

## THE DYNAMICS OF BANTU APPLIED VERBS: AN ANALYSIS AT THE SYNTAX–PRAGMATICS INTERFACE\*

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### 0. INTRODUCTION

Applied verbs in Bantu languages have often been analysed as licensing a new object NP within the subcategorization of their base verb, resulting in a change of valency with the new NP often expressing a specific thematic role. However, comparatively less attention has been paid to examples where applied verbs fail to have an effect on the valency of the base verb. While many of these latter cases can be regarded as non-productive, lexicalized forms, there is a small, but widely distributed class of examples which shows the productive use of an applied verb as encoding not a change in valency, but a particular lexico-pragmatic function which I will call ‘concept strengthening’. This paper is concerned with these examples.

### 1. PREVIOUS ANALYSES

Previous analyses of Bantu applied verbs have mainly been concerned with examples where the applied form has one more object than the corresponding base form, as seen in the following Swahili examples:

- (1a)      *A-li-andik-a*                      *barua*  
               SCD1-PAST-write-FV      letter  
               ‘S/he wrote a letter’
- (1b)      *A-li-mw-andik-i-a*                      *shangazi barua*  
               SCD1-PAST-OCD1-write-APPL-FV      aunt              letter  
               ‘S/he wrote a letter to the aunt’

The main difference between (1a) and (1b) is that in the applicative construction in (1b) a new benefactive NP *shangazi*, ‘aunt’, has been introduced into the VP headed by

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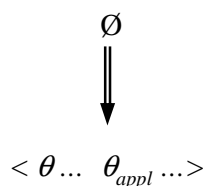
*andikia*, ‘write (APPL)’. Most previous analyses of applied verbs have concentrated on examples such as the one in (1b) and have taken applicatives as essentially triggering a change in valency. Specific analyses of Bantu applicative constructions as involving either morpho-lexical or syntactic operations will be discussed in the following sections.

### 1.1. Morpho-lexical analyses

Analyses of applied verbs and other valency changing operations within Lexical-Functional Grammar (LFG) have been proposed by a.o. Alsina & Mchombo (1990, 1993) and Bresnan & Moshi (1990). From an LFG perspective, applied verbs are derived by a morpho-lexical operation on the subcategorization frame of the base verb, which changes its thematic structure, and the derived lexical information is, like all lexical information, projected into syntax by universal mapping principles.

Bresnan & Moshi (1990: 170) formulate the rule relevant for applied verbs, whereby a new thematic role is introduced, as follows:

(2) Applicative



According to (2), an applied verb is formed by introducing a new theta role ( $\theta$ ) into a verb’s array of theta roles (represented between angled brackets), which contains roles lexically encoded by the given verb, or those introduced by derivational operations. The new role is thematically restricted, as indicated by the subscript, which stands as an abbreviation of roles which can be expressed by an applied object in a given language, e.g. for beneficiary, recipient, instrument or locative. The relation between morpho-lexical thematic information and syntactic structure is defined by the principle of function-argument biuniqueness, which ensures that all lexical information is projected into the syntax:

(3) Function–argument biuniqueness (Bresnan & Moshi 1990: 171): Each expressed lexical role must be associated with a unique function, and conversely.

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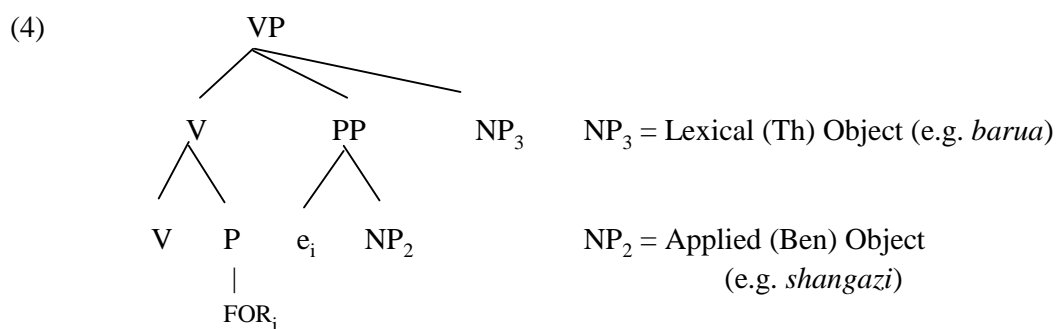
informants mainly collected during a fieldtrip to Zambia and Tanzania in 1997 partially funded by SOAS and a CRF/Irwin grant from the University of London.

