LOCATIVE INVERSION AND THE
ARCHITECTURE OF UNIVERSAL GRAMMAR

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Locative inversion in English and Chicheŵa shows remarkable similarities which can be explained by hypothesizing the same underlying argument structures and principles for mapping argument structure roles into syntactic functions. However, the alignment of roles with syntactic categories reflects a profound typological difference between the two languages: Chicheŵa categorizes locatives in a gender class system; English, in an abstract case-like system. The resulting syntactic differences defy analyses within a widely-assumed architecture of Universal Grammar and support the alternative adopted by Bresnan & Kanerva 1989.*

1. INTRODUCTION. Comparative syntax is the source of much recent theorizing about the principles of Universal Grammar (UG) and its parameters of variation. However, comparative syntax is usually based on languages which are closely related genetically, typologically, or areally. Because such languages have extensive similarities in forms of expression, they permit convincingly detailed syntactic comparisons, but for the same reason they provide a weak basis for inferring the deeper and more abstract principles of UG: parochial formal similarities can be mistaken for universal principles. Once such parochial formal properties are taken to be universal, a presumptive case is made for assimilating dissimilar languages to the same model.

The rationale for this approach to UG has been, first, 'that the underlying structure of languages should be as similar as possible in order to account for the fact that any language can be learned without explicit training' (Baker 1991: 540), and second, that the underlying structure of English and related languages is of the same formal character as their surface categorial structure. (The latter point is the standard assumption of transformational grammar and its descendants, embodied in current theory as the Projection Principle—Chomsky 1981, Speas 1990:Ch. 3.) It follows that the underlying structure of languages typologically distant from English should resemble English surface structure, a consequence drawn explicitly by Baker (1991:538–9) and Speas (1990:161–2). Let us refer to this consequence as the CATEGORIAL UNIFORMITY THESIS. As a

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argument (a-)structure:

$$R \langle\ \theta_1\ \ldots\ \theta_n\ \rangle$$
$$[f_1]\ \ldots\ [f_n]$$

functional (f-)structure:

$$\begin{bmatrix} \text{SUBJ} & \begin{bmatrix} \vdots \end{bmatrix} \\ \text{OBJ} & \begin{bmatrix} \vdots \end{bmatrix} \\ \text{PRED} & \cdots \end{bmatrix}$$

categorial (c-)structure:

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        V'
       / \
      V   NP
           |
           N'
```
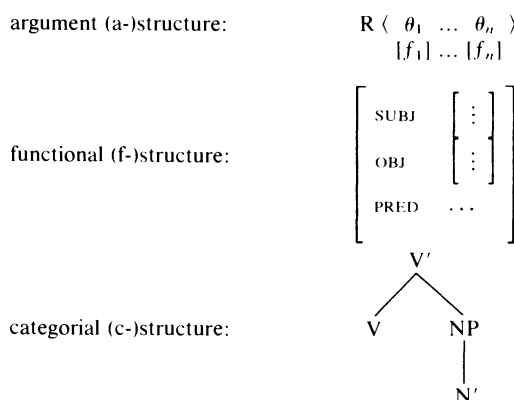
FIGURE 1. Parallel levels of structure (LFG).

result of the categorial uniformity thesis, to many descriptive linguists and typologists the 'abstract' underlying structures adopted in current UG look disconcertingly concrete, imputing to typologically distant languages a universal underlying structure derived from the morphological and surface structural categories of English and familiar European languages.

Baker (1991:539) suggests that researchers who reject this approach 'seem to be motivated by a kind of positivism and a desire to avoid forcing the structure of English onto other languages ...', for which they are willing to give up the explanatory goals of UG as metaphysical. Speas, too, argues that to give up the categorial uniformity thesis is to relinquish the goals of an explanatory and restrictive theory of UG by adopting 'different models of grammar for different languages' (1990:144). But this is a serious misconception, for there are alternative architectures of UG that do not entail the categorial uniformity thesis and that do permit explanatory theories of language learnability (Pinker 1984, 1989). In one such alternative, adopted in Bresnan & Kanerva 1989 (hereafter BK) and 1992, the thematic, structural, and functional levels of language are parallel information structures of very different formal character, linked by functional correspondences (a revised and elaborated framework of Lexical Functional Grammar—LFG).[1] This model contrasts with the conventional generative conception, in which all levels of grammar are represented by configurations of the same kind of syntactic sentence structures, linked by syntactic movement operations. In the framework adopted by BK the deeper and more universal principles of grammar abstract away from the categories of formal expression, such as NP, PP, INFL, and the like, though it is clear that such categories play an important role in theoretically characterizing phrase structure and word order variation across languages (see e.g. Kroeger 1993). Three levels in this model are illustrated in Figure 1.

