

Revisiting Object Symmetry in Bantu

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1. Introduction

Applicative morphology is a morphosyntactic operation used in some languages to introduce a new object to the argument structure of a verb. One such language is Kinyarwanda, a Bantu language spoken in Rwanda. In this language, the morpheme *-ish* is used to license the instrumental object *ikaramu* ‘pen,’ as in (1b), serving the same purpose as the oblique marker *ku* ‘with’ in (1a).¹

- (1) a. Umw-arimu y-a-ndik-a in-kuru kw’ i-karamu.
CL1-teacher CL1S-PST-write-IMP CL9-story with CL6-pen
‘The teacher wrote the story.’
- b. Umw-arimu y-a-ndik-ish-a in-kuru i-karamu.
CL1-teacher CL1S-PST-write-APPL-IMP CL9-story CL6-pen
‘The teacher wrote the story with the pen.’

The use of an applicative on a transitive verb, such as *-andika* ‘write,’ results in there being two formally unmarked post-verbal arguments after the verb. In some languages, both of these post-verbal elements show properties typical of objects in transitive, non-applied predicates, while in other languages, the element licensed by the applicative is the only noun that behaves as the core object of the sentence. The question of whether the two post-verbal nominals pattern alike as objects of the verb has been referred to as object (a)symmetry in the literature.

Applicative morphology and the symmetry of objects has been a popular topic in Bantuist linguistics, as this morphology is found across the Bantu family, and many studies have investigated the symmetry properties of specific languages (e.g. Gary & Keenan (1977); Kimenyi (1980); Perlmutter & Postal (1983); Dryer (1983) on Kinyarwanda, de Guzman (1987) on Siswati, Baker (1988); Alsina & Mchombo (1993) on Chicheŵa, Kisseberth & Abasheikh (1977) on Chimwi:ni, Isingoma (2012) on Rutooro). These studies make theoretical generalizations based on the empirical patterns of particular languages, but considerable variation in the behavior of applicatives in different languages makes it difficult for many of these approaches to capture the variation among languages.

One example of a study that does address inter-linguistic variation is Bresnan & Moshi (1993), who contrasted the symmetry patterns of benefactive applicatives in various Bantu languages, focusing especially on Chicheŵa (spoken in Malawi) and Kichaga (spoken in Tanzania). In Kichaga, both objects in an applied benefactive construction can be passivized and incorporated onto the verb, as in (2) and (3), respectively.

- (2) a. N-ǎ-ĩ-lyì-ì-à m-kà k-èlyà.
FOC-1S-PR-eat-APPL-ASP CL1-wife CL7-food
‘He is eating food for/on his wife.’

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¹ Unless otherwise noted, all Kinyarwanda data come from the author’s field notes.

- b. M̃-kà n-ǎ-í-lyì-ì-ò k-èlyâ.
 CL1-wife FOC-1S-PR-eat-APPL-PAS CL7-food
 ‘The wife is being benefitted/adversely affected by someone eating the food.’
- c. k-èlyá k-í-lyì-í-ò m̃-kà.
 CL7-food 7S-PR-eat-APPL-PAS CL1-wife
 ‘The food is being eaten on/for the wife.’ Bresnan and Moshi (1993:50-1,(5))
- (3) a. N-ǎ-í-m̃-lyì-í-à k-èlyâ.
 FOC-1S-PR-1O-eatAPPL-ASP CL7-food
 ‘He/she is eating food for/on him/her.’
- b. N-ǎ-í-kì-lyì-í-à m̃-kà.
 FOC-1S-PR-7O-eatAPPL-ASP CL1-wife.
 ‘He/she is eating it for/on the wife.’
- c. N-ǎ-í-kì-m̃-lyì-í-à.
 FOC-1S-PR-7O-1O-eatAPPL-ASP
 ‘He/she is eating it for/on him/her.’ Bresnan and Moshi (1993:51,(7))

In (2b-c), each of the objects in (2a) may appear as the subject of a passive. In (3b-c), each of the objects in (2a) can appear as an incorporated object pronoun on the verb.² In Chicheŵa, on the other hand, the patient cannot be the subject of a passive (4c) nor incorporated as an object pronoun (5b).

- (4) a. Ndi-na-phik-ir-a ana nsima.
 1S-PST-cook-APPL-ASP children cornmush
 ‘I cooked cornmush for the children’
- b. Ana a-na-phik-ir-idw-a nsima.
 children S-PST-cook-APPL-PASS-ASP cornmush
 ‘The children were cooked cornmush.’
- c. *Nsima i-na-phik-ir-idw-a ana.
 cornmush S-PST-cook-APPL-PASS-ASP children
 ‘Cornmush was cooked for the children.’ Baker (1988:386,(59))
- (5) a. Ndi-na-wa-phik-ir-a nsima.
 1S-PST-OM-APPL-ASP cornmush
 ‘I cooked cornmush for them.’
- b. *Ndi-na-i-phik-ir-a ana.
 1S-PST-OM-APPL-ASP children
 ‘I cooked it for the children.’ Baker (1988:370-1,(29))

The data in (2)-(5) show that languages vary as to whether the two objects of an applied transitive verb are treated symmetrically.³ However, different thematic types of applicative in a single language may also show variation in their behavior of object symmetry. Bresnan & Moshi (1993), looking only at the behavior of benefactive applicatives, have no explanation for the variation found among different types of applicative in a specific language (see §3.1 below).

