Argument Binding and Morphology in Chichewa[1]

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1 Introduction

Bantu verbal morphology traditionally comprises a verb root (VR) to which are suffixed extensions such as the causative, applicative, reciprocal, passive, etc. and are prefixed morphemes that encode negation, subject marker and object marker that cross-reference Topic noun phrases, tense/aspect, modality, etc. The latter differ from the suffixes in both form and function. Formally the suffixes have a –VC- structure, as opposed to the canonical CV syllable structure. Functionally the verbal suffixes affect argument structure (cf. Dlayedwa 2002; du Plessis & Visser 1992; Hoffman

1991; Letsholo 2002; Mabugu 2001; Morapedi 2006). Sentence 1 below illustrates the basic morphological organization of the verb in Chichewa[2]:

> (1) Mkángo u-da-ómb-án-íts-á   alenje   ndí asodzi.
>   3-lion   3SM-pst-hit-recip-caus-fv 2-hunter and 2-fisherman
>   'The lion made the hunters and the fishermen hit each other'.[3]

In this sentence the Verb Root (VR) **-omb-** 'hit' supports the extensions **-an-** for the reciprocal, **-its-** for the causative, and the clitics **u** 'subject marker' agreeing in φ-features with **mkángo** 'lion,' and **da** 'past tense.' In brief, the prefixed elements, analyzed as clitics in recent work (Mchombo 2002), includes information identified with Functional Projections within the Principles and Parameters Theory (cf. Chomsky & Lasnik 1993). This paper will focus on argument structure changing morphology, focusing specifically on the issue of argument binding associated with reciprocal constructions (Keenan & Razafimamonjy 2001).

2   Argument Structure and Verbal Suffixation

As indicated, Bantu languages have a number of argument structure changing extensions verbal suffixes that include, *inter alia*, the causative, applicative, stative (or neuter), reciprocal, passive. They also realize the less pervasive and no longer productive reversive, contactive and, positional, morphemes. The verb root (or radical), extended by the extensions, and terminated by the final vowel [a], constitute the Verb Stem (VS). The linguistic significance of the VS is indicated by its being the locus or domain for a number of linguistic processes whose influence does not extend to the clitics. For instance, there is vowel harmony in Chichewa (Mtenje 1985),

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[2] According to Malcolm Guthrie's (1967-71) classification of Bantu languages, Chichewa is placed in zone N in the unit N31. It is regarded as a dialect variation of Nyanja classified as belong to N30 (see Mchombo 2005, Watkins 1937)

[3] The following abbreviations will be adopted:

appl	applicative
assoc	associative marker
ben	benefactive
caus	causative
fv	final vowel
hab	habitual
OM	object marker
pass	passive
pres	present
pst	past
recip	reciprocal
reflex	reflexive
SM	subject marker

Luganda (Katamba 1984), in other Bantu languages, whose domain is exclusively the VS. In Chichewa, verbal reduplication, like vowel harmony, is confined to the verb stem. Below are some constructions illustrating the functioning of the extensions:

(2) Mkángo u-na-thyól-á   mpánda
    3-lion 3SM-pst-break-fv 3-fence
    'The lion broke the fence'

(3) Mkángo unathyóléts-á   mbidzí mpánda
    3-lion   3SM-pst-break-caus-fv   10-zebra 3-fence
    'The lion made the zebras break the fence'

(4) Mkángo u-na-thyól-él-á   mbidzí mpánda
    3-lion 3SM-pst-break-appl-fv   10-zebra 3-fence
    'The lion broke the fence for the zebras'

(5) Mkango u-na-thyól-éts-él-á   mbidzí
    3-lion   3SM-pst-break-caus-appl-fv   10-zebra
    mpánda kwá   alenje
    3-fence by   2-hunter
    'The lion made the hunters break the fence for the zebras.

(6) Mbîdzi zi-na-thyól-éts-él-édw-á   mpánda kwá
    10-zebra 10SM-pst-break-caus-appl-pass-fv 3-fence by
    alenje   (ndí mkángo)
    2-hunter   (by 3-lion)
    "The zebras got the fence broken for (them) by the hunters at the instigation of the lion"

(7) Mbîdzi zi-na-thyól-éts-él-an-á   mpánda kwá
    10-zebra 10SM-pst-break-caus-appl-recip-fv 3-fence by
    alenje
    2-hunter
    "The zebras got the fence broken for each other by the hunters"

The sentences illustrate the type of arguments affected by the presence of the individual extensions, as well as permissible combinations of those extensions. To the verb **thyola** 'break' are suffixed extensions to form the causative **thyoletsa** 'make break,' the applicative **thyolela** 'break for,' the applicative of a causative **thyoletsela** 'get something broken for someone,'

and the passive of the applicativized causative **thyoletseledwa** 'have something broken for one by' and the reciprocal of the applicativized causative **thyoletselana** 'have something broken for each other.' Morpheme order within the verb stem appears to be constrained by principles that have yet to be fully determined. Proposals concerning morphotactic constraints have ranged from ideas inspired by the "Mirror Principle" advanced by Mark Baker (1985, 1988), through suggestions about morphological template to suggestions that perhaps thematic information is implicated in the linearization of the extensions (for relevant discussion, see Hyman 1991, 2003; Hyman and Mchombo 1992; Mchombo 2004; Ngunga 1997; Sibanda 2004).

