

Object Asymmetries in Comparative Bantu Syntax

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Object Asymmetries in Comparative Bantu Syntax

A classic problem in comparative syntax has been to explain the occurrence of object symmetries and asymmetries in Bantu. Though Bantu languages quite generally allow more than one postverbal NP object, they split into two broad types according to the syntactic behavior of the objects. In what we will call the *asymmetrical object type* language only one of the postverbal NPs exhibits “primary object” syntactic properties of passivizability, object agreement, adjacency to the verb, and the like. Examples of this type include Kiswahili (Loogman (1965, 329–331), Bokamba (1981, 152–156)), Chimwi:ni (Kisseberth and Abasheikh (1977)), Hibena (Hodges and Stucky (1979)), and Chicheŵa (Baker (1988a,b), Alsina and Mchombo (1988; 1989)).¹ In the *symmetrical object type* language more than one NP can display “primary object” syntactic properties. Examples of this type include Kinyarwanda (Kimenyi (1976; 1980), Gary and Keenan (1977)), Kihaya (Duranti and Byarushengo (1977)), Kimeru (Hodges (1977)), and Mashi and Luyia (Gary (1977)). There are also symmetrical object languages in which asymmetries occur with subclasses of objects characterized by factors of person or animacy. Examples include Chishona (Hawkinson and Hyman (1974)) and Sesotho (Morolong and Hyman (1977)).

The symmetrical and asymmetrical object types have multiple syntactic differences that appear to covary systematically. The fundamental problem—first posed by Gary and Keenan (1977)—is to explain this covariation by reducing it, if possible, to a single parameter of variation, instead of postulating multiple unrelated differences in the grammars of the two types of languages.

In the following sections we first characterize the typology of object symmetries and asymmetries, comparing the results of our primary empirical research on Kichaga (a symmetrical object language) with recent work on Chicheŵa (an asymmetrical object

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¹ The Chicheŵa described by Trithart (1976) differs in some respects.

The new, or ‘‘applied,’’ object may have the thematic roles of beneficiary, maleficiary, goal (recipient), instrument, location, or motive (reason or purpose), depending on the semantics of the base verb. Example (2) illustrates the beneficiary and maleficiary roles. The same verb also allows instrument, location, and motive roles, illustrated in (3a–c):

- (3) a. N-ǎ-í-lyì-í-à mà-wòkó k-élyá. V_{ap} NP_{ins} NP_{pt}
 FOC-1 S-PR-eat-AP-FV 6-hand 7-food
 ‘He/She is eating food with his/her hands.’
- b. N-ǎ-í-lyì-í-à m-ṛì-nyì k-élyá. V_{ap} NP_{loc} NP_{pt}
 FOC-1 S-PR-eat-AP-FV 3-homestead-LOC 7-food
 ‘He/She is eating food at the homestead.’
- c. N-ǎ-í-lyì-í-á njáá k-élyá. V_{ap} NP_{mot} NP_{pt}
 FOC-1 S-PR-eat-AP-FV 9 hunger 7-food
 ‘He/She is eating the food because of hunger.’

Intransitive verbs have applied forms as well:

- (4) a. N-ǎ-í-zrìc-í-à mbùyà. V_{ap} NP_{ben}
 FOC-1 S-PR-run-AP-FV 9 friend
 ‘He/She is running for a friend.’
- b. N-ǎ-í-pfì-í-à mbùyà. V_{ap} NP_{ben}
 FOC-1 S-PR-die-AP-FV 9 friend
 ‘He/She is dying for a friend.’
- c. N-ǎ-í-òròk-ì-à m-àná. V_{ap} NP_{ben}
 FOC-1 S-PR-stand-AP-FV 1-child
 ‘He/She is standing for a child.’
- d. N-ǎ-í-zrìc-í-à sh-àzrù. V_{ap} NP_{ins}
 FOC-1 S-PR-run-AP-FV 8-shoe
 ‘He/She is running with shoes.’

The applied verb form is the only grammatical means for introducing these semantic arguments of the verb. In Kichaga there are no prepositions or case markers available to mark any of these arguments.⁵ Unlike Kichaga, Chicheŵa has a preposition for instruments and (arguably) another for recipients, but it lacks prepositions for oblique beneficiaries and locatives (Bresnan and Kanerva (1989), Bresnan and Mchombo (1989)).

1. Typological Differences

We have identified five covarying differences between Kichaga and Chicheŵa, which we take to be representative of the typological split between symmetrical and asym-

⁵ Kichaga has lost productive use of the proto-Bantu locative noun class prefixes and employs the locative suffix *-nyi* instead, as in (3b). However, two of the locative verb prefixes for subject and object marking have been retained: class 16 *ha-* for specific location and class 17 *ku-* for general location. Locative nouns suffixed by *-nyi* can induce either class 16 or 17 subject agreement with the verb, depending on specificity; and they can also be represented by object markers on the verb. Thus, *-nyi* should be analyzed as a locative noun class marker rather than as an oblique case marker.

- c. N-ǎ-í-kì-m-lyì-í-à. OM_{pt}-OM_{ben}-V_{stem}
 FOC-1 S-PR-7 O-1 O-eat-AP-FV
 ‘He/She is eating it for/on him/her.’

In Chicheŵa this is not the case. Chicheŵa examples corresponding to (7b,c) are ungrammatical (Baker (1988a, 266–267; 1988b, 370–371), Alsina and Mchombo (1989, ex. 5)).⁷ This contrast is schematized in the following table:

(8)	OM _{ben} -V _{stem}	NP _{pt}	OM _{pt} -V _{stem}	NP _{ben}	OM _{pt} -OM _{ben} -V _{stem}
Kichaga	✓		✓		✓
Chicheŵa	✓		*		*

Note that the critical difference between the two language types is *not* in the number of object markers, but in the restrictions on object marking. It happens that Chicheŵa has a single object marker (Bresnan and Mchombo (1987)), whereas Kichaga permits up to three:

- (9) N-ǎ-l'é-kú-shí-kí-kór-í-à. OM_{loc}-OM_{ins}-OM_{pt}-V_{stem}
 FOC-1 S-PS-17 O-8 O-7 O-cook-AP-FV
 ‘She/He cooked it with them there.’

Other symmetrical object languages, such as Kinyarwanda and Kihaya, also permit multiple object markers. Nevertheless, there are languages of the symmetrical object type that have only a single object marker. An example is Siswati (De Guzman (1987)), which resembles Kichaga in the syntax of its objects but has one object marker.⁸

We note in passing that all object markers in Kichaga, unlike Chicheŵa, have the obligatory pronoun-doubling property: when the NP object is an independent pronoun, the object marker obligatorily cooccurs with it.

- (10) a. N-ǎ-í-m-lyì-í-à k-èlyá ò. OM^j . . . NP_{pro}^j
 FOC-1 S-PR-1 O-eat-AP-FV 7-food 1 PRO
 ‘He/She is eating food for/on him/her.’
- b. N-ǎ-í-kì-lyì-í-à m-kà kyò. OMⁱ . . . NP_{pro}ⁱ
 FOC-1 S-PR-7 O-eat-AP-FV 1-wife 7 PRO
 ‘He/She is eating it for/on the wife.’
- c. N-ǎ-í-kì-m-lyì-í-à òó kyò. OMⁱ OM^j . . . NP_{pro}^j NP_{pro}ⁱ
 FOC-1 S-PR-7 O-1 O-eat-AP-FV 1 PRO 7 PRO
 ‘He/She is eating it for/on him/her.’

⁷ This restriction holds with applied beneficiary objects. When the applied object is an instrument or locative, however, either it or the patient can be expressed by the object marker, but not both together (Baker (1988a, 301), Alsina and Mchombo (1989, exs. 8, 46)).

⁸ Likewise, the number of postverbal object NPs is independent of the typological division. Asymmetrical object languages may have three such NPs, like Chimwi:ni (Kisseberth and Abasheikh (1977)) and Kiswahili (Riddle (1975)), or no more than two, like Chicheŵa (Alsina and Mchombo (1989)). Symmetrical object languages may have three postverbal objects, like Kinyarwanda (Kimenyi (1976; 1980)), Kihaya (Duranti and Byarushengo (1977)), and Kichaga, or no more than two, like Kimeru (Hodges (1977)).

Following Bresnan and Mchombo (1987), we take the doubling object marker to be a marker of grammatical agreement, and the nondoubling object marker to be an incorporated pronoun showing anaphoric agreement with a topic.

1.3. Unspecified Object Deletion

Unspecified object deletion is the source of a third covarying difference between symmetrical and asymmetrical object languages. An example with a simple transitive verb in Kichaga is given in (11) (compare example (1)):

- | | |
|--|---------------------------------|
| (11) N-ǎ-ĩ-lỳ-à.
FOC-I S-PR-eat-FV
'He/She is eating.' | V (NP _{pt})
↓
∅ |
|--|---------------------------------|

Kichaga also allows unspecified object deletion of the patient in the presence of another object, such as a beneficiary:

- | | |
|---|---|
| (12) N-ǎ-ĩ-lyí-í-à m-kà.
FOC-I S-PR-eat-AP-FV 1-wife
'He/She is eating for/on the wife.' | V NP _{ben} (NP _{pt})
↓
∅ |
|---|---|

Chicheŵa does not (Alsina and Mchombo (1989, ex. 34)). Chicheŵa verbs that allow unspecified object deletion, as in (11), prohibit it when they take a beneficiary object, as in (12).⁹ (An analogous restriction appears in English, where the transitive verb *cook* allows unspecified object deletion (*John cooked (food) for the children*), but the ditransitive *cook* does not (*John cooked the children *(food)*.) The contrast is summarized schematically in the following table:

(13)	$V \ NP_{ben} \ (NP_{pt})$ ↓ ∅	Kichaga	Chicheŵa
		✓	*

1.4. Reciprocalization

A fourth difference between the two language types occurs in reciprocal verb constructions. The reciprocal suffix of the verb reduces the syntactic objects of the base verb by one (Baker (1988b), Mchombo (1989), Alsina (1989)). Reciprocalization in Chicheŵa is illustrated by (14),¹⁰ in Kichaga by (15):

- (14) a. A-lenje a-na-mény-ér-a a-sodzi mi-kôndo.
 2-hunter 2 SB-REC PST-hit-APPL-IND 2-fisher 4-spear
 'The hunters hit the fishers with spears.'