The goal of this paper is to outline the inner- and inter-linguistic variation of object symmetry patterns in order to show that theoretical generalizations drawn from particular languages are not easily generalizable across Bantu. Specifically, I show that the symmetry patterns of an applicative cannot

² See Bresnan & Mchombo (1987); von Heusinger (2002); Buell (2006); Henderson (2006); Adams (2010); Diercks & Sikuku (2011); Baker et al. (2012) for various discussions of object incorporation in Bantu.

³ Further tests found in the literature for object symmetry include relativization, reflexivization, unspecified object deletion of the patient, and word order. The nature of these tests is the same in (2)-(5); when the applicative is asymmetrical, only the applied object can undergo object-oriented operations, and when the applicative is symmetrical, both objects can undergo object-oriented operations.

be predicted from the thematic role of the object, as assumed in earlier work on object symmetry. Furthermore, I show that object order should not be derived from the same machinery as other objecthood diagnostics. The present study proposes a reworking of Bresnan and Moshi's analysis that accounts for the variation within and among languages by suggesting that each applicative in a language encodes its own idiosyncratic restrictions on object symmetry.

The structure of the paper is as follows. In the next section, I give a brief overview of previous approaches to object symmetry in Bantu. Section 3 shows that there is more variation in Bantu than these previous studies are able to account for, and Section 4 proposes an analysis that captures this variation, which builds off of the parametric approach of Bresnan & Moshi (1993). Section 5 concludes the discussion.

2. Previous Approaches to Object Symmetry

Some of the earliest accounts of object symmetry come from the Relational Grammarians, whose focus was largely on the dialect of Kinyarwanda described in Kimenyi (1980). Gary & Keenan (1977) argue that the notions of direct and indirect object are not present in Kinyarwanda benefactive applicatives, proposing that Kinyarwanda permits multiple nominals with the same grammatical function. Dryer (1983) and Perlmutter & Postal (1983) argue that Gary & Keenan's analysis is too limiting, showing that in order to capture other thematic types of applicatives and causatives, one needs a more nuanced analysis where the two post-verbal elements have different grammatical functions. Perlmutter & Postal (1983) stipulate that some languages permit that 3's (i.e. indirect objects) can be promoted to 1's (i.e. subjects) without having to first be treated as 2's (i.e. direct objects). This captures why indirect objects, such as applied objects, can behave like objects in Kinyarwanda benefactive applicatives.

Using Government and Binding Theory (GB), Baker (1988) proposes a preposition-incorporation analysis that argues that differences in how Case is assigned can capture the symmetry of benefactives and asymmetry of instrumentals in Chicheŵa. Alsina & Mchombo (1993) propose an alternative to Baker's analysis, using Lexical-Functional Grammar (LFG). Their analysis says that, given the hierarchy in (6) adopted from Bresnan & Kanerva (1989), anything higher than goals will be treated as asymmetrical.

(6) ag > ben > go/exp > ins > pt/th > loc Bresnan & Kanerva (1989)

This analysis captures the Chicheŵa system, where benefactives are symmetrical and instrumentals are asymmetrical.

More recent work appeals to Pylkkänen's (2008) distinction between high and low applicatives. McGinnis (2001) and McGinnis & Gerdtz (2003) claim that low applicatives place the two objects in the same phase (Chomsky, 2000, 2001), determining symmetry, while high applicatives place them in different phases, determining asymmetry. Baker et al. (2012) also use phase theory to distinguish the different symmetry properties of applicatives and causatives in Lubukusu, arguing that the latter contains an extra phase boundary. Jeong (2007), arguing against McGinnis (2001), achieves a similar effect by proposing an anti-locality constraint in conjunction with various other language-specific structural differences; Zeller (2006a) and Zeller & Ngoboka (2006) also argue that locality is the crucial component to capturing (a)symmetry.

The issue with all of these approaches is that they cannot account for variation outside of their specific language of study, as will be shown in detail in the following section. One study to date that attempts to capture cross-linguistic variation comes from Bresnan & Moshi (1993), who propose a parameter of variation that captures whether a language will have symmetrical or asymmetrical applicatives.⁴ Their study, however, only compares benefactive applicatives, failing to capture the variation that is found within each language. I will return to their analysis in §5, where I show that a different articulation of their proposal can account for the variation found in Bantu.

⁴ See also Baker (1992), who analyzes the typology of instrumental, benefactive, and locative applicatives in Chicheŵa, Lesotho, and Kinyarwanda. However, he assumes that instrumental and benefactive applicatives will behave the same across languages. This is empirically problematic, as I show in section 3.1.

3. Variation in Object Symmetry

In this section, I outline data that show that various assumptions in the literature on Bantu applicatives do not hold. First, I show that symmetry does not follow from the semantic type of applicative. Second, I show that languages are not internally consistent with respect to the behavior of different applicatives. Third, I show that what have been treated as locative applicatives in the literature often do not fit the mold of true applicatives. Finally, I show that object order is not a reliable test for object symmetry, as it often patterns differently from other tests.

3.1. *Symmetry is not Consistent by Applicative Type*

A recurring issue with previous approaches to object symmetry is the assumption that symmetry corresponds universally to the thematic type of applicative, and studies on single languages often over-generalize the pattern found in that language. For example, analyses discussing data from Chicheŵa generalize that benefactives are asymmetrical and instrumentals are symmetrical (Baker (1988); Alsina & Mchombo (1993)). On the other hand, studies of Kinyarwanda generalize that both benefactives and instrumentals are symmetrical (Gary & Keenan, 1977; Dryer, 1983; Perlmutter & Postal, 1983). This is clearly problematic; to assume that the thematic role of applicative inherently encodes a specific symmetry pattern cannot explain the variation found among languages. To exemplify the issue clearly, take Chicheŵa and Lubukusu. Both languages have benefactive and instrumental applicatives, but the two have the opposite pattern as to whether or not the applicative will be symmetrical.