With regard to the Mirror Principle the suggestion is that "morphological derivations must directly reflect syntactic derivations (and vice versa)" (Baker 1985:375). This approach ties morphological structure to syntactic derivation, probably determining semantic scope too. Naturally, this gets undermined by morphological orderings that patently conflict with syntactic derivation. Such mismatches between syntactic derivation and morphological order have been noted in some languages, such as Xhosa (cf. Dlayedwa 2002).

The idea of a morphological template that fixes the preferred order of the morphemes on the basis of principles independent of syntactic derivation or semantic composition can be gleaned from the work of Hyman (1991, 2003). Based on studies of various African languages Hyman has noted a recurrence of the order Causative, Applicative, Reciprocal, Passive (CARP). The suggestion is that in the absence of over-riding factors, this is the generally preferred order of those morphemes. Certainly, Chichewa offers some evidence of that in that the applicative and the reciprocal appear in that order even when the syntactic derivation or semantic interpretation would demand reverse order (cf. Mchombo 2004). Discussion of morphotactic constraints will be deferred to other studies.

The relative order of the extensions and the clitics is significant. In Lexical Phonology and Morphology-theoretic terms, the extensions can be analyzed as Level 1 affixes. They are intimately connected to the host VR, deriving the VS. Besides the role that the VS plays in constituting the locus of vowel harmony, reduplication, etc., it is also the input to nominalizations that exclude the prefixed material, as shown below:

kónda 'love' / kóndána 'love each other' / chikondano 'mutual love'
onetsela 'demonstrate' / chionetselo 'exhibition'
kodza 'urinate' / kodzela 'urinate with' / chikodzelo 'bladder'

ongola 'straighten' / ongolela 'straighten with' / chiongolelo 'steering wheel'

tenga 'take' / tengana 'take each other' / mténgáno 'death pact'

ononga 'damage' / onongéka 'get damaged' / chionongeko 'destruction'

senda 'skin' / sendédwa 'be skinned' / kasendedwe 'manner of skinning'

da 'hate' / dana 'hate each other' / mdani 'enemy'

fa 'die' / fela 'die for' / felana 'die for each other' / mafelano 'intense struggle'

In previous work the following structural representation of the verb in Chichewa has been proposed:

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                Verb
              /      \
          NEG         I''
                    /     \
                  SM       I'
                         /    \
                      T/A      M'
                             /    \
                          MOD   Macro-Stem
                                /        \
                             OM          Verb Stem
                                        /         \
                                 Verb Rad      Final Vowel
                                /        \
                          Verb Root     Ext$_\text{O}$
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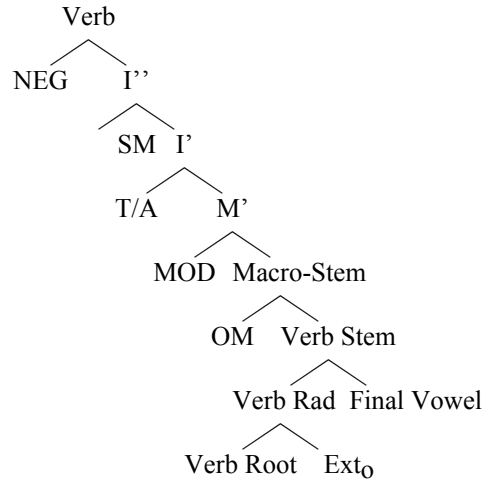
Figure 1

3   On Argument Binding and Syntactic Binding in Chichewa

The concept of binding has played a crucial role in syntactic theory, as evidenced by its inclusion in the name of one major theoretical framework, the theory of Government and Binding (GB) (Chomsky 1981). Binding has traditionally been invoked to account for the construal of two constituents …X…[…Y…]… within a syntactic configuration such that one is con-

strued as referentially dependent on the other. The dependent one, the bindee, has its construal determined by its binder, the antecedent, under specific structural conditions. The principles of the binding theory specify the elements whose construal is determined by some antecedent, and the requisite structural conditions for successful construal. Binding has, traditionally, involved reflexives and pronominals. The former have their construal with an antecedent resolved within an appropriately defined local domain. The latter, on the other hand, appear to be more involved in discourse structure. Earlier versions of binding theory included reciprocals in the typology of bound elements, grouped together with reflexives as requiring an antecedent within some local domain.

The conflation of reflexives and reciprocals as constituents that are bound under specific conditions of locality is one that seemed to be influenced by the form and distribution of reflexives and reciprocals in English. Thus, given a reflexive such as *'herself'* and the reciprocal *'each other,'* both of which appear in arguments positions in the sentence, and require that their construal be determined within an appropriately defined local domain, it was easy to subsume them under the same category, as anaphors. The sentences below provide the relevant examples:

(8) a. The queen bought herself a new castle
     b. The baboon and the hyena bought each other presents.

