

The Syntactic Projection Problem and the Comparative Syntax of Locative Inversion

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The fundamental problem this study addresses is how to predict the syntactic properties of verbs from information about their meaning and use—the ‘syntactic projection problem’. That a universal solution to this problem must exist has been argued from nature of language acquisition (Pinker (1989)). But the most compelling evidence for universal projection principles comes from comparative syntax, where languages that may differ genetically, areally, and typologically can be shown to instantiate the same principles for projecting verbal meaning and use into syntactic structures. Such a case is examined here.

English, a West Germanic language spoken in England and its former colonies, is genetically and areally unrelated to Chicheŵa, a Bantu language spoken in East Central Africa. The two languages also differ typologically, English belonging to a group of languages that employ case and government to express syntactic relations, and Chicheŵa belonging to a group that employs noun class and agreement instead (Bresnan and Mchombo (1987)). Despite these differences, English and Chicheŵa show remarkable correspondences in the properties of locative inversion, a syntactic unaccusative alternation studied in Chicheŵa by Bresnan and Kanerva (1989):

I will show that at the level of argument structure and function, English and Chicheŵa are subject to the same principles of syntactic projection, from which the unaccusativity or inversion phenomenon arises (following Bresnan and Kanerva (1989)).

1 Argument Structure

Locative inversion verbs in English and Chicheŵa have remarkably close correspondences at the level of argument structure.

1 ARGUMENT STRUCTURE

1.1 Intransitivity

In English, locative inversion occurs only with intransitive verbs, such as *be*, *sit* and *come*:

- (1) a. A lamp was in the corner.
- b. My friend Rose was sitting among the guests.
- c. The tax collector came back to the village.

Each of the examples alternates with a locative inverted form that shares the same thematic role structure:

- (2) a. In the corner was a lamp.
- b. Among the guests was sitting my friend Rose.
- c. Back to the village came the tax collector.

Note the characteristic preposing of the locative phrases and concomitant postposing of the subjects in (2a-c). This does not occur with transitive verbs such as *seat*, *find*, and *place*:

- (3) a. My friend Rose seated my mother among the guests of honor.
- b. *Among the guests of honor seated my mother my friend Rose.
- c. *Among the guests of honor seated my friend Rose my mother.
- (4) a. The locals can find lemon grass in the valley.
- b. *In the valley can find lemon grass the locals.
- c. *In the valley can find the locals lemon grass.
- (5) a. Susan has placed a menorah on the table.
- b. *On the table has placed a menorah Susan.
- c. *On the table has placed Susan a menorah.

1 ARGUMENT STRUCTURE

The same is true in Chicheŵa (Bresnan and Kanerva (1989)). Intransitive verbs such as *-li* 'be', *khala* 'sit' and *bwera* 'come' allow locative inversion. Example (6) is representative:¹

- (6) a. 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.' (B-K (2b))
- b. 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-K (1b))

Transitive verbs such as *pěza* 'find', *thamangitsa* 'chase', and *tumiza* 'send' disallow locative inversion, as example (7) illustrates:²

- (7) a. Mâyi a-na-péz-á mw-aná kú-dâmbo.
1A mother 1 SB-REC PST-find-IND 1-child 17-5 swamp
'The mother found the child in the swamp.' (B-K (44a))
- b. *Ku-dâmbo ku-na-péz-á mâyi mw-ăna.
17-5 swamp 17 SB-REC PST-find-IND 1A mother 1-child
Lit.: 'In the swamp found the mother the child.' (B-K (44b))

1.2 Split Intransitivity and Passives

While locative inversion in English applies only to intransitive verbs, it does not apply to *all* intransitive verbs (Postal (1977, 147)). Intransitive verbs split as to whether they allow it (Levin (1986)):

- (8) a. Among the guests was sitting my friend Rose.
b. *Among the guests was knitting my friend Rose.
- (9) a. Onto the ground had fallen a few leaves.
b. *Onto the ground had spit a few sailors.

