

Locative Inversion in Chicheŵa: A Case Study of Factorization in Grammar

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# Locative Inversion in Chicheŵa: A Case Study of Factorization in Grammar

There has been a predominant tendency in generative grammar to syntacticize grammatical phenomena. Thematic structure (lexical role structure) is represented by syntactic sentence structure, syntactic functions are represented by syntactic sentence structure of the same character, and discourse functions (to the small extent that they are recognized) are replaced by configurations of the same kind of syntactic sentence structure. The relations between the representations are conceived of as proof-theoretic, or derivational, in nature. The actual independence of the thematic, structural, and functional levels of language has inevitably come into conflict with the goal of constraining derivational relations among syntactic representations of them.

The organization of grammatical structure that has emerged from our research departs from the conventional view. Thematic structure, constituent structure, and functional structure are parallel information structures of very different formal character. They are related not by proof-theoretic derivation but by local structural correspondences, as a melody is related to the words of a song.<sup>1</sup> Thematic, structural, and functional representations of a sentence can be superimposed, but formally they are independent planes of grammatical organization, and it is this independence that is so evident—and seemingly so problematic—in the phenomenon of locative inversion in Chicheŵa.<sup>2</sup>

We acknowledge with gratitude our Chicheŵa teacher Dr. Sam A. Mchombo, of the Linguistics Department at the University of California, Berkeley. The data in this article are based on his knowledge of Chicheŵa, and our research results build directly on his theoretical linguistic contributions in Mchombo (1984) and Bresnan and Mchombo (1986; 1987). This work would have been impossible without his inspired teaching, generosity, and insight. We are also grateful to Alex Alsina, Mark Baker, Mary Dalrymple, Katherine Demuth, Talmy Givón, Carolyn Harford, Osvaldo Jaeggli, Mimi Klaiman, Lori Levin, K. P. Mohanan, Tara Mohanan, Lioba Moshi, Chris Piñon, Paul Schachter, Peter Sells, Jane Simpson, and Annie Zaenen for valuable discussions of earlier versions of this work.

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<sup>1</sup> Lexical-Functional Grammar (LFG) provides an explicit formal development of this model. See Bresnan (1982), Levin, Rappaport, and Zaenen (1983), Iida, Wechsler, and Zec (1987), Kaplan and Zaenen (in press), Kaplan and Maxwell (1988a,b), Johnson (1987), and the references cited in these works.

<sup>2</sup> Chicheŵa is a Bantu language spoken in East Central Africa. We describe here the judgments of Sam A. Mchombo, who speaks a central Malaŵi dialect of Chicheŵa.

**Part I**  
**The Problem of Locative Inversion**

In locative inversion a locative phrase is preposed and the subject is postposed, as in the following examples from Chicheŵa:<sup>3</sup>

- (1) a.           Loc           V           i-S  
Ku-mu-dzi ku-li chi-tsîme.  
17-3-village 17 SB-be 7-well  
'In the village is a well.'
- b.           Loc           V                           i-S  
Ku-mu-dzi ku-na-bwér-á a-lendô-wo.  
17-3-village 17 SB-REC PST-COME-IND 2-visitor-2 those  
'To the village came those visitors.'

Locative inversions characteristically alternate with uninverted forms that share the same thematic role structure. Thus, (1a,b) alternate with (2a,b):

- (2) a.           S           V           Loc  
Chi-tsîme chi-li ku-mu-dzi.  
7-well 7 SB-be 17-3-village  
'The well is in the village.'
- b.           S           V           Loc  
A-lendô-wo a-na-bwér-á ku-mu-dzi.  
2-visitor-2 those 2 SB-REC PST-COME-IND 17-3-village  
'Those visitors came to the village.'

Locative inversion in Chicheŵa (as in other Bantu languages) seems to defy analysis, because the status of the inverted subject is not typical of subjects or objects. The literature on locative inversion in both Bantu and English contains conflicting proposals

<sup>3</sup> We follow here the transcription conventions of Bresnan and Mchombo (1987), adhering to Chicheŵa orthography with the addition of high (ˊ), falling (ˋ), and rising (ˊˋ) tones; low tones are unmarked. Chicheŵa has eighteen noun classes, which are denoted by arabic numerals in our glosses (see appendix 1); roman numerals are used for first, second, and third person; and the following abbreviations are used for grammatical categories:

SG	singular	PASS	passive
PL	plural	STAT	stative
SB	subject	IND	indicative
OB	object	SBJN	subjunctive
PROG	progressive	ASC	associative
PERF	present perfect	INF	infinitive
IM FUT	immediate future	COP	copula
REC PST	recent past	COMP	complementizer
PRS HAB	present habitual	PRON	pronoun
PST HAB	past habitual	REL	relative
COND	conditional	REFL	reflexive
APPL	applicative	Q	interrogative
CAUS	causative	HON	honorific

that the postposed subject is a subject, a demoted subject, or an object, and that the preposed locative is a topic, a subject, an adverbial adjunct, or a pseudo-subject.<sup>4</sup> As indicated by the equivalence of (1a,b) and (2a,b), the inverted subject has the thematic role of the subject. However, unlike subjects of transitive verbs, and like objects, it appears in postverbal position adjacent to the verb. In fact, there is clear evidence in Chichewa that the inverted subject is internal to the minimal phrase containing the verb—the position of the structural object.

### 1. The Inverted Subject in Object Position

Evidence that the inverted subject is in structural object position comes from word order at the S level, word order at the VP level, and phrase-level phonology.

#### 1.1. Word Order at the S Level

In Chichewa phrase structure the subject can precede or follow the VP but cannot separate a verb from its object (Bresnan and Mchombo (1987)):

- (3) a.  $\begin{array}{ccc} \text{S} & & \text{V} & & \text{O} \\ \text{A-ny\`ani} & [\text{VP} & \text{a-ku-}\acute{\text{im}}\text{b-}\acute{\text{a}} & & \text{ny}\acute{\text{i}}\text{mbo.}] \\ \text{2-baboon} & & \text{2 SB-PROG-sing-IND} & & \text{10 song} \end{array}$   
 ‘The baboons are singing songs.’
- b.  $\begin{array}{ccc} & \text{V} & & \text{O} & \text{S} \\ [\text{VP} & \text{A-ku-}\acute{\text{im}}\text{b-}\acute{\text{a}} & & \text{ny}\acute{\text{i}}\text{mbo}] & \text{a-ny\`ani.} \\ & \text{2 SB-PROG-sing-IND} & & \text{10 song} & \text{2-baboon} \end{array}$   
 ‘The baboons are singing songs.’
- c.  $\begin{array}{ccc} & \text{V} & & \text{S} & \text{O} \\ *[\text{VP} & \text{A-ku-}\acute{\text{im}}\text{b-}\acute{\text{a}} & & \text{a-ny\`ani} & \text{ny}\acute{\text{i}}\text{mbo.}] \\ & \text{2 SB-PROG-sing-IND} & & \text{2-baboon} & \text{10 song} \end{array}$   
 ‘The baboons are singing songs.’

Similarly, in locative inversions the locative can precede or follow the VP but cannot separate the verb from the inverted subject:

- (4) a.  $\begin{array}{ccc} \text{Loc} & & \text{V} & & \text{i-S} \\ \text{M-mi-t\`engo} & [\text{VP} & \text{mw-a-khal-a} & & \text{a-ny\`ani.}] \\ \text{18-4-tree} & & \text{18 SB-PERF-sit-IND} & & \text{2-baboon} \end{array}$   
 ‘In the trees are sitting baboons.’
- b.  $\begin{array}{ccc} & \text{V} & & \text{i-S} & \text{Loc} \\ [\text{VP} & \text{Mw-a-khal-a} & & \text{a-ny\`ani}] & \text{m-mi-t\`engo.} \\ & \text{18 SB-PERF-sit-IND} & & \text{2-baboon} & \text{18-4-tree} \end{array}$   
 ‘In the trees are sitting baboons.’

<sup>4</sup> See Růžička (1959–60), Gregersen (1967), Langendoen (1973; 1979), Iwakura (1978), Bowers (1976), Emonds (1970; 1976), Stowell (1981), Perez (1983), Safir (1985), L. Levin (1986), and Rochemont (1986).

- c. \* $[\text{VP} \overset{\text{V}}{\text{Mw-a-khal-a}} \quad \overset{\text{Loc}}{\text{m-mi-téngo}} \quad \overset{\text{i-S}}{\text{a-nyáni.}}]$   
 18 SB-PERF-sit-IND 18-4-tree 2-baboon  
 'In the trees are sitting baboons.'

This generalization about word order is true for all our examples of locative inversion. The following are representative:

- (5) a. \* $\text{Ku-li} \quad \text{ku-mu-dzi} \quad \text{chi-tsíme.}$   
 17 SB-be 17-3-village 7-well  
 'In the village is a well.'
- b. \* $\text{Ku-na-bwér-á} \quad \text{ku-mu-dzi} \quad \text{a-lěndo.}$   
 17 SB-REC PST-COME-IND 17-3-village 2-visitor  
 'To the village came visitors.'
- c. \* $\text{Ku-na-péz-édw-á} \quad \text{kú-dámbo} \quad \text{mw-ána.}$   
 17 SB-REC PST-find-PASS-IND 17-5 swamp 1-child  
 'In the swamp was found the child.'

This evidence rules out an analysis in which the postposed subject is an immediate constituent of S.<sup>5</sup>

### 1.2. Word Order at the VP Level

A further generalization about Chicheŵa phrase structure is that a VP adjunct occurs at the right edge of the VP, where it must follow the VP-internal object and precede the VP-external postposed subject:

- (6) a.  $[\text{VP} \overset{\text{V}}{\text{A-na-kwér-éts-a}} \quad \overset{\text{O}}{\text{a-nyaní}} \quad \overset{\text{Adv}}{\text{pá-njǐnga}}] \overset{\text{S}}{\text{Chatsalíra.}}$   
 1 SB-REC PST-ride-CAUS-IND 2-baboon 16-10 bicycle 1 Name  
 'Chatsalira made the baboons ride on bicycles.'
- b.  $??\overset{\text{S}}{\text{Chatsalíra}} [\text{VP} \overset{\text{V}}{\text{a-na-kwér-éts-a}} \quad \overset{\text{Adv}}{\text{pa-njingá}} \quad \overset{\text{O}}{\text{á-nyáni.}}]$   
 1 Name 1 SB-REC PST-ride-CAUS-IND 16-10 bicycle 2-baboon
- c. \* $[\text{VP} \overset{\text{V}}{\text{A-na-kwér-éts-a}} \quad \overset{\text{O}}{\text{a-nyáni}}] \overset{\text{S}}{\text{Chatsalíra}} \overset{\text{Adv}}{\text{pa-njǐnga.}}$   
 1 SB-REC PST-ride-CAUS-IND 2-baboon 1 Name 16-10 bicycle
- d.  $\overset{\text{Adv}}{\text{*Pa-njǐnga}} \overset{\text{S}}{\text{Chatsalíra}} [\text{VP} \overset{\text{V}}{\text{a-na-kwér-éts-a}} \quad \overset{\text{O}}{\text{a-nyáni.}}]$   
 16-10 bicycle 1 Name 1 SB-REC PST-ride-CAUS-IND 2-baboon

Exactly the same is true of locative inversions. A VP adjunct follows the VP-internal

<sup>5</sup> As in analyses of locative inversion in English (Langendoen (1973; 1979), Iwakura (1978)) and Safir's (1985, 300ff.) theory of locative inversion based on English and French.

inverted subject and precedes the VP-external locative, just as though the locative were in subject position and the inverted subject in object position:

- (7) a.  $\begin{array}{cccc} & \text{V} & & \text{Loc} \\ & \text{Ku-na-bwér-á} & \text{a-léndo pa-njĩnga} & \text{ku-mu-dzi.} \\ & 17 \text{ SB-REC PST-COME-IND} & 2\text{-visitor } 16\text{-}10 \text{ bicycle} & 17\text{-}3\text{-village} \\ & \text{'To the village came visitors on bicycles.'} & & \end{array}$
- b.  $\begin{array}{cccc} & \text{Loc} & & \text{i-S} \\ * & \text{Ku-mu-dzi} & \text{pa-njĩnga} & \text{a-léndo.} \\ & 17\text{-}3\text{-village} & 17 \text{ SB-REC PST-COME-IND} & 16\text{-}10 \text{ bicycle } 2\text{-visitor} \\ & & & \end{array}$
- c.  $\begin{array}{cccc} & \text{V} & & \text{Adv} \\ * & \text{Ku-na-bwér-á} & \text{a-léndo} & \text{pa-njĩnga.} \\ & 17 \text{ SB-REC PST-COME-IND} & 2\text{-visitor } 17\text{-}3\text{-village} & 16\text{-}10 \text{ bicycle} \\ & & & \end{array}$
- d.  $\begin{array}{cccc} & \text{Adv} & & \text{i-S} \\ * & \text{Pa-njĩnga} & \text{ku-mu-dzi} & \text{a-léndo.} \\ & 16\text{-}10 \text{ bicycle } 17\text{-}3\text{-village} & 17 \text{ SB-REC PST-COME-IND} & 2\text{-visitor} \\ & & & \end{array}$

This evidence rules out an analysis in which the inverted subject is adjoined to the VP.<sup>6</sup>

### 1.3. Phrasal Phonology

Chichewa phrase-level phonology corroborates the evidence from word order. Corresponding to constituent structure in syntax, phonology has its own high-level constituent structure. A growing body of research, especially in Prosodic Phonology, has examined these structures and their relationship to syntactic structure (see, for example, Selkirk (1980a,b; 1984; 1986), Nespor and Vogel (1982; 1986), Vogel (1985), McHugh (1986), Chen (1987), and Hayes (forthcoming)). Phrase-level phenomena in Chichewa phonology evince a level of prosodic structure that correlates with syntactic structure. In this interstructural relationship inverted subjects and uninverted objects are indistinguishable; both are distinct, however, from VP adjuncts and VP-external phrases.

The heart of Prosodic Phonology is the use of phonological constituent domains to condition or restrict phonological rules. Chichewa phrase-level rules show two types of sensitivity to prosodic constituency; the language has, in Selkirk's (1980b, 111) terms, domain span rules and domain limit rules. A domain span rule is one that applies whenever its structural description is met entirely within a single domain of prescribed type, and a domain limit rule is one that is triggered in part by the edge of a domain of prescribed type.

The constituent structures allowed by Prosodic Phonology are considerably restricted in comparison to syntactic constituent structures. For instance, the collection of constituents at one level must dominate all and only constituents of the next level down

<sup>6</sup> As in Stowell's (1981) and Rochemont's (1986) theories of locative inversion based on English.

(the ‘‘Strict Layer Hypothesis’’ in Selkirk (1984, 26) and Nespor and Vogel (1986, 7)). Furthermore, constituent levels are restricted to a fixed list (from highest to lowest): utterance, intonational phrase, phonological phrase, clitic group, phonological word, foot, and syllable.<sup>7</sup> Of these levels, the phonological phrase (henceforward p-phrase) has the most ties to syntactic constituent structure; hence, our examination of Chicheŵa phonology focuses on p-phrase phenomena.