⁹ This restriction holds with beneficiary applied objects. With instrumental and locative applied NPs in Chicheŵa, unspecified object deletion is still possible (Alsina and Mchombo (1989, exs. 35, 50)).

¹⁰ Our examples (14a,b) are based on Alsina (1988).

- b. A-lenje a-na-mény-ér-an-a mi-kôndo.
2-hunter 2 SB-REC PST-hit-APPL-RECIP-IND 4-spear
'The hunters hit each other with spears.'
- (15) a. Wà-chàkà wá-í-kòṛ-í-à w-àńá shí-m'îi.
2-Chaga 2 S-PR-burn-AP-FV 2-child 8-firebrand
'The Chagas are burning the children with firebrands.'
- b. Wà-chàkà wá-í-kòṛ-í-àn-à shí-mîi.
2-Chaga 2 S-PR-burn-AP-RCP-FV 8-firebrand
'The Chagas are burning each other with firebrands.'

Symmetrical and asymmetrical object languages differ in which objects they allow to be eliminated by reciprocalization. In Kichaga the patient can be reciprocalized in the presence of any applied object, including a beneficiary:

- (16) Wà-chàkà wá-í-w'ágh-ì-àn-à mǎngì. NP_{ag} V_{rcp} NP_{ben}
2-Chaga 2 S-PR-kill-AP-RCP-FV 1 chief
'The Chagas are killing each other for the chief.'

In Chicheŵa this is not possible (Baker (1988b, 386)).¹¹ The contrast, in essence, is given in table (17):

(17)		NP _{ag}	V _{rcp}	NP _{pt}	NP _{ag}	V _{rcp}	NP _{ben}
	Kichaga		✓			✓	
	Chicheŵa		✓			*	

1.5. Interactions of Object Properties

The fifth difference between the symmetrical and asymmetrical object types is fundamental. As we have noted in passing, under certain conditions the asymmetrical object type *does* allow different NPs to have object properties. This is true, for example, of the Chicheŵa applied locative: either it or the patient can be passivized, object marked, or (subject to pragmatic plausibility) reciprocalized. But what is critical in the asymmetrical object type is that only one argument at a time can have these object properties (Zaenen (1984), Alsina and Mchombo (1989)). For example, if one argument is passivized, the other cannot be object marked or reciprocalized. In a true symmetrical object language, in contrast, different arguments can *simultaneously* have primary object properties.

1.5.1. Cooccurrence of Passives with Object Markers. Kichaga allows object markers to cooccur with passives:

- (18) a. M-kà n-á-í-kì-lyí-í-ò. OM_{pt}-V_{pas}
1-wife FOC-1 S-PR-7 O-eat-AP-PAS
'The wife is being benefitted/adversely affected
by someone's eating it.'

¹¹ Again the restriction holds for beneficiaries. Chicheŵa does allow reciprocalization of the patient in the presence of instrumental and locative applied objects (Baker (1988b, 387), Alsina (1989)), as (14b) illustrates.

- b. K-í-ń-lyì-í-ò. OM_{ben}-V_{pas}
 7 S-PR-I O-eat-AP-PAS
 ‘It (i.e., the food) is being eaten for/on him/her.’

There is a wrinkle in the data. Like some other Bantu languages, Kichaga shows an animacy restriction on the appearance of an object marker with the passive. In Kichaga an animate object marker that is pronominal (that is, nondoubling) cannot appear with a passivized inanimate subject (unless the subject is contrastively focused or pronominal). Thus, example (18b) becomes ungrammatical if the inanimate subject *kèlyá* ‘food’ appears in subject position as in (19a), though not if it is contrastively focused (19b) or pronominal (19c). (Note that the contrastively focused subject in (19b) differs from that in (19a) tonally.)

- (19) a. *K-èlyá k-í-ń-lyì-í-ò.
 7-food 7 S-PR-I O-eat-AP-PAS
 ‘The food is being eaten for/on him/her.’
 b. K-élyá, k-í-ń-lyì-í-ò.
 7-food 7 S-PR-I O-eat-AP-PAS
 ‘The food is being eaten for/on him/her.’
 c. Kyò k-í-ń-lyì-í-ò.
 7-it 7 S-PR-I O-eat-AP-PAS
 ‘It (i.e., food) is being eaten for/on him/her.’

The restriction shown in (19a) disappears when the passivized subject is animate:

- (20) M-àná n-á-í-m-lyì-í-ò.
 1-child FOC-I S-PR-I O-eat-AP-PAS
 ‘The child is being eaten for him/her.’

—or when the object marker is inanimate:

- (21) Kù-zrèndé kú-l'è-kí-réng-í-ò.
 15-leg 15 S-PS-7 O-carve-AP-PAS
 ‘The leg is being carved for it (i.e., the chair).’

—or when the object marker doubles a pronoun object:

- (22) K-èlyá k-í-m-lyì-í-ò òò.
 7-food 7 S-PR-I O-eat-AP-PAS I PRO
 ‘The food is being eaten for/on him/her.’

The same generalization appears with patient object markers as with beneficiaries: *Mà-wòkò* *γá-í-kì-lyì-í-ò* ‘Hands are being used to eat it’ becomes ungrammatical if an animate object marker *m-* ‘him/her’ is substituted for the inanimate patient object marker *kì-* ‘it’, changing the meaning to ‘Hands are being used to eat him/her’.¹²

¹² We are grateful to Mark Baker (personal communication) for suggesting that we look for an animacy factor behind the ungrammaticality of (19a). Baker reminded us of a similar instance reported in Kihaya by Duranti and Byarushengo (1977, 66–69). They show that whenever a nonhuman NP becomes the subject of a passivized applicative verb, the animate NP cannot be pronominal.

Abstracting away from the effects of the relative animacy of passivized subject and object markers, we see that object markers can generally cooccur with passives. This is not true in Chicheŵa: the object marker never appears on a passive verb (Sam Mchombo (personal communication)). Therefore, we summarize the essential typological difference between Kichaga and Chicheŵa as in table (23):

(23)		Kichaga	Chicheŵa
	OM-V _{pas}	√	*

1.5.2. *Unspecified Object Deletion with Passives.* In Kichaga, unspecified object deletion of one object can cooccur with passivization of another object:

- | | | |
|---------|-----------------------------------|--|
| (24) a. | M-kà n-ǎ-í-lyì-í-ò. | NP _{ben} V _{pas} (NP _{pt}) |
| | 1-wife FOC-1 S-PR-eat-AP-PAS | ↓ |
| | ‘The wife is being eaten for/on.’ | ∅ |
| b. | Mà-wòkǒ ǎ-í-lyì-í-ò. | NP _{ins} V _{pas} (NP _{pt}) |
| | 6-hand 6 S-PR-eat-AP-PAS | ↓ |
| | ‘Hands are being eaten with.’ | ∅ |

In contrast, in Chicheŵa, passivization of one object makes unspecified object deletion of another object impossible, even though it is possible with the active form of the verb (Alsina and Mchombo (1989, ex. 40b)). The contrast is schematized in table (25):

(25)		Kichaga	Chicheŵa
	NP V _{pas} (NP _{pt})	√	*
	↓		
	∅		

1.5.3. *Unspecified Object Deletion with Object Markers.* In Kichaga unspecified object deletion of one argument can cooccur with object marking of another:

- | | | |
|---------|------------------------------------|--|
| (26) a. | N-ǎ-í-m-lyì-í-à. | OM _{ben} -V _{stem} (NP _{pt}) |
| | FOC-1 S-PR-1 O-eat-AP-FV | ↓ |
| | ‘He/She is eating for/on him/her.’ | ∅ |
| b. | N-ǎ-í-ǎ-lyì-í-à. | OM _{ins} -V _{stem} (NP _{pt}) |
| | FOC-1 S-PR-6 O-eat-AP-FV | ↓ |
| | ‘He/She is eating with them.’ | ∅ |

In Chicheŵa, in contrast, it cannot. A verb that otherwise allows unspecified object deletion disallows it when another argument is object-marked (Alsina and Mchombo (1989, ex. 40a)). Table (27) schematizes this contrast:

(27)		Kichaga	Chicheŵa
	OM-V _{stem} (NP _{pt})	√	*
	↓		
	∅		

1.5.4. *Cooccurrence of Reciprocals with Passives.* Reciprocal verbs can be passivized in Kichaga:

- (28) Shí-mǐí sh-í-kòr-í-àn-ò (nà) wà-chàkà. $V_{rcp-pas}$
 8-firebrand 8 S-PR-burn-AP-RCP-PAS (by) 2-Chaga
 'Firebrands are being used by the Chagas to burn each other.'

This is impossible in Chicheŵa:¹³

- (29) *Mi-kôndo i-na-mény-ér-an-ídw-á ndí á-lenje. $*V_{rcp-pas}$
 4-spears 4 SB-REC PST-hit-APPL-RECIP-PASS-IND by 2-hunter
 'Spears were used by the hunters to hit each other.'

- | | | |
|---------------|---------|----------|
| | Kichaga | Chicheŵa |
| $V_{rcp-pas}$ | √ | * |

1.5.5. *Cooccurrence of Reciprocals with Object Markers.* In Kichaga reciprocalization and object marking of two different arguments of the same verb are possible (compare (15b)):

- (31) Wà-chàkà wǎ-í-shì-kòr-í-àn-à. $OM-V_{rcp}$
 2-Chaga 2 S-PR-8 O-burn-AP-RCP-FV
 'The Chagas are burning each other with them (i.e., firebrands).'

In Chicheŵa, in contrast, an object cannot be eliminated by reciprocalization in the presence of an object marker (Sam Mchombo (personal communication); compare (14b)):

- (32) *A-lenje a-na-í-mény-er-ǎn-a. $*OM-V_{rcp}$
 2-hunter 2 SB-REC PST-4 OB-hit-APPL-RECIP-IND
 'The hunters hit each other with them (i.e., spears).'

