Differential marking in Shona applicatives: A Bidirectional OT account

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In this paper I will argue that Shona secondary objects exhibit differential marking, depending on their animacy features. This analysis, which allows for a more general account of Shona as a symmetrical language, is implemented in this paper in Bidirectional Optimality Theory (B-OT), with non-trivial consequences. This paper is concerned with applicative ditransitives. A transitive verb like *-si(y)a* 'leave' can take another complement (a beneficiary) when it is extended by the applicative suffix, as in (1b). The applied object (i.e. the beneficiary) is the primary object (O) in (1b). As such, it appears immediately after the verb. But the theme can also be placed in that position, as in (1c). The applied object in (1c), then, is mapped as a secondary object (O2), giving support to an analysis of Shona as a symmetrical language (Bresnan & Moshi 1990).

(1) a. *nda-si-ir-a mwana chipo*
1.SG.PAST-leave-APPL-F child present
'I left the gift for the child.'

b. *ndasi-ir-a chipo mwana*
1.SG.PAST-leave-APPL-F child present
'I left the gift for the child.'

In symmetrical languages, the Asymmetrical Object Parameter (AOP) is set to allow for two internal arguments to be intrinsically classified as [-r] (unrestricted). The analysis of Shona as a symmetric language is challenged by an animacy constraint: when the two internal arguments are human, only the beneficiary can be mapped onto an unrestricted function (Hawkinson & Hyman 1974). (2a) and (2b) are not synonymous.

(2) a. *nda-si-ir-a murume mhandara*
1.SG.PAST-leave-APPL-F man girl
'I left the girl for the man.'

b. *#nda-si-ir-a mhandara murume*
1.SG.PAST-leave-APPL-F girl man
'I left the man for the girl.'

MChombo & Firmino (1999) describe similar facts in Gitonga, arguing that they pose a challenge to the IAP. Their solution is to leave the interpretation of sentences like (2b) to the pragmatic component of the grammar, which would filter the unwanted mapping. I will argue here that the AOP does provide the right account of Shona applicatives, based on the availability of an alternative applicative construction (3) in which a human theme is realized as an O, and the beneficiary retains the locative classifier found on obliques.

(3) *nda-si-ir-a mhandara* ***ku****-murume*.
1.SG.PAST-leave-APPL-F girl LOC-man
'I left the girl for the man'

The beneficiary in (3), I suggest, is an applied object. As shown in Harford (1993) and Bresnan (1999), Bantu locative classifiers are gender affixes. Locative phrases are not excluded from subject or complement positions. From this point of view, then, Shona behaves as a symmetrical language across the board: a locative beneficiary is an O2. The locative marking on the O2 is no more than a case of differential marking: Locative gender on an object is a marked formal feature, which is employed to signal a marked argument, i.e. a beneficiary mapped onto an O2.

I propose a Bidirectional OT analysis of locative O2 marking in Shona. In B-OT (Blutner, De Hoop, & Hendricks 2006), a form-meaning pair <*f*,*m*> may be selected as the optimal output of a bidirectional optimization, even if neither *f* nor *m* are optimal candidates, when the more harmonic pairs <*f'*,*m*> and <*f*,*m'*> (where *f'* and *m'* are less marked forms and meanings) are blocked by a super-optimal pair <*f'*,*m'*>. Some implementations of B-OT In LFG (e.g. Kuhn 2003) focus on the correspondence between f-structure (as the "meaning") and c-structure (as the "form"). In this paper, however, I will evaluate pairs <*f*, *a*> of an f-structure *f* and an a-structure *a*.

The constraints that I will propose to implement the differential object marking analysis of Shona applicatives in B-OT are *LOC (locative gender is not marked on objects) and *ben/[+r] (beneficiaries are not restricted arguments). The effects of these constraints are that an a-structure with a restricted beneficiary will be marked, and an f-structure with a locative object will be also marked. Tableaux 1 and 2 show that the pair <*f, a*> is super-optimal, because it is more harmonic than any competing pairs. <*f, a*> blocks the pair <*f'*, *a*> in a productive optimization (Tableau 1), and the pair <*f*, *a'*> in an interpretive optimization (Tableau 2).

TABLEAU 1

a: V <ag, ben[-r], th[+r]>	*LOC	*ben/[+r]
☞✌ f: S, O, O2		
f': S, O, O2-LOC	*!	

TABLEAU 2

f: S, O, O2	*LOC	*ben/[+r]
☞✌ a: V <ag, ben[-r], th[+r]>		
a': V <ag, th[-r], ben[+r]>		*!

On the other hand, the pair <*f'*, *a'*> is also super-optimal, even if it is never the most harmonic one. Tableaux 3 and 4 show that <*f'*, *a'*> is blocked by the pairs <*f*, *a'*> and <*f'*, *a*>. But these are not super-optimal pairs: they are blocked by <*f*, *a*>. <*f*, *a*> is not in direct competition with <*f'*, *a'*>, so there is no super-optimal pair that blocks <*f'*, *a'*>. Therefore, <*f'*, *a'*> is also super-optimal.

TABLEAU 3

a': V <ag, th[-r], ben[+r]>	*LOC	*ben/[+r]
☞ f: S, O, O2		
✌ f': S, O, O2-LOC	*!	

TABLEAU 4

f': S, O, O2-LOC	*LOC	*ben/[+r]
☞ a: V <ag, ben[-r], th[+r]>		
✌ a':V <ag, th[-r], ben[+r]>		*!

This analysis accounts for the fact that the marked a-structure is linked to the marked f-structure with the locative O2. It also predicts that no beneficiary needs a locative prefix when the theme is inanimate. Because the animacy feature distinguishes one complement from the other, the additional f-structure *f''* (with inanimate O and no locative prefix on O2) enters the competition. As tableau 5 shows, <*f''*, *a'*> is super-optimal. <*f*, *a'*> blocks it (because of an additional constraint *hum/[+r]: "no restricted human arguments"), but <*f*, *a'*> is not super-optimal. <*f''*, *a'*>, being super-optimal and more harmonic than <*f'*, *a'*>, now stops <*f'*, *a'*> from being super-optimal.

TABLEAU 5

a': V <ag, th[-r], ben[+r]>	*LOC	*hum/[+r]	*ben/[+r]
☞ f: S, O_{hum}, $O2_{inan}$			
✌ f'': S, O_{inan}, $O2_{hum}$		*!	
f': S, O_{inan}, $O2_{hum}$-LOC	*!	*	

A B-OT analysis of the Shona applicative data captures the insight that the grammar has a battery of resources to recover the a-structure from the f-structure, and they are used in the most economical manner. When the speaker can rely on the animacy features of the complements to recover a-structure, word order is secondary. When the animacy features of the objects are identical, animacy does not allow for a-structure to be recovered. Locative differential marking is used in this case to express a marked a-structure. This analysis forces a revision of the principle that requires a marked form to express a marked meaning: it suggests that languages look for the least marked form that still manages to overtly express a semantic contrast. In Shona, animacy has a role to play as one of the formal features that enable the recovery of semantic contrasts. This, I will argue, provides a fresh perspective on animacy effects in grammar, and an alternative to the Harmonic Alignment theory of animacy in Aissen (1999, 2003).

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