Chicheŵa has two manifest domain limit rules: (penultimate) Lengthening and (tone) Retraction. Long vowels are a sparse minority in the Chicheŵa lexicon, yet every word in citation has a long vowel in its penultimate syllable. More generally, vowels lengthen in all p-phrase penultimate positions. In addition to Lengthening, penultimate syllables also frequently bear contour tones, which are rare in other positions. These contour tones arise by Retraction: the tone of the final syllable in a p-phrase is retracted onto the second mora of the long penultimate syllable. Example (8) typifies the alternations that Lengthening and Retraction together induce:<sup>8</sup>

(8)	mteengo	‘price’	mtengo uuwu	‘this price’
	mlèéndo	‘visitor’	mlendó uuyu	‘this visitor’
	mtéèngo	‘tree’	mténgó uuwu	‘this tree’
	nkhúlúúlu	‘cicada’	nkhúlúúlu iiyi	‘this cicada’

The other two phrasal rules we shall consider are domain span rules. The rule of Nonfinal Doubling spreads a singly linked high tone to the following syllable as long as that syllable is not in the phrase-final (bisyllabic) foot. This pattern is illustrated in (9), in which each p-phrase contains a single underlying high tone:

(9)	dókótaala	‘doctor’	dókótala uuyu	‘this doctor’
	mtsíkaana	‘girl’	mtsíkána uuyu	‘this girl’
	chigawéenga	‘terrorist’	chigawéngá iichi	‘this terrorist’
	mnyamááta	‘boy’	mnyamatá uuyu	‘this boy’

It is important to remember that the visible effects of Nonfinal Doubling (the spread of the high tone) must occur at least two syllables away from the end of a p-phrase.

The rule of Prehigh Doubling spreads a singly linked high tone to the following syllable as long as a high tone follows it (within the same p-phrase). The cases that distinguish Prehigh Doubling from Nonfinal Doubling involve a high tone spreading onto the phrase-final foot:

(10)	njoovu	‘elephant’	yá, wá	‘Assoc. Marker’
	mwàána	‘child’	ndí	‘and, with’

<sup>7</sup> Consequently, a prosodic constituent structure has no recursion and fixed depth.

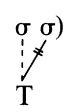
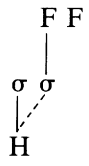

<sup>8</sup> The second high tone in *mténgó uuwu* arises from another phonological rule, Nonfinal Doubling, to be discussed immediately below.

For perspicuity, special transcriptions are used for this subsection. Long vowels appear as two successive vowels, each of which is treated as a separate tone-bearing unit. A low tone is explicitly marked (with a grave accent `) when it occurs as half of a contour tone on a long vowel.

njovu yá mwáána	'elephant of child'
njovu ndí mwáána	'elephant and child'
mwaná wá njoovu	'child of elephant'
mwaná ndí njoovu	'child and elephant'

Lexically, the second (final) syllable of *mwáána* bears a high tone. This high tone triggers doubling onto the phrase-penultimate syllable in the forms for 'elephant of child' and 'elephant and child'. The forms for 'child of elephant' and 'child and elephant' lack the high tone trigger; hence, no doubling occurs. Lengthening and Retraction apply to give these forms their final shape.

The four rules introduced above can be formalized as follows:

- (11) a. Lengthening:  $\emptyset \rightarrow V / \text{--- } \sigma$       Domain: p-phrase
- b. Retraction:  $\sigma \sigma$       Domain: p-phrase  

- c. Nonfinal Doubling:  $\sigma \sigma$       Domain: p-phrase  

- d. Prehigh Doubling:  $\sigma \sigma$       Domain: p-phrase  


These rules signal p-phrase constituency. Since the domain limit rules are triggered specifically by the end of a p-phrase, their application signals the presence and location of a p-phrase end, and their failure to apply signals its absence. Conversely, the application of a domain span rule indicates precisely where a boundary does not exist, for the rule's entire structural description must lie within a single p-phrase. Consider the juncture between contiguous words *A* and *B*. If *A* and *B* lie in the same p-phrase, neither Lengthening nor Retraction will apply at the end of *A*; Nonfinal and Prehigh Doubling, though, are free to apply either at the end of *A* or straddling *A* and *B*. If *A* and *B* lie in separate p-phrases, on the other hand, *A*'s penultimate syllable will show Lengthening and Retraction, and no tone doubling will occur straddling *A* and *B*.

Using the above rules as diagnostics, we find three classes of word juncture in Chicheŵa: obligatorily phrase-internal, variable, and obligatorily phrase-external. All three types occur in the vicinity of a verb.

First, the juncture between a verb and its object is obligatorily phrase-internal. In example (12) the high tone on the final syllable of the verb *wagonéetsa* must double (by Prehigh Doubling) onto the object, and Lengthening and Retraction on the verb are



disallowed. In (13) tone doubling occurs at the end of the verb, and Lengthening and Retraction there are disallowed.<sup>9</sup>

- (12) (máàyi) (wagonetsá mwáná wááke) [D]  
 \*(máàyi) (wagonèétsa) (mwaná wááke) [L, R]  
 'The mother has put her child to sleep.'
- (13) (chatsaliíra) (anakwérá njǐnga) [D]  
 \*(chatsaliíra) (anakwéèra) (njǐnga) [L, R]  
 'Chatsalira rode a bicycle.'

Other VP-internal junctures are variable. Consequently, either the domain span or the domain limit rules apply in a given utterance (but not both):

- (14) (wathamangá kúdáàmbo) [D]  
 (wathamàánga) (kudáàmbo) [L, R]  
 'He/she has run in the swamp.'
- (15) (zinapérékedwá kwá mfúumu)  
 (zinapérékèédwa) (kwá mfúumu) [L, R]  
 'They(cl.10) were given to the chief.'
- (16) (pereka mphátsó kwá mfúumu) [D]  
 (pereka mpháàtso) (kwá mfúumu) [L, R]  
 'Give the presents to the chief.'
- (17) (anabwérétsa alendó panjǐnga) [D]  
 (anabwérétsa alèendo) (panjǐnga) [L, R]  
 'They(cl.2) made visitors come on bicycle.'

In contrast, a juncture at the end of the VP is strictly phrase-external. Example (18) contains a verb followed by a topic outside of the VP (as argued by Bresnan and Mchombo (1987, 750)):

- (18) \*(a-li-pítirizé phúnziro) [D]  
 (a-li-pítiríze) (phunziro) [L, R]  
 'They(cl.2) should continue it, the lesson.'

A post-VP subject must also be in a separate p-phrase from the verb:

- (19) \*(wagoná mwáána) [D]  
 (wagòóna) (mwáána) [L, R]  
 'The child is asleep.'

The above patterns allow us to locate the inverted subject strongly inside the VP, since it is obligatorily in the same p-phrase as the verb:

<sup>9</sup> In examples (12)–(21) the letter(s) in brackets indicate which phonological rules have applied in the juncture of interest: D for either of the doubling rules, L for Lengthening, and R for Retraction. Underlining indicates the locus of application of the rules.

- (20) (kumuudzi) (kunabw<sup>é</sup>rá alendó átáatu) [D]  
 \*(kumuudzi) (kunabw<sup>é</sup>éra) (alendó átáatu) [L, R]  
 'To the village came three visitors.'
- (21) (kumuudzi) (kwakhalá áána) [D]  
 \*(kumuudzi) (kwakhàála) (áána) [L, R]  
 'In the village have remained children.'

Thus, the phrasal phonology makes no distinction between inverted subjects and non-inverted objects, although it does distinguish both from other VP-internal constituents and VP-external constituents.

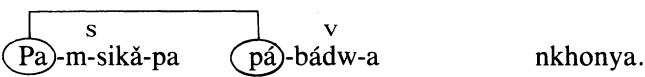
In summary, evidence from word order at the S level, word order at the VP level, and phrasal phonology converges in showing that the inverted subject is internal to the minimal phrase containing the verb. This is the characteristic position of the structural object in Chichewa (Bresnan and Mchombo (1987)).

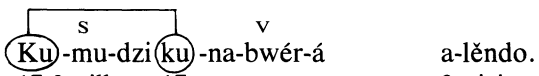
## 2. The Locative Subject

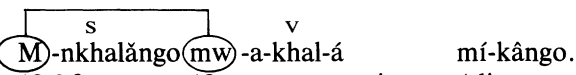
A compelling indication that the inverted subject cannot be the syntactic subject is the evidence that the locative phrase itself is the subject. Evidence for this in Chichewa comes from subject-verb agreement, the absence of expletive subjects, attributive VPs, and subject raising.

### 2.1. Subject-Verb Agreement

Finite verbs in Chichewa have an obligatory subject prefix that agrees with the subject NP in person, number, and gender (noun class) (Bresnan and Mchombo (1987)). In locative inversions the subject prefix of the verb agrees obligatorily with the locative phrase. There are three locative noun classes, and any mismatch of the three locative subject prefixes in the following examples would be completely ungrammatical:

- (22) a.   
 Pa-m-siká-pa pá-bád-w-a nkhonya.  
 16-3-market-16 this 16 SB IM FUT-be born-IND 10 fist  
 'At this market a fight is going to break out.'

- b.   
 Ku-mu-dzi ku-na-bwér-á a-léndó.  
 17-3-village 17 SB-REC PST-come-IND 2-visitor  
 'To the village came visitors.'

- c.   
 M-nkhalángo mw-a-khal-á mí-kángo.  
 18-9 forest 18 SB-PERF-remain-IND 4-lion  
 'In the forest have remained lions.'

Hence, locative subject-verb agreement in Chicheŵa is a clear indicator of the subject status of the inverted locative.

## 2.2. Evidence against an Expletive Subject

A second consideration in favor of the subject analysis of the inverted locatives is the evidence against a (possibly null) expletive subject in Chicheŵa. The idea that the locative subject prefixes might be markers of a semantically empty expletive or impersonal subject has been advanced by Perez (1983) for another Bantu language, Chishona. But for Chicheŵa, the expletive analysis would fail to explain why there is obligatory subject-verb agreement with the locative phrases under locative inversion.<sup>10</sup>

Moreover, in contrast to Chishona, Chicheŵa gives no evidence of expletive subjects elsewhere in its grammar. Chicheŵa lacks impersonal passives and does not have impersonal uses of locative subjects. For example, in (23) from Chishona (Perez (1983, 143)) the subject of the passivized main verb is understood to be impersonal, and its subject prefix is glossed as a locative (class 17):

- (23) Kú-no-fungir-w-a      kuri Sekúru      vá-ngu íbenzi.  
 17-PR-suspect-PASS-IND that 1A uncle 2A-my fool  
 'It is suspected that my uncle is a fool.'

A parallel example in Chicheŵa has the class 10 verbal prefix, not a locative prefix:

- (24) Zi-ku-gánízir-idw-á      kútí á-tsíbwéni á-ngá ndi a-fiti.  
 10 SB-PROG-think-PASS-IND COMP 2-uncle      2-my COP 2-witch  
 'It is thought that my uncle is a practitioner of witchcraft.'

This class 10 concord is the regular agreement marker for *kúti* complementizer clauses:

- (25) a. Zi-ku-ónék-a      kutí m-phunzitsi w-ánú á-ma-dy-á  
 10 SB-PROG-seem-IND COMP 1-teacher      1-your 1 SB-PRSHAB-eat-IND  
 mbewa.  
 10 mice  
 'It seems that your teacher eats mice.'
- b. Kutí m-phunzitsi w-ánú á-ma-dy-á      mbewa ndi  
 COMP 1-teacher      1-your 1 SB-PRSHAB-eat-IND 10 mice COP  
 z-ó-dábwíts-a.  
 10-ASC INF-amaze-IND  
 'That your teacher eats mice is amazing.'

Even weather verbs in Chicheŵa show obligatory agreement with their locative subjects:

<sup>10</sup> Even in Chishona there are problems with the expletive analysis. Perez (1983, 150–151) gives three examples of purported failure of locative agreement in Chishona, but the locative phrases in two examples are temporal adjuncts. The third example is a passivized intransitive, which could involve an impersonal use of the class 17 locative prefix *ku-* as an optional alternative to locative inversion. However, Harford (1988) revises her earlier analysis in Perez (1983) to the position that inversion verbs in Chishona, as in Chicheŵa, take locative subjects.

- (26) a. Kũ-nja kw-a-zizir-a.  
 17-out 17 SB-PERF-be cold-IND  
 ‘It’s cold outside.’ (Lit.: ‘Outside is cold.’)
- b. M-kăti mw-a-tenth-a.  
 18-inside 18 SB-PERF-be hot-IND  
 ‘It’s hot inside.’ (Lit.: ‘Inside is hot.’)

Thus, there are no expletive subjects elsewhere in Chichewa grammar.

But most telling is the fact that unlike expletive subjects, the locative subject prefix must have the semantic content of a pronoun under certain conditions. And under these conditions, locative inversion is possible, excluding the possibility that locative inversion depends on an expletive or impersonal subject. One such condition arises when the subject prefix refers anaphorically to a discourse topic, as in the following examples:

- (27) a. Pá-bád-w-a nkhonya.  
 16 SB-IMP-FUT-be born-IND 10 fist  
 ‘There (at some place) will break out a fight.’
- b. Ku-na-bwér-á a-lěndo.  
 17 SB-REC-PST-COME-IND 2-visitor  
 ‘There (in/to some place) came visitors.’
- c. Mw-a-khal-á mí-kāngo.  
 18 SB-PERF-remain-IND 4-lion  
 ‘There (inside some place) have remained lions.’

Here the locative prefixes are used pronominally, to refer to definite locations in the discourse context. This use is characteristic of all subject prefixes in Chichewa (Bresnan and Mchombo (1986; 1987)).

Another condition in which subject prefixes must have semantic pronominal content arises when they are anaphorically bound to a dislocated topic within a sentence (Bresnan and Mchombo (1987, 755–757)):

- (28)  $\overbrace{\text{Chi-chěwa}}^{\text{Top}} \text{ mu-ku-gáníz-a} \text{ kutí } \overbrace{\text{chi-ma-wá-sángaláts-a}}^{\text{Pro}}$   
 7-Chewa II PL SB-PROG-think-IND COMP 7 SB-PST HAB-2 OB-please-IND  
 ‘Chichewa, you think it used to please them.’

The subject prefix in the embedded clause agrees anaphorically with the distant topic, so that a mismatch in noun class makes the example ill-formed:

- (29)  $\overbrace{\text{*Chi-chěwa}}^{\text{Top}} \text{ mu-ku-gáníz-a} \text{ kutí } \overbrace{\text{zi-ma-wá-sángaláts-a}}^{\text{Pro}}$   
 7-Chewa II PL SB-PROG-think-IND COMP 10 SB-PST HAB-2 OB-please-IND  
 Lit.: ‘Chichewa, you think they used to please them.’