¹Chicheŵa examples taken from Bresnan and Kanerva (1989) are indicated by "B-K" followed by the example number in that work. In the glosses, roman numerals denote the 18 gender classes; the locative gender classes are 16, 17, and 18.

²Bresnan and Kanerva (1989) note that the result is ungrammatical whether the inverted subject precedes or follows the direct object in such examples.

1 ARGUMENT STRUCTURE

- (10) a. Into the hole jumped the rabbit.
b. *Into the hole excreted the rabbit.
- (11) a. Toward me lurched a drunk.
b. *Toward me looked a drunk.
- (12) a. On the corner stood a woman.
b. *On the corner smoked a woman.

Furthermore, locative inversion is possible with *passivized* transitive verbs. For example, the transitive verbs *seat*, *find* and *place* illustrated above all allow locative inversion when passivized. Note, however, that there is a restriction against the expression of the passive *by* phrase.

- (13) a. Among the guests of honor was seated my mother (?* by my friend Rose).
b. In the valley can be found lemon grass (?* by the locals).
c. On the table has been placed a menorah (?* by Susan).

Other examples of locative inversion with passives are the following:

- (14) a. To Louise was given the gift of optimism.
b. To a French research team has been attributed the discovery of a new virus.
c. In the package with your Saturday ticket are included a free hotdog, a BART coupon, and an Oakland A's sunvisor.
d. In this pot is being cooked a live lobster.

Exactly the same is true of Chicheŵa (Bresnan and Kanerva (1989)). The intransitive split is illustrated in (15) and the passive case in (16):

- (15) a. Ku-mu-dzi kw-a-khal-á nkhalambá zó-kha.
17-3-village 17SB-PERF-remain-IND 10elder 10-only
'In the village have remained only old people.' (B-K (50a))

- 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.' (B-K (50b))
- (16) a. Ku-dâmbo ku-na-péz-édw-á mw-ána (?? ndí mâyi).
 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).' (B-K (51b))
- b. 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.' (B-K (54d))

Note that in Chicheŵa exactly as in English, there is restriction against the expression of the passive agent by a *ndí* 'by' phrase.

1.3 Locative Arguments and Theme Subjects

What characterizes the examples that allow locative inversion? It cannot be just those examples that have intransitive verbs with a locative argument. Consider the verb *shoot*, which takes a locative path argument and has two intransitive uses, illustrated in (17b,c):

- (17) a. A marksman shot a bullet through the wedding band.
 b. A marksmen shot through the wedding band.
 c. A bullet shot through the wedding band.

Although there is potential ambiguity in these examples, the intended reading of (17a) is that the marksman shot a projectile through the wedding band, while in (17b) the bullet is the projectile that passes through the wedding band. Locative inversion is clearly preferable with the latter:

- (18) a. ?*Through the wedding band shot a marksman.
 b. Through the wedding band shot a bullet.

What seems to characterize the locative inversion examples in both English and Chicheŵa is the interpretability of the subject as the argument of which the location, change of location, or direction expressed by the locative

argument is predicated—a *theme* in the sense of Gruber (1965) and Jackendoff (1972; 1976; 1987).³ This is precisely what distinguishes the uninverting (18a) from the inverting (18b). The marksman is not passing through the wedding band in shooting, so the subject designating this participant does not invert. But the bullet is passing through the wedding band, and this is the referent of the inverting subject.

The theme subject generalization clearly holds true of the locative inversion examples given earlier. Verbs like *sit*, *stand*, *fall*, and *lurch* predicate locations or change of locations of their subjects. In the case of motional activity verbs such as *jump* in (4), *fly*, or *run*, the subject is an agent in that it causes or controls the action, but it is also a theme in that it undergoes a change of location. In the case of the transitive verbs like *seat*, *find*, *place*, location or change of location is predicated of a theme object, not a subject, and locative inversion is not possible. When these verbs are passivized, however, the transitive object argument, which corresponds to the theme, is realized as a subject, and locative inversion becomes possible. And in the case of the dative examples (8a,b), location can be understood in an abstract sense.⁴

Theme subjects are necessary for locative inversion, but not sufficient: the verb must have a locative argument which is predicated of the theme. Tan (forthcoming) cites the contrast between the locative argument in an example like (19a), where the location is predicated of the rocks, and the locative adjunct in (19b), where the location is *not* predicated of the Rockies. Only the former allows locative inversion with passives (20):

- (19) a. Men placed the rocks in the helicopter.
 b. Men watched the Rockies in the helicopter.
- (20) a. In the helicopter were placed the rocks.
 b. *In the helicopter were watched the Rockies.