That the anaphors must have their construal determined within the local domain is shown by the ungrammaticality of the following sentences:

(9) a *The queen believes that the king will buy herself a new castle.
     b. *The baboon and the hyena believe that the lion will buy each
        other presents

The identification of the reflexive with the reciprocal as constituting the class of anaphors is one that continues to undergo revision in light of their grammaticalization and semantic properties. In Chichewa, the reflexive is an invariant morpheme *–dzi-* (or its cognates in other Bantu languages), that appears in the position of the object marker (OM). The OM occurs as a left sister of the VS. The OM and the VS comprise the Macrostem (cf. Goldsmith & Sabimana 1985). In Bantu languages the OM has been analyzed as an incorporated pronominal argument anaphorically bound by an antecedent within the discourse structure (cf. Bresnan & Mchombo 1986, 1987; Chimbutane 2003; Deen 2004; Dlayedwa 2002; Letsholo 2003; Rubanza 1988). The grammaticalization of the reflexive, appearing in the

position of an incorporated pronominal argument, argues for its treatment as a pronominal argument whose construal is determined by principles of syntactic binding[4]. Consider the following:

(10) a. Anyaní   a-ku-dzí-mángílil-á   ku   nthámbí
         2-baboon   2SM-pres-reflex-tether-fv   17-loc   10-branch
         "The baboons are tethering themselves to the branches."
      b. Anyaní   a-ku-wá-mángílil-á   ku   nthámbí
         2-baboon   2SM-pres-reflex-tether-fv   17-loc   10-branch
         "The baboons are tethering them to the branches."

The relevant antecedent appears to be the Subject Marker (SM), itself functionally ambiguous as an agreement marker and as an incorporated pronominal argument (cf. Bresnan & Mchombo 1986, 1987; Mchombo 2004). The pronominal argument status of the SM underlies the apparent 'long distance' relationship between the reflexive and the constituent that determines its referential value. Take the following:

(11) Mikángó   sí-í-ku-fún-á   kutí   nkhandwe
      4-lion   Neg-4SM-pres-want-fv   that   10-fox
      zi-uz-é   anyaní   kutí   í-ma-dzi kând-a
      10SM-tell-subjun 2-baboon   that   4SM-hab-reflex-scratch
"The lions do not want the foxes to tell the baboons that they (lions) scratch themselves"

The reflexive in the verb *í-ma-dzi-kânda* is anaphorically bound to the NP *mikángo* 'lions' in an apparently long-distance anaphoric relationship through the intervention of the SM *'i,'* an incorporated pronominal acting as the antecedent of the reflexive. In turn, the SM is bound by the NP *mikángo* 'lions.' The binding of the reflexive is, certainly, an aspect of syntactic binding in the standard sense, constrained by principles of bound anaphora.

4 The Reciprocal

The reciprocal, on the other hand, is realized as a verbal suffix in Bantu languages. In its morphological realization, the reciprocal is encoded by a

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[4] Sozinho Matsinhe's account of verbal affixes in the southern African Bantu language of Tsonga departs from treatment of the reflexive as a pronominal argument subject to the principles of syntactic binding. He opts for the analysis of reflexivization as a morpho-lexical process, affecting argument structure. The analysis will be commented upon later.

verbal suffix *–an-.* In some languages the reciprocal is realized by more than one morpheme. For instance, in Luganda and Ci-Yao the verbal suffix **-agan-** is used; in Kikongo, the dialect of Zoombo region of Northern Angola the morpheme **-azyan-** is used (see Carter & Makoondekwa, 1987), and in Runyambo the reciprocal is realized by the morpheme **-angan- (**see Rugemalira 1993**).** In all these languages the suffix **-an-** remains, sometimes restricted to 'frozen' forms whose roots are no longer attestable as independent verbs within the language. In Runyambo, the following reciprocals, derived with **-an-,** lack independently existing verb stems: **bag-an-a** 'share, divide up'; **bug-an-a** 'meet'; **fuka-an-a** 'wrestle, struggle'; **hak-an-a** 'argue'; **iw-an-a** 'fight'; **ing-an-a** 'be equal.' Reciprocals with the form **–an-** are also derivable from independently attested verb roots. These include forms such as **tong-a** 'demand payment' **tong-an-a** 'quarrel'; **tond-a** 'create' **tond-an-a** 'discriminate against (by origin)'; **nyw-a** 'drink' **nyw-an-a** 'become friends'; **jend-a** 'go, walk' **jend-an-a** 'go together.'