Exactly the same holds for locative inversion. In (30) the locative topic phrase *ku-mu-dzi* ‘at the village’ is anaphorically bound to the locative subject prefix on the verb *bwera* ‘come’ in the lower clause:

- (30) **Ku**-mu-dzi mu-ku-gáníz-a kutí **ku**-na-bwér-á a-lěndo.  
17-3-village II PL SB-PROG-think-IND COMP 17 SB-REC PST-COME-IND 2-visitor  
Lit.: 'To the village, you think that there came visitors.'

- (31) \* **Ku**-mu-dzi mu-ku-gáníz-a kutí **pa**-na-bwér-á a-lěndo.  
17-3-village II PL SB-PROG-think-IND COMP 16 SB-REC PST-COME-IND 2-visitor  
Lit.: 'To the village, you think that there came visitors.'

A locative or other topic phrase that is not anaphorically linked to an element of the clause it modifies cannot be displaced in this way. For example, the adjunct locative in (32a) cannot be displaced from the lower clause to the higher clause without anaphorically binding a locative pronoun. Thus, (32b) is ungrammatical. Contrast (32c), where an enclitic locative pronoun has been added to the lower clause verb, restoring grammaticality:

- (32) a. A-ku-fún-á kutí a-lěndo a-bwer-é kú-mu-dzi.  
1 SB-PROG-want-IND COMP 2-visitor 2 SB-COME-SBJN 17-3-village  
'He wants visitors to come to the village.'

- b. \* **Ku-mu-dzi** a-ku-fún-á kutí a-lěndo a-bwěr-e.   
17-3-village 1 SB-PROG-want-IND COMP 2-visitor 2 SB-COME-SBJN  
Lit.: 'To the village, he wants visitors to come.'

- c. **Ku**-mu-dzi a-ku-fún-á kutí a-lěndo a-bwer-é **ko**.  
17-3-village 1 SB-PROG-want-IND COMP 2-visitor 2 SB-COME-SBJN-17 there  
Lit.: 'To the village, he wants visitors to come there.'

This evidence shows that the locative subject prefix is not a semantically empty expletive or impersonal subject: its semantic pronominal content is crucial to the anaphoric binding of topics.

In this way we can also see that the locative subject prefix of weather verbs is a true locative argument, and not a semantically empty expletive or impersonal subject. In (33) the locative topic must be anaphorically bound to a locative pronominal in the lower clause, which shows anaphoric agreement with it:

- (33) a. **Kodí**(**ku**)-nja mu-ku-gáníz-a kutí **kw**-á-zizir-a?  
Q 17-out II PL SB-PROG-think-IND COMP 17 SB-PERF-be cold-IND  
'Outside, do you think that it is cold?'

- b. \*Kodí (m) -kāti mu-ku-gáníz-a kutí (kw) -á-zizir-a?  
 Q 18-inside II PL SB-PROG-think-IND COMP 17 SB-PERF-be cold-IND  
 ‘Inside, do you think that it is cold?’

To conclude: Like all of the other noun class subject prefixes, the locative subject prefix must have semantic pronominal content under certain conditions. The occurrence of locative inversion under these conditions excludes the possibility that locative inversion depends on an expletive or impersonal subject.

### 2.3. Attributive VPs

There is a derived form of the Chichewa verb, which creates a nonfinite verbal phrase that can be used as a modifier of nominals or as a predicate complement, much like the participial phrase in English:

- (34) a. m-sodzi w-ó-dábwíts-a  
 1-fisherman 1-ASC INF-amaze-IND  
 ‘an amazing fisherman’  
 b. M-chi-pinda ndi m-ó-dábwítsa.  
 18-7-room COP 18-ASC INF-amazing  
 ‘The inside of the room is amazing.’

This verb form is morphologically derived from the infinitive/gerund by the addition of the associative prefix *á-*.<sup>11</sup>

In this attributive verbal phrase every argument of the basic verb may be expressed except for the subject (exactly as with English relative participials). For example, in (35a) the active subject of the bracketed verbal phrase is missing, and in (35b) the passive subject is missing:

- (35) a. m-sodzi [VP w-ó-ík-á nsómbá pa-m-pando]  
 1-fisherman 1-ASC INF-put-IND 10 fish 16-3-chair  
 ‘a fisherman putting fish on a chair’  
 b. nsómbá [VP z-ó-ík-ídw-á pá-m-pando]  
 10 fish 10-ASC INF-put-PASS-IND 16-3-chair  
 ‘fish being put on a chair’

In other words, this attributive VP expresses a semantic property that can be defined by abstracting over an open argument of the derived verb. That open argument must correspond to the subject argument of the base verb.

Interestingly, inverted verbs appear in these attributive VPs, and when they do so,

<sup>11</sup> The associative prefix regularly coalesces with the infinitival/gerund prefix *ku-* to yield the vowel *o*, as seen in (34a,b). When the verb stem is monosyllabic, however, coalescence fails, and both prefixes are distinguishable, as in *w-á-kú-ba* (from the stem *-ba* ‘steal’) and *ch-á-kú-swa* (from the stem *-swa* ‘break’). For more on associative verb forms, see Mchombo (1979), Orr and Scotton (1980), Mtenje (1983, 49–50), Moto (n.d.), and Kanerva (in progress).

it is the locative argument that is the open subject argument, and the inverted subject that remains inside the VP:<sup>12</sup>

- (36) m-nkhalangó [VP m-ó-khál-á mi-kângo]  
 18-9 forest 18-ASC INF-live-IND 4-lion  
 'in the forest where there live lions'
- (37) ku-m-sáná kw-akó kw-á-kú-kúlu-ko [VP k-ó-tér-á njúchi]  
 17-3-back 17-your 17-ASC-17-big-17 there 17-ASC INF-land-IND 10 bee  
 'on that big back of yours where there land bees'
- (38) m-nyumbá [VP m-ó-gón-á nkhûku] koma a-nthu  
 18-9 house 18-ASC INF-sleep-IND 10 chicken but 2-person  
 á-ma-gón-á kúnja  
 2 SB-PRS HAB-sleep-IND outside  
 '. . . in the house where chickens sleep, but people sleep outside . . .'

The same attributive VPs can be used as predicate complements to the copula, as (39) illustrates:

- (39) M-nyumbá ndi m-ó-gón-á nkhûku.  
 18-9 house COP 18-ASC INF-sleep-IND 10 chicken  
 'In the house is where chickens sleep.'

This is striking evidence for the subject status of the inverted locative.

#### 2.4. Subject Raising

Like many languages, Chicheŵa has very few verbs that can be construed as subject raising predicates. But the following example from a text recorded by Mchombo (appendix 2, text 3) is a clear case of raising of the locative subject of the infinitive:

- (40) . . . pa-chi-dzala pá-fúna ku-túkumbuká chi-nthu . . .  
 16-7-rubbish pit 16 SB IM FUT-want INF-emerge 7-thing  
 '. . . there seems to be something coming out of the rubbish pit . . .'

The syntactic form of this example closely resembles the English *From the rubbish pit seems to be emerging something*. Such raising is universally restricted to the grammatical subject of the infinitive.

In sum, the evidence from subject-verb agreement, the absence of expletive subjects, attributive VPs, and subject raising converges in identifying the preposed locative in locative inversions as the grammatical subject.

### 3. Nonobject Properties of the Inverted Subject

We have given evidence that, like an object, the inverted subject occupies a position within the smallest phrase containing the verb, and like a subject, the locative participates

<sup>12</sup> English has no syntactically parallel construction, for reasons discussed in Bresnan (forthcoming), so our translations here use full relative clauses rather than participial VPs. Example (38) is an excerpt from a song by Allan Namoko, which is sung in Malaŵi (Sam A. Mchombo (personal communication)).

in subject-verb agreement and anaphora, attribution and predication, and subject raising. The problem is that the inverted subject also shows properties atypical of objects. First, it cannot passivize:

- (41) a. Ku-mu-dzi ku-na-bwér-á a-lendô-wo.  
 17-3-village 17 SB-REC PST-COME-IND 2-visitor-2 those  
 'To the village came those visitors.'
- b. \*A-lendô-wo a-na-bwér-édw-á ndí ku-mu-dzi.  
 2-visitor-2 those 2 SB-REC PST-COME-PASS-IND by 17-3-village  
 Lit.: 'The visitors were come by to the village.'

Second, it prohibits the object marker:

- (42) \*Ku-mu-dzi ku-na-wá-bwér-a a-lendô-wo.  
 17-3-village 17 SB-REC PST-2 OB-COME-IND 2-visitor-2 those  
 Lit.: 'To the village came them, those visitors.'

Third, it cannot be extracted by relativization:

- (43) a. Pa-m-chenga p-a-im-a nkhandwe.  
 16-3-sand 16 SB-PERF-stand-IND 9 fox  
 'On the sand is standing the fox.'
- b. \*N'chi-yâni chi-méné pa-m-chenga p-á-ím-a \_\_\_\_?  
 COP 7-Q 7-REL 16-3-sand 16 SB REL-PERF-stand-IND  
 Lit.: 'What is it that on the sand is standing?'

Ordinary objects, in contrast, have all three properties in Chichewa (although certain idiomatic and cognate objects disallow the object marker; see Bresnan and Mchombo (1987, 763–764)).

This, then, is the problem: the locative is indeed the subject, and the inverted subject is indeed in object position—but it doesn't behave fully like an object. Why?

#### 4. The Inverted Subject as an Unaccusative Object

We propose that the inverted subject in locative inversion is in fact an unaccusative object—that is, a grammatical object that alternates with the subject for a certain class of intransitive verbs.<sup>13</sup> We further suggest that when the unaccusativity of locative inversion is properly understood, the strange behavior of the inverted subject falls into place.

The evidence for the unaccusativity of locative inversions in Chichewa is striking. First, locative inversion is possible only with intransitive verbs.<sup>14</sup> All of our examples of locative inversion thus far have involved intransitive verbs with meanings like 'come', 'arrive', 'be', 'remain'. In their ordinary uses, these verbs do not allow object agreement,

<sup>13</sup> See Perlmutter (1978) and Burzio (1981; 1986). To our knowledge, L. Levin (1986) was the first to observe this generalization for locative inversion (in English).

<sup>14</sup> There is a small but interesting class of counterexamples to this generalization; see footnote 17.



and they fail to passivize.<sup>15</sup> In contrast, transitive verbs fail to undergo locative inversion. For example, the verbs *péza* ‘find’, *thamangitsa* ‘chase’, and *tumiza* ‘send’ are typical of transitive verbs in not permitting locative inversion. (Whether the inverted subject precedes or follows the object of the verb in these examples, the result is ungrammatical.)

- (44) a. Mâyi a-na-péz-á mw-aná kú-dámbo.  
1A mother 1 SB-REC PST-find-IND 1-child 17-5 swamp  
‘The mother found the child in the swamp.’
- b. \*Ku-dámbo ku-na-péz-á mâyi mw-ána.  
17-5 swamp 17 SB-REC PST-find-IND 1A mother 1-child.  
Lit.: ‘In the swamp found the mother the child.’
- (45) a. A-lenje a-na-thámáng-its-a aná kú-dámbo.  
2-hunter 2 SB-REC PST-run-CAUS-IND 2 child 17-5 swamp  
‘The hunters chased the children in the swamp.’
- b. \*Ku-dámbo ku-na-thámáng-its-a a-lenje ána.  
17-5 swamp 17 SB-REC PST-run-CAUS-IND 2-hunter 2 child  
Lit.: ‘In the swamp chased the hunters the children.’
- (46) a. A-lenje a-na-túmíz-a ma-zira kw-á á-tsíkana.  
2-hunter 2 SB-REC PST-send-IND 6-egg 17-ASC 2-girl  
‘The hunters sent eggs to the girls.’
- b. \*Kw-á á-tsíkana ku-na-túmíz-a a-lenje ma-zira.  
17-ASC 2-girl 17 SB-REC PST-send-IND 2-hunter 6-egg  
Lit.: ‘To the girls sent the hunters eggs.’

But although locative inversion applies only to intransitive verbs, it does not apply to *all* intransitive verbs. The intransitive verbs of Chicheŵa exhibit contrasts like the following:

- (47) a. M-mi-têngo mw-a-khal-a a-nyáni.  
18-4-tree 18 SB-PERF-sit-IND 2-baboon  
‘In the trees are sitting the baboons.’
- b. \*M-mi-têngo mu-ku-ímb-á a-nyáni.  
18-4-tree 18 SB-PROG-sing-IND 2-baboon  
Lit.: ‘In the trees are singing the baboons.’
- (48) a. M-chi-tsíme mw-a-gwer-a mbûzi.  
18-7-well 18 SB-PERF-fall-IND 9 goat  
‘Into the well has fallen a goat.’
- b. \*M-chi-tsíme mw-a-kodz-a mbûzi.  
18-7-well 18 SB-PERF-urinate-IND 9 goat  
Lit.: ‘Into the well has urinated a goat.’

<sup>15</sup> A few of the intransitive verbs that undergo locative inversion also have a transitive use that takes locative objects: for example, *fika* means ‘arrive’ (intransitive) or ‘reach’ (transitive); *dutsa* means ‘go through’ (intransitive) or ‘cross’ (transitive). In their transitive use, they allow both locative object agreement and passivization of the locative object.

- (49) a. Pa-m-chenga p-a-im-a nkhandwe.  
16-3-beach 16 SB-PERF-stand-IND 9 fox  
'On the beach is standing a fox.'
- b. \*Pa-m-chenga pa-ku-mvér-á nkhandwe.  
16-3-beach 16 SB-PROG-listen-IND 9 fox  
Lit.: 'On the beach is listening a fox.'
- (50) a. Ku-mu-dzi kw-a-khal-á nkhalambá zó-kha.  
17-3-village 17 SB-PERF-remain-IND 10 elder 10-only  
'In the village have remained only old people.'
- b. \*Ku-mu-dzi kú-ma-lúk-á nkhalambá zó-kha.  
17-3-village 17 SB-PRS HAB-weave-IND 10 elder 10-only  
Lit.: 'In the village weave only old people.'

The intransitive verbs that undergo locative inversion fall into several lexical subclasses, including the following:

*Motional verbs*

*fika* 'arrive', *-gwa*<sup>16</sup> 'fall', *gwera*<sup>17</sup> 'fall into', *bwera* 'come, come back', *tuluka* 'come out, exit', *tera* 'alight, land', *lowa* 'enter', *dutsa* 'go through', *thamānga* 'run', *lumpha* 'jump, leap', *ulūka* 'fly'

*Postural verbs*

*ima* 'stand', *khala* 'sit, dwell', *gōna* 'lie down, sleep'

*Verbs of existence and availability*

*-li* 'be', *khāla* 'remain, be left', *tsāla* 'remain, stay', *sōwa* 'disappear, be missing', *tayika* 'get lost', *dibwa* 'get caught (by a wild animal), be depleted', *badwa* 'be born'

Furthermore, locative inversion is possible with transitive verbs that have been passivized. Thus, the passive versions of the transitive verbs in the ungrammatical examples of (44)–(46) all allow locative inversion (though the agent phrases become unacceptable):<sup>18</sup>

- (51) a. Mw-āna a-na-péz-édw-á kú-dámbo (ndí māyi).  
1-child 1 SB-REC PST-find-PASS-IND 17-5 swamp (by 1A mother)  
'The child was found in the swamp (by the mother).'