And even though it is the men who are in the helicopter in (19b), the subject designating them cannot invert:

³This generalization is observed for locative inversion in English by Levin (1986) and for Chicheŵa by Bresnan and Kanerva (1989).

⁴Pinker (1989) argues convincingly for a semantic difference between the dative expressed with *to*, which is abstractly locational, and the dative expressed with the double NP construction, which is possessional.

(21) *In the helicopter watched men.

This is because a locative argument, not an adjunct, is required for locative inversion.

We see, then, that the verbs that undergo locative inversion in English and Chicheŵa have a distinctive argument structure, in which the verb predicates of the subject a location, change of location, or direction expressed by the locative argument. I schematize this conclusion as follows:

(22) < th loc >
 |
 s

2 Presentational Focus

Not only the argument structure, but the discourse functions of locative inversion in English and Chicheŵa have remarkable correspondences. In both languages locative inversion has a special discourse function of *presentational focus* (Hetzron (1971; 1975), Bolinger (1971; 1977), Rochemont (1984)), in which the referent of the inverted subject is introduced on the scene. One effect of presentational focus is illustrated in (23), where (B) seems an odd response to (A):

(23) A: I'm looking for my friend Rose.

B: #Among the guests of honor was sitting Rose.

C: Rose was sitting among the guests of honor.

(B) seems odd because it seems to depend on a scene having been set that includes guests of honor, which (A) does not provide, and because Rose, having just been mentioned in (A), cannot be introduced on the scene naturally in (B). The uninverted form (C) is a more natural response. This effect is exactly analogous in Chicheŵa (Bresnan and Kanerva (1989, ex. (75))).

2.1 Pronominal Restriction

Next, there is the pronominal restriction: although the postposed subject may be definite or indefinite, it cannot be an anaphoric pronoun, as Rochemont (1984) observed:

(24) *Rose_i? Among the guests of honor was sitting she_i/her_i.

The reason appears to be that anaphora is pragmatically inconsistent with presentation. The ill-formedness of (24) cannot be attributed solely to a restriction against inverted pronouns, because the deictic use of the English pronoun is acceptable with locative inversion, again as observed by Rochemont (1984):

(25) Among the guests of honor was sitting HER [pointing].

Exactly the same restriction appears in Chicheŵa (Bresnan and Kanerva (1989)), as the following example illustrates. The pronoun used in (26) is nondeictic.

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

2.2 Contrastive Focus

The inverted subject is not only presented on the scene, but as Bresnan and Kanerva (1989) point out, it is focussed relative to the locative. This is brought out by the following contrast. In (27a) the locative is highly marked as a focus of contrast for the final *not* phrase, while the inverted subject is fine (27b):⁵

- (27) a. ??On the wall hung paintings, but not on the door.
 b. On the wall hung paintings, but not photographs.

In the uninverted forms, both the locative and the subject can be foci of contrast for the final *not* phrase:

- (28) a. Paintings hung on the wall, but not on the door.
 b. Paintings hung on the wall, not photographs.

⁵It is necessary to exclude the "repair" intonation from (27a), in which the utterance is repeated to correct a preceding statement. An example of repair is the following interchange between speakers A and B. A: On the door hung paintings. B: No! On the WALL hung paintings, not: "On the DOOR hung paintings." With the repair intonation, it is unnatural to continue with "... but not ..."