By (3), every thematic role has to be expressed syntactically by a specific grammatical function (the exact choice is constrained by a thematic hierarchy). Since, by (2), applied verbs have an additional thematic role, which according to (3) has to be represented by a unique grammatical function, the combined effect of (2) and (3) is that applied verbs will show an increased valency with respect to the base verb.

### 1.2. Syntactic analyses

An alternative approach assumes that applied verbs are syntactically derived. Under this conception, proposed by Baker (1988) and Marantz (1984, 1993)<sup>1</sup>, the morphological complexity of applied verbs reflects their underlying syntactic complexity.

In Baker's analysis, applicative constructions result from the incorporation of an empty preposition into the verb, in a process similar to noun incorporation found for example in North American languages such as Mohawk (cf. Baker 1988: 278):

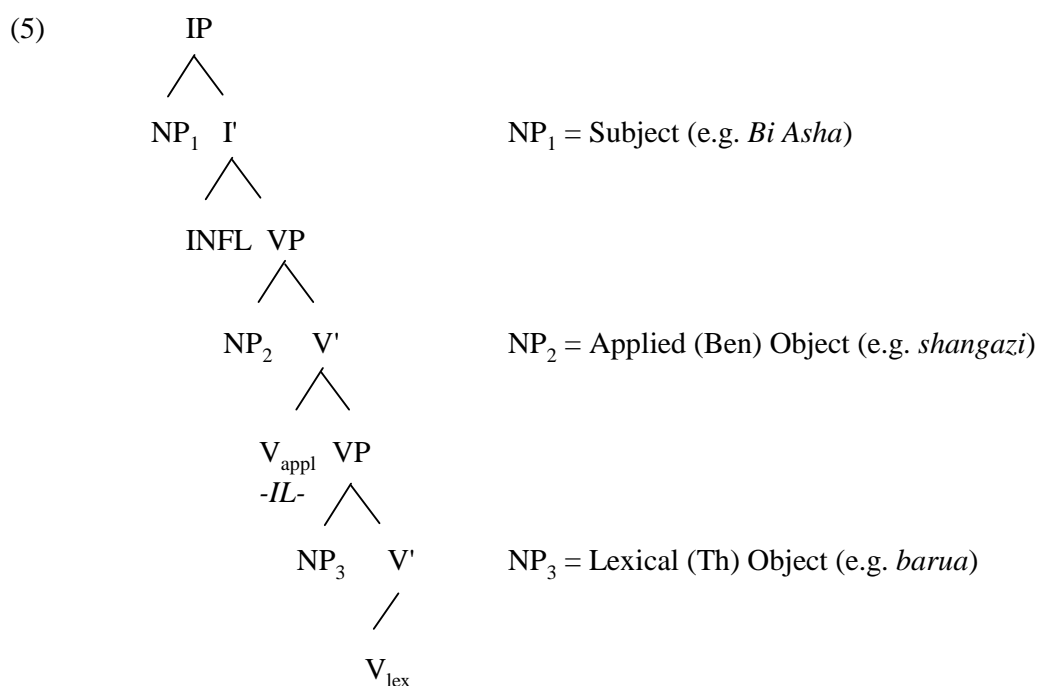


As the structure in (4) shows, applicative constructions have an underlying prepositional object with an empty preposition as head, which is incorporated into (or, adjoined to) the verb. The abstract preposition FOR in (4) indicates that the object is thematically restricted in a way which, in languages like English, may be expressed by a preposition. The morphological reflex of the introduction of the PP is the applicative marker on the verb. The remaining object of the preposition surfaces as applied object of the verb.