In Lubukusu benefactives are symmetrical and instrumentals are asymmetrical. The data in (8) show that either object can appear as an object marker in benefactive constructions. The data in (10), on the other hand, show that object incorporation is not symmetrical with instrumental applicatives.

- (7) wanjala a-a-kul-il-a omu-xasi sii-tabu
 wanjala 3SS-T-buy-APPL-ASP CL1-woman CL7-book
 ‘Wanjala bought the book for the woman.’ Peterson (2007:7,(2))
- (8) a. wanjala a-mu-kul-il-a sii-tabu
 wanjala 3SS-CL1.OBJ-buy-APPL-ASP CL7-book
 ‘Wanjala bought her the book.’ Peterson (2007:8,(4a))
- b. wanjala a-si-kul-il-a omo-xasi
 wanjala 3SS-CL7.OBJ-buy-APPL-ASP CL1-woman
 ‘Wanjala bought it for the woman.’ Peterson (2007:8,(4b))
- (9) wanjala a-a-fuum-il-a sii-tabu lu-karatasi
 wanjala 3SS-T-cover-APPL-ASP CL7-book CL11-paper
 ‘Wanjala covered the book with paper.’ Peterson (2007:10,(12))
- (10) a. wanjala a-si-fuum-il-a lu-karatasi
 wanjala 3SS-CL7.OBJ-T-cover-APPL-ASP CL11-paper
 ‘Wanjala covered it with the paper.’
 *‘Wanjala covered the paper with it.’ Peterson (2007:11,(14a))
- b. wanjala a-lu-fuum-il-a sii-tabu
 wanjala 3SS-CL11.OBJ-T-cover-APPL-ASP CL7-book
 ‘Wanjala covered it with the book.’
 *‘Wanjala covered the book with it.’ Peterson (2007:11,(14b))

The benefactive construction in (7) can have the objects symmetrically incorporated onto the verb. When objects are incorporated onto the verb as in (9), the only grammatical interpretation is that the incorporated form is the patient, never the instrument.

In Chicheŵa, however, the opposite pattern is found. Example (11), repeated from (5), shows that with the benefactive applicative, the object marker cannot be used for the theme in (11b); only the

beneficiary can be object-marked on the verb. Example (13), on the other hand, shows that both the instrumental object and the theme can appear as object markers on the verb.⁵

- (11) a. Ndi-na-wa-phik-ir-a nsima.
1 S-PST-OM-APPL-ASP cornmush
'I cooked cornmush for them.'
- b. *Ndi-na-i-phik-ir-a ana.
1 S-PST-OM-APPL-ASP children
'I cooked it for the children.'
- Baker (1988:370-1,(29))
- (12) Mavuto a-na-umb-ir-a mpeni mtsuko.
Mavuto SP-PAST-mold-APPL-ASP knife waterpot
'Mavuto molded the waterpot with a knife.'
- Baker (1988:354,(3))
- (13) a. Mavuto a-na-u-umbir-a mitsuko (mpeni).
Mavuto SP-PST-OM--mold-APPL-ASP waterpots knife
'Mavuto molded the waterpots with it (the knife).'
- b. Mavuto a-na-i-umb-ir-a mpeni (mitsuko).
Mavuto SP-PST-OM-mold-APPL-ASP knife waterpots
'Mavuto molded them (the waterpots) with a knife.'

The data from (7)-(13) show that Chicheŵa and Lubukusu show opposite patterns for object symmetry, as summarized in the table in (14), where A stands for asymmetrical and S stands for symmetrical.

(14) Chicheŵa-Lubukusu Symmetry

	Benefactive	Instrumental
Chicheŵa	A	S
Lubukusu	S	A

In short, Chicheŵa has an asymmetrical system with benefactive applicatives and a symmetrical system with instrumental applicatives; Lubukusu has an asymmetrical instrumental applicative and a symmetrical benefactive applicative. This is problematic for any analysis that ties symmetry to the thematic role of an applicative, as almost all previous approaches do. If symmetry is considered an inherent property of a specific thematic applicative type in a language, there is no way of extending this to languages that show the opposite pattern of symmetry on the same applicative type, as shown with the Chicheŵa and Lubukusu data above.

3.2. Locatives Often Diverge from Other Applicatives

A descriptive issue for previous approaches to object symmetry is that locative applicatives in some languages do not serve an applicative function. Namely, the function is not that of introducing a new object to the argument structure of the verb. A clear example of a non-applicative use of a locative is the morpheme *-el* in Tswana, which encodes a goal interpretation to the locative argument.

- (15) a. Mo-simane o-tabog-a fa-godimo ga-thaba.
CL1-boy HE-run-IMP NEARBY-top LOC-mountain
'The boy is running on top of the mountain.'
- b. Mo-simane o-tabog-el-a kwa-godimo ga-thaba.
CL1-boy HE-run-APPL-IMP DISTANT-top LOC-mountain
'The boy is running to the top of the mountain.'
- Tswana; Schaefer (1985)

⁵ This pattern is the same for the other tests the authors use for symmetry, including passivization and word order for Baker (1988) and passivization, word order, and reflexivization for Peterson (2007).