Exactly the same holds in Chicheŵa. The inverted forms are in (29) and the corresponding uninverted forms are in (30):

- (29) a. *Ku-mu-dzi ku-na-bwér-á mi-kângo 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.' (B-K (80b))
- b. Ku-mu-dzi ku-na-bwér-á mi-kângo ósatí njovu.
 17-3-village 17 SB-REC PST-come-IND 4-lion not 10 elephant
 'To the village came lions, not elephants.' (B-K (80a))
- (30) a. Mi-kângo i-na-bwér-á ku-mudzi 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.' (B-K (79b))
- b. Mi-kângo 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-K (79a))

These correspondences between two unrelated languages suggest that general principles of grammar underlie the alternation, and moreover, that these principles must relate the argument structure to the discourse function.

3 The Syntactic Projection Theory

Why is the distinctive theme-location argument structure associated with locative inversion? The answer proposed by both Levin (1986; 1987) for English and by Bresnan and Kanerva (1989) for Chicheŵa starts from the observation that the semantic role of theme (and patientive roles in general) universally alternates between syntactic subject and object. As Bresnan and Kanerva (1989) observe: "Cross-linguistically, the theme or patient is canonically expressed as either subject or object: (i) the subject in syntactically ergative languages (Kibrik (1985), Mel'čuk (1988)), (ii) the object in syntactically active languages . . . , and (iii) the transitive object and intransitive subject in syntactically accusative languages." In both English and Chicheŵa, the theme is the syntactic object of an active transitive verb and the syntactic subject of the passive transitive verb. And in both languages, intransitive verbs like *be*, *sit*, and *come* have the theme as the subject, but allow it to appear in the syntactic object position in locative inversion. This is, in essence, the unaccusative hypothesis.

The other semantic roles are syntactically constrained as well. Again as Bresnan and Kanerva (1989) observe: "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))." Concerning the locative role, Bresnan and Kanerva (1989) state: "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))."

3.1 Decomposition of Syntactic Functions

To distill these pervasive cross-linguistic generalizations into a formal theory of syntactic alternations in grammar, Bresnan and Kanerva (1989) postulate that the grammatical functions of subject, object, and oblique are constituted of more primitive elements, just as phonemes are constituted of more primitive distinctive features in phonological theory.⁶ Such primitives explain the existence of natural classes of functions, which share subsets of primitive elements.

Subject and object are hypothesized to have the primitive property of being semantically unrestricted—that is, capable of being associated with different semantic roles (and even having no semantic roles, as with expletive subjects and objects). This property is designated $[-\tau]$. On the other hand, objects are hypothesized to have the primitive property of complementing transitive predicators such as verbs and adpositions, and not complementing intransitive predicators such as basic nouns and adjectives. This property is designated $[+o]$. Obliques are restricted in the semantic roles they may express, hence $[+\tau]$, and they are nonobjectlike (complementing basic nouns and adjectives), hence $[-o]$. A consequence of this scheme is that there should be two kinds of syntactic objects, unrestricted and restricted. By definition, it is only the unrestricted objects that can alternate with subjects, and the restricted objects must have fixed semantic roles, like obliques.

⁶A similar proposal is made by Simpson (1983).

$$(31) \quad \begin{array}{cc} \begin{bmatrix} -r \\ -o \end{bmatrix} & \text{SUBJ} & \begin{bmatrix} +r \\ -o \end{bmatrix} & \text{OBL}_\theta \\ \\ \begin{bmatrix} -r \\ +o \end{bmatrix} & \text{OBJ} & \begin{bmatrix} +r \\ +o \end{bmatrix} & \text{OBJ}_\theta \end{array}$$

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

This classification gives the following natural classes of syntactic functions:

$$(32) \quad \begin{array}{cc} [-r] = \text{SUBJ, OBJ} & [-o] = \text{SUBJ, OBL}_\theta \\ [+r] = \text{OBJ}_\theta, \text{OBL}_\theta & [+o] = \text{OBJ, OBJ}_\theta \end{array}$$

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

$$(33) \text{ markedness hierarchy:} \quad s > \begin{array}{c} \circ \\ \text{OBL}_\theta \end{array} > o_\theta$$

The subject is the least marked function; the restricted object is the most highly marked. In fact, many languages lack restricted objects altogether.