[1] Though not formalized in such a way as to bring out the similarities, multidimensional functional approaches to natural language envision a similar architecture, as Talmy Givón has reminded me. Formally related architectures include Kac 1978, Sadock 1991, Jackendoff 1993, and Andrews & Manning 1993, which connects some of these ideas to Head-Driven Phrase Structure Grammar.

Each level models a different dimension of grammatical structure: role, function, and category. (Other dimensions of course exist, but these three have been most extensively investigated thus far within the present framework.) Roles correspond to the grammatically expressible participants of eventualities (modelled by a-structure), functions belong to the inner or 'covert' grammatical relations (modelled by f-structure), and categories belong to the outer structure of forms of expression (modelled by c-structure). Each level has its own distinctive prominence relations, characterizing the logical subject, the functional subject, and the structural subject. However, the independence of these levels is partially obscured by correspondence principles (also called 'linking' or 'mapping' principles) which tend to preserve prominence across levels, at least in the unmarked case. If it is unmarked for these relations to coincide, it is also less revealing of the distinctive properties of each level.

What makes locative inversion particularly revealing of the architecture of UG is its mismatches of role, function, and category. Throughout the history of generative grammar, roles and inner relations have been represented in the vocabulary of 'outer' structures (syntactic phrase structure categories and configurations), and the correspondences between the levels have been presented as transformational (phrase-structure dependent) operations. Within this general framework, locative inversion has seemed to defy analysis. As BK observe (2–3), the literature on locative inversion is filled with conflicting proposals 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. The recent generative literature on locative inversion in English continues this divergence, with the inverted subject treated as an unaccusative object in Coopmans 1989 and Levin 1991, a subject in Rochemont & Culicover 1990, a small clause complement subject in Hoekstra & Mulder 1990, and a demoted subject in Levin & Rappaport Hovav 1992.

In contrast, in the alternative architecture shown above, c-structure is not used to represent 'inner' or 'deep' grammatical relations, thus permitting (within constraints) mismatches between levels and significant variability in categorial structures across languages. From this perspective it is easy to see why locative inversion has seemed to defy analysis: the outer categorial structure does not faithfully reflect the inner logical and functional relations. I will argue that in English locative inversions there is no structural subject, the logical subject is a focussed object that does not appear in immediately postverbal object position, and the functional subject is an oblique PP argument that does not show any morphological or phrase-structural subject properties. In other words, there are mismatches of subjects across the levels of a-structure, f-structure, and c-structure.

Within English itself the evidence of these inner functional relations is subtle and indirect, coming from interactions of syntactic processes that the language learner might never be exposed to in combination. The most striking evidence comes from comparing the syntax of English and Chicheŵa, an unrelated and typologically distant Bantu language of East-Central Africa. Chicheŵa gives direct morphological and structural evidence of the same inner relations that

appear only obliquely in English. Previous accounts of locative inversion within the conventional generative architecture are all based on categorial properties of English which are not shared by Chicheŵa. Hence, they cannot be extended to explain the generalizations common to the two languages. Thus, while the present study strongly supports the UG hypothesis itself, it throws into question the standard architecture of UG incorporating the categorial uniformity thesis.

2. LOCATIVE INVERSION. Locative inversion in English is illustrated by examples 1–3:

(1) a. *A lamp was in the corner.*
    b. *In the corner was a lamp.*
(2) a. *My friend Rose was sitting among the guests.*
    b. *Among the guests was sitting my friend Rose.*
(3) a. *The tax collector came back to the village.*
    b. *Back to the village came the tax collector.*

The term LOCATIVE will be used to subsume a broad range of spatial locations, paths, or directions, and their extensions to some temporal and abstract locative domains, as warranted by corpus-based studies of locative inversion (Birner 1992:54–8). As the (b) sentences illustrate, locative inversion involves the preposing of a locative phrase before the verb and the postposing of the subject NP after the verb. The positions of the locative and the subject arguments are inverted without changing the semantic role structure of the verb. These properties of locative inversion are common to both English and Chicheŵa (cf. BK: 2, exx. 1–2).

