Acommodating recalcitrant data within an analysis of the ChiShona applicative

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Abstract

"Theoretical approaches to the applicative construction in the Bantu languages have tended to focus on the regular and productive types only. This involves morphological operation that increases the valence of the verb stem and assigns an interpretation of benefactive to the extra argument. There are in ChiShona, however, a number of other productive patterns with the applicative morpheme where the applicative object is interpreted as a locative or goal, and where there may or may not be a change in the valence of the verb stem. Moreover, there are instances in which the applicative is associated with a completely idiosyncratic semantic contrast. In order to avoid grammatical redundancy and capture the morpho-syntactic similarities between the different types of applicative, this paper proposes that the different patterns and interpretations of the applicative construction are not distinct but result from polysemous extensions of a basic construction. The analysis is framed within the theory of HEAD-DRIVEN PHRASE STRUCTURE GRAMMAR(HPSG) (Sag & Wasow (1999), Pollard & Sag (1987), Pollard & Sag (1994)) and utilises the theory of TYPE-BASED DERIVATIONAL MORPHOLOGY(TBDM) (Riehemann (1993), Riehemann (1998)). The paper thus draws attention to the existence of non-standard types of applicative in ChiShona and provides a unitary account of them that is not obviously possible within other frameworks."

1 Prototypical Applicatives

Standard applicative constructions are those in which an affix is attached to the verb, allowing a nominal to appear in the VP in addition to those inherently selected by the verb root(Baker (1992)).This construction is a derivational suffix that attaches in the lexicon and adds an NP argument of some sort to the argument structure of the base verb as illustrated below:

(1) verb($\mathrm{arg}_1 ... arg_n$) $\longrightarrow$ verb-appl ($\mathrm{arg}_1, arg_m, arg_n$)

(Mchombo 1999)

Because of this additive nature Machobane (1989) has concluded that the applicative suffix is transitivizing in nature. Thus a prototypical applicative adds an extra noun phrase which is interpreted as a beneficiary or instrumental(Bresnan & Moshi (1990),Baker (1988).Evidently, the resultative construction increases the syntactic valency of the predicate- in (2a) *fira* in the resultative complex verb has a surface syntactic valency of two. The syntactic impact of applicative suffixation is to add on an extra argument to the argument structure of the verb and the new argument acquires all the direct object properties of a standard transitive object and is interpreted most often as a beneficiary of the eventuality denoted by the verb stem.

(2) a. Jesu a-ka-f-a
1 Jesus 1SMPASTdieFV
'Jesus died'

b. Jesu a-ka-**ti**-f-ir-a
1jesus 1SMPAST3RD PLdie APPLFV
'Jesus died for us'

Beneficiary

(3) a. Mayi va-ka-bik-a chi-ngwa
1 a mother 2SMPASTbakeFV 7 bread
'Mother baked bread'

b. Mayi va-ka-bik-ir-a **v-ana** chi-ngwa
1 a mother 2SMPASTbakeAPPLFV 2 child 7 bread
'Mother baked bread for the children'

Beneficiary

Semantically, a beneficiary is some sort of a potential modal goal. That is to say, a lexical argument of the verb is interpreted as being "potentially" located at a particular/specific location.In this context the location will be interpreted as the introduced argument.[1]

[1]Abbreviations used

appl Applicative

arg Argument

ass Associative

fv Final vowel

om Object marker

inst Instrumental sm Subject marker

The numbers indicate the gender class associated with the noun and it can be plural or singular

But there are other interpretations that can be associated with the applicative suffix. Port (1981) has even concluded that because the applied suffix expresses such a wide variety of semantic relationships it poses an analytical problem, since one cannot come up with a unitary account[2]:

(4) a. Mwana a-ka-nyur-a
1 child 1SMPASTdrownFV
'The child drowned'

b. Mwana a-ka-nyur-ir-a **mu-rwizi**
1 child 1SMPASTdie APPLFV 18 11 river
'The child drowned in the river'

Locative

(5) a. Ma-*poachers* a-ka-vhim-a
6 poachers 1SMPASThuntFV
'Poachers hunted'

b. Ma-*poachers* a-ka-vhim-ir-a **mari**
6 poachers 1SMPASThuntAPPLFV 9 money
'Poachers hunted for money'