<sup>16</sup> Monosyllabic verb stems like *-gwa* are not available as citation forms, because words in the major lexical categories Noun and Verb must all contain at least one foot of two syllables (Kanerva (in progress)).

<sup>17</sup> *Gw-er-a* is the applicative form of *-gwa*. Although this form is normally transitive (fn. 20), here it behaves like an intransitive verb in disallowing transitive passivization: \**M-chitsime mw-a-gweredwá ndí mbūzi* 'The well was fallen into by a goat'. Although judgments are insecure, it seems also to resist object agreement with the locative: ??*Mbūzi y-a-mú-gwera m-chitsime* 'A goat has fallen into it, the well'. We therefore treat it here as a lexicalized intransitive verb stem (Mchombo (1978)). See Alsina and Mchombo (1988) for an explanation of this exceptional behavior within their theory of applicatives.

<sup>18</sup> Like the passive, the stative intransitivizes the verb, allowing locative inversion. For example, *pez-ék-a* 'get found, be available' also shows locative inversion: *Ku-dámbo ku-na-péz-ék-á mw-āna* Lit.: 'In the swamp got found a child'. Likewise, the verb *tayika* 'get lost', listed among the invertible intransitive verbs above, is a stative passive of the transitive verb *tāya* 'lose'. Although they have a mediopassive meaning, these stative passives do not allow an expressed agent.

- b. Ku-dámbo ku-na-péz-édw-á mw-ána (??ndí máyi).  
17-5 swamp 17 SB-REC PST-find-PASS-IND 1-child ( by 1A mother)  
'In the swamp was found the child (??by the mother).'
- (52) a. Āna a-na-thámáng-its-idw-á kú-dámbo (ndí á-lenje).  
2 child 2 SB-REC PST-run-CAUS-PASS-IND 17-5 swamp (by 2-hunter)  
'The children were chased in the swamp (by the hunters).'
- b. Ku-dámbo ku-na-thámáng-its-idw-á ána (??ndí á-lenje).  
17-5 swamp 17 SB-REC PST-run-CAUS-PASS-IND 2 child ( by 2-hunter)  
'In the swamp were chased the children (??by the hunters).'
- (53) a. Ma-zira a-na-túmíz-idw-á kw-á á-tsíkana (ndí á-lenje).  
6-egg 6 SB-REC PST-send-PASS-IND 17-ASC 2-girl (by 2-hunter)  
'Eggs were sent to the girls (by the hunters).'
- b. Kw-á á-tsíkana ku-na-túmíz-idw-á má-zira (??ndí á-lenje).  
17-ASC 2-girl 17 SB-REC PST-send-PASS-IND 6-egg ( by 2-hunter)  
'To the girls were sent eggs (??by the hunters).'

Other examples of locative inversion with passives are the following:<sup>19</sup>

- (54) a. Kw-á mfúmu ku-na-pérék-edw-á mphátso.  
17-ASC 9 chief 17 SB-REC PST-give-PASS-IND 10 gift  
'To the chief were given gifts.'
- b. M-chi-pindá-mu mu-ku-dy-édw-á nsômba.  
18-7-room-18 this 18 SB-PROG-eat-PASS-IND 10 fish  
'In this room is being eaten fish.'
- c. Pa-m-sikǎ-pa pá-bád-w-a nkhonya.  
16-3-market-16 this 16 SB IM FUT-be born-IND 10 fist  
'In this market a fight is going to break out.'
- d. M-nkhâli mw-a-phik-idw-á chákúdyá.  
18-9 cooking pot 18 SB-PERF-COOK-PASS-IND 7 food  
'In the pot has been cooked food.'

But there are certain passive verbs that fail to undergo locative inversion. Examples are the passivized applied verbs in (55) and (56):<sup>20</sup>

- (55) a. W-a-thamang-ir-á mfúmu mu-m-pikisano.  
II SG SB-PERF-run-APPL-IND 9 chief 18-3-race  
'You have run for the chief in the race.'

<sup>19</sup> When a place is identified by a person, a locative prefix is used with the associative marker *á*, as in (53b) and (54a). The *kwá* phrases in these examples can be analyzed as modifiers of an understood locative head. Note also that the verb *pereka* 'give, hand over' takes a locative role, as shown by an example with *ku-chisôni* (Lit.: at-sorrow) 'a place where there's a funeral': *Nd-a-pereka nkhûku ku-chisôni* 'I have given a chicken at the funeral place'.

<sup>20</sup> The "applicative," or applied form of the verb, is a derived transitive verb that applies the action of the base verb *v* to a new object argument *x*, yielding a derived meaning paraphrasable as 'do *v* for, to, with, or at *x*'.

- b. Mfûmu y-a-thamang-ir-idw-á mú-m-pikisano.  
 9 chief 9 SB-PERF-run-APPL-PASS-IND 18-3-race  
 Lit.: 'The chief has been run for in the race.'
- c. \*Mu-m-pikisano mw-a-thamang-ir-idw-á mfûmu.  
 16-3-race 16 SB-PERF-run-APPL-PASS-IND 9 chief  
 Lit.: 'In the race has been run for the chief.'
- (56) a. A-ku-yénd-ér-a ndodo pa-m-sewu.  
 1 SB-PROG-walk-APPL-IND 9 stick 16-3-road  
 'He is walking with a stick in the road.'
- b. Ndodo i-ku-yénd-ér-edw-á pa-m-sewu.  
 9 stick 9 SB-PROG-walk-APPL-PASS-IND 16-3-road  
 Lit.: 'A stick is being walked with in the road.'
- c. \*Pa-m-sewu pa-ku-yénd-ér-edw-á ndodo.  
 16-3-road 16 SB-PROG-walk-APPL-PASS-IND 9 stick  
 Lit.: 'In the road is being walked with a stick.'

And object-drop verbs also fail to undergo locative inversion. Examples are the verbs *dya* 'eat' and *phika* 'cook'. Both verbs can be used intransitively by omitting the object. But whereas the passivized forms of these verbs do undergo locative inversion, as in (54b,d), the active intransitive forms do not:<sup>21</sup>

- (57) a. A-nthu a-kù-dy-a m-chi-pindã-mu.  
 2-person 2 SB-PROG-eat-IND 18-7-room-18 this  
 'People are eating in the room.'
- b. \*M-chi-pindã-mu mu-ku-dy-á a-nthu.  
 18-7-room-18 this 18 SB-PROG-eat-IND 2-person  
 Lit.: 'In the room are eating people.'
- (58) a. A-mâyi a-phik-a m-nkhâli.  
 2 HON-mother 2 HON SB PERF-COOK-IND 18-9 pot  
 'Mother has cooked in the pot.'
- b. \*M-nkhâli mw-a-phik-a a-mâyi.  
 18-9 pot 18 SB-PERF-COOK-IND 2 HON-mother  
 Lit.: 'In the pot has cooked mother.'

We find, then, that the subjects of one group of intransitive verbs pattern together with the subjects of passive verbs in allowing locative inversion, whereas the subjects of another group of intransitive verbs pattern together with the subjects of transitive verbs in failing to do so. These are, of course, hallmarks of "unaccusativity."

Though it is restricted to lexical classes in Chichewa, the phenomenon is reminiscent of the general typological pattern of "split intransitivity" in some ergative languages

<sup>21</sup> The examples are grammatical under an interpretation not involving locative inversion. Construing the nonlocative NP as the patient rather than the agent of the verb, and the locative NP as the agent, we get the meanings 'The interior of the room is eating people' and 'The interior of the pot has cooked mother', which may be used metaphorically.

(Comrie (1978), Dixon (1979)), and the “active-stative” language type (Sapir (1917), Klimov (1977), Kibrik (1979–81; 1985), Durie (1985a,b; 1986; 1987)). Generally speaking, in such languages verbs whose subjects have the semantic role of agent belong to a morphosyntactic class distinct from verbs whose subjects are patientive, or not agents.<sup>22</sup>

Thus, the unaccusative character of locative inversion in Chicheŵa seems to reflect grammatical principles of general applicability. Yet current syntactic movement theories of unaccusativity do not provide a convincing account of these principles.

## 5. Problems for Syntactic Movement Theories

The basic idea behind syntactic movement theories of unaccusativity is that one (underlying) level of syntactic structure represents the lexical role structures of verbs, another level of syntactic structure of the same character represents their surface arrangement of syntactic functions, and the two are related by syntactic movement operations that derive the superficial structure from the underlying structure. These movement operations are regulated by restrictive syntactic principles (such as the Projection Principle, the  $\theta$ -Criterion, and Case theory). The proposed principles conspire to preserve information about lexical role structure in the configurations of the more superficial syntactic structure from which the semantic representation is derived. In this framework, unaccusative objects must occur in the object position in underlying syntactic structure in order to satisfy the Projection Principle, which requires that lexical properties, such as being a patient or theme argument, are represented uniformly at all levels of syntactic structure.<sup>23</sup>

For the theories of Burzio (1986) and Chomsky (1986) within this framework, the essential problem is that unaccusative objects, like passivized objects, are not assigned (abstract) Case by their governing verbs. To receive Case they must either move to the subject position or be coindexed with a dummy subject, from which they inherit Case. By basic assumptions of these theories, such chains of coindexed NPs must be uniquely Case-marked and  $\theta$ -marked. These assumptions are required in order to keep the information about lexical thematic role structure visible in the syntactic representation. However, the locative in subject position in Chicheŵa is not a dummy, is already coindexed with a locative  $\theta$ -marked position, and itself has (presumably inherent) locative Case, violating the visibility conditions. Moreover, as an argument that c-commands the coindexed unaccusative object, it argument-binds an NP that must be free, violating the binding conditions, which are also defined on the same syntactic representation.

<sup>22</sup> There is, however, significant variability in the active-stative typological patterning. Merlan (1985) shows that some of the properties of active and stative classes of intransitive verbs correlate, not with agentivity versus patientivity, but with other morpholexical factors such as the largest or smallest intransitive class. In addition, T. Payne (1984; 1985) points out that motional verbs may fall together with the nonagentive class, even though their subjects can be regarded as agents. This is true in Chicheŵa and will be discussed further below. Finally, Van Valin (1987) demonstrates that the inherent lexical aspect of the verb affects unaccusative properties in some languages. We show below that this is not a factor in Chicheŵa, however.

<sup>23</sup> Except in nonconfigurational languages (Hale (1983)).

At first sight, one might think that all that is required to accommodate a movement theory of unaccusativity to the facts of Chichewa is a revision of the Case theory that regulates movement. One such revision has already been proposed by Belletti (1988), who gives evidence from Italian against the unique Case requirement and the chain theory of unaccusativity it is part of. She proposes instead that the unaccusative object of a verb receives Case, not through chain formation, but through the assignment of an optional inherent Case by the verb—the partitive Case. Partitive Case is hypothesized to account for the indefinite reading of unaccusative NPs in Italian that Belletti has discovered. Moreover, it is natural on Belletti’s account to stipulate that inherent Case cannot be “absorbed” by passivization or object agreement; for it seems plausible that inherent Case always signals a special semantic Case relation, one that adds specific semantic Case content to an argument (like partitive or locative Case), and that such semantic content by its nature cannot be syntactically altered by absorption. But as we have shown, locative inversions and their alternants in Chichewa are thematically and semantically constant. There is no partitive reading, or definiteness effect, by which we can detect the presence of an added semantic Case relation. Nevertheless, one could suppose that inherent Case of some kind is assigned by unaccusative verbs in Chichewa, perhaps inherent nominative Case (see Borer (1986)). This could account for the lack of object agreement and passivizability of unaccusative objects, stipulating that inherent Case cannot be “absorbed” like structural Case. However, this approach still offers no insight into why the inverted subject fails to undergo extraction (since inherently Case-marked NPs elsewhere can be extracted) and why the passives of certain applied ditransitive verbs disallow locative inversion, as noted above.

These problems are only partially remedied by Baker’s (1988; to appear) approach to inherent Case in Bantu. Baker (1988) assumes that structural Case is assigned under government at S-Structure, requires adjacency to the verb, can be absorbed by passivization and object agreement, and is not restricted to semantic arguments of the verb; inherent Case, in contrast, is assigned under government at D-Structure, does not require adjacency to the verb, cannot be absorbed by passivization and object agreement, and is restricted to arguments that are assigned a  $\theta$ -role by the verb. He additionally assumes that each Bantu verb has the option of assigning one inherent Case. Thus, when passivization absorbs the structural Case of a transitive verb, it still has an optional inherent Case to assign to its unaccusative object, yielding (after movement of the locative into subject position) the locative inversion forms. Moreover, given Baker’s (to appear) theory of applicatives, not all passives will be able to undergo locative inversion. In particular, the beneficiary cannot be assigned inherent Case, because on Baker’s theory of applicatives, the verb does not govern the beneficiary argument at D-Structure: there it is governed by a preposition (*for*). Since it is the preposition and not the verb that assigns a  $\theta$ -role to the beneficiary argument, the beneficiary cannot be assigned inherent Case by the verb and hence cannot be an unaccusative object. This would account for examples like our (55). But Baker’s analysis of benefactive applicatives as deriving from an un-



derlying prepositional phrase is designed to explain asymmetries between benefactive and instrumental applicatives (such as object agreement and adjacency to the verb). It is crucial on his theory that an instrument, unlike a beneficiary, *is* governed and assigned a  $\theta$ -role by the verb at D-Structure and can therefore be assigned inherent Case. Thus, his analysis of locative inversion fails to explain the ungrammaticality of examples like (56c)—and of other correlated facts we describe below. The inherent Case theory also fails to explain why the unaccusative object in Chicheŵa cannot be extracted, for inherently Case-marked arguments elsewhere in the grammar (for example, secondary objects of ditransitive constructions, with which the verb does not show object agreement) *can* be (Baker (to appear)).

Thus, current versions of the movement theory of unaccusatives fail to provide a principled explanation for the properties of locative inversion that we have observed. We will propose a radically different approach to the problem, based on the assumption that neither movement nor the abstract Case mechanisms that are hypothesized to regulate it are involved at all in the phenomena of locative inversion.