- | | | |
|--------------|---------|----------|
| | Kichaga | Chicheŵa |
| $OM-V_{rcp}$ | √ | * |

1.5.6. *Cooccurrence of Reciprocals with Unspecified Object Deletion.* Finally, in Kichaga unspecified object deletion can cooccur with a reciprocal verb:

- (34) W-àná wǎ-í-kòr-í-àn-à. $NP V_{rcp} (NP_{pt})$
 2-child 2 S-PR-COOK-AP-RCP-FV
 'The children are cooking for each other.'
 \downarrow
 \emptyset

In Chicheŵa it cannot (Sam Mchombo (personal communication)):

- (35) *ǎna a-ku-phík-ír-an-a. $*NP V_{rcp} (NP_{pt})$
 2-child 2 S-PRES-COOK-APPL-RECIP-IND
 'The children are cooking for each other.'
 \downarrow
 \emptyset

¹³ Our Chicheŵa example (29) is based on Alsina (1988).

(36)

	Kichaga	Chicheŵa
NP V _{rcp} (NP _{pt})	√	*
↓ ∅		

We have just examined all six pairwise combinations of object marking, passive, reciprocalization, and unspecified object deletion in Kichaga and Chicheŵa. In every case Kichaga allows the combination and Chicheŵa prohibits it. This evidence indicates that the covariation of object properties in symmetrical and asymmetrical Bantu languages is pervasive and systematic.

2. Previous Theories

The problem of explaining the variation between symmetrical and asymmetrical object properties has been tackled repeatedly by different theorists over the past twelve years. However, no proposed solution has yet succeeded: the proposals that do succeed in reducing the differences between the symmetrical and asymmetrical object types to a single parameter of variation and thus explaining why they should covary have been shown to have descriptive inadequacies, whereas the proposals that solve the descriptive problems postulate multiple independent differences in the grammars of the two types of languages, thus failing to explain the covariation. We support this claim with a review of five different approaches to the problem.

2.1. Gary and Keenan (1977)

In their classic study of Kinyarwanda, Gary and Keenan (1977) propose a solution to this problem of object variation, based on the idea that the universal relational hierarchy—*Subject* > *Object* > *Indirect Object* > *Oblique* > . . .—is collapsed in some languages by omitting a separate category of Indirect Object and allowing multiple instances of Object. Given universal syntactic properties of Object, this proposal successfully explains the covariation of differences we have seen between Kichaga and Chicheŵa. However, Perlmutter and Postal (1983), Dryer (1983), and De Guzman (1987) have all pointed out problems with this proposal, the most telling being that even in symmetrical object languages some syntactic processes distinguish objects from indirect objects. We can see this in Kichaga and Chicheŵa as well.

First, the basic word order constraint on transitive sentences in Chicheŵa is that the object is adjacent to the verb (Bresnan and Mchombo (1987), Bresnan and Kanerva (1989)). Since Chicheŵa is a head-initial language, the object then immediately follows the verb in the verb phrase. However, the word order constraints appear more complicated in ditransitive applicative constructions: the applied NP must be adjacent to the verb if it is a beneficiary or recipient, but the patient NP may be adjacent to the verb if the applied NP has any of the other thematic roles (Baker (1988b, 370), Alsina and Mchombo (1989, exs. 3, 4, 44)). In Gary and Keenan's (1977) terms, the indirect object,

if there is one, is adjacent to the verb; otherwise, the object is adjacent to the verb. Such a distinction between direct and indirect object should disappear in a symmetrical object language like Kichaga, if Gary and Keenan's proposal is correct, but in fact Kichaga shows the same word order generalization as Chicheŵa. The patient can be adjacent to the verb if the applied argument has any thematic role other than the "indirect object" roles of beneficiary (maleficiary) or recipient (compare (2), (3)):

- (37) a. *N-a-i-lyi-i-a k-elya m-ka. *V NP_{pt} NP_{ben}
 FOC-I S-PR-eat-AP-FV 7-food 1-wife
 'He is eating food for/on his wife.'
- b. N-ǎ-ĩ-lyì-í-à k-èlyá má-w'òkò. V NP_{pt} NP_{ins}
 FOC-I S-PR-eat-AP-FV 7-food 6-hand
 'He/She is eating food with his/her hands.'
- c. N-ǎ-ĩ-lyì-í-à k-èlyá m-rì-nyì. V NP_{pt} NP_{loc}
 FOC-I S-PR-eat-AP-FV 7-food 3-homestead-LOC
 'He/She is eating food at the homestead.'
- d. N-ǎ-ĩ-lyì-í-à k-élyá njàà. V NP_{pt} NP_{mot}
 FOC-I S-PR-eat-AP-FV 7-food 9hunger
 'He/She is eating the food because of hunger.'

Animacy is not significant in determining these word order patterns, although it is important in other Bantu languages, such as Sesotho (Morolong and Hyman (1977), Hyman and Duranti (1982), Machobane (1987)) and elsewhere in Kichaga as we have shown above. For example, the Kichaga sentence *Mśàwí nǎ-í-lyì-í-à m̀kà mǎnà* 'The witch is eating the child for the woman' requires the beneficiary to be adjacent to the verb; reversing the order of 'woman' and 'child' simply changes the interpretation so that the child becomes the beneficiary of the witch's eating the woman. Similarly, in *N-ǎ-l'è-réng-ì-à k̀i-timá k̀u-zrèndè* 'She/He carved a leg for the chair', the inanimate beneficiary 'chair' must be adjacent to the verb; again reversing the order of postverbal objects simply changes the interpretation to 'She/He carved a chair for the leg'.¹⁴ Word order patterns with applied instrumentals, locatives, and motives remain unchanged when the patient is animate: reversing the order of the animate patient NP and the applied NP is both grammatical and meaning-preserving.

A second piece of evidence that indirect objects must be distinguished from objects in symmetrical object languages comes from extractions. In Chicheŵa there is a restriction against long-distance extractions of beneficiary and recipient objects, which does not apply to other objects, such as patients or applied instrumentals and locatives (Baker (1988a, 289–302; 1988b, 355–356, 374–376), Alsina and Mchombo (1989, exs. 23, 24, 49)). In other words, there is a constraint against long-distance extraction of indirect objects. Once again, such a distinction between direct and indirect objects should disappear in Kichaga, if these grammatical relations are collapsed; yet Kichaga has exactly

¹⁴ We are grateful to Carolyn Harford for suggesting this crucial point.

the same restriction:

- (38) a. *M-ka a-i-lyi-i-a k-elya nyi-ichu.
 1-wife 1 SREL-PR-eat-AP-FV 7-food COP-1 this
 'The wife for whom he is eating the food is this one.'
- b. K-èlyá á-í-lyì-í-à m-kà kí-pùsù.
 7-food 1 SREL-PR-eat-AP-FV 1-wife 7-rotten
 'The food which he is eating for the wife is rotten.'
- c. Kì-shù á-í-rèng-í-à kì-timá kí-òhì.
 7-knife 1 SREL-PR-carve-AP-FV 7-chair 7-sharp
 'The knife with which he is carving the chair is sharp.'
- d. M-rì-nyì á-í-lyì-í-à k-èlyá ch'í kó-kyè p̄dò.
 3-homestead-LOC 1 SREL-PR-eat-AP-FV 7-food NEG FOC 17-his NEG
 'The homestead at which he is eating the food is not his.'

In sum, Gary and Keenan's (1977) proposal is attractive for its simplicity in explaining object symmetries, but it fails to account for the asymmetries between direct and indirect objects that exist even in symmetrical object languages. The fact that the same asymmetries appear in both Kichaga and Chicheŵa suggests that a deeper generalization is being missed.

2.2. *Perlmutter and Postal (1983)*

A different solution to the problem is proposed by Perlmutter and Postal (1983) within the framework of Relational Grammar (RG). Their proposal allows the properties attributed to Object and Indirect Object to vary across languages. Thus, object marking and passivizability apply to objects (2's) in asymmetrical object languages but to both direct and indirect objects (2's and 3's) in symmetrical object languages. To account for the full range of differences we have exposed in Kichaga and Chicheŵa, their account would have to add that unspecified object deletion and reciprocalization likewise apply to 2's in Chicheŵa and to both 2's and 3's in Kichaga. Unfortunately, this approach does not capture the relationships between these various object properties: it must be specified rule by rule whether 2's or both 2's and 3's are referenced. This raises the question of why all these rules covary in the two language types.

In addition to the parameter(s) of variation just enumerated, this approach postulates several others as well. In an asymmetrical object language like Chicheŵa, a beneficiary or recipient (3) is advanced to 2, causing the initial 2 to become a *chômeur* and lose its object properties. But in a symmetrical object language like Kichaga, the advancement of 3 to 2 must be prevented, because final 2's and 3's are still distinguished by processes such as word order and extraction. Further, the advancement of other (non-3) arguments to 2 must not result in demotion of the initial 2, because both 2 and 3 retain object properties. Hence, a new demotion rule of $2 \rightarrow 3$ is postulated for symmetrical object languages, but not for asymmetrical object languages.

In sum, Perlmutter and Postal's (1983) solution allows for greater descriptive ac-

curacy in characterizing the two language types, but it postulates multiple independent differences in the grammars of the two types, leaving much of the covariation unexplained.

2.3. *Marantz (1984)*

Like Gary and Keenan (1977), Marantz (1984) assumes that languages may vary in the number of direct objects they have. Thus, verbs in symmetrical object languages differ from those in asymmetrical object languages in carrying the multivalued feature [+2 *transitive*] (which means in his system that they may assign two θ -roles). Like Perlmutter and Postal (1983), Marantz also assumes that detransitivizing processes such as passivization and reciprocalization stipulate individually how many objects they can affect. For example, the passive and reciprocal affixes in symmetrical object languages would each carry the feature [-1 *transitive*] (which will eliminate, through an additive convention on morphological feature percolation, one of the θ -roles assigned by a verb they are affixed to). This account therefore inherits the problems of *both* its predecessors: (1) it fails to explain asymmetries in word order and extractability between direct and indirect objects in the symmetrical object languages, and (2) it postulates too many parameters of variation, leaving the covariation unexplained. Marantz also offers a novel proposal to explain why different object properties are associated with different θ -roles, such as beneficiary and instrument, but Baker (1988b, 357–359) shows that this proposal encounters empirical problems with the Chicheŵa data.