A slightly different solution has been proposed in Marantz (1984, 1993), where it is assumed that applicative constructions result from verb raising of the lexical verb to a higher applied verb (Marantz 1993: 129):

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<sup>1</sup> More recent analyses include Nakamura's (1997) Minimalist analysis and the Construction Grammar approach by Shibatani (1996). These analyses share the assumption that applicatives increase valency.



In this approach, the applicative morpheme, represented as *-IL-*, is treated as a verbal head which projects its own verbal projection and with it its own object. The lexical verb moves from its original position to the higher V where it is adjoined to the applicative morpheme, and the applied verb then moves further to INFL to pick up inflectional information, the result being a fully inflected applied verb. Since in the structure in (5) two VPs, and hence two Spec-VP positions are projected, applicative constructions will come out as having two objects; one introduced by the lexical verb, the other by the applied suffix.

Both syntactic analyses share the idea that applicative constructions involve the introduction of an additional object, either by an empty preposition, or by the applicative morpheme, and they thus share with the LFG approach the assumption that applied verbs differ from their base verb in that they have an additional object.

### 1.3. Problems with previous analyses

In summary, most previous analyses are concerned with the syntactic aspect of applicative constructions, in particular with the change in valency observable most often with benefactive applicative constructions. The evidence adduced in previous work is mainly syntactic, consisting in particular of word order, object-marking and passivization facts. However, rather less attention has been paid to the pragmatic function of applied verbs, and the relation between applicative constructions and

corresponding constructions with non-applied verbs and prepositional objects (but cf. the more recent work by Bentley 1998, Mabugu 1999, Matsinhe 1999, Rapold 1997). In addition, since applicative constructions are analysed as introducing an additional object, the analyses are difficult to extend to cases where applied verbs are used without an attendant change in valency. These cases, which are mainly found with non-benefactive applied verbs, will be discussed in more detail below.

## **2. THEORETICAL BACKGROUND**

The analysis presented here is developed within a dynamic approach to natural language structure, Dynamic Syntax (Kempson et al. 2001), and a particular approach to VP adjunction within this framework (developed in Marten 1999). Dynamic Syntax is a model of how hearers build semantic structure from words encountered in the utterance, in a step-by-step, incremental fashion in order to construct representations of thought, i.e. propositions consisting of concepts (Fodor 1975, 1999, Sperber & Wilson 1995).

### **2.1. Underspecified syntax for verbs**

Within Dynamic Syntax, verb phrase adjunction can be modelled as syntactic underspecification of verbal subcategorization information, so that verbs can be represented as allowing generally for an indeterminate number of associated nominal expressions, restricted by language-specific structural constraints and by more general conceptual-pragmatic processes (Marten 1999). A simplified lexical entry for *bake*, for example, includes an underspecified type ( $Ty(e^*)$ ):

(6) Lexical Entry for *bake*:

$\{Fo(bake'), Ty(e^* \rightarrow (e \rightarrow t))\}$ , where  $e^* = 0$  or more expressions of  $Ty(e)$ .

The type value encodes the number of arguments (expressions of type 'e', denoting an entity, as opposed to expressions of type 't', denoting a truth value, the type of propositions/sentences) the verb subcategorizes for. In the entry in (6), an element of underspecification has been introduced, since according to  $Ty(e^* \rightarrow (e \rightarrow t))$ , minimally one argument (the subject) is required, but any number of additional complements may be introduced into the clause. In this way, optional arguments and verbal adjuncts may be integrated into the verb phrase as (structural) arguments, and the single lexical entry in (6) can be resolved as transitive (7), or as encompassing several complements (8).

The semantic representation shows the formula (conceptual meaning) and type values for the two sentences:

- (7) John was baking a cake  
 $Fo((bake'(a\_cake'))(john')), Ty(t)\}$
- (8) John was baking a cake for Mary in the kitchen  
 $Fo((((bake'(in\_the\_kitchen'))(for\_mary'))(a\_cake'))(john')), Ty(t)\}$

The syntactic underspecification inherent in the lexical entries for verbs is resolved incrementally when hearers build semantic representations from words in context. Although the formulation of underspecified type values by means of  $e^*$  allows for the introduction of indefinitely many complements, the actual number of complements for any given verb in a specific context will be restricted both by structural constraints (e.g. NPs may have to be licensed by case or prepositions) as well as by conceptual-pragmatic constraints, in particular the possibility of constructing an appropriate mental concept from the lexical information provided by the predicate, the complementation, and the utterance context, which is further discussed in the next section.