English also has inversions of NONLOCATIVE phrases (Emonds 1976, Green 1976, 1980, Bolinger 1971, 1977, Birner 1992), which are restricted to the verb *be*:[2]

(4) a. *Especially worrisome to public health experts is the growing number of TB cases.* [Adapted from Birner 1992:66–7]
    b. *Criticized often for drunkenness is John Smith.* [Birner 1992:62]
    c. *Voting in favor were three women.*

The restriction to *be* is controversial. Emonds (1976:34ff.) claims that inversions of participles and adjectives are restricted to the verb *be* in English, while PP inversions are not restricted in this way. This claim is disputed by Hoekstra & Mulder (1990:30) and is falsified by examples like the following:

(5) a. *Crashing through the woods came a wild boar.* [Birner, personal communication, 1990, attributed to Georgia Green]
    b. *Coiled on the floor lay a one-hundred-and-fifty-foot length of braided nylon climbing rope three-eighths of an inch thick.* [Birner 1992:58]

Here what is preposed is not a PP but a VP. However, the VP itself consists

[2] In cases like 4c, where a present participle is inverted, Bolinger 1971 ingeniously traces the construction to a historical locative source for the nominal in the progressive.

of a participle with a locative/directional complement.[3] Omitting the locative PP reduces the acceptability of these examples, while omitting the participle preserves it. Further, the verbs that allow such phrasal inversions, like *come, sit, stand,* and *lie,* all select LOCATIVE complements. Contrast the following inversions using nonlocative copular verbs:

(6) a. **Gathered pointlessly in the yard seemed three women.*
    b. **Busy at the lathes kept three women.*
    c. **Conspicuously absent became Mary.*
    d. **Even closer seemed a python.*
    e. **Spilled all over the floor got pinto beans.*

These verbs do not select specifically locative complements. In fact, a number of them reject locative complements: **Three women seemed in the yard, *Mary became at the office.* If we replace the verbs either with *be* or with verbs that do select locative complements, the inversions are possible:[4]

(7) a. *Gathered pointlessly in the yard stood three women.*
    b. *Busy at the lathes sat three women.*
    c. *Conspicuously absent was Mary.*
    d. *Even closer came a python.*
    e. *Spilled all over the floor lay pinto beans.*

We can conclude that, in addition to locative inversion (which may prepose non-PP locative/directional constituents as in 5), English has another type of inversion of nonlocative constituents, which is generally restricted to *be.* There is thus English-internal evidence for excluding cases like 4a–c from our comparative study.

Chicheŵa provides further support for this restriction of our scope of inquiry. While Chicheŵa has both locative and nonlocative complements to the verb *-li* 'be',[5] only the locative complements undergo the inversion pattern:[6]

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[3] In a corpus of naturally-occurring inversions studied by Betty Birner, 97% of inversions with verbs other than *be* contain preposed locative PPs, and in the remaining 3% 'the preposed element was either a PP, some other kind of locative constituent, or *thus, so,* or *as*' (Birner 1992:180). The 'other kind of locative constituent' is without exception a semantically locative or motional VP consisting of a participle with a locative/directional complement, as in 5a–b.

[4] This fact is unexplained by Hoekstra & Mulder's 1990 analysis, in which locative inversion verbs are analyzed as copular verbs taking small clauses. On their account the inverted subject is base generated in postverbal position as the subject of a small clause whose predicate complement is preposed into preverbal subject (Spec of IP) position. In favor of this account they cite as fully grammatical several marginal examples of inversions with nonlocative copular verbs: ??*Most embarrassing would have been considered losing your keys,* ??*Most incompetent were judged the students of the French department* (Hoekstra & Mulder 1990:30). Because these examples are perfect with *be* (dropping the participle) and the preposed phrases lack locative meaning, they probably do not represent a true generalization of locative inversion, but are instead an extension of *be* inversion.

[5] BK (17, n. 16) point out that monosyllabic verb stems like *-li* are not available as citation forms, because words in the major lexical categories must all contain at least one foot of two syllables (Kanerva 1990b); hence the hyphen is used with this form.

[6] Examples 8a–b are from Bresnan & Kanerva (1989:2); the locative class markers 16, 17, and 18 of nouns (but not verbs and adjectives) are glossed as particles rather than prefixes in this and

(8) a. *Chi-tsîme chi-li   ku mu-dzi.*
      7-well   7.SUBJ-be 17 3-village
      'The well is in the village.'

    b. *Ku mu-dzi   ku-li   chi-tsîme.*
       17 3-village 17.SUBJ-be 7-well
       'In the village is a well.'

(9) a. *A-nthu   á-mbîri a-na-lí*   *kú-vót-ér-a*   *m-tsogoleri*
      2-person 2-many 2.SUBJ-REC.PST-be 15-vote-APPL-FV 1-leader
         w-á   tsópăno.
         1-ASC now
      'Many people were voting for the new leader'

    b. **Ku-vót-ér-a   m-tsogoleri w-á   tsópăno ku-na-lí*
       15-vote-APPL-FV 1-leader   1-ASC now   15.SUBJ-REC.PST-be
       a-nthu   á-mbîri.