3.2 Syntactic Underspecification of Argument Roles

Under these assumptions, alternations between natural classes of syntactic functions are characterized by *underspecification*, rather than (lexical or syntactic) transformation. Thus, the typological generalizations described above are distilled into the following formal principles, which partially specify the syntactic functions of agent, theme, and location roles on the basis of the intrinsic meanings of the roles:

(34) Intrinsic classifications (IC):	agent:	$\begin{array}{c} ag \\ \\ [-o] \end{array}$
	theme:	$\begin{array}{c} th/pt \\ \\ [-r] \end{array}$
	locative:	$\begin{array}{c} loc \\ \\ [-o] \end{array}$

3.3 Hierarchical Argument Structure

Further specific properties of the syntactic function associated with a role—whether it is a subject or object, for example—derive from the argument structure of the verb. An argument structure consists of the lexical roles of a verb, their intrinsic syntactic classifications, and an ordering that represents the relative prominence of the roles. An important hypothesis in morphosyntax is that this relative prominence is not arbitrary, but semantically determined, the most prominent roles being those of the more causally active participants in events. This is the essential import of the ‘thematic hierarchy’, according to which (in the version assumed here) roles descend in prominence from agent through beneficiary, goal (recipient) and experiencer, instrumental, patient and theme, to location:⁷

$$(35) \quad ag > ben > go/exp > ins > pt/th > loc$$

Thus *sit* and *seat* have the respective argument structures:

$$\begin{array}{ccc} < th & loc & > & < ag & th & loc & > \\ & [-r] & [-o] & & [-o] & [-r] & [-o] \end{array}$$

In each argument structure the roles descend in prominence from left to right. The most prominent semantic role of a predicate is designated $\hat{\theta}$. Hence, $\hat{\theta}$ of *sit* is *th*, while $\hat{\theta}$ of *seat* is *ag*.

These hierarchically ordered argument structures, together with the intrinsic classifications, play a role in our theory that is analogous to the D-structure representations of syntactic movement theories of unaccusativity

⁷See Bresnan and Kanerva (in press) for references and discussion of alternative hierarchies.

morphological operations which add and bind roles are the causative (Mohan (1988), Alsina (1989)) and the applicative (Alsina and Mchombo (1988)).

3.5 Default Syntactic Specifications

Default syntactic specifications apply finally, after any and all morphological operations. These (in the syntactic accusative language type) make the highest role unrestricted and lower roles restricted, by default.

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

Defaults (39a,b) are ordered by the elsewhere condition; the default with the more restricted environment applies first.

A very general constraint on all function specifications is that they must preserve information: they can only add features, not delete or change them. This is called the monotonicity constraint. Thus, roles that are intrinsically classified $[-r]$ will not undergo default (38b), and may continue to alternate between subject and object, subject to the final well-formedness conditions.

3.6 Well-formedness Conditions

Finally, there are two well-formedness conditions on the specified argument structures resulting from the preceding principles, which are called 'lexical forms':⁹

- (39) (i) *The subject condition*: Every (verbal) lexical form must have a subject;
- (ii) *Function-argument biuniqueness*: Each expressed lexical role must be associated with a unique function, and conversely.

⁹Bresnan and Kanerva (1989) observe: "The generality of the subject condition (due to Baker (1983)) is open to question, because many languages have constructions in which there is no overt subject (see, e.g., Cole et al. (1989), Durie (1985a; 1987a)). 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."