The regular formation of the reciprocal in Runyambo as, *mutatis mutandis,* in the other languages listed above, is through the suffixation of **-angan-** which "...can be attached to most transitive verb roots, provided the derivation makes sense." ([Rugemalira, 1993 :150). This is shown in such derivations as **nob-angan-a** 'hate each other'; **jun-angan-a** 'help each other.' Some verbs roots allow the suffixation of both **-an-** and **-angan-**, but with different readings. Consider the following data, again from Runyambo:

(12) -reeb-a   look
       -reeb-an-a   keep in touch
       -reeb-angan-a   look at each other

       -kwat-a   hold/touch/seize
       -kwat-an-a   be related; stick together;
       -kwat-angan-a   hold/seize each other

       -ras-a   throw, shoot.
       -ras-an-a   fight, struggle.
       -ras-angan-a   shoot or throw at each other

In Kikongo the productive reciprocal morpheme is the verbal suffix **-azyan-**, but it also has the suffix **-aan-**. In this language "for some verbs the form is simply **-aan-,** as in **-waanaana** 'find each other=meet together, and **-monaana** 'see each other', but for many it is **-azyaan-**; Thus, one gets **-zola** 'love', **-zolazyaana** 'love each other'. Long vowels before NC [nasal

cluster-SAM] are contracted when the addition of the extension brings the number of stem syllables up to four: **-kaamba** 'give news to', **-kambazyaana** 'exchange news with each other', and **-soonga** 'show'---> **-songazyaana** 'show each other'." (Carter & Makoondekwa, 1987 : 130)

Syntactic configurations in which the reciprocal form appears are largely similar in that the reciprocal requires a plural or group-denoting subject NP. When the group-denoting NP is a coordinate structure, some-times a comitative construction is used, as shown below, from Swahili:

(13) Kiboko a-li-vut-an-a na simba
     7-hippo 1SM-pst-pull-recip-fv with 1-lion
     "The hippo and the lion pulled each other"
     Lit. "The hippo pulled each other with the lion"

Such comitative constructions are routinely exploited to overcome vari-ous syntactic problems. For instance, the SM is obligatory in verbal mor-phology, thereby susceptible to analysis as a *de facto* grammatical subject (cf. Demuth & Johnson 1989; Marten & Kempson, 2006). The SM agrees in -features with the group denoting NP, a grammaticized TOPIC element (cf. Morimoto 2000). Given the Bantu noun classification system, where the nouns are placed into various gender classes, coordinate structures pro-vide instances where the coordinated nouns may come from different gen-der classes, resulting in problems relating to the realization of the SM which, somehow, must resolve the gender conflict (cf. Corbett & Mtenje 1987; Mchombo & Ngalande 1980; Mchombo & Ngunga 1994). In such cases, all but the initial conjunct of the participants involved in the action denoted by the reciprocal would be encoded in an extraposed *'na NP'* in Swahili. In some languages, e.g., Ci-Yao, the problem may go beyond is-sues of resolution of gender conflict. Consider the following sentence:

(14) a. Coomé cí-kú-ci-súúmisy-a   nyama císúvi
        7-cat   7SM-pres-7OM-sell-fv 9-meat 7-leopard
        "The cat is selling (to) the leopard some meat."
     b. *Coomé ní císúví yí-kú-súúmisy-an-á   nyama
        7-cat   and 7-leopard 8SM-pres-sell-recip-fv   9-meat

The coordinated nouns in 18b are from the same gender class, and each one of them takes the SM *'ci.'* Their plural forms are *yoóme* 'cats' and *yisuví* 'leopards' respectively. These belong to class 8, and take the plural SM *'yi.'* The coordinate structure cannot be antecedent to the plural subject marker because the NP does not denote a plurality of cats or leopards. It cannot

bind *'ci'* either, the SM for class 7, because that goes with a singular noun whereas the coordinate NP denotes a plural group. Effectively the comitative construction resolves the problems occasioned by such constructions.

5 Argument Binding and Reciprocal Morphology

In Bantu languages, the reciprocal appears to be involved in morpholexical operation of verb derivation. The reciprocal derives a one-place predicate from a two-place predicate or, in general, reduces by one the array of arguments associated with the non-reciprocalized predicate. It is a detransitivizing morpheme that derives predicates with a reciprocal interpretation. Consider the following:

(15) a. Alenje   á-ma-gul-íl-á   asodzi   mikóndo
         2-hunter   2SM-hab-buy-appl-recip-fv   4-spear
      "The hunters buy spears for the fishermen."
      b. Alenje ndí asodzi   á-ma-gul-il-án-á   mikóndo
         2-hunter conj 2-fishermen 2SM-hab-buy-appl-recip 4-spear
      "The hunters and the fishermen buy each other spears."

In Chichewa the reciprocal participates in all linguistic processes associated with the verb stem. These include reduplication, deverbal nominalization, vowel harmony, etc. Notable is the fact that the reflexive, together with other proclitics, do not participate in either nominalizations of the type indicated, or in reduplication. The deverbal nominals, involving the reflexive, are ungrammatical, a shown below:

(16) Ku-*dzí*-kónd-a   *chi-*dzi*-kondo   'self-love'
     Inf-reflex-love-fv
     'To love oneself'

     Ku-*dzí*-yámík-a   *ma-*dzi*-yamiko 'self-praise'
     Inf-reflex-praise-fv
     'To praise oneself'

(17) mikango í-ma-*dzi*-kánd-a
     4-lion   4SM-hab-reflex-cratch-fv

     *mikango   í-ma-*dzi*-kánd-a-*dzi*-kánd-a
     4-lion   4SM-hab-reflex-scratch-fv-reflex-scratch-fv

The reciprocal in Bantu, unlike the reflexive, is not a nominal argument subject to principles of binding. It is a morpho-lexical process deriving reciprocal predicates apparently not susceptible to syntactic binding. However, this is a view that turns out to be controversial.