       2-person 2-many
       'Voting for the new leader were many people.'

In 9a 'be' takes an infinitive/gerund complement, yielding a progressive meaning. As 9b shows, this verbal complement cannot be inverted, unlike the locative complement of 'be' in 8. (On differences between the superficially similar class 17 locative particle *ku-* in 8 and class 15 verbal prefix *ku-* in 9, see Bresnan & Mchombo 1993.) This fact, together with the parallels between locative inversion in English and Chicheŵa described below, supports the assumption that locative inversion can be distinguished as a unitary phenomenon from inversions of nonlocative phrases.

3. ARGUMENT STRUCTURE. Not all verbs can undergo locative inversion. BK observe a number of constraints on inverting verbs in Chicheŵa. The same constraints hold in English as well.

3.1. THE TRANSITIVITY RESTRICTION. In English, locative inversion occurs only with intransitive verbs, such as *be, sit,* and *come* (cf. 3).

  (10) 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.*
  (11) a. *A lucky hiker can find the reclusive lyrebird in this rainforest.*
      b. **In this rainforest can find the reclusive lyrebird a lucky hiker.*
      c. **In this rainforest can find a lucky hiker the reclusive lyrebird.*

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subsequent examples, in accordance with the results of Bresnan & Mchombo 1993. The Chicheŵa examples given in this study follow transcription conventions of Bresnan & Mchombo 1987 and Bresnan & Kanerva 1989, adhering to Chicheŵa orthography with the addition of high (´), falling (ˆ), and rising (ˇ) tones; low tones are unmarked. Chicheŵa has eighteen noun classes, which are denoted by arabic numerals in the glosses, including a class 1A; roman numerals are used for first and second person; and the following abbreviations are also used: NEG = negative, sg = singular, SUBJ = subject, OBJ = object, PROG = progressive, PRF = present perfect, REC.PST = recent past, IM.FUT = immediate future, PRS.HAB = present habitual, APPL = applicative, PASS = passive, FV = final vowel, POSS = possessive pronoun, ASC = associative, and INF = infinitive.

> (12) a.   *Susan has placed a tarte Tatin on the table.*
> b.   **On the table has placed a tarte Tatin Susan.*
> c.   **On the table has placed Susan a tarte Tatin.*

The same is true in Chicheŵa. Intransitive verbs such as *-li* 'be', *khala* 'sit', and *bwera* 'come' allow locative inversion, while transitive verbs such as *pĕza* 'find', *thamangitsa* 'chase', and *tumiza* 'send' disallow it (cf. BK: 16, exx. 44–46).[7]

3.2. SPLIT INTRANSITIVITY. While locative inversion in English applies only to intransitive verbs, it does not apply to ALL intransitive verbs (Postal 1977: 147). Intransitives split as to whether they allow it (Levin 1985):

> (13) a.   *Among the guests was sitting my friend Rose.*
> b.   **Among the guests was knitting my friend Rose.*
> (14) a.   *Onto the ground had fallen a few leaves.*
> b.   **Onto the ground had spit a few sailors.*
> (15) a.   *Into the hole jumped the rabbit.*
> b.   **Into the hole excreted the rabbit.*
> (16) a.   *Toward me lurched a drunk.*
> b.   **Toward me looked a drunk.*
> (17) a.   *On the corner was standing a woman.*
> b.   **On the corner was drinking a woman.*

The same holds of Chicheŵa (cf. BK:16–7, exx. 47–50).

3.3. PASSIVIZED TRANSITIVE VERBS. Furthermore, locative inversion is possible with PASSIVIZED transitive verbs in English. For example, the transitive verbs *seat, find,* and *place* illustrated above in 10–12 all allow locative inversion when passivized:

> (18) a.   *My mother was seated among the guests of honor.*
> b.   *Among the guests of honor was seated my mother.*
> (19) a.   *The reclusive lyrebird can be found in this rainforest.*
> b.   *In this rainforest can be found the reclusive lyrebird.*
> (20) a.   *A tarte Tatin has been placed on the table.*
> b.   *On the table has been placed a tarte Tatin.*

Exactly the same is true of Chicheŵa (cf. BK:17–8, exx. 51–54).

3.4. THE *by*-PHRASE RESTRICTION. When a passive verb undergoes locative inversion, there is a restriction against the expression of the passive *by* phrase, illustrated in 21a–c. (The *by* in each of these examples is intended in its agentive, not its locative, sense.)