4 Why Locative Inversion Occurs

The defaults (39i,ii) have the effect of always making the external argument the subject, and making the internal argument the subject only when there is no external argument. To see why this is so, consider first the active transitive verb *seat*, which has the three roles agent, theme, and location:

(40)	<i>seat</i>	<	<i>ag</i>	<i>th</i>	<i>loc</i>	>
intrinsic:			[-o]	[-r]	[-o]	
defaults:			[-r]		[+r]	
			S	O/S	OBL _{loc}	
w.f.:			S	O	OBL _{loc}	

The agent, being both $\hat{\theta}$ and intrinsically classified [-o], is the external argument, and it becomes the default subject. This forces the unrestricted theme (the internal argument) to become the object, by function-argument biuniqueness. The locative is oblique by default. This accounts for examples like (3a) *My friend Rose seated my mother among the guests of honor.*

Next consider the intransitive verb *sit*, which has the two roles theme and location:

(41)	<i>sit</i>	<	<i>th</i>	<i>loc</i>	>
intrinsic:			[-r]	[-o]	
defaults:				[+r]	
			O/S	OBL _{loc}	
w.f.:			S	OBL _{loc}	

Here there is no external argument. The theme, which is the internal argument, is $\hat{\theta}$. The theme can be either subject or object, but the defaults again make the location an oblique, so the theme must become subject to satisfy the well-formedness condition that every lexical form have a subject. This accounts for examples like (1b) *My friend Rose was sitting among the guests.*

Now consider the passive verb *seated* which shares the same role structure as the active verb. Passivization suppresses the *ag* role, which is the external argument, so that the derived argument structure resembles the

two-role verb *sit* above, and the defaults and well-formedness conditions apply in the same way.¹⁰ The internal argument becomes the subject to satisfy the subject condition.

(42)	<i>seat</i>	<	<i>ag</i>	<i>th</i>	<i>loc</i>	>
intrinsic:			[-o]	[-r]	[-o]	
passive:	<i>seated</i>		∅			
defaults:					[+r]	
				O/S	OBL _{loc}	
w.f.:				S	OBL _{loc}	

This accounts for examples like *My mother was seated among the guests of honor (by my friend Rose)*.

Thus by the defaults above, the external argument becomes the subject, and when there is no external argument, the internal argument does.

But now consider the requirements of presentational focus. In presentational focus, a scene is set and a referent is introduced on the scene to become the new focus of attention. In the core cases, a scene is naturally expressed as a location, and the referent as something of which location is predicated—hence, a theme. This imposes a natural selection of the < *thloc* > argument structure. As we have just seen, the unmarked syntactic realization of these arguments would have the theme become the subject and the location, an oblique. But a pervasive functional generalization across languages is that the subject is the unmarked discourse topic, and this would often conflict with the presentational focussing of the theme argument, for the same reason that pronominal anaphora conflicts with it. Given that the theme is unrestricted, however, there is a way to solve this problem: make the location the subject, for it is the more topical argument. The well-formedness conditions will then force the theme to be realized as an object, and the object is the focussable syntactic function *par excellence*. But this solution has two essential limitations: first, it is conditioned by the special environment of presentational focus; second, it will always fail in the presence of an active agent in the argument structure, for the active agent (being the external argument) becomes the grammatical subject, and blocks any other subject.

¹⁰Since $\hat{\theta}$ is unexpressed, the effect of the $\hat{\theta}$ default, specifying the *ag* as [-r], is vacuous and not shown.

This idea is formally incorporated in our theory in the following 'focus subject default' postulated by Bresnan and Kanerva (1989) as an addition to the defaults previously given (38a,b). As before, these defaults are ordered by the elsewhere condition; hence (43) must precede the final default that makes all theta roles [+r] (38b). Its effect, then, is to make the *loc* role the subject (or alternatively, to introduce an expletive subject in the same context).

(43) Focus subject default:

$$\begin{array}{c} [f] \quad loc \\ | \\ [-r]/expl \end{array}$$

The feature [f] refers to the presentational focus attribute(s), and *expl* denotes an expletive subject which may appear as an alternative to the classification of *loc* as [-r]. In English, this expletive is what is known as 'presentational *there*' (Aissen (1975)).¹¹

They further propose that the distribution of the focus feature [f] is a parameter of variation across languages. In Chicheŵa it is subject to the constraint given in (44), which states that only the theme argument can bear the [f] feature, and only when it is the highest expressed role:

(44) Focus parameter:

$$\begin{array}{c} < \quad th/pt \\ | \\ [f] \end{array}$$

The same parameter is selected in the grammar of English.