## Part II

### The Solution: Factoring Grammatical Structure

The peculiar properties of the inverted subject in locative inversion follow from constraints simultaneously imposed by thematic structure, syntactic functions, and (as we will show) discourse function, together with the principles that relate them. Whereas the movement framework employs phrase structure to represent all three kinds of linguistic information, we assume that there are linguistic levels of thematic structure and functional structure formally independent of the phrase structure, and that the principles relating them are quite different from those developed in the movement framework. In particular, to capture the alternation of the theme/patient between the subject and object functions (which is modeled in the movement framework by deriving the surface subject from an underlying object position), we employ a radically different idea: the syntactic function of the theme/patient is *lexically underspecified* and may be realized as either subject or object, depending on the context.<sup>24</sup> This idea is the heart of our theory of the correspondence between thematic structure and syntactic functions, *the lexical mapping theory*.

#### 6. The Lexical Mapping Theory

There are four components of the lexical mapping theory: (a) hierarchically ordered semantic role structures, (b) a classification of syntactic functions along two dimensions, (c) principles of lexical mapping from semantic roles to (partially specified) functions, and (d) well-formedness conditions on lexical forms.

<sup>24</sup> This idea originates in the pioneering work of L. Levin (1986) on a lexical-functional theory of unaccusativity.

### 6.1. Thematic Structure

First, the theory hypothesizes a universal hierarchy of thematic roles descending from agent through beneficiary, recipient/experiencer, instrument, patient/theme, to location, which structures the semantic roles of verbs (Jackendoff (1972), Foley and Van Valin (1984), Givón (1984), Kiparsky (1987)):<sup>25</sup>

(59) *ag* > *ben* > *recip/exp* > *inst* > *th/pt* > *loc*

For example, in the lexical role structures of the Chichewa verbs ‘remain’, ‘find’, and ‘eat’, the thematic roles from left to right descend the hierarchy:

(60) *khāla* <*th loc*>                    ‘remain’  
       *pēza* <*ag th (loc)*>                ‘find’  
       *dya* <*ag (pt) (loc)*>               ‘eat’

Motivation for a hierarchy of thematic roles has been based on the theoretical order of composition of arguments with a predicator: the lower roles on the hierarchy designate “inner” arguments that are semantically composed with the predicator earlier than arguments corresponding to roles higher on the hierarchy. On the assumption that semantically inner arguments of a verb tend to be lexicalized before outer arguments, Kiparsky (1987) finds evidence of the hierarchy in the patterns of idioms and lexicalized expressions. He notes that Verb + Locative idioms are common (*put X to shame, take X to task, go to the dogs*), as are Verb + Theme idioms (*give X a hand, lend X an ear, ring a bell, the roof caved in, a penny dropped*) and Verb + Theme + Locative idioms (*let the cat out of the bag, carry coals to Newcastle*), but idiomatic combinations become very scarce as the arguments ascend the thematic hierarchy.<sup>26</sup> The pattern could be explained as well by an alternative interpretation of the thematic hierarchy as representing a scale of discourse topicality of argument types rather than an order of semantic

<sup>25</sup> Not all roles are included in this representation of the hierarchy. Our version of the hierarchy follows Givón (1984) and Kiparsky (1987) in placing the locative roles below the theme. Jackendoff (1972) and Foley and Van Valin (1984) differ in placing the locative role above the theme, with the “goal” or recipient role. The evidence below from lexicalizations in English and from passivization in Chichewa supports the version assumed here; see also Alsina and Mchombo (1988) for evidence from applicatives in favor of the different ranking of locative and goal (recipient) roles in the hierarchy.

Jackendoff (1972) cites two pieces of evidence in favor of placing the location higher than the theme on the hierarchy. One piece of evidence, based on passivization, can be accounted for as well in our theory (see fn. 36). The other, based on reflexivization, is factually problematic. The observation is that whereas *John touched Mary* has both agentive and nonagentive senses, the sentence *John touched himself* has only the agentive sense. Assuming a constraint on reflexivization that a reflexive may not be higher on the thematic hierarchy than its antecedent, Jackendoff proposes to account for this by assigning the verb *touch* in its nonagentive sense the thematic structure <*loc th*>, where the location role is higher than the theme. If the subject *John* corresponds to the theme role, then it will be lower than the reflexive on this analysis of the argument structure of *touch*. But this analysis implies that sentences like *Don't let the wire touch itself at any point* must be ungrammatical. This is incorrect, in our judgment.

<sup>26</sup> Note that the proximity of the arguments to the verb in phrase structure does not account for this pattern: idioms can be formed from nonadjacent sequences such as Verb + . . . + PP and even nonconstituent sequences such as Subject + Verb, so long as the arguments are the innermost semantically. Nor is the concept of “external argument” (Williams (1981)) adequate to explain this pattern: each argument is “external” to those below it on the hierarchy.



composition (Givón (1984)). The assumption would be that the least topical argument types are most easily lexicalized with a verb. This topicality generalization has been documented for morphological incorporation of noun stems into verbs (Hopper and Thompson (1980), Mithun (1984)). We will adopt the hierarchy of thematic roles without choosing between these interpretations. Whether because of their lower topicality, or because of their inner semantic constituency, noun incorporation across languages has been observed to favor the lower thematic roles (Mithun (1984), Comrie (1978)).

Further motivation for a hierarchy of thematic roles comes from the sequence of grammaticalization of verb-agreement markers, which proceeds from the highest role downward (Givón (1976; 1984), Kibrik (1985), Kiparsky (1987)). The same thematic hierarchy also allows us to reconstruct the notion of thematic subject, or “logical subject,” as the highest role in a lexical argument structure, regardless of its syntactic function.<sup>27</sup> We will symbolize the thematic subject by  $\hat{\theta}$ .

Thematic roles (Gruber (1965; 1976), Fillmore (1968)) are abstractions over the finer-grained semantic structures of verbs (Jackendoff (1976; 1987), Dowty (1979), Guerssel et al. (1985)).<sup>28</sup> But in what follows we will simply take the agent to be the argument that causes or has control over the situation described by the verb (*Mary* in *Mary shattered the vase*). We will take the theme to be the argument of which location or state is predicated, or change of location or state (*the vase* in *Mary shattered the vase*); with motion verbs it is the theme that undergoes motion. With verbs of effect or action, we will take the patient to be the locus of the effect (*the vase* in *Mary kicked the vase*).<sup>29</sup> We do not preclude the possibility that an argument (subject to the constraints of the hierarchy) may have multiple thematic roles (for instance, in *Mary ran home*, *Mary* both undergoes a change of location and has control over the activity of running, hence is both theme and agent).

## 6.2. Classification of Syntactic Functions

Second, the theory postulates a classification of syntactic functions according to the features [ $\pm r$ ] (thematically unrestricted or not) and [ $\pm o$ ] (objective or not):

$$(61) \quad \begin{array}{ll} \left[ \begin{array}{l} -r \\ -o \end{array} \right] & \text{SUBJ} \\ \left[ \begin{array}{l} -r \\ +o \end{array} \right] & \text{OBJ} \end{array} \quad \begin{array}{ll} \left[ \begin{array}{l} +r \\ -o \end{array} \right] & \text{OBL}_{\theta} \\ \left[ \begin{array}{l} +r \\ +o \end{array} \right] & \text{OBJ}_{\theta} \end{array}$$

<sup>27</sup> Linguistically significant generalizations based on the concept of thematic (“logical” or “deep”) subject appear in anaphoric control and binding in Sanskrit (Klaiman (1987)) and Marathi (Joshi (1987)) and in conditions on imperatives in Dyrbal and elsewhere (Dixon (1972; 1979)).

<sup>28</sup> Indeed, Dowty (1987) sketches how the effects of the thematic hierarchy can be derived from more primitive semantic dimensions of predicates, and Zaenen (1988) shows how an extension of this approach can successfully explain the unaccusativity phenomena of Dutch in a way compatible with our framework.

<sup>29</sup> Here we are following L. Levin (1986; 1987). In transitive verbs the patient often differs from the theme in disallowing an “absolutive” intransitive: contrast *Mary shattered the vase* ~ *The vase shattered*, where *the vase* is a theme, with *Mary kicked the vase* ≠ *The vase kicked*, where *the vase* is a patient. Unlike the theme, the patient also alternates with an irresultative oblique: *Mary kicked at the vase* versus \**Mary shattered at the vase*. Much finer-grained analyses are possible, but this will serve our purposes here.

Intuitively, the thematically restricted functions are those whose thematic roles are fixed. Thus, subject and object may correspond to virtually any thematic role and may even be nonthematic; oblique arguments—and secondary objects as well (L. Levin (1986), Dryer (1987))—have fixed semantic roles within each language. The intuition behind the feature [+o] is that there are several objectlike functions that appear as arguments of transitive categories of predicators (Verb and Preposition) but not of the intransitive categories Noun and Adjective. Note that  $OBL_{\theta}$  abbreviates multiple oblique functions, one for each instance of thematic role  $\theta$ :  $OBL_{go}$ ,  $OBL_{instr}$ , and so on. In just the same way,  $OBJ_{\theta}$  abbreviates secondary objects that are individuated thematically.<sup>30</sup>

This classification gives us the following natural classes of syntactic functions:

$$(62) \quad \begin{array}{ll} [-r] = \text{SUBJ, OBJ} & [-o] = \text{SUBJ, } OBL_{\theta} \\ [+r] = \text{OBJ}_{\theta}, OBL_{\theta} & [+o] = \text{OBJ, } OBJ_{\theta} \end{array}$$

### 6.3. Lexical Mapping Principles

Third, the theory postulates lexical mapping principles that associate thematic roles with partial specifications of syntactic functions.<sup>31</sup> These principles are of three kinds: (a) intrinsic role classifications, which partially specify syntactic functions according to the intrinsic semantic properties of thematic roles, (b) morpholexical operations, which add or suppress thematic roles, and (c) default classifications, which specify syntactic functions according to the hierarchical relations of thematic roles. A constraint on all lexical mapping principles is the preservation of syntactic information: they can only *add* syntactic features, and not delete or change them. This monotonicity is allowed by underspecification.

**6.3.1. Intrinsic Role Classifications.** The intrinsic role classifications associate characteristic syntactic functions with the intrinsic meanings of the roles. They include the following. The *agent encoding principle* states that the agent role cannot be encoded as an object function, but will alternate between subject and oblique. The *theme encoding principle* states that a patient or theme role will be an unrestricted function, alternating between subject and object. And the *locative encoding principle* states that a locative role will be encoded as a nonobjective function.

$$(63) \quad \begin{array}{ll} \text{agent encoding:} & \begin{array}{c} ag \\ | \\ [-o] \end{array} \\ \text{theme encoding:} & \begin{array}{c} th/pt \\ | \\ [-r] \end{array} \end{array}$$

<sup>30</sup> Thus, we now analyze the OBJ2 of earlier work in LFG as a semantically restricted object ( $OBJ_{th}$ ,  $OBJ_{ben}$ , and so on).

<sup>31</sup> The principles given here characterize verbal argument structures; nonverbal categories lack the full complement of syntactic functions found with verbs (Rappaport (1983)), possibly because of differences in role structures.

locative encoding:      *loc*  
                                   |  
                                   [−*o*]

(The theme classification as given here is incomplete: the *th/pt* can also be classified [+*o*]; see Alsina and Mchombo (1988) for the full form, which accounts for the applicative and its interactions with other morpholexical processes.)

The intrinsic classifications are a distillation of pervasive cross-linguistic generalizations about the unmarked grammatical encoding of semantic roles. Thus, cross-linguistically, the agent is canonically *not* encoded as object: in syntactically accusative languages it is the canonical subject, and in syntactically ergative languages it is a thematically restricted, nonobjective function (Dixon (1979), Wierzbicka (1981), Mel'čuk (1988)).<sup>32</sup> Cross-linguistically, the theme or patient is canonically encoded as an unrestricted function, either subject or object: (a) the subject in syntactically ergative languages (Kibrik (1985), Mel'čuk (1988)),<sup>33</sup> (b) the object in syntactically active languages,<sup>34</sup> and (c) the transitive object and intransitive subject in syntactically accusative languages. Finally, there is cross-linguistic evidence that locative arguments alternate between oblique and subject; particularly in existential sentences, locatives often appear with the basic word order and other properties of subjects (Kuno (1971), Clark (1978)).

Note that a locative role does not always receive the locative intrinsic classification shown above. A locative role introduced by the applicative morpheme can be intrinsically classified as an object [+*o*] (Alsina and Mchombo (1988)), and several verbs in Chicheŵa inherently take locative objects (fn. 15). These might be analyzed as having inherently "applied" locative roles (Alsina and Mchombo (1988)). Restricted lexical subclasses may also impose special role classifications that preempt the unmarked intrinsic classifications.

**6.3.2. Morpholexical Operations.** Morpholexical operations affect lexical argument structures by adding and suppressing thematic roles. One such operation is the passive,

<sup>32</sup> We assume here with Wierzbicka (1981), Kiparsky (1987), and Mel'čuk (1988), and contrary to Marantz (1984) and B. Levin (1983), that the ergative is not a direct object in syntactically ergative languages, on grounds of the oblique status of the ergative case, omissibility of the (unspecified) ergative argument, and frequent restrictions on first and second person ergative arguments parallel to restrictions on passive agents.

<sup>33</sup> We crucially distinguish the purely syntactic concept of subject from logical or thematic notions of subject, as well as from the discourse function of topic. In his analysis of ergativity in Dyirbal, Dixon (1979) reserves the term *subject* for the thematic ("deep") notion and uses the term *pivot* for what we would call the subject argument. The syntactic subject in our sense need not align with the thematic subject or with the discourse topic.

<sup>34</sup> In his analysis of Acehnese as a pure exemplification of the active-stative type, Durie (1985a; 1987) gives convincing syntactic evidence that intransitive verbs have what in our terms would be syntactic subject or object properties depending on whether they are agentlike or patientlike. Durie uses the concepts of Actor and Undergoer for what we would call the subject and object arguments of Acehnese, because he assumes that the subject by definition must encompass the single argument of a logically intransitive verb, and that argument is not uniformly subjectlike in Acehnese. However, this assumption is not a definitional property of the syntactic subject in our sense: indeed, under locative inversion, the theme role of intransitive verbs in Chicheŵa is realized as a syntactic object and cannot be identified with the syntactic subject.

which suppresses the highest thematic role in the lexical argument structure.<sup>35</sup>

$$(64) \text{ passive: } \begin{array}{c} \hat{\theta} \\ | \\ \emptyset \end{array}$$

The agent phrase can be expressed as an optional, thematically bound adjunct (Grimshaw (1988), Jackendoff (1987)).<sup>36</sup>

*6.3.3. Default Role Classifications.* The default classifications apply last, after the entire argument structure has been morpholexically built up. The defaults are designed to capture the generalization that the highest thematic role of a verb will be the subject (as proposed by Givón (1984), Zaenen, Maling, and Thráinsson (1985), Kiparsky (1987), and others), and lower roles will be nonsubjects. But in certain contexts an atypical subject can arise, corresponding to a lower role on the hierarchy—as in the case of locative inversion.