> (21) a.   *??Among the guests of honor was seated my mother by my friend Rose.*

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[7] A small class of unaccusative transitive verbs does undergo locative inversion in Chicheŵa (Alsina & Mchombo 1988). See also Bresnan & Kanerva 1992:113 and Bresnan & Moshi 1990: 177–180.

   b. ??*In this rainforest can be found the reclusive lyrebird by a lucky hiker.*

   c. ??*On the table has been placed a tarte Tatin by Susan.*

BK (17–8, exx. 51b–53b) have observed the same restriction in Chicheŵa.[8]

3.5. NOT ALL PASSIVES. Not all passive verbs allow locative inversion. BK (18–9, exx. 55–56) show that when the passive subject is an applied beneficiary or instrument argument in Chicheŵa, locative inversion is ungrammatical. Comparable English examples are very difficult to find,[9] but one way English can create such passive subjects is through preposition incorporation into the verb (Bresnan 1982b): *He needs to be spoken to, These fields look like they've been marched through by an army.* It is only marginally possible to incorporate instrumental *with:*

   (22) a.   *A fireman hacked through an iron door with this axe.*

      b.   ??*This axe looks like it's been hacked-with through an iron door.*

Although the passivized instrumental example 22b is marginal, it is almost unimaginable with locative inversion (23a), even though the same verb otherwise marginally allows it (23b):

   (23) a.   **Through the iron door was hacked-with an axe.*

      b.   ?*Through the iron door hacked a fireman.*

In 23b the fireman must be moving through the door; he is hacking his way through the door with an axe. If the fireman is viewed as stationary, and only the axe as moving, then the example is bad.

   It is much easier to incorporate the abstract goal- or beneficiary-marking preposition *for:*

   (24) a.   *We fought for these rights in these very halls.*

      b.   *These rights were fought for in these very halls.*

The passive goal subject in 24b cannot undergo locative inversion (25a), even though the base verb allows it elsewhere (25b):

   (25) a.   **In these halls were fought for these rights.*

      b.   *In these halls were fought tremendous battles for equal rights.*

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[8] An apparent counterexample to the *by*-phrase restriction is provided by Beth Levin (personal communication, 1990) and also cited in Birner (1992:282): *Here, in the stone wall, had been wonderfully carved by wind or washed by water several deep caves above the level of the terrace.* Observe, however, that the *by* phrases here answer to *how* interrogatives: *How were the caves carved in the stone wall? —By wind/*By the railroad company. How were the caves washed into the stone wall? —By (river) water/??By hydraulic engineers.* In this respect they resemble manner phrases rather than passive agent phrases. Contrast: *How was he killed? —By his own hand/??By the railroad company. How can the reclusive lyrebird be found? —Only by persistent searching/ ??Only by a lucky hiker.* Thus the *by*-phrase restriction appears to hold for truly agentive uses of the passive *by* phrase.

[9] In English, unlike Chicheŵa, beneficiary objects can only be added to transitive verbs, which already disallow locative inversion, and prepositionless instrument objects are completely lacking (cf. Alsina & Mchombo 1990, 1993).

Thus, though English lacks direct analogues to Chicheŵa's passivized ap-plied verbs, the same underlying constraints on invertibility appear in English prepositional passives.

3.6. THE CORE ARGUMENT STRUCTURE FOR LOCATIVE INVERSION. These re-strictions on locative inversion in both English and Chicheŵa fall together under a single generalization. Locative inversion can occur just in case the subject can be interpreted as the argument of which the location, change of location, or direction expressed by the locative argument is predicated—a THEME in the narrowest sense of Gruber 1976 and Jackendoff 1972, 1976, 1987.[10] I schematize this generalization as follows, by informally depicting the association between the argument structure and the subject function:[11]

(26) verb ⟨ *th loc* ⟩

       |

       S

Consider how this generalization applies to the five restrictions on locative inversion enumerated above. The intransitive verbs *be, sit,* and *come* all satisfy the characterization of having a theme subject of which location, change of location, or direction is predicated, as in 26. In contrast, the transitive verbs *seat, find,* and *place* predicate locations of their object, not their subject, ar-guments:

(27) *find* ⟨ *ag th loc* ⟩

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          O

(*A lucky hiker can find* THE RECLUSIVE LYREBIRD *in this rainforest.*)

When these same transitive verbs are passivized, however, the agent is sup-pressed, the theme argument is now a subject, and locative inversion can apply:

(28) (*be*) *found* ⟨ (*ag*) *th loc* ⟩

              |

              S

(*THE RECLUSIVE LYREBIRD can be found in this rainforest.*)

In contrast, when preposition-incorporated verbs are passivized, the passive

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[10] This generalization was first observed for locative inversion in English by Levin 1985 (see also Bresnan 1989, Coopmans 1989, Hoekstra & Mulder 1990), for Chicheŵa by Bresnan & Kanerva 1989, and for Chinese by Tan 1991 (cf. Li 1990:134–39). Some parameters of variation are discussed in Bresnan & Kanerva (1989:37–38, 1992), Harford 1989, Demuth 1990, and Demuth & Mmusi 1992.

