the passive. Our corpus search for the combinations of the reversive and passive yielded only one combination, REV-PASS. The following examples display this combination.

31. (a) *Kenyatta*   ***a-me-fung-ul-iw-a***   *kutoka gereza-ni*
       Kenyatta   1SM-PF-lock-REV-PASS-FV from   prison-LOC
       'Kenyatta has been released from prison.'
       Document: 616421

    (b) *Ki-wango*   *hicho*   ***ki-li-teng-ul-iw-a***
       7-   7.that   7SM-PT-
       'that amount was annulled'
       Document: 640260 **Corpus:** hcs_alasiri

    (c) *Siri*   *hiyo*   ***i-li-fich-ul-iw-a***
       9.secret   9.that   9SM-PT-hide-REV-PASS-FV
       'the secret was revealed'
       Document: 629344

These examples illustrate the fact that passivization applies to the reversive verb, but a reversive verb cannot be derived from a passive verb. That means once a verb is passivized, it cannot be derived into a different action. Once *–ficha* 'conceal' is passivized into *–fichwa* 'be concealed, hidden,' for example, the action cannot be changed. It will remain related to 'hiding.' However, once *–ficha* 'hide' is reversed back into *–fichua* 'reveal,' then it can be passivized.

The reciprocal extension *–an-* suppresses the object of a verb and derive reciprocal reading of a plural subject or a subject with a commutative oblique object. The combination REV-REC is the only combination that is attested to by the data from the corpus examples presented here.

32. (a) *wa-andishi*   ***ku-fich-u-an-a***
       2-writer   INF-hide-REV-REC-FV
       'reporters to expose each other'
       Document: 626854

    (b) ***ku-pang-u-an-a***
       INF-arrange-REV-REC-FV
       'to disarrange'
       Document: 627948

    (c) *Wa-hindi*   ***wa-umb-u̲-a̲n̲-a***
       2-Indian   **2SM-mould-REV-REC-FV**
       'Indians embarrass each other'
       Document: 627569

From the root *–ficha* 'hide' in (32a), the reverse is derived as *–fichua* 'expose, reveal.' From this reversive form we can derive the reciprocal *–fichuana* 'expose each other.' The reverse order in which the action is reciprocalized and subsequently reversed is not attested. As with other extensions, the reciprocal does not change the action denoted by the root, while the reversive does.

The stative extension *–ik-* is another derivation that reorganizes the information presented in the sentences and suppresses the external argument. This affix does not change the event or action expressed by the root. With respect to its relative position to the reversive, the only order of these suffixes is REV-STAT. The output of the two suffixes is *–ok-* or *–uk-*, as discussed previously. We demonstrate this through the following examples.

33. (a)   *M-lango*   *wa*   *ndege*   **wa-fung-u-k-a**   *hewa-ni*
           3-door   3.of   9.plane   9SM-shut-REV-ST-FV   air-LOC
           'Plane door opens mid-air'
           Document: 625654

    (b)   *Basi*   **la-chom-o-k-a**   *ma-tairi*
           5.bus   5SM-stick-REV-ST-FV   6-tyre
           'Bus tires fall off'
           Document: 634427

    (c)   *Siri*   **i-na-fich-u-k-a**
           9.secret   9SM-PR-hide-REV-ST-FV
           'The secret is exposed/revealed'
           Document: 616278

From the root *–ficha* 'hide, conceal,' the verb *–fichua* 'expose' would be the reversive form. Adding the stative results in *–fichuka* 'become exposed' (33c), we can see that as with the other extensions, stativization is only possible after the reversive. In other words, it is not possible to do a reversal after stativizing. The stative will have already been applied to a very different action.

A summary of the results of the search is presented in the following table, in which X stands for any of the five extensions.

34.

Attested pairwise combinations of extensions involving the reversive.		
X	REV + X	X+REV
Applicative	✓	-
Causative	✓	-
Passive	✓	-
Reciprocal	✓	-
Stative	✓	-

The table shows that the reversive only appears before the other extensions. We did not find any case in which the reversive appears after another of these extensions.

These results are consistent with the semantic theory of morpheme order (Bybee 1985; Rice 2000). The reversive extension has a narrower scope than the other extensions; it is more relevant to the core meaning of the verb. Its attachment to a verb changes the event that is expressed. Let us demonstrate once more with the root *–panga* 'arrange, plan.'

35. (a)   *-pang-a*   'plan'
    (b)   *-pang-u-a*   'disarrange'
    (c)   *-pang-i-a*   'plan for'
    (d)   *-pang-ul-i-a*   'disarrange for, with
    (e)   *-pang-w-a*   'be planned'
    (f)   *-pang-ul-iw-a*   'be disarranged for, with'

For example, the state that results from *–panga* 'arrange, plan' is different from that which results from *–pangua* 'disarrange.' In contrast, the same event of planning or arranging is involved in *–pangia* 'plan for,' *–pangisha* 'cause to plan/arrange,' *–pangwa* 'be planned,*'* *–pangana* 'put each other in order, in plans,' and *–pangika* 'get planned.' Therefore, the reversive has narrower scope in that it modifies the root to refer to an action that is different. As predicted, it appears closest to the root when other extensions are involved.

7.   CONCLUSION

In this study, we set out to describe the reversive extension with a focus on its meaning and an account of its position relative to other verb extensions. The reversive extension *–ul-* is realized as *–u-, -o-, -ul-* and *–ol-*. It is a valency-neutral extension linked to inversion, although it gives rise to other readings, specifically the separative, intensive, and iterative. The reversive meaning is the prototypical meaning of the derivation. We have suggested the readings are linked through polysemy. This extension can be attached to verbs that: (i) express a state that can be reversed, (ii) are transitive, and (iii) are telic. In these respects, it is similar to the English reversative prefix *un-*. Both are productive but very heavily constrained as far as the verbs to which they can be attached. We have also argued that polysemy is not a unique feature of the reversive extension but is actually a trait of all extensions. The main claim is that the extensions are fuzzy categories with certain prototypical meanings.

Using words found while searching for pairwise combinations involving the reversive and other extensions, we established that the reversive appears before applicative, causative, passive, reciprocal, and stative extensions. This is consistent with both semantic scope theory and relevance theory. The reversive has a narrow scope and therefore appears to be the extension closer to the root. It changes the action denoted by the base to something different, for example, from 'opening' to 'shutting.' All the other extensions discussed here involve modification of the action that is either of the base or reversed. Scope theory predicts that such a suffix will occur closest to the root. Although the reversive has not attracted much attention, examination of its shape, distribution, and meaning reveals a great deal about the nature of both Bantu verb extensions and derivations in general.

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