Locative inversion is, then, a special case of the subject default, the general case being the  $\hat{\theta}$ . The context in which the special case arises depends on a particular configuration of the thematic structure, in which the theme is the highest expressed thematic role. We give a provisional formulation here, but will reconsider the context of locative inversion subsequently. Here the locative role is optionally classified as unrestricted when the theme is the highest expressed role:

$$(65) \left( \begin{array}{c} \langle th \dots loc \rangle \\ | \\ [-r] \end{array} \right)$$

Following Alsina and Mchombo (1988), the general (elsewhere) case of the subject default then classifies the highest thematic role as unrestricted:

$$(66) \begin{array}{c} \hat{\theta} \\ | \\ [-r] \end{array}$$

All other roles are, by default, restricted:

$$(67) \begin{array}{c} \theta \\ | \\ [+r] \end{array}$$

Like the intrinsic classifications, all default classifications apply to a role only if it

<sup>35</sup> We have adopted here the restrictive hypothesis advanced by Alsina and Mchombo (1988) that morpholexical operations may not syntactically classify thematic roles.

<sup>36</sup> A possible parameter of variation in the passive across languages, suggested to us by Alex Alsina (personal communication), is the constraint that the  $\hat{\theta}$  be higher on the hierarchy than the theme role. This would account for the oddness of certain passives noted by Jackendoff (1972), such as *The box is touching the wall* ~ ??*The wall is being touched by the box*, assuming the argument structure  $\langle th \ loc \rangle$  for *touch*.

is not already specified for an incompatible value of the default feature—that is, in accordance with the principle of preservation of information.

#### 6.4. Well-formedness Conditions

Finally, there are two well-formedness conditions on lexical forms:

The subject condition: Every lexical form must have a subject.<sup>37</sup>

Function-argument biuniqueness: In every lexical form, every expressed lexical role must have a unique syntactic function, and every syntactic function must have a unique lexical role.

We interpret function-argument biuniqueness (due to Bresnan (1980)) to allow non-thematic lexical roles, which occur with pleonastic or nonlogical (“floating”) subjects and objects. These roles can be classified only as unrestricted. We also allow unexpressed lexical roles.

### 7. Demonstration of the Theory

#### 7.1. Example 1: Invertible Intransitives

The verb *khāla* ‘remain’ has two semantic roles, theme and location. The more general case of classification is illustrated in (68):

(68)	<i>khāla</i>	⟨	<i>th</i>	<i>loc</i>	⟩	‘remain’
	intrinsic:		[− <i>r</i> ]	[− <i>o</i> ]		
	defaults:			[+ <i>r</i> ]		
			O/S	OBL <sub>loc</sub>		
	w.f.:		S	OBL <sub>loc</sub>		

By intrinsic classification, the theme role will be [−*r*], and the location role will be [−*o*]. If only the general subject default applies, the effect is vacuous, since  $\hat{\theta}$  is already [−*r*]. The remaining role is classified [+*r*]. The result is that the grammatical relations of the verb *khāla* ‘remain’ are lexically underspecified: although the location role is oblique, the theme role may be either subject or object. But by the well-formedness conditions on lexical forms, only one of the two possible function combinations is admitted: according to the subject condition there must be a subject function, ruling out the choice of object and oblique.

Consider now the special case. Since the theme is the highest expressed role, the special subject default can apply, classifying the location role as unrestricted:

<sup>37</sup> 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 (1985a; 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.

(69)	khála	⟨	<i>th</i>	<i>loc</i>	⟩	‘remain’
intrinsic:			[− <i>r</i> ]	[− <i>o</i> ]		
defaults:				[− <i>r</i> ]		
			o/s	s		
w.f.:			o	s		

By monotonicity the final default cannot now apply to *loc* to make it [+*r*]. Again the grammatical relations of the verb *khála* ‘remain’ are lexically underspecified: although the location role is a subject, the theme role may be either subject or object. By the well-formedness conditions on lexical forms, only one of the two possible combinations of functions is admitted: according to the function-argument biuniqueness condition there can only be one subject function, resulting in the choice of object for the theme.

In this way the principles yield the locative inversion alternations with active intransitive verbs illustrated in the (a) examples of (47)–(50).

### 7.2. Example 2: Uninvertible Transitives

The transitive verb *pěza* ‘find’ has three semantic roles: agent, theme, and (optionally expressed) location. The effect of the lexical mapping principles on the simple active verb *pěza* ‘find’ with an expressed location role is shown here:

(70)	pěza	⟨	<i>ag</i>	<i>th</i>	<i>loc</i>	⟩	‘find’
intrinsic:			[− <i>o</i> ]	[− <i>r</i> ]	[− <i>o</i> ]		
defaults:			[− <i>r</i> ]		[+ <i>r</i> ]		
			s	o/s	OBL <sub>loc</sub>		
w.f.:			s	o	OBL <sub>loc</sub>		

By intrinsic classification, the agent role will be [−*o*], the theme role will be [−*r*], and the location role will be [−*o*]. The special subject default is inapplicable, since the agent, not the theme, is the highest expressed role. Consequently, only the general subject default applies, making the agent [−*r*]. The final default applies only to the *loc* role, by monotonicity. Again the theme remains underspecified, but the function-argument biuniqueness condition rules out its realization as subject. This accounts for the failure of locative inversion with active transitive verbs (the (b) examples of (44)–(46)).

### 7.3. Example 3: Invertible Passives

The passive verb *pezědwa* ‘be found’ has the same three semantic roles as the active verb *pěza* ‘find’, but when the passive morpheme *-édw* is suffixed to the verb, the agent, as the highest thematic role ( $\hat{\theta}$ ) of this verb, is suppressed.

The result is a lexical form that resembles Example 1 in having the theme as the highest expressed role. Exactly the same two possibilities then arise. Example (71) il-

illustrates the case of the general subject default; example (72), the case of the special subject default:

(71)	pěza	⟨	<i>ag</i>		<i>th</i>		<i>loc</i>	⟩	‘find’
	intrinsic:		[− <i>o</i> ]		[− <i>r</i> ]		[− <i>o</i> ]		
	passive:	-édw	∅						
	defaults:						[+ <i>r</i> ]		
	w.f.:				O/S		OBL <sub>loc</sub>		
					S		OBL <sub>loc</sub>		
(72)	pěza	⟨	<i>ag</i>		<i>th</i>		<i>loc</i>	⟩	‘find’
	intrinsic:		[− <i>o</i> ]		[− <i>r</i> ]		[− <i>o</i> ]		
	passive:	-édw	∅						
	defaults:						[− <i>r</i> ]		
	w.f.:				O/S		S		
					O		S		

This accounts for locative inversion with passivized transitive verbs (the (b) examples of (51)–(53), and (54a–d)). The contrasting invertibility of the active and passive forms of these transitive verbs follows from the contrasting argument structures, in which either the agent or the theme is the highest expressed role.

#### 7.4. Example 4: Uninvertible Passives

Certain transitive verbs lack a theme argument altogether. When the agent is suppressed by passivizing such verbs, the special subject default remains inapplicable, because the required context is absent. For example, the applied verb *thamangĩra* ‘run for, with, to’ in its benefactive use has an agent, beneficiary, and optionally expressed location role.<sup>38</sup> When the agent is suppressed by passivization, the beneficiary remains as the highest expressed role, and the locative cannot become the subject:

(73)	thamangĩra	⟨	<i>ag</i>		<i>ben</i>		<i>loc</i>	⟩	‘run for’
			[− <i>o</i> ]		[− <i>r</i> ]		[− <i>o</i> ]		
	passive:	ídw	∅						
	defaults:						[+ <i>r</i> ]		
	w.f.:				O/S		OBL <sub>loc</sub>		
					S		OBL <sub>loc</sub>		

The same holds for the instrumental use of the applied verb.

<sup>38</sup> See Alsina and Mchombo (1988) on the derivation of the applied argument structure.



This explains the puzzling cases of passive verbs that fail to undergo locative inversion (the (c) examples of (55)–(56)): in neither the beneficiary nor the instrumental case is the theme the highest expressed role.

### 7.5. Example 5: Uninvertible Intransitives

The transitive verb *-dya* ‘eat’ can undergo locative inversion when passivized, parallel to *pěza* ‘find’ in Example 3. But in its active intransitive form it cannot undergo locative inversion. Let us assume the predicate argument structure *dya*  $\langle ag (pt) (loc) \rangle$  ‘eat’, with the thematic roles patient and location optionally expressible.<sup>39</sup> The effect of the lexical mapping principles is shown on the active intransitive verb ‘eat’ with an expressed location role:

(74)	<i>dya</i>	⟨	<i>ag</i>	<i>loc</i>	⟩	‘eat’
intrinsic:			[− <i>o</i> ]	[− <i>o</i> ]		
defaults:			[− <i>r</i> ]	[+ <i>r</i> ]		
		S		OBL <sub>loc</sub>		

The agent and location roles are both intrinsically classified [−*o*]. The special subject default is inapplicable because once again there is no expressed theme. The other default classifications specify the highest role as [−*r*] and the remaining role as [+*r*]. The result is an agent subject and oblique locative. This accounts for the failure of locative inversion with these object-drop verbs (the (b) examples of (57)–(58)).

### 7.6. Example 6: Motional Verbs

Motional verbs provide an interesting case for thematic analysis. Consider the intransitive verb *thamānga* ‘run’. It has two roles, one of which is an optionally expressed location. The other role is ambivalent: because the runner undergoes the motion in running, it is a theme, and because the runner controls or causes the activity, it is an agent. We will assume that for Chichewa verbs like *thamānga* ‘run’, *lumpha* ‘jump, leap’, and *ulūka* ‘fly’ the top thematic role is alternatively analyzable as either agent or theme.<sup>40</sup> With the  $\langle ag loc \rangle$  argument structure, the verbs are effectively like the object-drop verbs of Example 5 and will not undergo locative inversion. But with the  $\langle th loc \rangle$  argument structure, the verbs are effectively like the verbs of Example 1 and will undergo locative inversion for the same reasons.

Thus, either the theme [−*r*] or the agent [−*o*] classification is possible in principle for motional verbs like ‘run’. In Dutch (L. Levin (1986), Zaenen (1986; 1988)) and in Italian (Van Valin (1987), Centineo (1986)), motional verbs split along aspectual lines:

<sup>39</sup> See Alsina and Mchombo (1988) and Bresnan and Moshi (in preparation) on the suppression of the *th/pt*.

<sup>40</sup> Since this difference is systematic, it can be represented either by a lexical inference rule or by an optional feature of controllability in a more primitive semantic decomposition of thematic roles.



“accomplishments” or “telic” verbs, which involve an endpoint of motion (for instance, ‘run home’), behave like unaccusative verbs, whereas “activities” or “atelic” verbs, which involve no endpoint of motion (for instance, ‘run around’), behave like unergative verbs. (See Vendler (1967), Dowty (1979), Holisky (1979; 1981) on inherent lexical aspect.) In our terms, this means that for ambivalent verbs the choice of theme [–*r*] or agent [–*o*] intrinsic classifications may be determined by inherent lexical aspect in some languages.

However, Chicheŵa does not make this distinction for locative inversion. The temporal modifier *kwá ntháwí yáítâli* ‘for a long time’ applies to the duration of the activity with atelic verbs (*Mwãna a-na-thámángá kú-mudzi kwá ntháwí yáítâli* ‘The child ran in the village for a long time’) but not with telic verbs (??*Mwãna a-na-fíká ku-mudzi kwá ntháwí yáítâli* ‘The child arrived at the village for a long time’). Exactly the same is true of the verbs under locative inversion (*Ku-mudzi ku-na-thámángá mwána kwá ntháwí yáítâli* Lit.: ‘In the village ran the child for a long time’ contrasts with ??*Ku-mudzi ku-na-fíká mwána kwá ntháwí yáítâli* Lit.: ‘At the village arrived the child for a long time’). Both examples are grammatical without the temporal modifier. Hence, the agent and theme classifications—or the semantic factors such as volitionality or control that underlie them—must be available independently of lexical aspect. See also Holisky (1987), Van Valin (1987), and Durie (1985a,b; 1987) for evidence supporting a similar conclusion.

### 7.7. Example 7: Passivizability

It is clear, then, that the theme and patient arguments can alternate between subject and object functions. When the special subject default applies, it makes the locative role a subject, and the theme is then forced by the well-formedness conditions to become an object. It is an atypical object, however. First, it has the semantics of a subject, being the highest thematic role—which is the general default subject role. Second, unlike other objects, it cannot be passivized. This follows because the theme in locative inversion verbs is the highest expressed role. If passivization suppressed it, there would be no source for a subject to satisfy the subject condition: only the location role could become subject by the special subject default, but it requires an expressed theme to do so. This also explains the absence of intransitive passivization in Chicheŵa: when the usual subject role of an intransitive verb is suppressed by the passive, the subject condition is violated. As we have shown, Chicheŵa lacks expletive subjects to satisfy the condition, and without a theme, locative inversion cannot supply the required subject either.

Our theory has now explained virtually all of the properties of locative inversion we have observed, except for two: the absence of object agreement with the inverted subject, and its nonextractibility. These we attribute to the discourse function of the unaccusative object in locative inversion.

## 8. Presentational Focus

Locative inversions have the same thematic role structure as their uninverted counterparts but have an alternative encoding of the roles into syntactic functions; the inverted

and uninverted forms are not used in free variation, however. Locative inversion has a special function in discourse, first studied typologically by Hetzron (1971), who designated it the *presentative* function. It can be described succinctly in the words of Bolinger (1971, 584): “adverbial inversion . . . characterizes the type of sentence that might be called presentational, in which the referent of the subject is introduced on the scene . . .” We can see this in the context of a question like (75a), where (75b) but not (75c) is a natural response:

- (75) a. Ndi-ku-fún-á                      ku-dzíw-á      kutí n'ku-ti a-lendó  
 I SG SB-PROG-want-IND INF-know-IND COMP COP 17-Q 2-visitor  
 á-ná-fík-a.  
 2 SB REL-REC PST-arrive-IND  
 ‘I want to know where it was that the visitors arrived.’
- b. Ndi ku-mu-dzi a-lendô-wo      á-ná-fík-a.  
 COP 17-3-village 2-visitor-2 those 2 SB REL-REC PST-arrive-IND  
 ‘It’s at the village that those visitors arrived.’
- c. #Ndi ku-mu-dzi kú-ná-fík-á                      a-lendô-wo.  
 COP 17-3-village 17 SB REL-REC PST-arrive-IND 2-visitor-2 those  
 Lit.: ‘It’s at the village that arrived those visitors.’