Motive

(6) a. Bvut-a banga!
PREsnatchFV 5 knife
'Snatch the knife'

b. Bvut-ir-a **mw-ana** banga
PREsnatchAPPLFV 1 child 5 knife
'Snatch the knife from the child'

Source

(7) a. Mw-ana a-ka-tsamw-a
1 child 1SMPASTangryFV
'The child was angry'

b. Mw-ana a-ka-tsamw-ir-a **baba**
1 child 1SMPASTangryAPPLFV 1a father
'The child was angry with father'

Maleficiary

[2]Given this difficulty, analyses have generally postulated homonymous applicative forms, a position that leads to a large amount of grammatical redundancy and misses significant generalisations

(8) a. Kundishora a-ka-kand-a bhora
1 name 1SMPASTthrowFV 5 ball
'Kundishora threw a ball'

b. Kundishora a-ka-kand-ir-a **Anotida** bhora
1a name 1SMPASTthrowAPPLFV 1a name 5 ball
'Kundishora threw a ball to Anotida'

Goal

Though we have all these polysemous meanings, all the above are instances of some sort of a location relation depending on the semantics of the verb.[3]

2 Non-regular productive examples

2.1 Locatives

Within these instances, we have an optional adjunct as part of the subcategorised arguments of the verb as illustrated in examples(9-11)

(9) a. Mombe ya-ka-f-a ku-musha
9 cow 9SMPASTdieFV 17 3 home
'The cow died at the village'(it was already at home)

b. Mombe ya-ka-f-ir-a **ku-mu-sha**
9cow 9SMPASTdieAPPLFV 17 3 village
'The cow died at the village' (it came from somewhere and eventually died at home)

(10) a. Mw-ana a-ka-w-a mu-tsime
1 child 1SMPASTfallFV 18 5 well
'The child fell into the well'(was already inside the well)

b. Mw-ana a-ka-w-ir-a **mu-tsime**
1 child 1SMPASTfallAPPLFV 18 5 well
'The child fell into the well' (fell from the outside into the inside)

[3]What Iam suggesting is that the general meaning of the applicative has to entail some location relation in the content of the verb. The location can physical as in a locative argument, potential as in a benficiary argument or real as in a goal argument

(11) a. Patrick a-ka-on-a vasikana mu-gomo
1 name 1SMPASTsee FV 2 girl 18 5 mountain
'Patrick saw girls on the mountain'(but Patrick's presence on the mountain is not obligatory)

b. Patrick a-ka-on-er-a vasikana **mu-gomo**
1 name 1SMPASTsee APPLFV 2 girl 18 5 mountain
'Patrick saw girls on the mountain' (his presence on the mountain is compulsory)

The difference between these two constructions is that the (a) examples are adjuncts in that the sentence can do without locative NP while the (b) examples illustrate the INTERNALISATION of an optional adjunct. This in other words is still an addition of another argument though in this context, it is through the replacing of an adjunct.

2.2 Goals

The same analysis holds for goal applicatives in that they become new arguments through the replacement of an adjunct as indicated in examples(12-14).

(12) a. Kundishora a-ka-kav-a bhora kuna Anotida
1a name 1SMPASTkickFV 5 ball 17 ASS|INSTR 1a name
'Kundishora kicked a ball towards Anotida'

b. Kundishora a-ka-kav-ir-a **Anotida** bhora
1a name 1SMPASTkickAPPLFV 1a name 5 ball
'Kundishora kicked a ball to Anotida'

(13) a. Kundishora a-ka-kand-a bhora kuna Anotida
1a name 1SMPASTthrowFV 5 ball 17 ASS|INSTR 1a name
'Kundishora threw a ball towards Anotida'

b. Kundishora a-ka-kand-ir-a **Anotida** bhora
1a name 1SMPASTthrowAPPLFV 1a name 5 ball
'Kundishora threw a ball to Anotida'

However, the sentence below instead has an oblique argument. In line with other theories then what happens in such an example is the promotion of an oblique argument to a primary object status since *tuma* obligatorily subcategorises for an oblique argument. Similar examples can be found in verbs like *dzora* 'return' .