## **2.2. Contextual concept formation**

The eventual valency of a given predicate (verb) in context depends on a process of pragmatic enrichment (concept formation, cf. Carston 1996, Sperber & Wilson 1995, 1997, Wilson & Sperber 1999) which establishes the occasion specific meaning of an expression with recourse to lexical, world, and contextual information. The basic assumption of this view is that words do not address mental concepts directly, but rather merely encode an instruction to the hearer to construct a, possibly highly occasion specific, concept which she can assume corresponds sufficiently closely to the speaker's intended meaning. Thus for example the use of *eat* in (9) requires the establishment of an occasion specific concept of eating (example from Wilson & Sperber 1999):

- (9) Alan Jones: *Do you want to join us for supper?*  
 Lisa: *No, thanks. I've eaten.*

In order to understand Lisa's utterance, Alan has to enrich the concept of eating he entertains so that it entails that Lisa has eaten at a time not too long ago, and a sufficient amount and kind of food, so as to qualify as a reason for refusing an invitation to join Alan for supper. To construct a concept of Lisa eating a lychee for breakfast would not achieve the relevant contextual effects which Alan can take Lisa to have communicated.

The enrichment of lexically triggered concepts is driven by pragmatic principles, in particular the hearer's expectation of optimal relevance (Sperber & Wilson 1995). In constructing concepts, hearers make use of information a particular word accesses in long-term memory, but also of contextual values. The interpretation of verbs in particular is highly dependent on information provided from other elements of the clause, as can be seen from the effect of different complementation patterns on the interpretation of the verbs *open* and *cut* in the following examples:

- (10) *open the washing machine with a screwdriver; open one's eyes; open a bottle of wine with some friends; open a bank account*
- (11) *cut grass with a scythe/a lawn mower; cut a cake into cubes; cut paper roughly; cut hair with clippers*

The concepts addressed by the verbs in (10) and (11) differ even in these de-contextualized examples purely by recourse to the complements. One consequence of this approach to concept formation is that mental concepts are construed as being much more fine-grained than words, so that words and concepts stand in a one-to-many relation (cf. Sperber & Wilson 1997). Another aspect of this view is that the underspecified syntactic information of verbs can be seen as a reflex of underspecified pragmatic-conceptual information. The concept addressed by a predicate is established only with reference to context, including the verb's complementation frame<sup>2</sup>.

### **3. APPLIED VERBS AS INSTRUCTION FOR CONCEPT STRENGTHENING**

Against the background of syntactic underspecification and concept formation, the role of Bantu applied verbs can be addressed as follows: Given that the syntactic introduction of additional complements into the VP can – by claim – be achieved simply by resolving underspecified verbal information, what is the role of applied verbs over and above their syntactic function? The answer I am going to explore in this paper is that applied verbs encode an instruction for concept strengthening: The hearer is entitled to construct a concept which is 'stronger' than a potential concept constructed from a corresponding base verb. While the syntactic change of valency associated with applied verbs may count as concept strengthening, the more important evidence comes from cases where applied verbs do not change valency. In these cases, their function can be analysed as concept strengthening or predicate emphasis.

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<sup>2</sup> The idea that lexical meaning is context-dependent has been discussed previously (e.g. Porzig 1934, Firth 1968, Pustejovsky 1995), but few have tried to link this semantic with syntactic underspecification.