2.4. *Baker (1988b,c)*

Baker (1988b,c) proposes that the parameter of variation between symmetrical and asymmetrical object languages lies in the number of structural Cases assigned by the applied verb. Specifically, he postulates that the applied suffix in an asymmetrical object language like Chicheŵa has no structural Case features, whereas the applied suffix in a symmetrical object language like Kinyarwanda does. By assuming that Bantu verbs can assign one additional inherent Case and that universally object markers, passivization, and other detransitivizing processes absorb structural Case, this proposal successfully accounts for most of the covariation.¹⁵ Moreover, Baker offers a proposal to explain why asymmetries are associated with certain θ -roles, such as beneficiary: following the central idea in Marantz's (1984) proposal, Baker hypothesizes that asymmetries in the behavior of different applied objects can be traced to the presence or absence of an underlying preposition that assigns a θ -role before undergoing structural incorporation into the verb as a suffix.

Although this proposal can explain many of the differences between applicatives in

¹⁵ In fact, this proposal predicts too much covariation: since both object marking and the number of NPs licensed to appear in the VP are reflexes of structural Case, both the number of object markers and the number of postverbal NP objects are predicted to covary with the essential typological properties such as symmetrical passivizability. But this correlation does not in fact hold, as we showed in section 1.2.

Chicheŵa and Kichaga, it fails to explain several of their similarities. First is the word order constraint. If in a symmetrical object language like Kichaga both the beneficiary NP and the patient NP receive structural Case under adjacency in S-Structure, why is it that the beneficiary NP must always be adjacent to the verb, just as in Chicheŵa? Second is the difference in the syntax of the applied beneficiary and the applied locative. In Baker's theory, both would originate as D-Structure prepositional objects and be assigned their θ -roles by the preposition rather than the verb (Baker (1988b, 383–384)); both would then undergo preposition incorporation, inducing government by the verb. The applied locative should therefore show exactly the same properties as the applied beneficiary in both Kichaga and Chicheŵa. Nevertheless, both languages show a clear split in the behavior of applied locatives and beneficiaries with respect to word order and long-distance extractions, as we saw above (examples (37a,c) and (38a,d)). (Chicheŵa in addition shows extensive further differences between applied locatives and beneficiaries that remain unexplained under Baker's proposal (Alsina and Mchombo (1989)).)

In sum, Baker's (1988b,c) solution predicts much of the observed covariation but fails to capture uniformities across the typological divide.

2.5. Kiparsky (1988)

The final proposed solution we shall consider is one sketched by Kiparsky (1988), which maintains that object asymmetries universally arise from a hierarchy of thematic roles: [*Agent* < *Goal* < *Instrument* < *Theme* < *Locative* < *Verb* >>>>]. In Kiparsky's theory, roles may be either grammatically or semantically linked to surface forms, the subject being defined as the highest grammatically linked role on the hierarchy, and objects being defined as any other grammatically linked roles. Arguments other than subjects and objects, such as oblique PPs, are semantically linked. The passive morphologically demotes the highest role, making it semantically linked, and also eliminates the "primary" object-linking position(s) in the syntax. Subject and object arguments are distinguishable only by means of their position on the hierarchy and the morphosyntactic devices ("linkers") by which they are expressed.

The thematic hierarchy comes into play in predicting object asymmetries: if there are two objects, it is the thematically higher that will become the passive subject (by definition of the subject as the highest grammatically linked role). This raises the question of how to explain the passive in symmetrical object languages like Kichaga, where a lower role may become subject in the presence of a higher object role (see (5c) above, where the lower patient argument has become the passive subject in the presence of the higher beneficiary object). The answer Kiparsky offers is that, despite appearances, the higher role is not an object in this situation. Thus, in explaining this behavior in Kinyarwanda, he proposes that "in these languages, the inner object position . . . can serve either as a grammatical or as a semantic linker" (Kiparsky (1988, 9)). In other words, the problematic objects that appear higher on the hierarchy than subjects are hypoth-

esized to be obliques in object's clothing. We can test this hypothesis by finding syntactic tests that distinguish uncontroversial obliques from objects in Kichaga and applying them to the problematic arguments. It turns out that in every such test, the problematic arguments behave like objects and not obliques, contrary to prediction.

First, true obliques or lexical adjuncts in Kichaga, such as nonobject locatives and passive agent phrases, are quite generally optional.¹⁶ But the applied beneficiary in Kichaga is obligatory, whether or not the lower patient argument has been passivized:

- (39) a. N-ǎ-í-ly-í-à *(m-kà) k-élyà. V*(NP_{ben}) NP_{pt}
 FOC-1 S-PR-eat-AP-FV (1-wife) 7-food
 'He/She is eating food for/on *(his wife).'
- b. K-èlyá k-í-ly-í-ò *(m-kà). NP_{pt} V_{pas} *(NP_{ben})
 7-food 7 S-PR-eat-AP-PAS (1-wife)
 'The food is being eaten for/on *(the wife).'

And the same is true of all the other applied arguments in Kichaga: in the situation where a thematically lower argument is passivized, the applied object still cannot be optionally omitted and thereby fails to show a characteristic property of oblique arguments in the language: optionality.

Second, object agreement in Kichaga never occurs with true obliques, or roles that would uncontroversially be semantically linked. For example, object agreement can never occur with the optional passive agent phrase when it is pronominal:

- (40) a. K-èlyá k-í-lyi-ó nà-wò. V Obl_{pro}
 7-food 7 S-PR-eat-PAS by-2 PRO
 'The food is being eaten by them.'
- b. *K-elya k-i-wa-lyi-o na-wo. *OMⁱ-V Oblⁱ_{pro}
 7-food 7 S-PR-2 O-eat-PAS by-2 PRO
 'The food is being eaten by them.'

Nor can object agreement occur with an oblique locative phrase when it is pronominal:¹⁷

- (41) a. N-ǎ-í-ly-à k-élyá hò. V NP Obl_{pro}
 FOC-1 S-PR-eat-FV 7-food 16 PRO
 'He/She is eating the food there.'
- b. *N-a-i-ha-ly-a k-elya ho. *OMⁱ-V NP Oblⁱ_{pro}
 FOC-1 S-PR-16 O-eat-FV 7-food 16 PRO
 'He/She is eating the food there.'

This is in direct contrast to an applied locative object, which does trigger object agree-

¹⁶ Kiparsky (1988, 12) stipulates that "all semantically linked arguments are optionally expressed."

¹⁷ The verb in (41) is the basic, nonapplied form of the verb 'eat'. Unlike the applied form, it cannot take a locative object; but it can take an optional oblique locative phrase. We can infer that this phrase is an oblique argument and not a nonargument adjunct from the fact that it undergoes locative inversion with the passive form of the verb: *M-ri-nyi kü-i-lyi-ò k-élyá* 'In the homestead (there) is being eaten food'. See Bresnan and Kanerva (1989) on locative inversion in Chicheŵa.

ment when pronominal:

- (42) a. *N-a-i-lyi-i-a k-elya ho. *V NP Obj_{pro}
 FOC-I S-PR-eat-AP-FV 7-food 16 PRO
 'He/She is eating food there.'
- b. N-ǎ-í-hà-lyí-í-à k-èlyá hò. OMⁱ-V NP Obj_{pro}
 FOC-I S-PR-16 O-eat-AP-FV 7-food 16 PRO
 'He is eating food there.'

Thus, there is a clear contrast between the oblique pattern of verbal nonagreement in (40) and (41) and the object pattern of obligatory verbal agreement in (42). Which agreement pattern does a pronominal beneficiary argument display when the lower patient has become the passivized subject? It displays the object pattern:

- (43) a. *K-elya k-i-lyi-i-o oo. *V Obj_{pro}
 7-food 7 S-PR-eat-AP-PAS 1 PRO
 'The food is being eaten for/on him/her.'
- b. K-èlyá k-í-m-lyì-í-ò òò. OMⁱ-V Obj_{pro}
 7-food 7 S-PR-1 O-eat-AP-PAS 1 PRO
 'The food is being eaten for/on him/her.'

The same is true of all the other applied arguments in Kichaga: in the situation where a thematically lower object is passivized, the higher object still triggers obligatory object agreement when pronominal. It thus lacks a second characteristic property of obliques: verbal nonagreement.

A third generalization that distinguishes objects from obliques in Kichaga is word order: objects precede obliques in the verb phrase. Thus, the agent phrase of the passivized applied verb in (44) must follow the applied instrumental object:¹⁸

- (44) a. K-èlyá k-í-lyì-í-ò mà-wòkó (ná) w-àná. V Obj Obl
 7-food 7 S-PR-eat-AP-PAS 6-hand (by) 2-child
 Lit.: 'The food is being eaten-with the hands by the children.'
- b. *K-elya k-i-lyi-i-o (na) w-ana ma-woko. *V Obl Obj
 7-food 7 S-PR-eat-AP-PAS (by) 2-child 6-hand

Similarly, the oblique locative in (45) must follow the patient object:

- (45) a. N-ǎ-í-ly-à k-élyá m-ří-nyì. V Obj Obl
 FOC-I S-PR-eat-FV 7-food 3-homestead-LOC
 'He/She is eating food at the homestead.'
- b. *N-a-i-ly-a m-ri-nyi k-elya. *V Obl Obj
 FOC-I S-PR-eat-FV 3-homestead-LOC 7-food

Again, this is in direct contrast to the applied locative object, which can precede the

¹⁸ Except when coalesced with a pronoun, the use of the preposition *na* 'by, with' in Kichaga with passive agents is quite marked, and it is preferably omitted by speakers who are not bilingual in Kiswahili.

patient object, as we saw in (3c). Finally, although objects must precede obliques, the word order among nonobject arguments in the VP is not fixed. Thus, both orders of the oblique locative and passive agent phrase are possible with the passive of the simple transitive verb 'eat':¹⁹

- (46) a. K-èlyá k-ĩ-ly'í-ò m-rì-nyì (ná) w-'àná. V Obl_{loc} Obl_{ag}
 7-food 7 S-PR-eat-PAS 3-homestead-LOC (by) 2-child
 'The food was eaten at the homestead by the child.'
 b. K-èlyá k-ĩ-lýí-ò (ná) w-àná m-rì-nyì. V Obl_{ag} Obl_{loc}
 7-food 7 S-PR-eat-PAS (by) 2-child 3-homestead-LOC

Which word order pattern do the problematic arguments adhere to? Do they precede obliques like the objects in (44) and (45), or may they follow obliques like the locative in (46)? All such arguments show the characteristics of objects and not obliques. We illustrate this in (47), where the applied beneficiary must precede the agent phrase even when the lower patient argument has become the passive subject:

- (47) a. K-èlyá k-ĩ-lyì-í-ò m-kà (ná) w-'àná. V Obj Obl
 7-food 7 S-PR-eat-AP-PAS 1-wife (by) 2-child
 'The food is being eaten for/on the wife by the children.'
 b. *K-elya k-i-lyi-i-o na w-ana m-ka. *V Obl Obj
 7-food 7 S-PR-eat-AP-PAS by 2-child 1-wife

The same generalization holds across the thematic range of object arguments in the applicative: the higher argument continues to show the word order characteristic of objects when a lower argument has become the passive subject. Thus, the problematic objects lack a third characteristic of obliques: word order.