Note that the theme role is extended by Gruber and Jackendoff to verbal arguments in other semantic fields, for example to the argument denoting the entity that changes state with a verb of change of state. With such a verb the locative complement denotes the source or goal of the change of state, behaving as an abstract location. However, these change-of-state themes do not necessarily undergo locative inversion even when they appear with locative complements: **Away fainted Mary, *Into smithereens shattered the vase.*

[11] The appearance of thematic-role labels in these informal illustrations of argument structures is for heuristic purposes only; for more detailed accounts of a-structure, see the references cited in n. 25.

subject is an abstract goal or instrument argument distinct from the (unexpressed) theme of which location can be predicated:[12]

(29) (be) fought-for ⟨ (ag) goal (th) loc ⟩
|
S

(*THESE RIGHTS were fought for in these very halls.*)

These verbs do not satisfy generalization 26 and they do not undergo locative inversion, whereas related forms of the same verb which do satisfy the generalization do invert:

(30) (be) fought ⟨ (ag) th loc ⟩
|
S

(*TREMENDOUS BATTLES FOR EQUAL RIGHTS were fought in these very halls.*)

The *by*-phrase restriction can be seen as falling under the same generalization, given an additional assumption made by BK. Assuming a ranking of argument roles descending from agent to theme to locative, let the ranking be represented by the left-to-right order of roles in an argument structure. Generalization 26 can then be interpreted as stating that a theme subject must be the highest-ranked of the roles syntactically expressed, since there is none to its left in the argument structure. If a more prominent role than the theme is syntactically expressed, generalization 26 will not be satisfied because the theme will no longer be leftmost in the argument structure. Observe that in all of the good examples of locative inversion with passives, the theme subject is leftmost in the argument structure in the highest position, when the unexpressed agent is excluded from consideration (cf. 28–30). In the bad examples with *by* phrases, the agent cannot be excluded because it is indirectly expressed by the passive argument adjunct to which it is bound:

(31) (be) found ⟨ ag_i th loc ⟩ by ⟨ θ_i ⟩
|
S

Thus generalization 26 can be interpreted as failing to apply in this case, accounting for 21.[13]

Finally, the split intransitivity property is also a reflection of generalization 26. The noninverting intransitives *knit, spit, excrete, look,* and *drink* do not predicate locations of their subjects. If a locative phrase occurs with these verbs, it is either an adjunct describing the location of the entire event or a

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[12] On reasons for ranking abstract goals above locatives, see Bresnan & Kanerva 1992.

[13] The same reasoning would explain the resistance of locative inversions to the presence of an instrumental phrase, as noted by Beth Levin (personal communication, 1990), because instruments are higher than themes on the thematic hierarchy (cf. BK, Bresnan & Kanerva 1992): *Through a broad rift could be seen the opposite mountain (*with a telescope)/ The opposite mountain could be seen through a broad rift (with a telescope); On a large banner was painted a portrait of the ex-dictator (*with a large brush)/A portrait of the ex-dictator was painted on a large banner with a large brush.*

locative predicated of a (possibly implicit) nonsubject argument. In neither case does the base argument structure of the verb satisfy generalization 26:

(32) a. *knit, drink* ⟨ *ag (th)* ⟩
                          |
                          s

   b. *spit, excrete* ⟨ *ag (th) loc* ⟩
                          |
                          s

Verbs of type 32b clearly do not predicate locations of their subjects: if a rabbit excretes into a hole, the rabbit is not necessarily in the hole; if a few sailors spit onto the ground, the sailors are not necessarily on the ground. These verbs have an implicit theme argument (the spit or excreted substance) distinct from the subject, and it is this implicit argument of which change of location is predicated by the verb.[14] In contrast, if a rabbit jumps into a hole, the rabbit is necessarily in the hole; if a few sailors sit on the ground, they are necessarily on the ground. Thus by their entailments the locative-inverting intransitives can be distinguished from the noninverted examples of type 32b.