### 3.1. Pragmatic conditions for the use of (non-benefactive) applied verbs in Swahili

The first set of relevant evidence comes from pragmatic conditions on the use of (non-benefactive) applied verbs, as seen in the Swahili examples in (12):

- (12a) *Salma a-li-ka-a kiti-ni*  
 Salma SCD1-PAST-sit-FV chair-LOC  
 ‘Salma was sitting on a chair’
- (12b) *#Salma a-li-kal-i-a kiti*  
 Salma SCD1-PAST-sit-APPL-FV chair  
 ‘Salma was sitting on a chair’
- (12c) *Salma a-li-kal-i-a kiti cha uvivu*  
 Salma SCD1-PAST-sit-APPL-FV chair GEN laziness  
 ‘Salma was slouching/sitting in a comfortable chair’

The example in (12a) shows the intransitive verb *kaa*, ‘sit’, with a locative-marked adjunct *kitini*, ‘chair (LOC)’. The locative phrase can be introduced into the verb phrase as a ‘bare complement’ (i.e. without locative marking) with the applied verb *kalia*, ‘sit (APPL)’, which thus shows a change in valency ((12b) and (12c)). However, the contrast between (12b) and (12c) shows that the applied verb is subject to a pragmatic condition, namely that the sitting be in some way special. (The ‘#’ indicates that the sentence is subject to pragmatic appropriateness conditions). In (12c), this is indicated by using the complement *kiti cha uvivu*, ‘easy chair’, which enforces an interpretation of *kaa* as ‘slouch, sit in a relaxed manner’, rather than as simply ‘sit’<sup>3</sup>.

The same pragmatic effect of strengthening is found with the transitive verb *kata*, ‘cut’, in the examples in (13):

- (13a) *Bi Sauda a-li-kat-a mkate kwa kisu*  
 Ms Sauda SCD1-PAST-cut-FV bread with knife  
 ‘Ms Sauda cut bread with a knife’
- (13b) *(#)Bi Sauda a-li-kat-i-a mkate kisu*  
 Ms Sauda SCD1-PAST-cut-APPL-FV bread knife  
 ‘Ms Sauda cut bread with a knife’
- (13c) *Q:Bi Sauda a-li-kat-i-a nini mkate huo?*  
 Ms Sauda SCD1-PAST-cut-APPL-FV what/how bread this  
 ‘How *did* Ms Sauda cut this bread?’

<sup>3</sup> If the applicative in Swahili is seen as essentially directional (cf. Mkude 1996), direction is ‘added’ in these examples to an inherently directional predicate, which leads to the need to derive further pragmatic effects. I leave the detailed analysis of applicative and verb semantics for future research. I only wish to show that the applicative may have a pragmatic function in addition to its syntactic function.



The instrument *kisu*, ‘knife’, in the examples in (13) can be introduced as a prepositional phrase (13a), or by an applied verb. However, the form in (13a) is the unmarked form, while the use of the applied verb is preferred only when particular emphasis is placed on the cutting, either by questioning the instrument (13c), or as an answer to such a question, when sufficient inferential effects can be derived from strengthening the predicate with reference to the instrument (13b).

These two examples show that the use of applied verbs is licensed by extra inferential effects derived from the predicate. The concept addressed by the applied verb has to be constructed as ‘stronger’ than the corresponding base verb.

### 3.2. Applied verbs without valency alternation in Swahili

The examples of the preceding section have shown that applied verbs which change the valency of the base verb are subject to pragmatic licensing. However, as indicated above, some applied verbs encode an instruction for concept strengthening, without change in valency, as the following Swahili examples show:

- (14a) *Juma a-li-va-a kanzu*  
 Juma SCD1-PAST-wear-FV kanzu  
 ‘Juma was wearing a Kanzu’
- (14b) *Juma a-li-val-i-a nguo rasmi*  
 Juma SCD1-PAST-wear-APPL-FV clothes official  
 ‘Juma was dressed up in official/formal clothes’
- (14c) *#Juma a-li-val-i-a kanzu*  
 Juma SCD1-PAST-wear-APPL-FV kanzu  
 Int.: Juma was wearing a Kanzu
- (14d) *– kijana wa Kihindi, ka-val-i-a vizuri ...*  
 youth of Indian SCD1.PERF-wear-APPL-FV well ...  
 ‘– an Indian youth, dressed (up) well ...’  
 (Muhammad Said Abdulla, *Mwana wa Yungi Hulewa*, 1976: 52)

The examples in (14) show instances of the verb *vaa*, ‘wear’. It is used transitively in (14a) with the object *kanzu*, ‘kanzu’. However, in (14b) the applied form, *valia*, is used equally transitively, with the object *nguo rasmi*, ‘formal clothes’. In other words, the applied verb here fails to encode a change in valency, while it does encode a stronger concept than the base form, as indicated in the translation as ‘dress up’, a reading enforced by the use of special clothes as object. In contrast, as (14c) shows, if simple wearing of clothes is communicated, here enforced by using the ‘ordinary’ *kanzu* as

object, the use of the non-applied verb as in (14a) is preferred. Finally, the example in (14d) shows that the applied form is acceptable even intransitively as long as the pragmatic condition of strengthening is fulfilled.