Fourth, like other Bantu languages, Kichaga distinguishes between oblique and direct syntactic functions with extractions such as relativization: only direct functions (subjects and objects) can be relativized (as well as topicalized and clefted).²⁰ Thus, the relativized passive agent phrase in (48) and the relativized oblique locative phrase in (49) are ungrammatical:

- (48) *W-ana k-i-lyi-o nyi wa-ko-njau.
 2-child 7 S REL-PR-eat-PAS COP 2-17-NAME
 'The children by whom it is being eaten are the Njaus.'
 (49) *Kundu a-i-ly-a k-elya nyi m-rì-nyì.
 place 1 S REL-PR-eat-FV 7-food COP 3-homestead-LOC
 'The place at which he is eating the food is the homestead.'

¹⁹ Note that the verb in (46) is the nonapplied form of the verb 'eat', which takes an optional oblique locative. See footnote 6.

²⁰ Relativization in Kichaga is a long-distance operation. As in Chicheŵa (Bresnan and Mchombo (1987)), there is both anaphoric relativization and extraction relativization, the latter subject to syntactic boundedness effects. A further constraint is that the subject cannot be expressed as an NP inside the extraction relative clause, which appears to be related to the absence of the focus marker (Moshi (1988)).

Example (49) is in direct contrast to an applied locative object, which can be relativized, as shown in (38d). We can use this generalization, too, to test Kiparsky's hypothesis that the higher objectlike arguments are actually obliques when lower thematic roles are passive subjects. If they are obliques, they should not be relativizable; if they are objects, they should be. The following examples show that the higher object roles are in fact relativizable. The first is the relativization of a beneficiary when the patient has become the passive subject (*ben* > *pt*):

- (50) M̄-kà k-í-lyì-ĩ-'ó nyí M̄kàfít'inà.
 I-wife 7 S REL-PR-eat-AP-PAS COP NAME
 'The woman for/on whom it is being eaten is Mkafitina.'

The second is the relativization of the instrument when the patient has become the passive subject (*ins* > *pt*):

- (51) M̄a-wòkó k-í-lyì-ĩ-'ó má-tùtù.
 6-hand 7 S REL-PR-eat-AP-PAS 6-small
 'The hands with which it is being eaten are small.'

The third is the relativization of the patient when the locative has become the passive subject (*pt* > *loc*):

- (52) K-èlyá kú-í-lyì-ĩ-'ó nyí má-rùwù.
 7-food 17 S REL-PR-eat-AP-PAS COP 6-banana
 'The food which at that place is being eaten is bananas.'

Thus, the problematic objects lack a fourth characteristic of obliques: nonrelativizability.

We have now seen that four syntactic tests distinguish objects from obliques in Kichaga: optionality, verbal agreement, word order, and relativization. All these tests converge in showing that objects may occur above passive subjects on the thematic hierarchy. This shows that objects cannot be *defined* in terms of their position on the thematic hierarchy below the subject.²¹

In sum, Kiparsky's (1988) proposal provides a principled system for explaining object asymmetries, but it lacks any explanation of the patterns in symmetrical object languages like Kichaga. The basic problem in the theory is its lack of any simple means to distinguish among subjects and objects independently of their position on the thematic hierarchy.

3. An Alternative Theory

It seems clear that the semantic roles of arguments partially determine their syntactic behavior, but the syntactic functions of arguments are not a simple projection of the

²¹ The definition can be preserved, of course, by reformulating all of the object tests to exclude the counterexamples. In Kiparsky's system, this would involve thematic restrictions on various linkers and on relativization. However, it would be unexplained why the same restrictions recur in different parts of the grammar, indicating an undesirable loss of generalization.

thematic hierarchy. Nor are syntactic functions identifiable in any simple way with overt morphosyntactic structures. Consider the fact that the object in Kichaga appears in three different morphosyntactic positions, depending on its lexical type: if nonpronominal, it occupies the inner syntactic position in the VP adjacent to the verb; if pronominal and noncontrastive, it takes the first or second prefix position to the verb stem in the morphology, depending on its animacy, thematic role, and plurality; if pronominal and contrastive, it takes a VP-final position with other independent pronouns. These three morphosyntactic positions are structurally disparate; yet they are uniformly affected by each detransitivizing process in the language (passive, reciprocal, unspecified object deletion, and so on), as well as by each transitivity process (applicative, causative). To capture this kind of uniformity, we make the abstraction from syntactic *expression* to syntactic *function*. We assume three levels of structure in syntactic theory: a structure representing the underlying organization of argument roles, a structure representing the abstract syntactic functions of surface forms, and a structure representing the surface forms as they are overtly expressed in morphosyntax. Following Bresnan and Kanerva (1989), we assume that each of these three levels of syntactic organization has its own characteristic structure differing in formal primitives and geometry, and that the levels are related by principles of structural correspondence. We thus adopt a syntactic architecture characterized by structural modularity. We refer to the three levels as *a(rgument)-structure*, *f(unctional)-structure*, and *c(onstituent)-structure*.²²

The theory of a-structure and its possible correspondences to f-structure has been the subject of recent theoretical development.²³ As we will show, this theory provides a single parameter from which all of the observed differences of the asymmetrical-symmetrical object typology follow. We first outline the essential components of the theory.

3.1. *Decomposition of Syntactic Functions*

Bresnan and Kanerva (1989) postulate that the grammatical functions of subject, object, and oblique are constituted of more primitive elements, just as phonemes are constituted of more primitive distinctive features in phonological theory.²⁴ Such primitives explain the existence of natural classes of functions, which share subsets of primitive elements.

Subject and object are hypothesized to have the primitive property of being semantically unrestricted—that is, capable of being associated with different semantic roles (and even having no semantic roles, as with expletive subjects and objects). This property is designated [*-r*]. On the other hand, objects are hypothesized to have the primitive property of complementing transitive predicators such as verbs and adpositions, and not

²² Lexical-Functional Grammar provides an explicit formal development of this model. See Bresnan and Kanerva (1989) and the references cited there.

²³ See Bresnan and Kanerva (1989; to appear), Alsina and Mchombo (1989), Alsina (1989), Ackerman (1989), Mchombo (1989), K. P. Mohanan (1989), T. Mohanan (1988; 1989), Joshi (1988; 1989), Harford (1988), Klaiman (1987), Tan (in preparation), and Zaenen (1988).

²⁴ A similar proposal is made by Simpson (1983, 194).

complementing intransitive predicators such as basic nouns and adjectives.²⁵ This property is designated [+o]. Obliques are restricted in the semantic roles they may express, hence [+r], and they are nonobjectlike (complementing basic nouns and adjectives), hence [-o]. A consequence of this scheme is that there should be two kinds of syntactic objects, unrestricted and restricted. Of these, only the unrestricted objects can alternate with subjects, and the restricted objects must have fixed semantic roles, like obliques.

$$(53) \quad \begin{array}{cc} \left[\begin{array}{c} -r \\ -o \end{array} \right] \text{ SUBJ} & \left[\begin{array}{c} +r \\ -o \end{array} \right] \text{ OBL}_\theta \\ \left[\begin{array}{c} -r \\ +o \end{array} \right] \text{ OBJ} & \left[\begin{array}{c} +r \\ +o \end{array} \right] \text{ OBJ}_\theta \end{array}$$

(Note that OBL_θ abbreviates multiple oblique functions, one for each semantic role θ : OBL_{go} , OBL_{ins} , and so on. In just the same way, OBJ_θ abbreviates restricted objects that are individuated thematically.)

This classification gives the following natural classes of syntactic functions:

$$(54) \quad \begin{array}{ll} [-r] = \text{SUBJ, OBJ} & [-o] = \text{SUBJ, OBL}_\theta \\ [+r] = \text{OBJ}_\theta, \text{OBL}_\theta & [+o] = \text{OBJ, OBJ}_\theta \end{array}$$

If we assume that the negative feature values are unmarked, we can also derive the following markedness hierarchy of the syntactic functions:

(55) *Markedness Hierarchy*

$$\begin{array}{ccc} & o & \\ s > & & > o_\theta \\ & \text{OBL}_\theta & \end{array}$$

The subject is the least marked function; the restricted object is the most highly marked. In fact, many languages (including Romance) lack restricted objects altogether, and at least some syntactically ergative languages arguably lack objects (Kiparsky (1987)).

3.2. Syntactic Underspecification of Argument Roles

Under these assumptions, alternations between natural classes of syntactic functions are characterized by *underspecification*, rather than (lexical or syntactic) transformation. It is pervasive across languages that certain classes of functions are canonically associated with certain semantic roles: object and subject with the theme/patient; nonobject functions with the agent; and oblique or subject with the locative roles (Bresnan and Kanerva (1989)). Bresnan and Kanerva, building on the work of Levin (1986), use underspecification to distill these crosslinguistic generalizations into the following formal principles, which syntactically classify the agent, theme, and location roles on the basis of

²⁵ Transitive adjectives and nouns have been reported by Maling (1983), Hong (1988), Lida (1987), and Simpson (1983), but they are rare.

their intrinsic meanings:

(56) *Intrinsic classifications*

Agent	<i>ag</i>
	[− <i>o</i>]
Theme	<i>th/pt</i>
	[− <i>r</i>]
Locative	<i>loc</i>
	[− <i>o</i>]

Alsina and Mchombo (1989) extend the principles of intrinsic classification to account for applicative and dative constructions. First, they postulate that not only theme/patient but also the semantic roles of applied arguments receive the [−*r*] classification.²⁶ (Roles so classified will emerge as passivizable or unaccusative objects.) Second, they postulate an alternative intrinsic classification for these roles, of [+*o*]. (Roles classified in this way will emerge as restricted, or unpassivizable, objects.) However, they impose a limitation on the latter classification: the beneficiary and recipient roles—those corresponding to what are traditionally called indirect objects—universally lack the alternative [+*o*] classification.²⁷ We summarize these principles as follows:

(57) *Applied and theme roles (“internal arguments”)*

θ	or	θ
[− <i>r</i>]		[+ <i>o</i>]

Applied ben, rcp roles (“indirect objects”)

* θ
[+ <i>o</i>]

3.3. Hierarchical Argument Structure

Further specific properties of the syntactic function associated with a role—whether it is a subject, object, or oblique—derive from the argument structure of the verb. An argument structure consists of the lexical roles of a verb, their intrinsic syntactic classifications, and an ordering that represents the relative prominence of the roles. This

²⁶ Applied arguments are assumed to share with patients and themes a common semantic property that makes them objectlike or “internal” arguments.