(14) a. Mayi va-ka-tum-a mwana kuna mbuya
1a mother 2SMPASTsendFV 1 child 17ASS|INSTR 1a grandmother
'Mother send the child to grandmother'

b. Mayi va-ka-tum-ir-a **mbuya** mw-ana
1a mother 2SMPASTsendAPPLFV 1a grandmother 1 child
'Mother send the child to grandmother'

2.3 Meaning change

There are some verbs though which seem to restrict the base verb to a goal reading when the applicative suffix has been attached onto the base verb. Generally, there is a meaning shift.In these examples, we still have the lexical argument of the verb being located at the applied object.[4]

(15) a. Ma-*war veterans* a-ka-tiz-a pa-purazi
6 war veterans 1SMPASTflee FV 16 5 farm
'The war veterans fled from the farm'(the war veterans fled from the farm to somewhere)

b. Ma-*war veterans* a-ka-tiz-ir-a**pa-purazi**
6 war veterans 6SMPASTflee APPLFV 16 5 farm
'The war veterans fled onto the farm'(The war veterans fled from somewhere onto the farm)

(16) a. Vimbai a-ka-tut-a mu-fudze mu-bhara
1a name 1SMPASTloadFV 3 5manure 18 5wheelbarrow
'Vimbai loaded manure from the wheelbarrow'(Vimbai loaded manure from the wheel barrow onto/into somewhere)

b. Vimbai a-ka-tut-ir-a mu-fudze **mu-bhara**
1a name 1SMPASTloadAPPLFV 3 5manure 18 5wheel barrow
'Vimbai loaded manure into the wheel barrow'(Vimbayi loaded manure from somewhere into the wheel barrow)

(17) a. Juliet a-ka-tinha-a mombe mu-mu-nda
1a name 1SMPASTdrive FV 10 cow18 3 field
'Juliet drove cattle from the field'(Juliet drove cattle from the fields onto/into somewhere)

b. Juliet a-ka-tinh-ir-a mombe **mu-munda**
1a name 1SMPASTloadAPPLFV 10 cow18 3field
'Juliet drove cattle into the field'(Juliet drove cattle from somewhere into the field)

[4] These examples are very interesting because as indicated by Harford (1993), LEXICAL MAPPING THEORY(LMT) has problems accounting for these idiosyncratic instances

Both the locative and goal are all illustrations of some LOC relation. In contrast to a potential goal, the goal illustrated above is a natural(real) goal. Thus in the locative examples we find that the subject is located on, in, near or at the place of action(the applied object) while in the goal examples the object/theme is located at the applied object.[5]

All the above examples look like some form of an applicative construction since we can say that all the examples given involve some kind of an additional object (adjunct which is *internalised* or be a new introduced independent argument that will be interpreted as a beneficiary(modal goal).In addition to this syntactic function, all the examples entail some kind of a generalised locative. Since descriptively, we can come up with such generalisations how do we capture these differences theoretically?

3 Towards an analysis

An account of the observations given above will be developed within a HEAD-DRIVEN PHRASE STRUCTURE GRAMMAR (HPSG)framework ((Pollard & Sag 1987),(Pollard & Sag 1994) (Sag & Wasow 1999)). A brief overview of HPSG will be given. HPSG is a formal linguistic theory that emphasises the need for integration of partial information from various linguistics sources in an independent way.

HPSG grammars are assumed to consist of a *signature* and *theory* proper Przpiorkowski (2000). The theory is simply a set of constraints that all objects in the model must simultenously satisfy. Thus HPSG grammar is formulated as a declarative system of constraints. The signature on the other hand, makes ontological assumptions explicit, that is to say, it says what types of objects there are (e.g verbs, nouns , etc) and what features they may have (e.g. verbs have person and not case). More formally, a signature is a partial order of types which specifies what types of objects are allowed by the grammar and what attributes might be borne by objects of particular types.

Linguistic analysis is done through signs modelled as feature structures known as ATTRIBUTE VALUE MATRICES (AVM). These are sets of attributes and their values. Signs contain the information that all objects of a particular type must have at least two attributes PHONOLOGY whose values represent the phonological makeup of the sign and SYNSEM(SYNtax SEMantics) whose values correspond to the syntax and semantics of that sign.