A similar contrast can be seen with the locative complement in (15):

(15a)     *mpishi a-li-pik-a jiko-ni*  
 cook    SCD1-PAST-cook-FV   kitchen-LOC  
 ‘The cook was cooking in the kitchen’

(15b)     *mpishi a-li-pik-i-a jiko-ni*  
 cook    SCD1-PAST-cook-APPL-FV   kitchen-LOC  
 ‘The cook was cooking in the kitchen’ (habitually)

Both examples have a locative marked complement. However, in (15a) the verb is in its unextended form, while the verb in (15b) is an applied verb. The difference in meaning here is that in (15b), the cooking is interpreted as a habitual, recurrent action<sup>4</sup>. With a movement verb, the applied form emphasises the direction of the movement (examples from Abdulaziz 1996: 32):

(16a)     *waziri a-li-anguk-a chini*  
 minister   SCCD1-PAST-fall-FV   down  
 ‘The minister fell down’

(16b)     *waziri a-li-anguk-i-a chini*  
 minister   SCCD1-PAST-fall-APPL-FV   down  
 ‘The minister fell down’ (with an implied meaning of directionality)

Here the intransitive verb *anguka*, ‘fall’, is used with the locative adverb *chini*, ‘down’. The difference in interpretation is, according to Abdulaziz (1996: 32), that the applied verb adds an “implied meaning of directionality”.

The examples in this section show that applied verbs can be found which do not encode a change in valency, but where the applied verb conveys a different interpretation of the predicate<sup>5</sup>. These cases can be explained from the perspective adopted here, with reference to the conceptual-pragmatic function of applied verbs as an instruction to the hearer to create a strengthened concept. Concept strengthening may

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<sup>4</sup> I leave open the question in how far this interpretation can be subsumed under concept strengthening. Note also that in this example there is a sense of change in valency even though it is not reflected by the marking of the complement since *jikoni* is optional in (15a), but obligatory in (15b):

(i)     ? \**mpishi alipkia*

<sup>5</sup> Further examples are given in Whiteley (1968: 72) and Bentley (1998).



designates a stronger, strengthened form of the action encoded by the verb. As a final example, (19) shows the verb *lya*, ‘eat’, used intransitively as base and applied form:

- |       |                                                          |       |                                                                                    |
|-------|----------------------------------------------------------|-------|------------------------------------------------------------------------------------|
| (19a) | <i>tu-ka-ly-a</i><br>SCD1PL.-FUT-eat-FV<br>‘we will eat’ | (19b) | <i>tu-ka-li-il-a</i><br>SCD1PL.-FUT-eat-APPL-FV<br>‘we will feast’ (idiom.: enjoy) |
|-------|----------------------------------------------------------|-------|------------------------------------------------------------------------------------|

The applied form in (19b) is interpreted as ‘eating a lot/feasting’, or, in its idiomatic sense, as ‘enjoy’. Evidence from Bemba thus confirms the view that applied verbs encode an instruction for concept strengthening with or without a change in valency.

### 3.3. Adverbial applied verbs in Luganda

In Luganda, the conceptual-pragmatic function of applied verbs has developed a more grammaticalized reflex where particular adverbial modification can only be used with applied verbs: The applied form is required with *ddala*, an adverb of degree expressing thoroughness, completeness, and *bwereere*, “for nothing” (Ashton et al. 1954: 332):

- (20) *Bakyamidde ddala*  
‘They have gone completely astray.’
- (21) *Sembera ddala wano.*  
‘Come right here.’
- (22) *Tuteganiidde bwereere.*  
‘We have taken (all this) trouble for nothing.’