²⁷ The intuition behind this limitation is that these object roles are inherently more topical than the other object roles and so must receive the [−*r*] classification, which allows them to alternate with subjects. These roles have been observed crosslinguistically to occupy a higher position on the topicality hierarchy than all of the other object roles (Givón (1976; 1984)).

relative prominence is not arbitrary but instead is semantically determined, the most prominent roles being those of the more causally active or topical participants in events. This is the essential import of the “thematic hierarchy” or “topicality hierarchy” (Jackendoff (1972), Givón (1976; 1984), Dik (1978), Duranti (1979), Hyman and Duranti (1982), Foley and Van Valin (1984), Kidima (1987), Kiparsky (1987; 1988), Bresnan and Kanerva (1989; to appear)), according to which (in the version assumed here) roles descend in prominence from agent through beneficiary, abstract goal (recipient or experiencer), instrumental, and patient/theme, to location:²⁸

(58) *ag* > *ben* > *go* > *ins* > *pt/th* > *loc*

Roles in individual lexical role structures are ordered so as to descend the hierarchy from left to right.

The primary function of the thematic hierarchy in the present theory is to define the highest role of a predicate, which is denoted $\hat{\theta}$:

(59) $\hat{\theta}$ =_{df} the highest role of a predicate

$\hat{\theta}$ is sometimes called the “logical subject” (Kiparsky (1987; 1988), Joshi (1989)) or “thematic subject” (Bresnan and Kanerva (1989)). It corresponds to the agent argument of active and passive verbs, the experiencer argument (whether subject or object) of noncausative psychological verbs, and the theme argument of unaccusative verbs (Joshi (1989), Bresnan and Kanerva (1989), Alsina and Mchombo (1988), T. Mohanan (1989)).²⁹

3.4. Morpholexical Operations on Argument Structure

Argument structures can be altered by morpholexical operations, which add, suppress, or bind roles. (Alsina (1989) analyzes these operations as the partially specified lexical argument structures of the associated morphemes, which must be unified with the verbal argument structure during affixation.) For example, the passive suppresses the highest role (the logical subject) of a verb (Bresnan and Kanerva (1989)):

(60) *Passive*

$$\begin{array}{c} \hat{\theta} \\ | \\ \emptyset \end{array}$$

Suppression entails that the role is syntactically unexpressed; it nevertheless remains the $\hat{\theta}$ in the argument structure of a passive verb. The agent phrase can be indirectly

²⁸ The prominence relations specified in this hierarchy are derivable from a more primitive semantic basis (Dowty (1987), Zaenen (1988), Jackendoff (1987), K. P. Mohanan (1989), T. Mohanan (1988; 1989), Pinker (in press)). We will nevertheless continue to use the familiar labels *ag*, *th*, *loc*, and the like for convenience, presupposing an independently motivated theory of lexical semantics in terms of which the traditional roles “theme,” “agent,” and the like can be defined.

²⁹ $\hat{\theta}$ thus differs from the notion of “external argument” (Williams (1981)), which can be defined in our theory as $\hat{\theta}_{[-\sigma]}$. See the references cited here.

expressed as an optional, thematically bound adjunct (Bresnan (1978), Jackendoff (1987), Grimshaw (1988)).

The Applicative adds a new semantic role to the argument structure of a verb (below the highest role) (Alsina and Mchombo (1989)).³⁰ The notation θ_{appl} abbreviates any of the roles introduced by the Applicative, including beneficiary, recipient, instrument, locative, and motive.

$$(61) \text{ Applicative}$$

$$\begin{array}{c} \emptyset \\ \Downarrow \\ \langle \theta \dots \theta_{appl} \dots \rangle \end{array}$$

The morphological operation of Reciprocalization suppresses one role of the base verb, by binding it to $\hat{\theta}$, reducing the syntactic objects of the verb by one (Alsina (1989), Mchombo (1989)).³¹

$$(62) \text{ Reciprocalization}$$

$$\begin{array}{c} \langle \theta_i \dots \theta_i \dots \rangle \\ | \\ \emptyset \end{array}$$

Still another suppression operation is Theme Suppression (Alsina and Mchombo (1989)), which serves to intransitivize certain verbs:

$$(63) \text{ Theme Suppression}$$

$$\begin{array}{c} th/pt \\ | \\ \emptyset \end{array}$$

Theme Suppression accounts for the phenomenon known as unspecified object deletion.

The class of possible morpholexical operations is narrowly constrained (Alsina (1989)). Whatever effects morpholexical operations on argument structure may have on the syntactic features of arguments must be derived from general principles rather than stated for each rule. One such general principle, due to Alsina (1989), is that *only syntactically unmarked roles (those that lack positive-valued syntactic features) can be suppressed*.

³⁰ This change in the argument structure is induced by an underlying change in the lexical semantic structure. We will not attempt to formalize this semantic change here. Informally, the action of the base verb v is applied to a new argument x , yielding a derived meaning paraphrasable as 'do v for, to, with, or at x '.

³¹ This change in the argument structure is also induced by the underlying change in the lexical semantic structure, which binds a role to the agent by means of a reciprocal operator. This binding of one role to another in lexical role structures differs from the anaphoric binding of reciprocal pronouns in sentences just as valence-reducing reflexivization differs from anaphoric reflexivization (Sells, Zaenen, and Zec (1987)).

3.5. *Default Syntactic Specifications*

Default syntactic specifications apply finally, after any and all morpholexical operations and before lexical insertion. We will adopt here the defaults proposed by Bresnan and Kanerva (1989), following Alsina and Mchombo (1988). These (in the syntactic accusative language type) make the highest role unrestricted and lower roles restricted:³²

- (64) a. $\hat{\theta}$
 |
 [$-r$]
- b. θ
 |
 [$+r$]

Defaults (64a,b) are ordered by the Elsewhere Condition; the default with the more restricted environment applies first.

A very general constraint on all function specifications is that they must preserve information: they can only add features, not delete or change them (Bresnan and Kanerva (1989)). This is called the Monotonicity Constraint. Thus, roles that are intrinsically classified [$-r$] will not undergo default (64b) and may continue to alternate between subject and object, subject to the final well-formedness conditions. In contrast, roles that are classified [$+o$] will become restricted objects by default.

3.6. *Well-formedness Conditions*

Finally, there are two well-formedness conditions on the specified argument structures resulting from the preceding principles, which are called “lexical forms”:³³

- (65) a. *The Subject Condition*
 Every (verbal) lexical form must have a subject.
- b. *Function-Argument Biuniqueness*
 Each expressed lexical role must be associated with a unique function, and conversely.

4. The Parameter of Variation

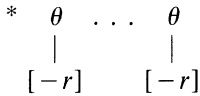
All of the differences enumerated above between Kichaga and Chicheŵa follow from this theory, given a single parameter of variation. In addition, the similarities in word order that proved problematic for previous theories are a direct consequence of this theory.

³² We omit the pragmatically marked focus subject default that gives rise to locative inversion; see Bresnan and Kanerva (1989, 37).

³³ Bresnan and Kanerva (1989, 28) observe: “The generality of the subject condition (due to Baker (1983)) is open to question, because many languages have constructions in which there is no overt subject (see for instance, Cole et al. (1978), Durie (1985; 1987)). It remains unclear whether these cases involve an empty nonlogical subject, as proposed by Baker (1983), or whether the subject condition itself is language-dependent.” The second condition is due to Bresnan (1980).

What is the parameter of variation? In their analysis of Chicheŵa, Alsina and Mchombo (1989) propose a constraint on all intrinsic classifications: only one role can be intrinsically classified unrestricted. We propose this as the asymmetrical object parameter:

(66) *Asymmetrical Object Parameter (AOP)*



It is present in asymmetrical object languages such as Chicheŵa, and lacking in symmetrical object languages such as Kichaga.

To see the consequences of this parameter, consider first word order. As noted above, the basic word order constraint on transitive sentences in Chicheŵa is that the object is adjacent to the verb, but in ditransitive constructions the word order constraints appear more complicated: the applied NP must be adjacent to the verb if it is a beneficiary or recipient; otherwise, either the patient NP or the applied NP may be adjacent to the verb. Given the AOP, the apparent complications in word order with ditransitives follow directly from the theory (Alsina and Mchombo (1988; 1989)). For according to the intrinsic classifications (57), when the applied role is a beneficiary or recipient (an “indirect object” role), it can only be [-r], whereas the patient can be either [-r] or [+o]. By the AOP, only one role in each lexical argument structure can be intrinsically classified [-r]; hence, the patient must be [+o]. The agent is intrinsically classified as [-o] by (56). To this argument structure, the defaults will apply as shown in (67):

(67) ‘eat-for’ < ag ben_{appl} pt >

AOP:	[-o]	[-r]	[+o]
defaults:	[-r]	[+r]	
	—	—	—
w.f.:	s	o/s	o _θ
	s	o	o _θ

The defaults make the highest role the subject and the lowest role a restricted object. By Monotonicity, the defaults cannot change the feature of the unrestricted *ben_{appl}*, which is therefore left underspecified, allowing it to alternate between subject and object. By the final well-formedness conditions, however, it can only be realized as an object in this argument structure, since the agent is the subject. The point here is that the applied beneficiary NP *must* be the (unrestricted) object, and so must be adjacent to the verb by the basic word order constraint.³⁴

³⁴ In contrast, applied roles other than the “indirect object” roles allow two alternative object functions by the principles of the theory. One of these functions is the unrestricted object, as in the case of the applied beneficiary illustrated in (67). The other function is the restricted object, which comes about from the alternative [+o] classification in the intrinsic classifications (57). In the former case the applied NP will be adjacent to the verb by the basic word order constraint. In the latter case the patient can be the unrestricted object and will then be adjacent to the verb by the same basic word order constraint.