[5]The notion of productive vs non-productive centres on the way the new object is added on, in the case were it is productive, we see that we have an independent noun phrase all together being added on, whilst in the irregular instances we have an optional object already presnt and then it is internalised

Feature structures employed in HPSG are TYPED. Type indicates what kind of object is being described, with types being partially ordered by subsumption. Two paths in a feature structure can lead to the same node. This is called structure sharing and is indicated by boxed numerals in the AVM.

3.1 The Lexicon

In the analysis of the data, I will focus on the lexicon. Moreover I will adopt Riehemann (1998)'s approach at analysing derivational morphology referred to as TYPE BASED DERIVATIONAL MORPHOLOGY (TBDM)since applicatives are derivational . TBDM makes crucial use of the hierarchical structure of the lexicon which is supported by HPSG. The lexicon has been viewed as the repository of idiosyncratic and unpredictable facts about lexical items organised as an alphabet list Briscoe (1993). Riehemann's approach to derivational morphology "is formulated in terms of complex recursive schemata structured in a multiple inheritance hierarchy as used in HPSG without positing lexical rules or lexical entries for affixes". In the analysis, the lexicon is construed as being organised as a multiple inheritance of types (Flickinger 1987),(Flickinger *et al.* 1985) and (Pollard & Sag 1994). Theories of typed lexicon rely on the intuition that lexical entries can be grouped into classes with common properties. These common properties can then be stated of the class as a whole, each member inheriting the properties Koenig & Jurafsky (1994).

Via the structure of the type hierarchy, we can model the various patterns of applicatives. All words, stems and derivational types are organised into a hierarchy of types, each of which is associated with appropriate constraints.All the nodes as exemplified in a type hierarchy are appropriate constraints associated with the sign.Figure(1) illustrates a partial lexical hierarchy that can be used in the explanation of ChiShona applicative constructions.