Verbs of type 32a are more difficult to distinguish semantically from locative-inverting verbs because the location of an entire eventuality as expressed by an adjunct is often also the location of the sole grammatically expressed participant of that eventuality. However, a number of linguists have discussed syntactic tests that distinguish locative adjuncts from locative arguments (Lakoff & Ross 1976 [1966], Reinhart 1983, Netter & Rohrer 1987, Hoekstra & Mulder 1990, Tan 1991). For example, Reinhart (1983:68–72) observes that adjuncts can be preposed before questioned subjects, while arguments cannot. Applying this observation to our example verbs, we do find a difference:[15]

(33) a. *On the corner, who drank?*
   b. ?**On the corner, who stood?*
(34) a. *On the platform among the guests of honor, who knitted?*
   b. ?**On the platform among the guests of honor, who sat?*

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[14] Gruber 1967 proposes that the verb *look* be analyzed along similar lines, with an unexpressed internal semantic argument as the theme whose change of location is designated by the locative. Thus *A drunk looked toward me* would have a semantic analysis in which the drunk's gaze goes toward me, where the gaze is the theme. If this analysis is correct, the noninvertibility of **Toward me looked a drunk* would fall under the generalization given here. See VanDevelde 1977 for a criticism of Gruber's analysis, and Goldsmith 1979 for a defense. Jackendoff 1983 also follows Gruber.

[15] Reinhart attributes this contrast to the different structural positions at which the two types of locatives attach: VP (for arguments) or S (for adjuncts). Note that both *stand* and *sit* have activity senses (*stand [up]* 'assume a standing posture', *sit [down]* 'assume a sitting posture') under which 33b and 34b are grammatical. In their activity senses these verbs disallow locative inversion (**Up stood a woman*, **Down sat Rose*). Just as we would expect, any locative adjuncts that occur with these verbs will fail to undergo locative inversion (**Among the guests was sitting down my friend Rose*, **On the corner stood up a woman*) and will allow preposing before questioned subjects (*On the corner, who stood up?, Among the guests of honor, who sat down?*) Cf. Rochemont (1978: 29).

Another test, proposed by Lakoff & Ross 1976 (1966), appears to corroborate this result: locative adjuncts can be optionally excluded from the interpretation of *so* anaphora, while locative arguments cannot. Exx. 35a–b contain locative adjuncts and are ambiguous as to whether or not *so* refers to an event at the same location as the event of the antecedent clause. Hence the parenthesized locative is a consistent addition to the *so*-clause:

(35) a. *My friend Rose was knitting among the guests, and so was my sister (alone in her bedroom).*

b. *A woman smoked on the corner, and so did my grandfather (on the porch).*

In contrast, in 36a–b, which contain locative arguments, *so* seems unambiguously to include the location or direction of the antecedent clause. Hence the parenthesized locatives in 36a–b are a contradictory addition to the *so*-clauses.[16]

(36) a. *My friend Rose was sitting among the guests, and so was my sister (alone in her bedroom).*

b. *An old chair stood in the corner, and so did a suitcase (in the middle of the room).*

In sum, a locative adjunct in the antecedent clause can be external to the situation picked up by *so*, while a locative argument cannot.

By such tests locative phrases occurring with noninverting verbs of type 32a—such as *drink* and *knit*—seem to be adjuncts lying outside of the argument structure of the verb. They therefore fail to satisfy generalization 26.

Note finally that, though locative arguments are often optional and may thereby resemble adjuncts, they are required by some verbs when the subject is inanimate:[17]

(37) a. *The book lay on the table/*The book lay.*

b. *The lamp stood in the corner./*The lamp stood.*

c. *A large vase was sitting among the sculptures./*A large vase was sitting.*

Thus the evidence supports the generalization that verbs in English permit locative inversion if they predicate location or direction of their subjects.[18] This is the same generalization identified by BK for Chicheŵa.

3.7. FLUIDITY OF INTRANSITIVES IN CONTEXT. As we have seen, the restrictions on locative inversion in both English and Chicheŵa reflect a core theme-

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[16] Again the activity senses of the verbs must be excluded, as with the previous test. See n. 15.

[17] Hoekstra & Mulder (1990:13) make a similar observation for Dutch.

[18] An alternative, discoursal account is tentatively suggested by Birner (1992:191–205): the verb must be 'informationally light' in the sense that its content is evoked or inferable from the discourse or sentential context. Verbs of existence and appearance ('copular' verbs in Hoekstra & Mulder's 1990 sense) are paradigm examples of informational lightness. But this proposal does not explain the failure of inversion with informationally light verbs that do not take locative complements, illustrated in 6; it also runs up against several counterexamples which Birner herself notes (1992: 204–5). See also §12 below.

locative argument structure. However, extending around this core in both languages is a penumbra of intransitive verbs whose lexical argument structures do not match the core pattern but can be assimilated to it in certain contexts. This fluidity can be illustrated by the polyadic verb *shoot*.