The morpheme *-el* in (15b) is not functioning as an applicative in the same manner as the applicatives discussed above; crucially, the morpheme is not used to increase the valency of the verb. Instead, it serves a semantic function of introducing a direction to the location encoded by the verb. In (15a), there is no explicit direction encoded by the non-applied verb, while in (b), the applied variant narrows the interpretation of the location to a goal. Leaving the details of the semantics aside, the syntactic nature of this example is distinct in that there is no additional syntactic argument added to the argument structure of the verb.

Another non-applicative use of a locative morpheme comes from elicited data in Kinyarwanda. In his highly influential grammar on Kinyarwanda, Kimenyi (1980) describes the morpheme *ho* as an applicative that introduces the location argument *isoko* ‘market’ to the argument structure of the verb in (16).⁶

- (16) Umugore y-ohere-je-ho i-soko umw-ana.
 CL1-woman CL1-send-PERF-LOC CL9-market CL1-child
 ‘The woman sent the child to the market.’ Kimenyi (1980)

This construction is also the only asymmetrical object construction in the language in this dialect (Kimenyi 1980:94-5), and many of theories have attempted to capture this generalization for Kinyarwanda. For the basic sentence in (17), only the locative can be passivized (18a) or incorporated (19a). The underlying object can never be passivized or incorporated.

- (17) Umw-walimu y-ohere-je-ho i-shuri igi-tabo.
 CL1-teacher CL1-send-PERF-LOC CL5-school CL7-book
 ‘The teacher sent the book to the school.’ Kimenyi (1980)

(18) *Passivization:*

- a. I-shuri ry-ohere-j-w-e igi-tabo n’umw-alimu.
 CL5-school CL5-send-PERF-PASS-PERF CL7-book by’CL1-teacher
 ‘The school was sent the book by the teacher.’ Kimenyi (1980)
- b. *Igi-tabo cy-ohere-j-w-e-ho i-shuri n’umw-alimu.
 CL7-book CL7-send-PERF-PASS-PERF CL5-school by’CL1-teacher
 ‘The book was sent to school by the teacher.’ Kimenyi (1980)

(19) *Pronoun Incorporation:*

- a. Umw-walimu y-a-ry-ohere-je-ho igi-tabo.
 CL1-teacher CL1-PST-OBJ.5-send-PERF-LOC CL7-book
 ‘The teacher sent the book to it.’ Kimenyi (1980)
- b. *Umw-walimu y-a-cy-ohere-je-ho i-shuri.
 CL1-teacher CL1-PST-OBJ.5-send-PERF-LOC CL5-school
 ‘The teacher sent the it to the school.’ Kimenyi (1980)

This morpheme *in* has lost its function as an applicative for the speakers I consulted. When sentences of the type in (20) were elicited, speakers only accepted the sentence when the location object was absent:⁷

⁶ Throughout this paper I will discuss variation of judgments in two different varieties of Kinyarwanda: those from the grammar written by the late Alexander Kimenyi, which are presumably his own, and those elicited by the author from speakers living in Muhanga, Rwanda, who grew up either in Muhanga or in Kigali, about one hour away. Although dialectal variation has never been fully documented for Kinyarwanda, I will assume that the divergence in judgments comes from dialectal variation. It should be noted that I have been unable to find a single speaker who shares Kimenyi’s judgments on locative applicatives, though see Zeller & Ngoboka (2006); Zeller (2006a,b) for discussion of a variety that shares Kimenyi’s judgments.

⁷ Bresnan & Moshi (1993) mention in a footnote that the locative in Kichaga has also lost its applicative function. More research is needed to clarify any underlying patterns to the loss in these languages.

- (20) Umugore y-ohere-je-ho (*i-soko) umw-ana.
 CL1-woman CL1-send-PERF-LOC CL9-market CL1-cook
 ‘The woman sent the child there *(to the market).’
- (21) Umw-walimu y-ohere-je-ho *(i-shuri) igi-tabo.
 CL1-teacher CL1-send-PERF-LOC CL5-school CL7-book
 ‘The teacher sent the book there *(to the school).’

The locative morpheme gives the sentence an adverbial location interpretation, something roughly equivalent to ‘over there’.⁸ Zeller (2006a,b) notes an effect of transitivity on the use of locatives as applicatives for the speakers he consults. The speakers I consulted, however, have consistently rejected the use of locatives as applicatives on all verbs. The variation among speakers in Kinyarwanda is a question left for future research. The crucial point here is that the locative morpheme has been reanalyzed, at least for some speakers, and is no longer usable as an applicative.

Interestingly, this morpheme can also be used as an emphatic marker, such as when it is added to the greeting *mwaramutse* ‘good morning’.

- (22) Mw-a-ramuts-e-ho.
 1PL-PST-pass.night-PERF-LOC
 ‘Very good morning to you.’

The exact syntactic and semantic nature of locative morphology in Kinyarwanda for the consulted speakers is in need of further investigation, but the crucial point for the present discussion is that the assumption that the Kinyarwanda locative behaves as an applicative is not accurate for all speakers of Kinyarwanda, which has been a frequent assumption in the literature on Kinyarwanda applicatives. In conclusion, Tswana and Kinyarwanda show that locative morphology does not have an applicative use, which is important when comparing the cross-linguistic properties of Bantu applicatives.

3.3. Object Order Does Not Pattern with Other Symmetry Tests

A standard test in the literature for object symmetry has been to see if the two objects are freely ordered with respect to one another. In symmetrical cases, the two objects should be permitted to appear in any order. In asymmetrical cases, only the applied object has a privileged position immediately after the verb. Although restrictions on object ordering do exist in some languages, the ordering of the objects does not always correspond to other tests for symmetry.