Response (75c) is odd because it seems to depend on a scene having been set that already includes the village, and the visitors, having just been mentioned, cannot be introduced on the scene naturally. Examples of locative inversion spontaneously used in narration are given in appendix 2.<sup>41</sup>

In fact, in language after language locative inversions and unaccusative constructions have been noted to have a presentational function.<sup>42</sup> This correlation seems natural when we take into account the widespread association between the syntactic subject and the discourse topic, on the one hand, and the syntactic object and the discourse

<sup>41</sup> It is important to distinguish locative inversion from another kind of inversion—“stylistic inversion”—which does not share the same function or restrictions. Stylistic inversion appears in the Chichewa spoken in southern Malaŵi in the areas of Mulanje, Luchenza, and Thyolo, but not in the Chichewa of our speaker (Sam A. Mchombo (personal communication)). In this form of inversion the verb shows agreement with a relative pronoun, and the subject is postposed:

- (i) njúchi zí-méné zí-ná-bwér-éts-a                      mfúmu  
 10 bee 10-REL 10 SB REL-REC PST-COME-CAUS-IND 9 chief  
 ‘the bees which the chief brought’

As this example illustrates, stylistic inversion can occur with transitive verbs, unlike locative inversion. When the head noun of the relative clause is a locative phrase, stylistic inversion will superficially resemble locative inversion:

- (ii) ku-nyanjá kú-méné kú-ná-ph-á                      ife      nsômba  
 17-9 lake 17-REL 17 SB REL-REC PST-kill-IND I PL PRON 10 fish  
 ‘at the lake where we killed fish’

Hence, in this dialect of Chichewa an example like (75c) would be well-formed: it would be not an instance of locative inversion but the stylistically inverted form of (75b).

<sup>42</sup> Locative inversions in Chishona are said to have a presentative function by Perez (1983, 139), and the presentational focus function of locative inversions appears to be widespread across language types (Hetzron (1971; 1975), Bolinger (1971; 1977), T. Payne (1985), Rochemont (1986)). See Guéron (1980) and Durie (1986) for discussion of the presentative function in relation to unaccusativity.

focus, on the other.<sup>43</sup> In our theory, the highest thematic role is the default subject, but when it is a theme (and hence intrinsically classified as unrestricted), it can be realized as an object in order to presentationally focus the argument. The theory requires a subject, so the atypical locative or expletive subject (depending on the language) is pressed into service in this marked case.

Some of the grammatical characteristics of locative inversion are directly attributable to this presentational function. One is the restriction on pronominal subjects.

### 8.1. *Pronominal Restriction*

Although the inverted subject may be definite or indefinite, it cannot be an anaphoric pronoun:

- (76) \*Ku-mu-dzi ku-na-bwér-á            ĭwo.  
 17-3-village 17 SB-REC PST-COME-IND III PL PRON  
 Lit.: 'To the village came they/them.'

This is so whether the pronoun is independent, as in (76), or morphologically incorporated into the verb, as in (77):

- (77) \*Ku-mu-dzi ku-na-wá-bwér-a.  
 17-3-village 17 SB-REC PST-2 OB-COME-IND  
 Lit.: 'To the village came them.'

It seems plausible that anaphora is pragmatically inconsistent with presentation. If so, we might expect a deictic pronoun to be acceptable, and this expectation is borne out.<sup>44</sup> The demonstrative pronoun, in contrast to the anaphoric pronouns, is relatively acceptable:

- (78) ?Ku-mu-dzi ku-na-bwér-á            a-wa.  
 17-3-village 17 SB-REC PST-COME-IND 2-these  
 'To the village came these.'

Observe that the pronominal restriction entails the restriction on object agreement, since the object agreement marker in Chicheŵa is actually an anaphoric pronoun morphologically incorporated into the verb, which agrees anaphorically with the topic (Bresnan and Mchombo (1986; 1987)).<sup>45</sup> Given the gradual historical evolution of agreement markers from morphologically bound pronouns that are anaphorically linked to the topic (Givón (1976)), their incompatibility with presentationally focused arguments is expected.

<sup>43</sup> Although the correlation is not universal (D. Payne (1987)).

<sup>44</sup> Rochemont (1986) observes the same generalization with locative inversion in English.

<sup>45</sup> The independent personal pronoun is also anaphoric, not deictic, but it refers to a changed topic. In virtue of its reference to a changed topic it is used for contrastive focus (Bresnan and Mchombo (1986; 1987)). But in virtue of its anaphoricity it is not used for the *presentational* function. Hence, when a contrastively focused constituent is also presentational, as in the examples of locative inversion we give below, the independent personal pronoun is still excluded.

### 8.2. Contrastive Focus

The inverted subject is not only presented on the scene in locative inversion, it is focused, or set off against presupposed material. Evidence for this comes from the *ósăti* ‘not’ phrase (Bresnan and Mchombo (1986)). In uninverted sentences in Chichewa a final *ósăti* ‘not’ phrase can induce a focus of contrast with either the initial subject or the locative:

- (79) a. Mi-kāngo i-na-bwér-á                      ku-mu-dzi ósatí njovu.  
4-lion    4 SB-REC PST-COME-IND 17-3-village not    10 elephant  
‘Lions came to the village, not elephants.’
- b. Mi-kāngo i-na-bwér-á                      ku-mu-dzi ósatí kú-chi-tsíme.  
4-lion    4 SB-REC PST-COME-IND 17-3-village not    17-7-well  
‘Lions came to the village, not to the well.’

But in the inverted form in (80) only the postposed phrase can be a focus of contrast for *ósăti* ‘not’:

- (80) a. Ku-mu-dzi ku-na-bwér-á                      mi-kāngo ósatí njovu.  
17-3-village 17 SB-REC PST-COME-IND 4-lion    not    10 elephant  
‘To the village came lions, not elephants.’
- b. \*Ku-mu-dzi ku-na-bwér-á                      mi-kāngo ósatí kú-chi-tsíme.  
17-3-village 17 SB-REC PST-COME-IND 4-lion    not    17-7-well  
Lit.: ‘To the village came lions, not to the well.’

This is what we would expect if the postposed phrase is focused by locative inversion. If we now cleft the initial locative, focusing it in a higher clause, then it becomes a possible focus of contrast for the final *ósăti* ‘not’ phrase:<sup>46</sup>

- (81) Ndi ku-mu-dzi ku-méné kú-ná-bwér-á                      mi-kāngo  
COP 17-3-village 17-REL    17 SB REL-REC PST-COME-IND 4-lion  
ósatí kú-chi-tsíme.  
not    17-7-well  
Lit.: ‘It’s to the village that came lions, not to the well.’

### 8.3. Extraction Restriction

If the inverted subject bears the focus function (FOC), it follows from the theory of discourse functions of Bresnan and Mchombo (1987) that it cannot simultaneously have the topic function (TOP) at the same level of functional structure.<sup>47</sup> Since interrogative pronouns have the FOC function and relative pronouns have the TOP function, it is predicted on this theory that the inverted subject can be questioned in place but cannot be relativized. An interesting application of this result is that questions formed with apparent

<sup>46</sup> On clefting as a focus construction in Chichewa, see Bresnan and Mchombo (1987).

<sup>47</sup> Key assumptions in this theory, including the conflict between focus and topic, have been noted by a number of researchers. In addition to the references cited by Bresnan and Mchombo (1987), see Gundel (1974; 1985; 1987).

movement of the interrogative pronoun should differ from questions formed with the interrogative pronoun in place; this is because in Chicheŵa the former are cleft constructions, in which the interrogative pronoun is the focus of the main clause but relativized in the subordinate clause. The clash between focus and topic does not occur in clefts, because the focus and topic functions occur at different levels of (functional) clause structure.

This explains the following asymmetry. Given the uninverted sentence (82), we can extract both the subject (83) and the locative (84):

- (82) Nkhandwe y-a-im-a pa-m-chenga.  
 9 fox 9 SB-PERF-stand-IND 16-3-sand  
 'The fox is standing on the sand (or beach).'
- (83) N'pâ-ti pa-méné nkhandwe y-á-ím-a \_\_\_\_ ?  
 COP 16-Q 16-REL 9 fox 9 SB REL-PERF-stand-IND  
 'Where is the fox standing?'
- (84) N'chi-yâni chi-méné \_\_\_\_ ch-á-ím-á pá-m-chenga?  
 COP 7-Q 7-REL 7 SB REL-PERF-stand-IND 16-3-sand  
 'What is standing on the sand?'

But given the inverted form of the same sentence (85), the locative can be extracted (86), and the inverted subject cannot be (87):

- (85) Pa-m-chenga p-a-im-a nkhandwe.  
 16-3-sand 16 SB-PERF-stand-IND 9 fox  
 'On the sand is standing the fox.'
- (86) N'pâ-ti pa-méné \_\_\_\_ p-á-ím-á nkhandwe?  
 COP 16-Q 16-REL 16 SB REL-PERF-stand-IND 9 fox  
 'In which place is standing the fox?'
- (87) \*N'chi-yâni chi-méné pa-m-chenga p-á-ím-a \_\_\_\_ ?  
 COP 7-Q 7-REL 16-3-sand 16 SB REL-PERF-stand-IND  
 Lit.: 'What is it that on the sand is standing?'

In contrast, questioning the inverted subject in place is fine:

- (88) Kodí pá-m-chenga p-a-im-a chi-yâni?  
 Q 16-3-beach 16 SB-PERF-stand-IND 7-what  
 'On the beach is standing what?'

In sum, several of the grammatical restrictions that distinguish the object in locative inversions from the object in uninverted constructions follow directly from the distinctive discourse function of the inverted construction.<sup>48</sup>

<sup>48</sup> There are several subtypes of focus that play an important role in discourse (D. Payne (1987)) but that we have not attempted to represent formally. This suggests a decomposition of our FOC and TOP functions into more primitive features, an issue we leave for further research.

## 9. The Context of Locative Inversion

We are now in a position to reconsider the context of the special subject default that gives rise to locative inversion. Our earlier formulation did not express the intrinsic connection between locative inversion and the presentational focus function. Nor was it sufficiently general to account for the nature of cross-linguistic variation found in locative inversion, even across Bantu languages.

As for cross-linguistic variation, Chichewa lacks expletive subjects, but in Sesotho, a Bantu language spoken in southern Africa, the locative subject prefix *ho-* appears to have evolved into a semantically empty expletive, lacking anaphoric content (Machobane (1987)). Unlike Chichewa, Sesotho retains none of the proto-Bantu locative class prefixes on nouns (see appendix 1), and the single locative subject prefix *ho-* (cognate with Chichewa *ku-*) is used with impersonal passive verbs and unaccusative active verbs.<sup>49</sup>

As another instance of variation, Chichewa shows a cluster of properties related to the theme context of locative inversion: the failure of locative inversion with passivized applied verbs (Example 4) and with object-drop verbs (Example 5), the absence of intransitive passivization (Example 7), and the curious restriction on passive agent phrases with locative inversion. But Chishona lacks these restrictions on locative inversion (Harford (1988)).<sup>50</sup>

We can account for all of this by generalizing our special subject default to the focus subject default shown in (89):

$$(89) [f] \quad \text{loc} / \text{expl} \\ \quad \quad \quad | \\ \quad \quad \quad [-r]$$

The feature *[f]* refers to the presentational focus attribute(s),<sup>51</sup> and *expl* denotes an expletive subject that may appear as an alternative to the *loc* classification. The meaning of this formulation is that in the special context of presentational focus (as opposed to the theme context of our earlier formulation (65)), an atypical subject low on the thematic hierarchy (either a locative or expletive) appears. This provides us with two parameters of variation: the choice of atypical subject (whether expletive or locative), and the constraints on the distribution of the focus feature *[f]*. Sesotho, with its restricted locative morphology, illustrates the choice of subject parameter. Chishona illustrates a parameter of variation in the constraint on focus.

In Chichewa the distribution of the focus feature *[f]* is subject to the constraint

<sup>49</sup> We are grateful to Katherine Demuth for bringing these facts to our attention.

<sup>50</sup> Harford (1988) shows that locative inversion in Chishona, as in Chichewa, fails to apply to active transitive verbs, and among active intransitive verbs, it applies only to the unaccusative subclass. But with passive verbs, locative inversion in Chishona is much freer than in Chichewa: it applies to the passivized applied verbs that lack a theme, passivized object-drop verbs, passivized unergative verbs, and passivized unaccusative verbs. None of these kinds of passives are possible in Chichewa, for want of a subject. In addition, there is no restriction in Chishona on using an agent phrase adjunct with locative inversion.

<sup>51</sup> In the formalism of LFG, we interpret it as a constraint on the functional structure of the verb, requiring the presentational focus attribute(s) to be present.



given in (90): only the theme argument can bear the  $[f]$  feature, and only when it is the highest expressed role.

(90)  $\langle$  *th*  
 |  
 $[f]$

This constraint accounts for the cluster of properties in Chicheŵa enumerated above, including the curious restriction on passive agent phrases with locative inversion.<sup>52</sup> But Chishona simply lacks constraint (90). The entire cluster of differences enumerated above then follows, for the focus feature  $[f]$  in Chishona will appear in a much wider range of contexts, allowing freer application of the focus subject default. In the case of passivized intransitive verbs, where no argument other than the locative subject is present, we can regard the verb itself as bearing the focus feature.<sup>53</sup>

## 10. Conclusion

In locative inversion in Chicheŵa, the inverted subject is the thematic subject, the syntactic object, and the presentational focus in discourse. Its peculiar grammatical properties—the lexical restrictions on invertibility, nonpassivizability, word order, agreement, and nonextractability—result from constraints imposed by parallel, nonderivationally related levels of grammatical structure.

The architecture of generative grammar has been predominantly based on the representation of independent levels of grammatical organization by configurations of the same kind of syntactic sentence structure; yet the need to constrain derivational relations among syntactic representations conflicts with the actual divergence of what is being represented. Although it is possible to superimpose thematic, structural, and functional relations onto the same syntactic representation, only the natural factorization of grammar will enable us to discover the deeper principles of language.

## Appendix 1: Locatives in the Noun Class System

In Chicheŵa, as in other Bantu languages, nouns are generally composed of a prefix and a stem: *mu-nthu* ‘person’, *a-nthu* ‘people’, *chi-nthu* ‘thing’.<sup>54</sup> The noun prefixes are systematically associated with concords, the prefixes of modifiers and verbs that are syntactically related to the nouns. Examples of possessive and verbal concords appear in (91) and (92):

(91) M-chi-pinda mw-ânga mú-ma-ndi-sangalâts-a.  
 18-7-room 18-my 18 SB-PRS HAB-I SG OB-please-IND  
 ‘It pleases me in my room, the inside of my room pleases me.’

<sup>52</sup> For if an agent phrase adjunct is used, it can be interpreted as expressing the agent role, which lies higher than the theme, and the context in (90) is no longer satisfied.

<sup>53</sup> This idea was suggested to us by Alex Alsina. Harford’s (1988) analysis differs slightly.

<sup>54</sup> In some classes the initial prefix has been lost, leaving only stem-initial morphophonemic mutations; and class 1A has a zero prefix.

- (92) Ka-mw-ána k-ánga ka-li ndí njala.  
 12-1-child 12-my 12 SB-be with 9 hunger  
 'My small child is hungry.'