Now consider word order in Kichaga. If Kichaga lacks the AOP, then it follows from the principles of intrinsic classification already given that the applied beneficiary role will always be $[-r]$, whereas the patient is either $[-r]$ or $[+o]$. In an active applicative argument structure such as (68), two unrestricted roles will lead to a violation of the final well-formedness condition of Function-Argument Biuniqueness, so the $[+o]$ option shown in (69) must be taken for the patient role:

(68)	‘eat-for’	⟨	<i>ag</i>	<i>ben_{appt}</i>	<i>pt</i>	⟩
			$[-o]$	$[-r]$	$[-r]$	
defaults:			$[-r]$			
			s	o/s	o/s	
w.f.:			s	o	*	

(69)	‘eat-for’	⟨	<i>ag</i>	<i>ben_{appt}</i>	<i>pt</i>	⟩
			$[-o]$	$[-r]$	$[+o]$	
defaults:			$[-r]$	$[+r]$		
			s	o/s	O_{θ}	
w.f.:			s	o	O_{θ}	

Hence, in Kichaga, as in Chicheŵa, the beneficiary NP of an active applied verb is the unrestricted object, whereas the patient NP is the restricted object. Given the basic word order constraint that the object is adjacent to the verb, it follows that the beneficiary NP in Kichaga is always the first NP following the applied verb. Thus, the word order generalizations follow.

Second, consider the passive. In Kichaga, two $[-r]$ roles cannot both be realized as objects, by Function-Argument Biuniqueness. (This is illustrated by (68).) But if one such role is realized as the subject, the other may be the unrestricted object. Hence, if we apply Passive to the argument structure in (68), there are two grammatical results: either the applied argument or the patient will become the subject.³⁵

(70)	‘eat-for’	⟨	<i>ag</i>	<i>ben_{appt}</i>	<i>pt</i>	⟩
			$[-o]$	$[-r]$	$[-r]$	
Passive:			\emptyset			
defaults:				o/s	o/s	
w.f.:				o	s	or
				s	o	

Therefore, Kichaga, which admits the underlying argument structure shown in (68), will have two passives of an applied beneficiary verb. Chicheŵa, which by the AOP admits only the argument structure shown in (69), will not (Alsina and Mchombo (1988; 1989)).

³⁵ Since $\hat{\theta}$ has been suppressed by the Passive in (70), default (64a) has no visible effect.

As the passive of (69) illustrates, only the applied beneficiary can become the subject of this argument structure:

(71)	‘eat-for’	⟨	<i>ag</i>	<i>ben_{appl}</i>	<i>pt</i>	⟩
AOP:			[− <i>o</i>]	[− <i>r</i>]	[+ <i>o</i>]	
Passive:			∅			
defaults:					[+ <i>r</i>]	
			—————			
			o/s	O _θ		
w.f.:			s	O _θ		

In (71) Passive suppresses the highest role of the applied verb—the agent. The well-formedness conditions require a subject, and of the two remaining roles, only the one classified [−*r*] can have the subject function. Thus, only an unrestricted object can passivize. It is the unrestricted object that must be adjacent to the verb, by the basic word order constraint. It follows that in Chicheŵa, unlike Kichaga, only objects that can be adjacent to the verb in the active can become subjects in the passive. Thus, the passive generalizations follow.

Third, consider unspecified object deletion. In Chicheŵa unspecified object deletion cannot occur with the benefactive applicative, whereas with instrumental and locative applicatives, it is still possible. These facts follow from the theory (Alsina and Mchombo (1988; 1989)). By the general theory of morpholexical operations, only syntactically unmarked roles (those with negative feature values) can be suppressed. Given the intrinsic classification of themes (57), it follows that Theme Suppression (63) can apply only to an *unrestricted* theme or patient. In beneficiary applicatives, the beneficiary must be [−*r*] by the principles of intrinsic classification (57), and the AOP forces the patient to take the marked ([+*o*]) classification. Therefore, Theme Suppression cannot apply. In instrumental and locative applicatives, in contrast, either the patient NP or the applied NP can be the unrestricted object (as shown by the fact that either can be adjacent to the verb). Here, therefore, Theme Suppression can apply. In Kichaga, in contrast, the AOP is lacking, and so the patient can be [−*r*] in the presence of a beneficiary. Although two [−*r*] roles cannot both be realized as objects, as we have shown, one may become an unrestricted object while the other undergoes Theme Suppression:

(72)	‘eat-for’	⟨	<i>ag</i>	<i>ben_{appl}</i>	<i>pt</i>	⟩
			[− <i>o</i>]	[− <i>r</i>]	[− <i>r</i>]	
Theme Suppression:					∅	
defaults:			[− <i>r</i>]			
			—————			
			s	o/s		
w.f.:			s	o		

Thus, the generalizations about unspecified object deletion follow, including the fact that it is possible with the benefactive applicative in Kichaga, but not in Chicheŵa.

Fourth, consider reciprocalization. Like Theme Suppression, Reciprocalization (62) is a suppression operation on lexical argument structures. Hence, it is limited to syntactically unmarked roles. Thus, the fact that in Chicheŵa the patient cannot be reciprocalized in the presence of an applied beneficiary follows directly from the theory, just as with Theme Suppression. The contrasting pattern in Kichaga again follows from the absence of the AOP, just as before:

(73) ‘eat-for’ $\langle \begin{array}{ccc} ag & ben_{appt} & pt \end{array} \rangle$

$$\begin{array}{ccc} | & | & | \\ [-o] & [-r] & [-r] \\ & & \emptyset \\ \hline [-r] & & \\ \hline s & o/s & \\ \hline s & o & \end{array}$$

Reciprocalization:
defaults:
w.f.:

Fifth, consider object markers. Chicheŵa’s object prefix marks unrestricted objects:

(74) $\left(\begin{array}{c} OM \\ [-r] \\ [+o] \end{array} \right) - V_{stem}$

Kichaga permits multiple object markers, for both restricted and unrestricted objects:³⁶

(75) $\left(\begin{array}{c} OM \\ [+o] \end{array} \right) - \left(\begin{array}{c} OM \\ [+o] \end{array} \right) - \left(\begin{array}{c} OM \\ [+o] \end{array} \right) - V_{stem}$

The difference in the morphological templates (74) in Chicheŵa and (75) in Kichaga is independent of the theory outlined above. But given (74) in Chicheŵa, it follows from the theory that a patient cannot be object-marked in the presence of a beneficiary object, although it can be in the presence of an instrumental or locative object (Alsina and Mchombo (1988; 1989)). All else being equal, Kichaga is correctly predicted to lack this restriction, although the multiplicity of object markers in Kichaga provides an overlapping explanation for this fact.

Finally, consider the interactions of object properties. First is the interaction of passivization and object marking. Given two [-r] roles, it follows that if one becomes the subject, the other can still be expressed as an unrestricted object marker (such as a beneficiary or recipient). We have shown that this is true for the object markers on passives in the Kichaga examples (18b) and (20)–(22). Such examples are correctly predicted to be impossible in Chicheŵa, by the AOP.

Second is the interaction of passivization and unspecified object deletion. Again, given two [-r] roles, one may become the subject while the other undergoes Theme

³⁶ We can infer that both unrestricted and restricted objects can be marked in Kichaga as follows. According to the theory, when an active verb has both a beneficiary NP and a patient NP, the latter must be a restricted object, by Function-Argument Biuniqueness. Yet either the patient or the beneficiary or both can be object-marked in this situation, as (7a–c) show.

Suppression. It follows that unspecified object deletion is possible when the applied NP has been passivized in Kichaga, though not in Chicheŵa:

(76)	‘eat-for’	\langle <i>ag</i> <i>ben_{appl}</i> <i>pt</i> \rangle [-o] [-r] [-r] ∅ ∅
Passive:		
Theme Suppression:		
defaults:		_____
		o/s
w.f.:		s

Thus, the generalizations about the interaction of unspecified object deletion and passivization follow.

Third is the interaction of unspecified object deletion and object marking. Of two [-r] roles, one may be expressed as an unrestricted object marker (namely, a beneficiary or recipient) while the other undergoes Theme Suppression. This explains the generalizations about the interaction of unspecified object deletion and object marking.

Fourth is the interaction of reciprocalization and passivization. Of two [-r] roles, one may be suppressed by Reciprocalization while the other becomes the subject. It follows that a reciprocal verb can be passivized in Kichaga, though not in Chicheŵa:

(77)	‘eat-for’	\langle <i>ag</i> <i>ben_{appl}</i> <i>pt</i> \rangle [-o] [-r] [-r] ∅ ∅
Reciprocalization:		
Passive:		
defaults:		_____
		o/s
w.f.:		s

Thus, the generalization about the passives of reciprocal verbs follows.

Fifth is the interaction of reciprocalization and object marking. Of two [-r] roles, one can be suppressed by Reciprocalization while the other is realized as an unrestricted object marker. This explains the grammaticality of Kichaga examples like (78):

- (78) Wà-chàkà wá-í-mú-w'ágh-í-án-à.
2-Chaga 2 S-PR-1 O-kill-AP-RCP-FV
‘The Chagas are killing each other for him/her.’

It also explains why no object marking can appear on reciprocal verbs in Chicheŵa, since only unrestricted objects are object-marked there.