One example of a mismatch of diagnostics comes from Kinyarwanda. Both benefactive and instrumental applicatives are symmetrical, both for Kimenyi and for the speakers consulted by the author. For example, take the instrumental applicative in (23). Both objects in this sentence can be passivized, as in (24) and incorporated, as in (25).

- (23) Umu-gabo a-ra-ndik-ish-a i-baruwa i-karamu.
 CL1-man CL1-PRES-write-INST-imp CL9-letter CL9-pen
 ‘The man is writing a letter with a pen.’ Kimenyi (1980)
- (24) *Passivization:*
- a. I-karamu i-ra-andik-ish-w-a i-baruwa n’umugabo.
 CL9-pen CL9-PRES-write-INST-PASS-IMP CL9-letter by’CL1-man
 ‘The pen is used to write the letter by the man.’ Kimenyi (1980)
- b. I-baruwa i-ra-andik-ish-w-a i-karamu n’umugabo.
 CL9-letter CL9-PRES-write-INST-PASS-IMP CL9-pen
 ‘The letter is being written with a pen by the man.’ Kimenyi (1980)

⁸ See Diercks (2011) and Marten & Kula (2014) for discussions of the syntactic and semantic uses of cognate locative clitics in Lubukusu and Bemba, respectively.

(25) *Pronoun Incorporation:*

- a. Umw-alimu a-ra-y-andik-ish-a i-baruwa.
 CL1-teacher CL1-PRES-OBJ.9-write-INST-IMP CL9-letter
 ‘The teacher is writing a letter with it.’ Kimenyi (1980)
- b. Umu-gabo a-ra-y-andik-ish-a i-karamu.
 CL1-man CL1-PRES-OBJ.9-write-INST-IMP CL9-pen
 ‘The man is writing it with a pen.’ Kimenyi (1980)

Despite the symmetry of the instrumental applicative in passivization and incorporation, applied objects are required to follow the patient argument.⁹

A further piece of evidence that word order varies along a separate parameter than the other tests comes from Lubukusu (Kenya), where the word order of the objects is fixed, despite patterning symmetrically in other tests. The benefactive applicative is symmetrical in Lubukusu, as shown by its ability to incorporate both objects, as in (27), and to passivize both objects, as in (28).¹⁰

- (26) wanjala a-a-kul-il-a omu-xasi sii-tabu
 wanjala 3SS-T-buy-APPL-ASP CL1-woman CL7-book
 ‘Wanjala bought the book for the woman.’ Peterson (2007:7,(2))
- (27) a. wanjala a-mu-kul-il-a sii-tabu
 wanjala CL1S-CL1.OBJ-buy-APPL-ASP CL7-book
 ‘Wanjala bought her the book.’
- b. wanjala a-si-kul-il-a omo-xasi
 wanjala CL1S-CL7.OBJ-buy-APPL-ASP CL1-woman
 ‘Wanjala bought it for the woman.’ Peterson (2007:8,(4))
- (28) a. omu-xasi a-kul-il-w-a sii-tabu (nee-wanjala)
 C1-woman CL1S-buy-APPL-PASS-FV CL7-book by-wanjala
 ‘The woman was bought the book by Wanjala.’
- b. sii-tabu sy-a-kul-il-w-a omu-xasi (?nee-wanjala)
 CL7-book CL7S-TENSE-buy-APPL-PASS-FV CL1-woman by-wanjala
 ‘The book was bought for the woman by Wanjala.’ Peterson (2007:8,(5))

These data indicate that although the benefactive applicative is symmetrical in Lubukusu with passivization and object incorporation, the beneficiary object must immediately follow the verb, as shown in (29).

- (29) wanjala a-a-kul-il-a sii-tabu omu-xasi.
 Wanjala CL1S-TENSE-buy-APPL-FV CL7-book C1-woman
 *‘Wanjala bought the book for the woman.’ Peterson (2007:8,(3))

Here, the only available interpretation is the one in which the woman was bought for the book, which is pragmatically odd. This suggests that whatever element occupies the slot immediately after the verb must be interpreted as the beneficiary. This is an instance of asymmetry, despite the benefactive applicative being symmetrical with respect to the other tests.

Marten et al. (2007) also discuss variability with respect to how languages pattern with objecthood tests, showing that ordering of objects does not pattern with other tests for object symmetry. Their paper compares the morphosyntactic properties of ten Bantu languages, and three of their parameters are based on the behavior of double-object constructions. Specifically, they look at whether either object can be adjacent to the verb, whether either object can be the subject of passivization, and whether either object can be expressed by an object marker. However, it is important to bear in mind that their study only investigates the behavior of objects in benefactive applicative constructions.

⁹ This is somewhat surprising, in that restrictions on object order are usually described as requiring the applied object to appear immediately after the verb. More work is needed to understand this restriction.

¹⁰ Peterson (2007) notes that for (28b), many speakers prefer an alternative construction.

Their findings for object symmetry are summarized in the table in (30), showing that the symmetry patterns are different between object order on the one hand and passivization and object marking on the other. Namely, all the languages except for Bemba, Chicheŵa, Swahili, and Tswana differ between word order and the other symmetry tests. This supports the present claim that word order is a separate parameter of variation across Bantu languages.