In a study of Malagasy, an Austronesian language, Keenan and Razafimamonjy observe that the reciprocal is derived morphologically through the affixation of the reciprocal morpheme –*if*- to a transitive verb. The reciprocal –*if*- "…immediately precedes the active prefix *aN*-. Its presence excludes an overt accusative NP…"(Keenan & Razafimamonjy 2001: 41). In this regard the Malagasy reciprocal behaves in a manner comparable to that in Chichewa. However, Keenan and Razafimamonjy state that the position excluded by the presence of the reciprocal remains syntactically active, indicated by the empty category symbol *'e.'* They then claim that "[It] is this empty position which corresponds to the presence of the reciprocal pronoun each other /one another in English and which determines one of the arguments, henceforth the reciprocalized argument, of the reciprocal relation used in semantic interpretation of Ss built from reciprocal verbs." (ibid.)

Keenan and Razafimamonjy make the further claim that "…the NP which –*if*- requires to be plural is the *antecedent* of –*if*-. We also say that this antecedent *reciprocally binds* the reciprocal empty category (ec) licensed by –*if*-. The motivation for this terminology is that given an occurrence of –*if*-, the positions determined by its antecedent and its ec are those which determine the arguments of the reciprocal relation used to interpret the reciprocal expression." (ibid. 42).

Having adopted this stance, Keenan and Razafimamonjy pose a number of questions about the antecedent of the reciprocal in Malagasy. These relate to whether the antecedent of the reciprocal

(a) always occurs external to the VP projected by the verb that the reciprocal morpheme –*if*- occurs in;

(b) c-commands the reciprocal empty category;

(c) occurs as an argument of the reciprocal predicate, within the same complete functional complex as the reciprocal verb; and,

(d) locally binds the empty category licensed by the reciprocal morpheme.

Their conclusion is that for Malagasy answers to questions (a) (b) and (d) are negative. For (c) the answer is affirmative, that the agent phrases of the non-active verbs are arguments of the verb.

The facts about Malagasy are, in relevant respects, comparable to Chichewa. Note, however, that there is a measure of quibbling in the K& R account. On the one hand, the plural antecedent "reciprocally binds" the reciprocal empty category licensed by the reciprocal morpheme. On the

other hand the antecedent does not either c-command or locally bind the empty category licensed by the reciprocal morpheme, as indicated by the negative answers to the questions (b) and (d) above. What then is to be made of the question whether any kind of binding is evident in reciprocal constructions?

The idea of reciprocal binding appears to be rooted in efforts to provide a coherent account of the reciprocal relation that is evident in the semantic interpretation of expressions built from reciprocal verbs. Consider the sentence below:

(18) a. Alenje ndí   asodzi   á-ma-lemekez-ân-a
        2-hunter conj 2-fiherman   2SM-hab-respect-recip-fv
     "The hunters and the fishermen respect each other."
    b. Alenje   ndí   asodzi   á-ma-gul-il-án-á
        2-hunter conj 2-fisherman   2SM-hab-buy-appl-recip-fv
       mikóndo
       4-spear
     "The hunters and the fishermen buy each other spears."

The sentences have as their primary readings the claims that the hunters respect the fishermen and the fishermen respect the hunters, and that the hunters buy spears for the fishermen and the fishermen buy spears for the hunters, respectively. Equally, the sentences convey the readings that the hunters respect each other and the fishermen respect each other for 18(a), or that the hunters buy each other spears and so do the fishermen, for 18(b). The latter readings could be derived from sentence coordination, so that will be set aside. Taking the standard approach to accounting for the initial interpretations, the assignment of semantic roles is done in the argument structure. A general constraint in the assignment of semantic roles is that each semantic role be assigned to a particular argument of the predicate and each argument be assigned a single semantic role. Naturally, if reciprocal verbs are derived lexically, and the reciprocal predicate is de-transitivized, then the single argument, the antecedent, must be assigned a single role. Yet, as the semantic interpretation indicates, the group denoted by the antecedent argument requires that the individuals denoted participate both as agents and patients or beneficiaries. How can this be achieved?

The simple clue lies, once again, in the treatment of reflexives that, apparently, resolve the apparent violation of this general constraint on semantic role assignment. A single entity participates as both agent and patient or beneficiary. The reflexive, as a pronominal argument, receives the semantic role of patient. However, as an anaphor, it is bound to the antecedent, effec-

tively resolving the reading that the antecedent is construed as both agent and patient. In other words, in the discourse structure representation the two syntactic arguments are mapped onto the same entity (cf. Sells, Zaenen & Zec 1986). It is but a simple step to the speculation that reciprocal constructions must equally involve binding.

6   On Reciprocal Interpretation

The relevance of the concept of binding to interpretation of sentences with reciprocal predicates is occasionally enhanced by putative analyses of the reflexive in some Bantu languages as a morpho-lexical process, deriving reflexive verbs. In such analyses reflexivization is claimed to be an argument structure reducing process, comparable to the reciprocal. Matsinhe's analysis of the reflexive in Tsonga, a language spoken in Mozambique and South Africa, adopts such a view, exploiting ideas attributed to Jane Grimshaw (cf. Matsinhe 1994). What then is the rationale for keeping them separate?