A noun class is therefore traditionally defined as a group of nouns that do not differ in prefix and that determine the same concords. Chichewa has eighteen such noun classes, of which six are plural classes corresponding to singular noun classes.<sup>55</sup>

Every noun stem in Chichewa belongs to at least one noun class. Although monosyllabic stems frequently appear in several classes (as does *-nthu* in *mu-nthu* 'person', *chi-nthu* 'thing'), most noun stems belong to a single noun class and its corresponding plural class. This assignment of noun stems to noun classes is based on grammatical rather than natural categorization. For example, stems denoting persons tend to appear in classes 1 and 2 but may appear elsewhere; stems denoting animals tend to appear in classes 9 and 10 but also appear in other classes; and stems designating other categories may appear in these classes.

Some noun classes are occupied by few or no noun stems of their own and instead borrow nouns from other classes as the base for prefixation: for example, *mw-ána* 'child', *ka-mw-ána* 'small child'; *m-sika* 'market', *pa-m-sika* 'at the market'; *pa-ka-m-sika* 'at the little market'. These secondary prefixes create a derived meaning of augmentation of singular or plural things (*chi-*, *zi-*), diminution of singular or plural things (*ka-*, *ti-*), or specific, general, or interior location (*pa-*, *ku-*, *mu-*).<sup>56</sup> (In addition, the class 6 prefix *ma-* is both the primary prefix for pluralizing class 5 noun stems and a secondary prefix for pluralizing class 14 nouns.) To a small group of noun stems that have an inherently locative meaning, the locative prefixes are attached directly as the primary noun prefixes. Examples are *-njá* 'out' and *-káti* 'inside'.<sup>57</sup>

The meanings of the locative classes are abstract, and the particular interpretations intended are implied by the context. Thus, the *ku-* class, used for general location as in (93a), means 'to' in the context of (93b) and 'from' in the context of (93c):

- (93) a. Mú-ma-thamáng-á ku-ti?  
 II HON SB-PRS HAB-run-IND 17-Q  
 'Where do you usually run?'

<sup>55</sup> The plural class 2 is also used for honorification of individuals.

<sup>56</sup> The locative class 17 prefix *ku-* can thus be distinguished morphologically from the formally identical class 15 prefix *ku-*: though they determine concords of the same form, the class 17 prefix derives locative nouns from nouns (*ku-chi-tsime* 'at the well'), and the class 15 prefix derives verbals from verb stems (*ku-imba* 'to sing, singing', *kũ-dya* 'to eat, eating').

<sup>57</sup> Like Chibemba (Givón (1972)), Tshiluba (Stucky (1978)), Chishona (Perez (1983)), and Kihaya (Trithart (1977)), Chichewa has alternative locative concord: modifiers of a locative nominal may show concord with either the outer locative prefix or the inner prefix of the nominal. But this alternation is restricted to modifiers within NPs; outside of the NP all verbs and predicate complements show only locative concord with locatives. Thus, (i) but not (ii) is an alternative to (91):

- (i) M-chi-pinda ch-ánga mú-ma-ndi-sangaláts-a.  
 18-7-room 7-my 18 SB-PRS HAB-I SG OB-please-IND  
 'It pleases me inside my room.'  
 (ii) \*M-chi-pinda ch-ánga chí-ma-ndi-sangaláts-a.  
 18-7-room 7-my 7 SB-PRS HAB-I SG OB-please-IND  
 'It pleases me inside my room.'



- b. Mú-ma-thamang-ír-á                      ku-ti?  
 II HON SB-PRS HAB-RUN-APPL-IND 17-Q  
 'Where do you usually run to?'
- c. Mú-ma-chokér-á                      ku-ti?  
 II HON SB-PRS HAB-COME-IND 17-Q  
 'Where do you come from?'

Similarly, the *mu-* class, used for interior location, means 'out of the interior of' in the context of (94a) and 'into the interior of' in the context of (94b). The examples differ only in the verb stems for exiting and entering; it is these that express the opposed directionality in relation to the interior.

- (94) a. M-chi-pinda mu-na-túlúk-a                      nkhandwe.  
 18-7-room 18 SB-REC PST-COME out-IND 9 fox  
 'Out of the room came a fox.'
- b. M-chi-pinda mu-na-lów-á                      nkhandwe.  
 18-7-room 18 SB-REC PST-COME in-IND 9 fox  
 'Into the room came a fox.'

And the *pa-* class, used for specific location, means 'from' in the context of (95a) and 'on' in the context of (95b); it cannot mean 'off' in the latter example. What carries the meaning difference is the context: the owl taking wing implies direction away from, whereas the baboon's jumping up and down does not:

- (95) a. Pa-mphânda pa-na-úlúk-á                      ká-dzidzi.  
 16-9 crotch 16 SB-REC PST-fly-IND 12-owl  
 'From a crotch (of a tree) flew an owl.'
- b. Pa-nthâmbi pa-na-lúmph-á                      nyăni.  
 16-9 branch 16 SB-REC PST-jump-IND 1A baboon  
 'On the branch jumped a baboon.'

In a situation where a person has jumped from the window of a building, the 'off' interpretation is possible:

- (96) Pa-zenêra pa-na-lúmph-á                      m-unthu.  
 16-5 window 16 SB-REC PST-jump-IND 1-person  
 'From the window jumped a person.'

The noun prefixes of the noun classes of Chicheŵa are shown in table 1, together with their numbering according to the system established by Meinhof (1932) and others for the comparative study of Bantu languages (Orr and Scotton (1980)).

Thus, in Chicheŵa the category locative is not a case, but a gender. In fact, Chicheŵa, like Bantu languages generally, is caseless, both in the morphology of the nominal system and in its typology as a head-marking language (Nichols (1986), Bresnan and Mchombo (1987)).

**Table 1**  
Chichewa noun class prefixes

Classes		Prefixes		Examples	
Sg	Pl	Sg	Pl	Sg	Pl
1	2	m(u)-	a-	mu-nthu ‘person’	a-nthu ‘people’
1A	2	∅	a-	mâyi ‘mother’	a-mâyi ‘mothers’
3	4	m(u)-	mi-	m-têngo ‘tree’	mi-têngo ‘trees’
5	6	*li-	ma-	dzîna ‘name’	ma-îna ‘names’
7	8	chi-	zi-	chi-nthu ‘thing’	zi-nthu ‘things’
9	10	*N-	*N-	njôka ‘snake’	njôka ‘snakes’
12	13	ka-	ti-	ka-mwăna ‘small child’	ti-ăna ‘small children’
14	6	u-	ma-	u-lěndo ‘journey’	ma-ulěndo ‘journeys’
	15		ku-		ku-îmba ‘to sing, singing’
	16		pa-		pa-mpando ‘on the chair’
	17		ku-		ku-msika ‘at the market’
	18		m(u)-		m-nyũmba ‘in the house’

## Appendix 2: Locative Inversion in Texts

### *Sam A. Mchombo*

These stories were told at Mtumbula village in the district of Nkhotakota in Central Malaŵi and recorded by Sam A. Mchombo in 1975.<sup>58</sup>

#### *Text 1: From a story told by Ms. Meriyana Mapulanga*

This is a story about how Mr. Hare resorted to crafty means to obtain food during a famine. We join the narrator as she begins the story.

Kăle ku-da-lí-kó a-nthu;  
long ago 17 SB-PAST-COP-17 2-person  
apo kú-dá-lí-kó a-nthu,  
when 17 SB REL-PAST-COP-17 2-person  
a-nthu âke a-kalulu.  
2-person aforementioned 2 HON-hare  
Pa-mudzi pa-da-gwá njala.  
16-village 16 SB-PAST-fall 9 hunger

<sup>58</sup> These texts exhibit a variant past tense morpheme *-da-*, which we gloss simply as PAST. We have not analyzed this morpheme further.

Ndiyé ápo pá-dá-gwá njala, y-ó-núnkha,  
 so when 16 SB-PAST-fall 9 hunger 9-ASCINF-stink  
 ngati y-omwé-yí y-á-gwá-kó má-kóno  
 like 9-REL-9 this 9 SB-PERF-fall-17 6-modern times  
 i-méné-yi t-á-thérá úfá kú Édímaki-ku thibu . . .  
 9-REL-9 this II PL SB-PERF-finish for flour 17 ADMARC-17 that [ideo:completely]

'Once upon a time, there was an individual. Now this individual was Mr. Hare. The village was struck by famine. It was struck by such a stinker of a famine, just like the one which has struck us now in these modern times, because of which we have finished off all the flour from the ADMARC (Agricultural Development and MARKeting Corporation) . . .'

*Text 2: From a story told by the late Mr. W. Chambo, under the pseudonym of Mr. Mndalademudamundo*

After having told a story about how boars devastated his cassava garden, the narrator introduces a story about a schoolteacher whose lunch was stolen. We join him as he concludes the story about the boars and introduces the one about the teacher.

. . . I-zo z-a-tha z-á ngúluwe-zo,  
 those-10 10 SB-PERF-finish 10-ASC 10 boar-10 those  
 ndiyé ndí-fká-pó-nsó zína, z-ó-dándáulitsá-nso.  
 so I SG SB IM FUT-put-16-also 10 other 10-ASC INF-WORRY CAUS-also  
 Pa-no pa-no p-áthu pa Chombo pa-no pa-da-bwérá mw-alimu  
 16-here 16-here 16-our 16 Chombo 16-here 16 SB-PAST-come 1-teacher  
 w-ó-chóká uko, ku-dzá kú-yérúza sukúlu pa-no.  
 1-ASCINF-come from there INF-come INF-teach 9 school 16-here  
 Mw-alimu-yo koma m-kázi a-dá-lí-be,  
 1-teacher-1 that but 1-wife 2 SB-PAST-COP-without  
 a-da-lí ndí m-longo w-áke  
 2 SB-PAST-COP with 1-sister 1-his  
 á-má-mú-phíkira nsíma . . .  
 2 SB REL-PST HAB-III SG OB-cook for 9 nsima

'Now that's over about the boars, and now I will give you something else just as worrisome. Now here at our place, to Chombo, came a teacher from somewhere to teach at the school here. But that teacher didn't have a wife. Instead, he had a sister, who was cooking nsima for him . . .'

*Text 3: Three excerpts from a story told by the late Mr. W. Chambo, under the pseudonym of Mr. Mndalademudamundo*

In this story a man decided to rob the daughter of a dead chief by posing as a messenger carrying letters sent by her dead father to obtain some money and clothes for him. He

adopted the strategy of burying himself in the rubbish dump outside the woman's house at night. In the morning, as the woman stepped out of the house, he began to emerge from the rubbish dump. We join the story as the woman is struck by this unusual sight.

. . . P-o-dzí-kúmbirá                    ch-omwê-chi,  
 16-ASC INF-REFL OB-dig for 7-REL-7 this  
 aná á mfúmú a-ja                    kutí ndí-zí-túlúka                    u-máwa.  
 2 child 2 ASC 9 chief 2-[shared info] COMP ISG SB-must-go out 14-morning  
 Aaa, ch-a-yambâ-ko chi-mu-nthu bwâna túkúmbú!  
 [exclam] 7 SB-PERF-begin-17 7-1-person sir [ideo:emerging]  
 A-ja                    â-ngo-pényétsa a-li “Ah, ah,  
 2-[shared info] 2 SB-just-stare 2-COP [exclam]  
 pa-chi-dzala pá-fúna                    ku-túkúmbuká chi-nthu, chi-nthu ch-ânji?”  
 16-7-rubbish pit 16 SB IM FUT-want INF-emerge 7-thing 7-thing 7-what kind  
 Chí-lí tukumbu,                    bwâna, ch-a-imbikira.  
 7-COP [ideo:emerge] sir 7 SB-PERF-persist  
 U-ja                    â-ngo-pényétsa, a-ngo-óná chi-mu-nthu fyálânthu,  
 1-[shared info] 2 SB-just-stare 2 SB-just-see 7-1-person [ideo:pop up]  
 chí-lí mbuu,                    ma-kalátá ku-manja . . .  
 7 SB-COP [ideo:dusty] 6-letter 17-6 hand

‘. . . When he had buried himself like that, as the daughter of the former chief stepped out in the morning, he began to rise out of the rubbish pit. She gaped, wondering “Ah, ah, there seems to be something coming out of the rubbish pit. What could it be?” He continued to rise and then she suddenly sees a strange person pop out, all dusty, with the letters in his hand . . .’

...

Having read the letters, she hands him the money and the clothes requested. She then asks him whether he wants to be accompanied, to which he replies:

“Ah, ah, ah!                    Ku-manda á-ma-perekezâna?  
 [exclam:Unh unh] 17-6 grave 2 SB-PRS HAB-accompany each other  
 P-otí ine tsópáno ndi-ka-choka                    pa-no ndi-ká-khála  
 16-COMP ISG now                    ISG SB-COND-leave 16-here 1 SG SB-go-sit  
 pa-thengo-po ndiyé ndí-zí-ká-gogôda,                    a-ká-ndí-tsekulira.  
 16-bush-16 there and so 1 SG SB-must-go-knock 2 SB-go-1 SG OB-open for  
 Tsópánó mú-ká-píté-nsó imwe                    a-nthu á-moyo?  
 now                    II PL SB-go-go-also II PL PRON 2-person 2 ASC-3 life  
 Ku-manda k-ó-sa-pítá                    a-nthu á-moyo,  
 17-6 grave 17-ASC-NEG-go 2-person 2 ASC-3 life

t-achína ife ndi yé tí-píta, á-kú-fá ndíthu.”  
 I PL-group I PL PRON COP I PL SB REL-go 2 ASC-INF-die truly

““Ah, ah, ah! Do people accompany each other to the grave? You see, now when I leave this place I will go into the brush over there and knock. They will open up for me. And now you living people would go too? The grave is not for the living, only for us, the truly dead ones.””

...

Later, the woman’s husband, who had left for work very early in the morning, returns, only to find that the house has been cleaned out. We rejoin the story at this point.

. . . Aaa, m-ma twéluvu koloko ku-nyumbá ku-ja tsópáno,  
 [exclam] 18-6 “12” o’clock 17-9 house 17-[shared info] now  
 a-múná-wó w-á mfúmú a-ja a-bwera.  
 2-husband-her HON 1-ASC 9 chief 2-[shared info] 2 SB PERF-come back  
 “Ah, m-nyumbá mu-no ndí-óna ngati mw-a-lowa usiwa,  
 [exclam] 18-9 house 18-here I SG SB-see like 18 SB-PERF-enter poverty  
 mw-a-chita bwânji?”  
 18 SB-PERF-do how  
 A-li “Eee, imwe, ma-kalâta a-wa dzi-wéréngeré-ní  
 2-COP [exclam] II PL PRON 6-letter 6-these 6 REFL OB-read for-II PL  
 mw-êkha á-chóká ku-manda kw-á bâba.” . . .  
 II PL-self 6 SB REL-come from 17-6 grave 17-ASC father

‘. . . Aaa, around noon, back at the house, the woman’s husband had returned. “Ah, it seems that this house has been struck by poverty, how come?” She replied, “Hey, here you are. Read these yourself, these letters that have come in from my father in the grave . . .”’

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