(30) Typology of Object Symmetry in Ten Bantu Languages (Marten et al., 2007)

	<i>Word Order</i>	<i>Passivization</i>	<i>Object Marking</i>
Symmetrical	Ha Tswana	Chaga Herero Lozi Siswati Tswana	Chaga Herero Lozi Siswati Tswana
Asymmetrical	Bemba Chaga Chichewa Herero Lozi Siswati Swahili	Bemba Chichewa Swahili	Bemba Chichewa Swahili

This study finds that objecthood diagnostics are not consistent within a single language, with word order patterning differently from passivization and object marking. For word order, they find that in Ha (Tanzania) and Tswana (Botswana) allow the objects to appear in either order.¹¹ As for the other languages in their sample—i.e. Bemba (Zambia), Chaga (Tanzania), Chicheŵa, Herero (Namibia), Lozi (Zambia), Siswati (Swaziland and South Africa), and Swahili (Tanzania and Kenya)—the two objects cannot be freely ordered after the verb.¹² For both passivization and object marking, the situation is different. In these domains, Chaga, Herero, Lozi, Siswati, and Tswana are symmetrical, while Bemba, Chichewa, and Swahili are asymmetrical.¹³

In short, dialect variation in Kinyarwanda, comparative data from Marten et al. (2007), and object ordering in Lubukusu indicate that languages are not necessarily homogeneous with respect to how they will pattern with different object symmetry tests. The clearest outlier is word order, which patterns differently from object symmetry tests in Kinyarwanda, Chaga, Herero, Lozi, Siswati, and Lubukusu.

4. An Alternative Account

In this section I propose a new approach to Bresnan and Moshi's analysis of Bantu applicatives using Lexical Mapping Theory (LMT). First, I outline the basic structure of LMT and summarize Bresnan and Moshi's approach. I then propose a revised version of their analysis, accounting for the empirical problems posed in the previous section.

4.1. Mapping Grammatical Functions in LMT

Various authors have used LFG's Lexical Mapping Theory (LMT) to model symmetry in Bantu languages. This provides mapping rules between thematic structure and grammatical function. Crucial to many of the analyses that implement an LMT type system is the use of a thematic hierarchy, like the one in (31).

- (31) $ag > ben > go/exp > ins > pt/th > loc$ Alsina and Mchombo (1993:24, (9))

¹¹ Note that Ha is part of the same dialect continuum as Kinyarwanda, so it is unsurprising that both Kinyarwanda and Ha permit free object ordering.

¹² Though they note that the ordering that is preferred differs between languages.

¹³ Marten et al. do not give the data for Ha passivization and object marking in double object constructions.

This hierarchy states that agents outrank beneficiaries, which outrank goals, and so forth. It is assumed in the theory that the logical subject of the sentence is the most prominent noun in the hierarchy.

A second aspect of the theory is the decomposition of grammatical functions based on two properties: whether or not the noun is semantically restricted, and whether or not a noun may appear as an object. This is encoded by two binary features, respectively: [+/-r] (restricted) and [+/-o] (objective). The combination of these four possible settings provides the following four categories:

- (32) a. [-r, -o] : SUBJ
 b. [-r, +o] : OBJ
 c. [+r, -o] : OBL_θ
 d. [+r, +o] : OBJ_θ

Alsina and Mchombo (1993:24, (10))

Subjects and objects are analyzed as [-r] in this theory since they need not have a specific semantic role (e.g. expletive subjects are generally understood to not have a semantic role). Obliques and thematic objects are both thematically restricted and differ only in whether they are an object or an oblique.¹⁴

Argument realization, then, is based on two types of classification of these features: *intrinsic classification* (IC), which are based on intrinsic properties of the thematic role, and *default classification* (DC), which is based on the argument's position relative to other roles. The combination of the features of intrinsic classification and the default classification provides the grammatical function of each noun in the sentence. The intrinsic classifications of internal arguments are given in (33).

- (33) Intrinsic Classifications for Internal Arguments:

- a. θ
 |
 [-r]
- b. $\theta < \text{go}$
 |
 [+o]

Alsina and Mchombo (1993:26, (12))

The first of these classifications states that all internal arguments may receive the IC [-r], which captures the generalization that all internal arguments can alternate between the unrestricted grammatical functions SUBJ and OBJ. The second of these states that a subset of internal arguments—i.e. those that are hierarchically lower than goals on the hierarchy given in (31)—can also take the the IC [+o]. This captures the fact that certain internal arguments are realized as the grammatical function OBJ_θ, i.e. that they are semantically restricted. Non-internal arguments (i.e. the subject) receive the IC [-o] because they are incapable of appearing as objects. Furthermore, two well-formedness conditions are essential to this system, cf. (Bresnan & Moshi, 1993):

1. Every verb must have a subject (Subject Condition)
2. Every lexical role is associated with a unique function, and vice versa (Function-Argument Biuniqueness)

The first of these well-formedness conditions requires that each verb has a subject, while the second requires that every role is mapped to a grammatical function, and that every grammatical function maps to a thematic role.

¹⁴ See Bresnan (2001) and Dalrymple (2001) for richer discussions on the decomposition of these grammatical functions in LFG.

4.2. *Bresnan and Moshi (1993)*

Bresnan and Moshi (1993) aim to capture the variation in object symmetry that is found among Bantu languages. As noted above, they are only comparing benefactive applicatives among languages; they are not accounting for the internal complexity of each language. This means that for them, a symmetrical or asymmetrical “language” is really just a language with a symmetrical or asymmetrical benefactive applicative. In terms of the system outlined just above, they propose that symmetry varies along a parameter that prevents asymmetrical object languages from having the [-r] IC on two separate objects. Symmetrical languages, like Kinyarwanda or Kichaga, allow multiple [-r] ICs. For example, for a language that has symmetrical objects, both may appear as the subject of the sentence when the agent is suppressed by a passive. Each of the derivations in (34) show one of the potential objects being promoted to subject.