Matsinhe treats the reciprocal and the reflexive in Tsonga as having comparable effects. The reciprocal morpheme is *–an-,* like in Chichewa and in Bantu in general. He notes that "…this affix changes the predicate argument structure of the verb to which it is attached by binding the object (theme) to the subject (agent), creating co-referentiality. This fact makes the reciprocal affix *–an-* resemble the reflexive prefix *–ti.* Thus, the former will be treated on par with the latter." (Matsinhe 1994:169). The parity of treatment of the reflexive and the reciprocal is motivated by the observation that "[L]ike the reciprocal affix *–an-*, the reflexive prefix *–ti-* gives rise to coreferentiality between the agent and the theme. The theta role linked to the object is suppressed (bound to the subject), and, as a result, the number of the arguments is reduced by one." (ibid. 170). Matsinhe adopts a suggestion by Grimshaw (1982) that "…reflexivization should be regarded as a morpholexical operation which applies a reflexive lexical rule to the predicate argument structure of a verb, and whose effect is to bind one argument to another" (Grimshaw 1982:106). On that basis, Matsinhe claims that reflexivization affects transitivity patterns, and that "…given a transitive two-place predicate, a reflexive predicate can be derived from it by binding its object to the subject. Hence reflexivization can be regarded as a process which transforms a transitive verb into an intransitive one." (ibid. 170).

Despite its aparent plausibility this analysis of the reflexive is dependent on shifting conceptions of the notion of binding. In general, anaphoric binding deals with the resolution of referential dependencies of pronominal elements. In many Bantu languages, the OMs are incorporated pronominal arguments in anaphorically bound by antecedents outside the minimal clau-

se. In Gikuyu, the OM is in complementary distribution with the object NP (cf. Begvall 1985; Mugane 1997), yet, it is not claimed that the OM detranstivizes the verb in order to account for the omission of the object NP. The grammaticalization of the reflexive which, unlike the reciprocal, appears in the OM position, is somehow discounted as irrelevant to the determination of its status as a pronominal argument that is bound to an antecedent within the clause. Instead, the failure of the verb to support an object NP, comparable to the situation when the OM is present anyway, is construed as evidence that the reflexive is a detransitivizing affix. Note that in languages such as Chichewa which, unlike Gikuyu, allows for clitic doubling, i.e., for the putative object NP to co-occur with the OM, the said object NP is an external Topic (cf. Morimoto 2000).

The reciprocal is associated with the notion of argument binding. Clearly, this is not equivalent to that involved in reflexivization. It has been customary to include reciprocals in discussions of 'symmetric predicates' (cf. Lakoff and Peters 1966; McNally 1993). A two-place predicate R, is said to be symmetric if for any two x and y, appropriate arguments of R, the following holds: Rxy is equivalent to Ryx. In other words, if 'x is in the relation R to y, but y is not in the relation R to x' is contradictory, then R is said to be symmetric. This characterization of symmetric predicates focuses on the intrinsic properties of the relation itself. The situation gets complex when cardinality of the individuals increases and lexical aspects of the predicate are taken into consideration. In some cases, the reading yielded is simply that of group activity. Thus, in the situation of a bar-room brawl, with a large number of individuals, the statement that the people threw bottles at each other does not mean that the relation of 'throwing bottles' holds of every pair-wise combination of the people there. Consider, further, the interpretation given to the statement that animals followed each other to the river, or that the substitute players in a sporting event are sitting next to each other on a bench. The interpretations are not comparable to that of say, two individuals shouting insults at each other. The notion of binding as applied to the reciprocal is thus different from that of the reflexive (cf. Alsina 1993; Dalrymple et.al., 1994, 1998; Mchombo 1999b; 2002a, b).

What then is to be made of the idea of argument binding that is associated with the reciprocal? Heim, Lasnik and May (1991) (henceforth HLM) propose to derive the semantics of reciprocals from the morphosyntactic representation for the reciprocal in English. Analyzing *each other* in English as an NP anaphor, the claim, as noted by Keenan and Razafimamonjy, is that "… the patently compound form *each other* undergoes a kind of semantic mitosis into *each* and *other* (at some level) the former interpreted as distributive universal quantifier and the latter as a disjoint reference opera-

tor" (Keenan and Razafimamonjy 2001:80) The analysis of HLM has the reciprocal as having quantificational force, hence susceptible to quantifier-raising (QR) at logical form. The semantics of the reciprocal, involving reciprocal binding can be in part determined from the logical form through scope relations.

Accepting that the reciprocal is quantificational suggests that at LF it should be in an operator position to bind its variable(s). The reciprocal thus introduces quantificational morphology in the Bantu verb stem. Quantifier-raising is a syntactic rule which adjoins a quantifier to its mother node for it to c-command its variable(s) within its scope. The concept of *scope* is itself explicated through the notion of c-command in that the scope of α is the set of nodes that α c-commands at LF. A quantifier's scope coincides with its c-command domain.

