The representation of Setswana double objects in LFG

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Setswana is a Bantu language in the south eastern zone and one of the three Sotho-Tswana languages, the others being Sesotho sa Leboa (Northern Sotho) and Sesotho (Southern Sotho) (Cole, 1955: xv-xix; Krüger, 2006:3-4). Our long term goal is the development of an LFG/XLE grammar for Setswana.

The basic syntactic structure of Setswana sentences follows a SVO word order. Typologically, Setswana is an agglutinative language with a rich system of verbal inflections. Setswana verbs may include affixes which extend the meaning of the verb (Louwrens, 1994:6-7). The prefixes and suffixes provide essential information regarding type, tense, aspect and mood (Krüger, 2006:198-243). Verbal prefixes include negative morphemes, subject agreement morphemes, object agreement morphemes, aspectual morphemes and the temporal morpheme. Verbal suffixes refer to the causative, applicative, reciprocal, perfect and passive suffixes as well as the verbal endings. In terms of orthography verbal prefixes are written disjunctively, while verbal suffixes are written conjoined to the verbal root (Pretorius et al., 2009).

Object marking patterns across Bantu are diverse: some Bantu languages have one object agreement morpheme, others have several. Some require object agreement morphemes with certain kinds of objects, whereas in others, object-marked objects apparently need to be dislocated (Riedel, 2009:1). As object marking patterns in Bantu verbal argument morphology are more diverse than subject marking patterns, more focus has been placed on object marking. Setswana allows multiple object markers to appear on a verb, while the majority of Bantu languages allow only one (Martin et al., 2012: iii). Although the morphemes of the verb are presented systematically in Setswana grammars the occurrence of multiple object agreement morphemes has received limited attention. Recently, however, the verbal morphology of verbs containing two object agreement morphemes was modelled using a finite-state approach (Pretorius et al., 2012).

While object agreement morphemes are written disjunctively in the Setswana orthography they are verbal prefixes and thus part of the verb. Setswana orthography conventions and the translation of Setswana verbs, as well as the fact that Bantu languages allow pro drop for subjects and objects, have contributed to varied opinions on the status of these morphemes (Bresnan, 2001:144-160; Mchombo, 2004:20-22, Zerbian, 2006:87-92).

In certain instances verbs in Setswana sentences may take two objects, i.e. the unrestricted object (OBJ) and the restricted object (OBJ*θ*) (cf. Lam, 2008:123). In these instances the word order is SVOO. Both of these objects may be represented in the verb by object agreement morphemes. The result is that two object agreement morphemes may be prefixed to the verb, which enhances the morphological complexity of the verb.

In example (1) the applicative verb, *o apeela* (she cooks) takes two objects, *bana* (children) and *dijo* (food), but in example (2) both objects are replaced by their respective object agreement morphemes, *ba* (them) and *di* (it) in the applicative verb, *o a ba di apeela* (she cooks it for them).

(1) *Mosadi o apeela bana dijo*. (The woman cooks food for the children.)
Mosadi/ o apeela/ bana/ dijo/
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Cl1-woman/ AgrSubj-Cl1 cook for/ Cl2-children/ Cl10-food/
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(2) *Mosadi o a ba di apeela*. (The woman cooks it for them.)
Mosadi/ o a ba di apeela/
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Cl1-woman/ AgrSubj-Cl1 PresTense AgrObj-Cl2 AgrObj Cl10 cook for/
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For the development of the Setswana grammar, it is necessary to accurately model the phenomenon of object agreement morphemes, and more specifically, double object agreement morphemes in LFG and implement it in XLE. In this paper we give a brief overview of relevant typological characteristics of Setswana and then discuss in some detail the sentence and verbal structures that include double object agreement morphemes, providing appropriate examples. We note that these morphemes form part of the morphology of the verb, despite their disjunctive orthography. By modelling the syntactic structure of sentences with double object morphemes using LFG/XLE, we also hope to shed further light on the grammatical value (e.g. pronominalisation) of object agreement morphemes.

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