(34) a. Symmetrical Applicative Construction, Option 1

	⟨ ag ben th ⟩	
IC	-o -r -r	
Passive	∅	
DC	-o +o	
	OBJ SUBJ	

b. Symmetrical Applicative Construction, Option 2

	⟨ ag ben th ⟩	
IC	-o -r -r	
Passive	∅	
DC	+o -o	
	SUBJ OBJ	

The tables in (34) show the intrinsic classifications (ICs) for the three thematic roles. [-o] is assigned to the agent, and the beneficiary (which is licensed by the applicative) and the theme are both assigned [-r]. At the next level, the agent is suppressed from being realized as the subject. Per the subject condition, one object must appear as the subject of the clause. Because both the beneficiary and theme have the [-r] IC, either can be paired with the [-o] DC, which means that argument will be realized as the subject. The argument that has not been promoted to subject will be assigned the [+o], meaning it will be realized as the object. Crucially, either the beneficiary or the theme can have the IC of [-r], and therefore, either can appear as subject. This captures object symmetry.

The alternative, however, is for languages that do not permit object symmetry, such as the Chicheŵa benefactive discussed above. For these types of languages, Bresnan and Moshi propose the Asymmetrical Object Constraint, which states that a language will not permit two [-r] features.

(35) *Asymmetrical Object Parameter*

*	<	θ	θ	>
		[-r]	[-r]	

For a language like Chicheŵa, then, the derivation proceeds as shown in (36). Only one [-r] feature can be assigned, and it is assigned to the beneficiary. The theme, then, can only take the [+o] feature. Passivization suppresses the agent, leaving the beneficiary as the only possible argument to be promoted to subject.¹⁵

¹⁵ This is because there is no DC feature that can be added to get the correct feature combination to have the theme realized as the subject.

(36) Asymmetrical Applicative Construction

	⟨ ag ben th ⟩
IC	-o -r +o
Passive	∅
DC	+o +r
	SUBJ OBJ _θ

The issue with this account is that it assumes all applicatives will behave the same in a single language—an assumption that is empirically false, as was discussed at length in Section 3. Comparable theories that attempt to capture the variation of applicative type within a single language rely on the hierarchy given in (31), deriving symmetry from the position of a role based on the hierarchy. For example, Alsina & Mchombo (1993) argue that any role that is higher than goal will be asymmetrical, predicting the Chicheŵa system, where beneficiaries are asymmetrical and instrumentals are symmetrical. However, recall from Section 3.1 that Lubukusu has the exact opposite system of symmetry. This calls into question tying object symmetry to a universal thematic role hierarchy, since languages differ in which thematic roles are symmetrical or asymmetrical.¹⁶

4.3. An Alternative LMT Analysis

There are two empirical generalizations that previous approaches are unable to capture simultaneously: (1) the symmetry facts of a single applicative type vary among languages (i.e. a construction that is symmetrical in one language is asymmetrical in another), and (2) constructions within a single language are not always consistent across different applicatives. I propose that the symmetry of certain constructions is encoded in the argument structure for each applicative type in each language; there is no inherent link between the thematic type of applicative and that applicative's symmetry facts. In short, each applicative in a given language is arbitrarily encoded for its own symmetry properties.

On this analysis, different thematic applicatives in a language may differ structurally despite phonological homophony. For example, in Chicheŵa, both the benefactive and instrumental applicatives are licensed by the morpheme *-ir*, but they differ structurally in having different symmetry properties. This structural distinction is matched phonologically in Kinyarwanda, where the benefactive, instrumental, and locative applicatives are phonologically distinct (*-ir*, *-ish*, and *-ho*, respectively).¹⁷

Following the LMT approach to applicatives, I model applicatives as a lexical rule that adds a new argument to the argument structure, much in the way of Bresnan & Moshi (1993).

(37) Applicative Rule

$$\begin{array}{c} \emptyset \\ \Downarrow \\ \langle \dots \theta_{(\alpha)} \dots \rangle \end{array}$$

This lexical rule takes a basic argument structure and adds a new thematic role (the ellipses indicating other possible roles to the right and/or left). To annotate the morpheme-specific distinction of symmetry in the a-structure, I use the privative (i.e. present or not) feature α . When α is present, the introduced applied argument is not symmetrical. When this feature is absent, the two object arguments are treated symmetrically.

For a symmetrical benefactive, such as in Kichaga and Kinyarwanda, the argument structure would be coded as shown in (38).

(38) 'eat-for' (Lubukusu)

$$\langle ag \ ben \ th \rangle$$

¹⁶ Levin & Rappaport Hovav (2005) question the use of thematic hierarchies in linguistic theory more generally, noting two issues. First, there is considerable debate in the literature regarding which roles should be included and in what order they should appear in the ranking. Second, thematic hierarchies are not externally derivable, and they are, at best, descriptive generalizations.

¹⁷ Recall that *-ho* behaves as a true applicative in the dialect of Kimenyi (1980) and as an emphatic marker in the dialects described by the author.