The problem with the reciprocal in Bantu is that as an aspect of quantificational morphology it should be susceptible to QR to achieve the scope effects, but as a constituent of a lexically derived verb stem, it should not be the target of syntactic movement, which would violate lexical integrity. Applying QR to the reciprocal would create a trace in the verb stem, in effect, a variable. However, Baker (1988) notes there are no traces inside words. Clearly, the quantificational morphology associated with the reciprocal in Bantu poses problems regarding the derivation of logical form from the morphological form. Perhaps the reciprocal is offering evidence for not deriving logical form from morphosyntactic organization through movement of constituents. Logical form is linked to, but modeled independently of, morphosyntactic organization. Grammatical theory needs to provide for factorization of natural language into such informational structures as discourse structure, argument structure, functional structure, constituent structure, logical structure, etc., each with its primitives and constraints, providing explicit procedures for capturing the relations among them. Without going into explicit details, this is the architecture that is provided by the theory of LFG (cf. Bresnan 2001; Dalrymple 2001; Falk, 2001).

7   References

Alsina, A. (1992). On the Argument Structure of Causatives. *Linguistic Inquiry* 23(4): 517-555.

Alsina, A. (1993). Predicate Composition: A Theory of Syntactic Function Alternations, Doctoral dissertation, Stanford University.

Baker, Mark (1985) The Mirror Principle and Morphosyntactic Explanation. *Linguistic Inquiry* 16.3: 373-415.

Baker, Mark. (1988). *Incorporation: A Theory of Grammatical Function Changing*. Chicago: University of Chicago Press.

Bresnan, Joan (2001). *Lexical Functional Syntax*. Oxford: Blackwell Publishers

Bresnan, Joan. and Sam A. Mchombo (1987). Topic, Pronoun and Agreement in Chichewa. *Language* **63**(4): 741-782.

Bresnan, Joan and Sam A. Mchombo (1995). The Lexical Integrity Principle: Evidence from Bantu. *Natural Language & Linguistic Theory* **13**: 181-254.

Carter, Hazel and Joao Makoondekwa (1987). *Kongo Language Course: Maloongi Makikoongo. A Course in the Dialect of Zoombo, Northern Angola*. Madison: African Studies Program, University of Wisconsin.

Chimbutane, Feliciano (2002). Grammatical Functions in Changana: Types,Properties and Function Alternations. M.Phil dissertation, Australian National University.

Chomsky, Noam (1981) *Lecture on Government and Binding*. Dordrecht, Foris Publications.

Chomsky, Noam and Howard Lasnik (1993) Principles and Parameters Theory. In (eds.) Jacobs, J, A von Stechow, W Sternefeld, and T.Venneman (1993) *Syntax. An International Handbook of Contemporary Research*. Berlin: Walter de Gruyter.

Corbett, Greville and Al Mtenje (1987) Gender agreement in Chichewa. *Studies in African Linguistics, 18. 1-38*

Dalrymple, Mary 2001. *Lexical-Functional Grammar (Syntax and Semantics 34)*. New York: Academic Press

Dalrymple, Mary, Makoto. Kanazawa, Yookyung Kim, Sam Mchombo & Stanley Peters (1998). Reciprocal Expressions and the Concept of Reciprocity. *Linguistics & Philosophy 21*: 159-210

Dalrymple, Mary, Makoto Kanazawa, Sam Mchombo & Stanley Peters (1994). What Do Reciprocals Mean? Fourth Semantics and Linguistic Theory Conference: SALT 4, Rochester, NY, Cornell University Working Papers in Linguistics.

Dalrymple, Mary, Sam Mchombo, and Stanley Peters (1994). Semantic Similarities and Syntactic Contrasts between Chichewa and English Reciprocals. *Linguistic Inquiry* **25**(1): 145-163.

Deen, Kamil Ud 2004. Let's Build Some Agreement: The status of the Subject Prefix in Nairobi Swahili. Paper presented at the 35th Annual Conference of African Linguistics, Harvard University.

Demuth, Katherine and Mark Johnson (1989). Interaction Between Discourse Functions and Agreement in Setawana. *Journal of African Languages and Linguistics 11*: 21-35.

Dlayedwa, Ntombizodwa, C. (2002). Valency-Reducing processes in Xhosa. Doctoral dissertation, University of Essex, UK.

Du Plessis, J. A. and M. Visser (1992). *Xhosa Syntax*. Pretoria, Via Afrika.

Falk, Yehuda N. (2001). *Lexical Functional Grammar. An Introduction to Parallel Constraint-Based Syntax*. Stanford, CA: CSLI Publications.

Goldsmith, John & Firmard Sabimana (1985). The Kirundi Verb. Unpublished paper, The University of Chicago.

Guthrie, Malcolm. (1962). The Status of Radical Extensions in Bantu Languages. *Journal of African Languages 1*: 202-220.

Guthrie, Malcolm (1967-71). *Comparative Bantu*. Farnsborough: Gregg International Publishers.

Heim, Irene, Howard Lasnik,and Robert May. (1991). Reciprocity and Plurality. *Linguistic Inquiry 22*(1): 63-101.

Hoffman, Mika. (1991) The Syntax of Argument-Structure-Changing Morphology, Doctoral dissertation, Massachusetts Institute of Technology.