The first two examples are instances of conceptual strengthening in that the action is performed (or required to be performed) to a higher degree than encoded by a corresponding base verb. Of course, this reading is enforced by the adverb *ddala*, but the requirement that *ddala* only be used with applied forms can be analysed as semantic compatibility, so that the function of the applied verb in these cases is, in accordance with the argument developed here, to encode the strengthening of the concept addressed. A rather different form of strengthening is achieved in (22), where the applied form is used with *bwereere*, and the interpretation of the verb is strengthened with relation to the overall outcome of the action (note the ‘(all this)’ in the translation

provided by Ashton et al.). In both cases, the applied form indicates not a change in valency, but in conceptual strength<sup>7</sup>.

### 3.4. Augmentative applied verbs in Luganda and Pogoro

A final piece of supporting evidence for the view developed here comes from another lexicalized pattern involving applied verbs, namely so-called augmentative applied verbs found for example in Luganda. Augmentative applied verbs are formed by extending the base verb twice, they are ‘double applicatives’. The function of these verbs is either to introduce a new object, similar to the simple applied form, or, as in the following examples, to encode a strengthened concept (from Ashton et al. 1954: 332)<sup>8</sup>:

(23) *Asomerera okuyiga afuna okumanya.*  
 ‘He who reads diligently in order to learn gains knowledge.’

(24) *Omuliro guzikiridde.*  
 ‘The fire has gone completely out.’

The examples show that the augmentative form of the verb can be used to express a strengthened concept such as reading diligently, i.e. often, a lot, with a high level of concentration etc (23), or the completion of a process such as extinguishing of fire (24).

Augmentative applied verbs are also found in Pogoro. The following examples are from Hendle (1907: 42, my translation of the original’s German glosses):

(25a)	<i>-pulira</i>	‘blow (fire)’	<i>-pulirira</i>	‘blow (fire) strongly’
(25b)	<i>-itira</i>	‘pour’	<i>-itirira</i>	‘pour completely’
(25c)	<i>-tugira</i>	‘escape’	<i>-tugirira</i>	‘escape completely’
(25d)	<i>-komera</i>	‘hit sb.’	<i>-komerera</i>	‘hit strongly’
(25e)	<i>-oyera</i>	‘relax’	<i>-oyerera</i>	‘relax thoroughly’
(25f)	<i>-megera</i>	‘distribute’	<i>-megerera</i>	‘distribute everything’

As can be seen from the translations, the function of the augmentative applied form is to encode a strengthened concept, which, depending on the lexical verb semantics, includes doing something thoroughly, completely, or exhaustively. Although no

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<sup>7</sup> Whether the interpretation ‘for nothing’ is achieved exclusively by the use of the adverb, or inherently related to interpretative possibilities of applied verbs is a question which I leave open here. Other uses of non-valency changing applied verbs are difficult to interpret as concept strengthening, cf. fn 4 above.

<sup>8</sup> Ashton et al. (1954: 332) identify the function of augmentative applied verbs as extending the action of the verb either in time or duration, but their examples seem to show that this view is too narrow.

examples are given in the source, it appears that, with the possible exception of (25f), no change in valency is implied with these augmentative forms. Rather, they encode only the semantic difference.

#### 4. CONCLUSION

The discussion in this paper shows that applied verbs in Swahili, Bemba, Luganda, and Pogoro, and presumably in Bantu more generally, can be used to express an instruction to the hearer to construct a concept which is stronger than could have been constructed from the corresponding base verb. This conceptual-pragmatic function is expressed irrespective of a change in valency, which has often been seen as a defining characteristic for this type of verb, and it is thus difficult to capture in a purely syntactic analysis. However, to the extent that the introduction of a new object can be seen as an instance of concept strengthening – in a sense to be made more precise in future work – the conceptual-pragmatic and syntactic behaviour of applied verbs can be aligned in a more comprehensive analysis. More generally, the interaction of lexical semantics, conceptual-pragmatic enrichment and syntactic underspecification in the interpretation of Bantu applied verbs provides valuable evidence for our understanding of natural language understanding.