With these additions to the theory, locative inversion in English now falls into place. Consider how it arises with the intransitive verb *sit*:

(45)

	<i>sit</i>	<	<i>th</i>	<i>loc</i>	>
intrinsic:			[-r]	[-o]	
focus:			[f]		
defaults:				[-r]	
			o/s	s	
w.f.:			o	s	

¹¹The provision for an expletive subject is a parameter of variation which is not taken in Chicheŵa.

The theme is the highest expressed role, and when it is presentationally focussed, the focus subject default is applicable, making the locative the subject. By the well-formedness conditions, the theme becomes the object. This accounts for examples like (2b) *Among the guests was sitting my friend Rose*.

In contrast to *sit*, an intransitive verb like *spit* has an agent rather than a theme as the highest role. The locative is not predicated of the agent, which thus lacks themelike properties and receives only the agentlike intrinsic classification. Hence the agent is an external argument role, and since it must become the subject, locative inversion could never arise (because there can only be one subject):

(46)	<i>spit</i>	<	<i>ag</i>	>	<i>loc</i>	>
intrinsic:			[-o]		[-o]	
focus:			*[f]			
defaults:			[-r]		[+r]	
			-----		-----	
			S		OBL _{loc}	

This account for examples like (9b) **Onto the ground had spit a few sailors*. Thus the split intransitivity of locative inversion falls out of this theory.

Motional verbs like *creep*, *jump* are thematically ambivalent (Bresnan and Kanerva (1989)): their highest role is both an agent because it is in control of the activity, and a theme because it undergoes a change of location. These verbs can receive in principle either the theme ([-r]) or the agent ([-o]) classification of $\hat{\theta}$, and will undergo locative inversion with the theme [-r] classification. In this way the theory accounts for both 'active' and 'stative' types of locative inversion in English (Aissen (1975)).

The effect of passivization on locative inversion falls out as well. With an active transitive verb like *seat*, locative inversion can never arise because the external argument role will become the subject. But under passivization this role is suppressed, locative inversion can occur:

(47)	<i>seat</i>	<	<i>ag</i>	<i>th</i>	<i>loc</i>	>
intrinsic:			[-o]	[-r]	[-o]	
passive:	<i>seated</i>		∅			
focus:				[f]		
defaults:					[-r]	
				o/s	s	
w.f.:				o	s	

This accounts for examples like (13a) *Among the guests of honor was seated my mother.*

The *by*-phrase restriction on locative inversion with passives can also be explained, assuming that the *by*-phrase adjunct binds the $\hat{\theta}$ role, and thereby serves indirectly to express it. The focus parameter (44) will thus be inapplicable to such a passive argument structure, where the theme is not the highest expressed role:

$$\textit{seated} \langle \textit{ag}_i \textit{th} \textit{loc} \rangle \textit{by} \langle \theta_i \rangle$$

This accounts for the ill-formed variant of (13a) with the passive *by*-phrase: *?*Among the guests of honor was seated my mother by my friend Rose.*

Thus the theory explains why locative inversion fails to occur with transitive verbs, why it splits among intransitives and occurs with passives, why it prohibits the passive *by*-phrase, why passive verbs with non-theme subjects disallow it, and why it occurs in the marked context of presentational focus. Given our theory and the focus parameter (44), these properties necessarily cluster together, and their presence as a group in both English and Chicheŵa is not accidental.

The theory also derives the salient structural difference between internal and external arguments—their asymmetry with respect to the VP. It follows from the projection theory that external arguments are always subjects, while internal arguments may be subject or objects. In the \bar{X} theory of Bresnan (1982) the syntactic categories are defined in terms of syntactic functions. By definition, the VP is the phrase structure category that is both predicative (i.e. cannot dominate a subject NP) and potentially transitive (i.e. can dominate object NPs). It follows that if a language has a VP, the external argument must appear in a position external to the VP, while the internal argument may appear either VP-internally or VP-externally.

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