For an asymmetrical applicative, such as the Chicheŵa benefactive, the argument structure is as follows:

- (39) ‘eat-for’ (Chicheŵa)
 < ag ben_α th >

The privative feature α encodes whether each applicative in a language will be symmetrical. This captures the variation between and within languages; languages are free to vary with respect to which of their applicatives are symmetrical or symmetrical.¹⁸ I propose a constraint that states that only one theta role can be [-r] when there is a theta role with the α indexing. I call this the Morpholexical Asymmetry Constraint (MAC), formalized in (40):

- (40) *Morpholexical Asymmetry Constraint*
 * < θ_α , θ >
 | |
 [-r] [-r]

What this notation says is that it is not possible to have two [-r] features in the argument structure in which the privative feature α appears.¹⁹ This system works nearly identically to that of Bresnan and Moshi (1993), but it constrains the symmetry of a construction at the level of the applicative morpheme itself, and, crucially, not across the language. A sample derivation for the Kichaga (symmetrical) type of benefactive is given in (41), where both the beneficiary and the theme can appear as the subject of a passive²⁰

- (41) Kichaga Benefactive (Symmetrical)

	< ag	ben	th >
IC	-o	-r	-r
Passive	\emptyset		
DC		+o/-o	-o/+o
		O	S
		S	O

In this structure, there is no violation of the MAC; the benefactive in Kichaga is not marked with α , and this permits that the beneficiary and the theme may both be assigned the IC [-r]. As seen above with Bresnan and Moshi’s analysis, either can then have the DC [-o] which maps it to subject.

For the benefactive in Chicheŵa, on the other hand, the MAC will not permit two [-r] ICs due to the presence of the α feature on the benefactive. The derivation will not be able to proceed.

- (42) Chicheŵa Benefactive (Asymmetrical)

	< ag	ben- α	th >
IC	[-o]	*[-r]	[-r]

The only available analysis is one in which the beneficiary is assigned the IC [-r] and the theme is assigned [+o]. This results in the beneficiary being the only element that can be promoted to subject as a passive.

¹⁸ Crucially, a specific applicative will always be consistent within a language. For example, benefactive applicatives in Kinyarwanda are always symmetrical, but there is no requirement for the patterning of benefactives in other Bantu languages.

¹⁹ An anonymous reviewer questions the external motivation for the MAC, a point that can only be left for future research. It should be pointed out, however, that this is a problem that is also present for Bresnan and Moshi’s Asymmetrical Object Parameter. The difference is that the MAC makes the important prediction that different applicative types in a single language may differ in their symmetry properties.

²⁰ For reasons of space, I will only give a detailed account of passivization, though I assume that the same parameter of variation accounts for object incorporation, but crucially not word order, as I discuss below.

(43) Chicheŵa Benefactive (Asymmetrical)

	< ag	ben- α	th >
IC	-o	-r	+o
Passive	\emptyset		
DC		-o	+r
		S	O_{θ}

Crucially, the Chicheŵa instrumental applicative, which is symmetrical, will be the same as the benefactive applicative in Kichage (i.e. it will not be marked with α). The MAC captures the empirical facts across languages; each construction selects for the symmetry facts of its objects, which is annotated in the argument structure. This can capture the cross-linguistic diversity of the symmetry of these constructions.

In Section 3.2, data was presented that show that not all languages (or all dialects of the same language—cf. Kinyarwanda) permit that locative morphology is used as an applicative. For those languages or dialects that do not permit locative morphology to be treated as an applicative, the object-adding function in (37) is simply absent, and since there is no element being added to the argument structure, there is no α feature to be encoded. In other words, languages and dialects that do not use the locative as an applicative seem to have reanalyzed the morpheme to serve some other function in the language and no longer use it to introduce objects to the clause.

Finally, word order was shown to diverge from other objecthood diagnostics in Section 3.3. Unlike Bresnan and Moshi’s approach (and most other syntactic approaches to symmetry), I do not assume that word order will derive from the syntactic structures that derive object symmetry with passives, object incorporation, etc. I argue that word order in some languages is determined by the animacy of the two objects (Morolong & Hyman, 1972; Hyman & Duranti, 1982; Aranovich, 2009). Specifically, I argue that in languages that attune to the animacy of object, animate objects will precede inanimate elements. This captures the Lubukusu data in (44), repeated from (26), where the animate *omuxasi* ‘woman’ must precede the inanimate *siitabu* ‘book.’

- (44) wanjala a-a-kul-il-a omu-xasi sii-tabu
 wanjala 3SS-T-buy-APPL-ASP CL1-woman CL7-book
 ‘Wanjala bought the book for the woman.’ Peterson (2007:7,(2))

The animate object must precede the inanimate object despite both being symmetrical with respect to passivization and object incorporation, as shown in (26)–(29). It has been assumed in the literature that the asymmetry for all objecthood diagnostics follows from the same parameter of variation, but approaches that mix word order with other tests will fail to capture the Lubukusu data.

The overall system I propose, then, is as follows. Applicatives are independently marked for the symmetry properties, encoded in this paper as a privative feature encoded by the applicative morpheme. This predicts that syntactic facts (like passivization and object incorporation) will cluster together. Animacy varies along a separate parameter, with some languages requiring that animate elements precede inanimate elements.

5. Conclusion

In this paper, I have brought to light various issues in work on object symmetry with applicative morphology in Bantu. The first is that symmetry is not consistent by applicative type, between languages or in a single language. The second issue is that locative morphology is often not truly an applicative in various languages. Finally, object symmetry does not always pattern with other tests for object symmetry. I then provided an analysis using Lexical Mapping Theory, in which I argued that each applicative in a language is individually coded for symmetry or asymmetry.

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