#### REFERENCES

- Abdulaziz, M., 1996, *Transitivity in Swahili*, Köln: Köppe.
- Alsina, A. & S. A. Mchombo, 1990, 'The syntax of applicatives in Chichewa: problems for a theta theoretic asymmetry', *Natural Language and Linguistic Theory* 8, 493-506.
- Alsina, A. & S. A. Mchombo, 1993, 'Object asymmetries and the Chichewa applicative construction', in Mchombo, ed., 17-45.
- Ashton, E. O., R. M. K. Mulira, E. G. M. Ndawula & A. N. Tucker, 1954, *A Luganda Grammar*, London: Longmans.
- Bentley, M., 1998, 'The marking of grammatical relations in Swahili', *Studies in African Linguistics* 27, 177-197.
- Bresnan, J. & L. Moshi, 1990, 'Object asymmetries in comparative Bantu syntax', *Linguistic Inquiry* 21, 147-185.
- Carston, R., 1996, 'Enrichment and loosening: complementary processes in deriving the proposition expressed', *UCL Working Papers in Linguistics* 8, 61-88.

- Firth, J. R., 1968, 'Linguistic analysis as a study of meaning', in *Selected Papers of J. R. Firth*, ed. by F. R. Palmer, London: Longmans, 12-26.
- Fodor, J. A., 1975, *The Language of Thought*, New York: Crowell.
- Fodor, J. A., 1999, *Concepts*, Oxford: Oxford University Press.
- Hendle, P. J., 1907, *Die Sprache der Wapogoro*, Berlin: Reimer.
- Kempson, R. M., W. Meyer-Viol & D. Gabbay, 2001, *Dynamic Syntax: The Flow of Language Understanding*, Oxford: Blackwell.
- Marantz, A., 1984, *On the Nature of Grammatical Relations*, Cambridge: MIT Press.
- Marantz, A., 1993, 'Implications of asymmetries in double object constructions', in Mchombo, ed., 113-150.
- Marten, L., 1999, *Syntactic and Semantic Underspecification in the Verb Phrase*, doctoral dissertation, University of London.
- Matsinhe, S., 1999, 'Applicative constructions in Tsonga', paper presented at the 10th ALASA conference, Pretoria, South Africa.
- Mabugu, P., 1999, 'Non-beneficiary applicative constructions in Chishona', paper presented at the 10th ALASA conference, Pretoria, South Africa.
- Mchombo, S. A., ed., 1993, *Theoretical Aspects of Bantu Grammar*, Stanford: CSLI.
- Mkude, D. J., 1996, 'Agentless versus Non-agentive passives in Swahili', *Journal of Asian and African Studies* 51, 1-14.
- Muhammed Said Abdulla, 1976, *Mwana wa Yungi Hulewa*, Dar es Salaam: East African Publishing House.
- Nakamura, M., 1997, 'Object extraction in Bantu applicatives: some implications for minimalism', *Linguistic Inquiry* 28, 252-280.
- Porzig, W., 1934, 'Wesenhafte Bedeutungsbeziehungen', *Beiträge zur deutschen Sprache und Literatur* 58, 70-97.
- Pustejovsky, J., 1995, *The Generative Lexicon*, Cambridge, Mass.: MIT Press.
- Rapold, C., 1997, *The Applicative Construction in Lingala*, ms. (scriptie), Rijksuniversiteit Leiden.
- Shibatani, M., 1996, 'Applicatives and benefactives: a cognitive account', in M. Shibatani & S. A. Thompson, eds., *Grammatical Constructions: Their Form and Meaning*, Oxford: Clarendon, 157-194.
- Sperber, D. & D. Wilson, 1995, *Relevance*, 2<sup>nd</sup> edition, Oxford: Blackwell.
- Sperber, D. & D. Wilson, 1997, 'The mapping between the public and the private lexicon', *UCL Working Papers in Linguistics* 9, 107-125.
- Whiteley, W. H., 1968, *Some Problems of Transitivity in Swahili*, London: SOAS.
- Wilson, D. & D. Sperber, 1999, 'Truthfulness and Relevance', ms. UCL London.