Hyman, Larry (1991). Conceptual Issues in the Comparative Study of the Bantu Verb Stem. (eds.) Mufwene Salikoko S. and Lioba Moshi *Topics in African Linguistics*. Amsterdam/Philadelphia, John Benjamins Publishing Co.**:** 3-34.

Hyman, Larry and Sam A. Mchombo (1992). Morphotactic Constraints in the Chichewa Verb Stem. Papers from the Parasession on the Place of Morphology in a Grammar, Berkeley, CA, Berkeley Linguistic Society.

Keach, Camilla. N. (1995). Subject and Object Markers as Agreement and Pronoun Incorporation in Swahili. (ed.) A. Akinlabi *Theoretical Approaches to African Linguistics 1*. Trenton, NJ, Africa World Press, Inc. 109-116.

Keenan, Edward L. & Jean Paulin Razafimamonjy (2001) Reciprocals in Malagasy. UCLA Working Papers in Linguistics. Papers in African Linguistics 1. Harold Torrence (ed). UCLA Department of Linguistics Number 6. 42-89.

Kiparsky, Paul (1982). Lexical Morphology and Phonology. *Linguistics in the Morning Calm*. T. L. S. o. Korea. Seoul, Korea, Hanshin Publishing Company**:** 3-92.

Lakoff, George and Stanley Peters (1966). Phrasal Conjunction and Symmetric Predicates. (eds.) D. Reibel and S. Schane *Modern Studies in English: Readings in Transformational Grammar*. Englewood Cliffs, N.J., Prentice-Hall. 113-142.

Letsholo, Rose. 2002. Syntactic Domains in Ikalanga. Doctoral dissertation. University of Michigan.

Mabugu, Patricia (2001). Polysemy and the Applicative Verb Construction in Chishona. Doctoral dissertation, University of Edinburgh.

Matsinhe, Sozinho (1994). The Status of Verbal Affixes in Bantu Languages with Special Reference to Tsonga: Problems and Possibilities. *South African Journal of African Languages 14. No. 4*: 163-176.

May, R. (1985). *Logical Form: Its Structure and Derivation*. Cambridge, MA: The MIT Press.

Mchombo, S. A. (1993). "A Formal Analysis of the Stative Construction in Bantu." *Journal of African Languages and Linguistics 14*: 5-28.

Mchombo, S. A. (1993). On the Binding of the Reflexive and the Reciprocal in Chichewa. In Mchombo, Sam (ed.) 1993. *Theoretical Aspects of Bantu Grammar*. Stanford, CA: Center for the Study of Language and Information**: 181-208.

Mchombo, Sam. (2002). Affixes, Clitics and Bantu morphosyntax. In Amberber, Mengistu & Peter Collins (eds.) *Language Universals and Variation*. Westport, CT: Greenwood Press. 182-213

Mchombo, Sam. (2004). *The syntax of Chichewa*. Cambridge, UK: Cambridge University Press.

Mchombo, Sam (2005). Nyanja. *Encyclopedia of Languages and Linguistics*. 2. Volume 8. Oxford, Elsevier. (ed.) Keith Brown pp.744

Mchombo, S. A. and R. M. Ngalande (1980). Reciprocal Verbs in Chichewa: A Case for Lexical Derivation. *Bulletin of the School of Oriental & African Studies, University of London 45*: 570-575.

Mchombo, S. A. and A. S. A. Ngunga (1994). The Syntax and Semantics of the Reciprocal Construction in Ciyao. *Linguistic Analysis 24*(1-2)

McNally, L. (1993). Comitative Coordination: A Case Study of Group Formation. *Natural Language & Linguistic Theory 11*: 347-379.

Morapedi, Setumile (2006). Information Structure in Setswana: Locative Inversion and Related Constructions. Doctoral dissertation, University of Sussex, UK.

Morimoto, Yukiko 2000. Discourse Configurationality in Bantu Morphosyntax. Doctoral dissertation, Stanford University.

Mugane, John. 1997. *A Paradigmatic Grammar of Gikuyu*. Stanford, CA: CSLI Publications.

Mtenje, A. D. (1985). Arguments for an Autosegmental Analysis of Chichewa Vowel Harmony. *Lingua 66*: 21-52

Rugemalira, Josephat (1993). Runyambo Verbal Extensions and Constraints on Predicate Structure. Doctoral dissertation, University of California, Berkeley

Sells, Peter, Annie Zaenen, and Draga Zec (1987). Reflexivization Variation: Relations between Syntax, Semantics, and Lexical Structure." In (eds.) M. Iida, S. Wechsler, and D. Zec. *Working Papers in Grammatical Theory and Discourse Structure. Interactions of Morphology, Syntax, and Discourse*. Stanford, CA: CSLI Publications 169-238.

Sibanda, Galen (2004). Verbal Phonology and Morphology of Ndebele. Doctoral dissertation, University of California, Berkeley.

Watkins, Mark Hanna (1937) A Grammar of Chichewa. A Bantu Language spoken in British Central Africa. Language Dissertations, 24. Baltimore, Linguistic Society of America.