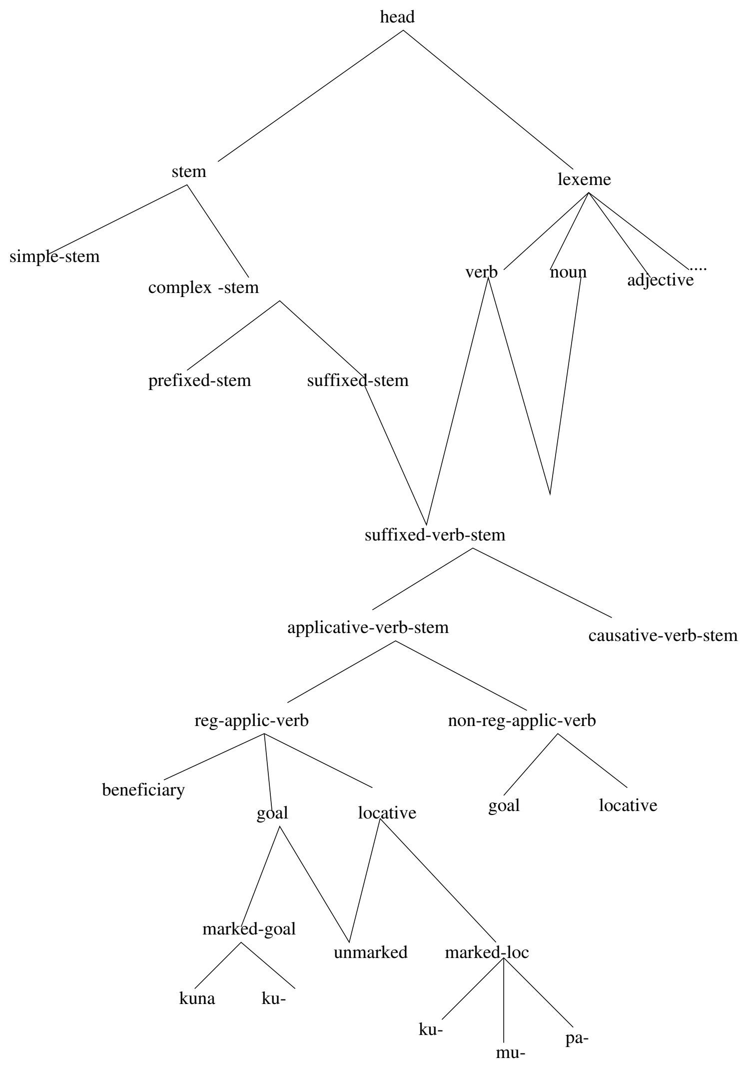

Figure 1: A partial monotonic lexical hierarchy of the ChiShona applicative verb

There is little reason to doubt that the regular and non-regular applicative verbs exhibit a basic structure. This unity is captured by treating both of these types as instances of a common type, namely the applicative verb stem.The top of the hierarchy shows that each word is cross-classified for the dimensions stem and lexeme The lexeme part contains the traditional part of speech notions and the stem part contains the fact that the stem has two types.

What is important to point out in this hierarchy is the type applicative-verb stem which is considered to be a productive process of word formation. A new type has been introduced (reg-applic-verb) on the lowest level that inherits all the constraints from the applicative stem and functions as the most productive word formation. Every appropriate stem of type applic-verb can be filled in creating a new word. Such a representation is further enriched by specifying constraints on particular nodes in the hierarchy as will be shown below.

Since lexical entries are underspecified in the grammar, the simple stem only specifies stem phonology and SYNSEM values associated with it and this indicates the fact that it is morphologically based. The derived stem inherits from these constraints and at the same time it has two subtypes; prefixed and suffixed . The combination of the lexemic type and stem type gives rise to a feature structure such as the following with the following constrains being posited for the type reg-applic-verb.

4 The productive schema

(18)
$$
\left[\begin{array}{ll}
\textit{reg-appli-verb} & \\
\text{PHONOLOGY} & \boxed{1} + \textit{i/er} \\
\text{MORPH-B} & \left[\begin{array}{ll} \text{PHON} & \boxed{1} \\ \text{SYNSEM} & \left[\begin{array}{ll} \text{SYN} & \left[\begin{array}{l} \text{HEAD } \textit{verb} \\ \text{CAT}|\text{VAL} \left[\text{OBJ } \langle\boxed{3}\rangle\right]\end{array}\right] \\ \text{ARG-ST} & \langle \boxed{3} \rangle \\ \text{SEM} & \left[\text{CONT } |\text{NUC } \boxed{4}\right]\end{array}\right]\end{array}\right] \\
\text{SYNSEM} & \left[\begin{array}{ll} \text{SYN} & \left[\text{CAT } |\text{VAL } |\text{OBJ } \boxed{3} \oplus \boxed{6}\text{NP}_{\boxed{5}}\right] \\ \text{ARG-STR} & \langle \boxed{3} \oplus \boxed{6} \rangle \\ \text{SEM} & \left[\text{CONT } |\text{NUCL } \boxed{4} + \left[\begin{array}{ll} \text{RELN} & \textit{locative} \\ \text{ARG1} & \text{index} \\ \text{ARG2} & \boxed{5}\end{array}\right]\right]\end{array}\right]
\end{array}\right]
$$

What we are looking at here is a theory of word formation that allows constraints to apply to the argument structure of both the applicative verb as a whole and also the stem to which the applicative stem's argument structure contains some additional NP. Thus in the schemata we have some generalised locative role and some additional role to the object list. Since we seem to have an additional relation in this schemata, this entails the fact that the generalised locative is interpreted as a beneficiary.ARG1 and ARG2 defines the participants involved in the situation being described. ARG1 is not specified, but it is located at the locative argument which is $\boxed{5}$.

The regular applicative gives us the general formation of the applicative and then we can capture the subregularities underneath it. What happens with the adjunct examples is the addition of an argument with the new argument taking the place of an adjunct. In these instances, the index gets attached to either the subject or object depending on the semantic structure of the verb hence the difference in terms of meaning between the non-applicative and the applicative locative or goal.

5 Conclusion

Such a framework allows us to capture these generalisations, since both regular and irregular applicative formation can be accommodated easily as well as cross-cutting similarities that exists. Such an approach has the advantage of minimising redundancy in the lexicon.

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