Sixth is the interaction of reciprocalization and unspecified object deletion. Of two [-r] roles, one can be suppressed by Theme Suppression and the other by Reciprocalization. This explains the cooccurrence of these two operations in Kichaga, and their failure to cooccur in Chicheŵa:

(79)	‘eat-for’	\langle <table style="display: inline-table; vertical-align: middle; border: none;"> <tr> <td style="padding: 0 5px;"><i>ag</i></td> <td style="padding: 0 5px;"><i>ben_{appl}</i></td> <td style="padding: 0 5px;"><i>pt</i></td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">[-o]</td> <td style="text-align: center;">[-r]</td> <td style="text-align: center;">[-r]</td> </tr> <tr> <td></td> <td style="text-align: center;">∅</td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">∅</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">[-r]</td> </tr> <tr> <td colspan="3" style="text-align: center;">-----</td> </tr> <tr> <td colspan="3" style="text-align: center;">s</td> </tr> <tr> <td colspan="3" style="text-align: center;">s</td> </tr> </table> \rangle	<i>ag</i>	<i>ben_{appl}</i>	<i>pt</i>				[-o]	[-r]	[-r]		∅				∅			[-r]	-----			s			s		
<i>ag</i>	<i>ben_{appl}</i>	<i>pt</i>																											
[-o]	[-r]	[-r]																											
	∅																												
		∅																											
		[-r]																											

s																													
s																													
Reciprocalization:																													
Theme Suppression:																													
defaults:																													
w.f.:																													

We have shown that a single parameter of variation gives rise to extensive covarying differences between the object symmetries and asymmetries of Kichaga and Chicheŵa. Moreover, within the framework of the present theory, a remarkably close underlying similarity of structure can be seen in the two languages. Both have the same basic word order constraint that the (unrestricted) object is adjacent to the verb. Both have the same (universal) principles of intrinsic classification, in which asymmetries appear between the object properties of the “indirect object” roles and the other “internal” roles. And in both languages the same (universal) morpholexical operations of Passive, Applicative, Reciprocalization, and Theme Suppression occur, despite striking differences in the syntactic phenomena that result.³⁷

5. Further Predicted Differences

The theory predicts further covarying typological differences that have not previously been observed and are not predicted under any of the alternative theories discussed above (Alsina (1989), Bresnan and Kanerva (to appear)).

In Chicheŵa there is a small class of unaccusative applicative verbs having the $\langle th\ loc \rangle$ argument structure, such as *gwer-a* ‘fall into’. These verbs bear the applied verb morphology that normally transitivizes verbs (for instance, *gw-er-a* ‘fall-APPL-IND’). Contrary to what happens with other applicative verbs in Chicheŵa, however, these verbs fail to passivize and to allow object agreement, and they do undergo locative inversion, an unaccusative phenomenon (Alsina and Mchombo (1988)). Example (80) illustrates these properties (see Bresnan and Kanerva (1989, 16–17)):

- (80) a. Mbûzi y-a-gw-er-a m-chi-tsîme.
 9goat 9SB-PERF-fall-APPL-IND 18-7-well
 ‘The goat has fallen into the well.’
- b. M-chi-tsîme mw-a-gw-er-a mbûzi.
 18-7-well 18SB-PERF-fall-APPL-IND 9goat
 ‘Into the well fell the goat.’
- c. *M-chi-tsîme mw-a-gw-er-edw-á ndí mbûzi.
 18-7-well 18SB-PERF-fall-APPL-PASS-IND by 9goat
 ‘The well has been fallen into by a goat.’

³⁷ The constraint against extraction of “indirect objects” by relativization is also the same in both languages. See Alsina and Mchombo (1989) for a formulation within the present theory.

- d. ??Mbûzi y-a-mú-gw-er-a.
 9goat 9_{SB}-PERF-18_{OB}-fall-APPL-IND
 'The goat has fallen into it (e.g., the well).'

The special properties of these verbs follow from the theory (Alsina and Mchombo (1988)). Both the theme and applied locative roles receive the "internal" intrinsic classifications (57); hence, in Chicheŵa, if the theme is $[-r]$, then by the AOP the locative object role must be $[+o]$, and conversely. The two possibilities are shown in (81a,b); the first corresponds to (80a), where the locative is a restricted object, and the second corresponds to (80b), where the locative is the subject and the theme is an unaccusative object:

- (81) a. V < th loc_{appl} >
 | |
 AOP: $[-r]$ $[+o]$
 defaults: $[+r]$

 o/s o_{loc}
 w.f.: s o_{loc}
- b. V < th loc_{appl} >
 | |
 AOP: $[+o]$ $[-r]$
 defaults: $[-r]$

 o s/o
 w.f.: o s

Now since the object marker in Chicheŵa marks only unrestricted objects, as we have shown, it follows that the applied locative object of this verb will disallow object marking, because it is a restricted object. This explains (80d). As for Passive, it cannot apply to the argument structure in (81b), because there the theme is marked $[+o]$, and Passive, like all other suppression operations, can only suppress unmarked roles (those having negative feature values). Passive can suppress the unrestricted theme in (81a), but observe the outcome:

- (82) V < th loc_{appl} >
 | |
 AOP: $[-r]$ $[+o]$
 Passive: \emptyset
 defaults: $[+r]$

 * o_{loc}

There is no subject, and the form is ruled out by the well-formedness conditions. This explains why Passive cannot apply to these verbs (80c).

It is ultimately the AOP that lies behind the failure of passivization and object marking with the unaccusative applicative verbs. For a language that lacked the AOP

would have the following source of grammatical passivization of the unaccusative applicative:

(83)	$V \langle \begin{array}{cc} th & loc_{appt} \\ & \\ [-r] & [-r] \\ \emptyset & \\ \hline s/o \\ s \end{array} \rangle$
AOP:	[-r] [-r]
Passive:	\emptyset
defaults:	<hr style="width: 50%; margin: 0 auto;"/>
w.f.:	s/o s

The unrestricted theme role can be suppressed by passivization, and the unrestricted applied locative provides a subject, satisfying the well-formedness conditions. Since it is the prohibition against two unrestricted roles that explains why these verbs cannot be passivized or object-marked in Chicheŵa, languages such as Kichaga that lack this prohibition are predicted to allow passivization and object marking of such verbs.³⁸

This prediction is borne out by the facts. In Kichaga, in contrast to Chicheŵa, verbs of the $\langle th \ loc \rangle$ unaccusative applicative class do allow passivization (Bresnan and Kanerva (to appear)) and object marking. This is shown in (84):³⁹

- (84) a. Mbùrú y-ǎ-ólòk-ì-à má-wò-nyì.
9 goat 9 S-PRF-fall-AP-FV 6-stone-LOC
'The goat fell onto the stones.'
- b. Mà-wò-nyì k-ǒ-ólók-í-à mbùrù.
6-stone-LOC 17 S-PRF-fall-AP-FV 9 goat
'Onto the stones fell the goat.'
- c. Mà-wò-nyì k-ǒ-ólók-í-ò mbùrù.
6-stone-LOC 17 S-PRF-fall-AP-PAS 9 goat
'The stones have been fallen onto by the goat.'
- d. Mbùrú y-á-kú-ólòk-ì-à.
9 goat 9 S-PRF-17 O-fall-AP-FV
'The goat fell onto the them (i.e., stones).'

This correlation between the passivizability of unaccusative applicative verbs and the other symmetrical object properties can be seen elsewhere. In Chishona, as in Kichaga, both beneficiary and patient are passivizable, according to Hawkinson and Hyman (1974, exs. 6, 14, 26):⁴⁰

³⁸ This prediction was made by Alsina (1989) before we obtained the Kichaga data that verify it.

³⁹ In Kichaga the preposition *na* 'by' is optional with lexical NPs and must bind an agent role. Hence, with the passive of a $\langle th \ loc \rangle$ verb, the agentive preposition is not used.

⁴⁰ Hawkinson and Hyman (1974) show for Chishona that when both beneficiary and patient arguments are high on the hierarchy of "natural topics"—that is, when both are either animate lexical NPs or first or second person pronouns—only the beneficiary can be passivized. As observed in Bresnan and Kanerva (to appear), this constraint would follow from the present theory by setting the asymmetrical object parameter to prohibit two unrestricted semantic roles only when they are both [+animate] or both [-III]. Hawkinson and Hyman (1974) report variation in the word order judgments of their Chishona consultant that can be accounted for by an optional additional word order constraint that animate objects must precede animate restricted objects.

- (85) a. Mùrúmé á-kà-nyór-ér-á mwáná tsàmbà.
 man he-past-write-to/for child letter
 'The man wrote a letter to/for the child.'
- b. Mwàná á-kà-nyór-ér-ù-á tsàmbà né mùrúmé.
 child he-past-write-to/for-pass. letter by man
 'The child was written a letter by the man.'
- c. Tsàmbà yá-kà-nyór-ér-ù-á mwáná.
 letter it-past-write-for-pass. child
 'The letter was written for the child.'

In terms of our theory, this means that both goal and theme can simultaneously be unrestricted, indicating the absence of the AOP. It should therefore follow that unaccusative applicative verbs having the *<th loc>* argument structure should passivize in Chishona, unlike Chicheŵa. The following example from Harford (1988, ex. 20b), cited in Bresnan and Kanerva (to appear), bears out this prediction. Note that this grammatical example is almost perfectly cognate with the ungrammatical Chicheŵa example (80c):

- (86) Mu-tsíme m-á-w-ír-w-a né-mbudzi.
 18-well 18 SB-PERF-fall-APPL-PASS-IND by-9 goat
 'The well has been fallen into by a goat.'

None of the previous theories of the asymmetrical object typology predicts this correlation. Many theories have excluded passivization of unaccusatives (Perlmutter and Postal (1983), Burzio (1981; 1986), Marantz (1984)), and those that have been designed to account for it (such as Baker (1988a), Baker, Johnson, and Roberts (1989)) have done so by means of a parameter that varies independently of the object parameter in these theories. For example, we have seen that the object parameter in Baker's theory is whether the verb can assign one or two structural Cases, whereas the parameter that allows passivization of unaccusatives is whether the passive morpheme can appear in object position in D-Structure (Baker, Johnson, and Roberts (1989, 232)).

6. Conclusion

We have presented a new theory of the symmetrical-asymmetrical object typology in Bantu, one that succeeds in reducing the extensive covariation of syntactic differences to a single parameter of variation and also predicts surprising further differences between the two types.

The syntactic structure of Bantu has long been assimilated to the grammatical model of standard European languages. In general, Bantu languages lack case and have a small, closed class of adjectives and few prepositions. Instead, the rich systems of noun class concords and verbal morphology are central to the syntax. Nevertheless, generative syntactic analyses of Bantu have made crucial use of the categories and configurations of European grammar. The Bantu applicative has frequently been modeled as a kind of

dative construction, in which a prepositional object or oblique phrase becomes the primary object of the verb, even though there may exist no such prepositional or oblique phrases in the language (as in Kichaga). Object properties in Bantu have been attributed to Case even though there is evidence that Bantu diverges typologically from Case-government languages (Bresnan and Mchombo (1987; 1989), Bresnan (1989)). Our theory provides a new framework based on more abstract and (we believe) less typologically parochial concepts: universal argument structure and the primitive features that underlie syntactic functions themselves.

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