The verb *shoot* in 38a takes a locative path argument and has two intransitive uses, illustrated in 38b–c:

(38) a. *A marksman shot a bullet through the wedding band.*
    b. *A marksman 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 38b is that the marksman shot a projectile through the wedding band, while in 38c the bullet is the projectile that passes through the wedding band. Thus, while either the bullet or the marksman can be expressed as the subject of this verb, only the bullet is the theme. In accordance with the core generalization governing locative inversion, the marksman is not passing through the wedding band in shooting, so the subject designating this participant does not invert (39a). But the bullet is passing through the wedding band, and this is the referent of the inverting subject (39b).

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

Now consider example 40:

(40) *Through the window on the second story was shooting a sniper.*

Here the inverted subject is the agentive and not the theme argument of *shoot*. Yet the example can be used in the context of describing a scene in which a sniper is shooting from the second story window. If the sniper were on the ground using the window as a target to shoot through, or if the sniper were shooting from a rooftop through the second story window of an opposing building, the example would not be felicitous. Inversion is possible just when the shooting through the window serves to LOCATE the sniper—in other words, just when location is predicated of the subject and the situation can be assimilated to the core theme-locative generalization isolated above. In such examples a theme-locative predication appears to be overlaid on the basic predication of the verb (as suggested by William Ladusaw, personal communication, 1988). We will return to this idea below.[19]

In both English and Chicheŵa, locatives which are normally adjuncts to intransitive activity verbs appear inverted just when they serve to locate the subject of the activity. An example occurs in BK (40):

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[19] Levin 1991 argues that with verbs of manner of motion (*run, fly, walk*) and emission (*flash, whistle, bubble*) a shift of semantic class permits locative inversion. See also Hoekstra & Mulder 1990 on the semantic shift of locative inversion verbs. Though in the context of snipers, *shoot* might be considered a verb which signals their existence and helps to locate them, it clearly does not belong to the lexical classes of verbs discussed by Levin 1991. Moreover, as Levin & Rappaport Hovav 1992 point out, on the semantic shift account it is unclear why such various verb types should all undergo the same lexical shift in their semantics.

(41) a. *Pa nthâmbi pa-na-lúmph-á*   *nyǎni.*
       16   9.branch 16.SUBJ-REC.PST-jump-FV 1A.baboon
       'On the branch jumped a baboon.'
   b. *Pa zenêra*   *pa-na-lúmph-á*   *mu-nthu.*
       16   5.window 16.SUBJ-REC.PST-jump-FV 1-person
       'From the window jumped a person.'

BK specifically contrast the nondirected motion in 41a with that in 41b: in 41a the baboon is understood to be jumping up and down on the branch, not following a path of motion. Hence, as used in 41a, 'jump' is a canonical example of an unergative verb according to Levin & Rappaport Hovav 1992.[20] Nevertheless it can be assimilated to the core locative inversion cases in contexts in which the activity serves simply to locate the subject on the scene. In such contexts a theme-locative predication seems to be overlaid on the lexical argument structure of the verb, permitting locative inversion. Why such an overlay predication occurs is discussed further below.

In summary, we have seen that in both English and Chicheŵa the core argument structure of locative inversion is a location predicated of a theme. Both languages exhibit fluidity of intransitives in context, allowing verbs whose lexical argument structures do not match the core pattern to undergo locative inversion if location is predicated of the subject in the CONTEXT OF USE. In such examples, a theme-locative predication seems to overlay the lexical argument structure.

4. PRESENTATIONAL FOCUS. Not only the argument structure, but also the uses of locative inversion in English and Chicheŵa show systematic correspondences. In both languages locative inversion has a special discourse function of PRESENTATIONAL FOCUS (Hetzron 1971, 1975, Bolinger 1971, 1977, Rochemont 1986), in which the referent of the inverted subject is introduced or reintroduced on the (part of the) scene referred to by the preposed locative.

4.1. DISCOURSE CONTEXT. One effect of presentational focus is illustrated in 42, where B seems an odd response to A:

(42) 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 (re-)introduced on the scene naturally in B. The uninverted form C is a more natural response. This effect is exactly analogous in Chicheŵa (BK:33, ex. 75).

Penhallurick's 1984 discourse-based study of locative inversion in English accords with this analysis. In addition to an examination of instances of locative inversion in their textual contexts, Penhallurick provides quantitative data from

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[20] Levin & Rappaport Hovav (1992:233–4) discuss a number of comparable examples of locative inversion in English.

several English novels showing that 'None of the referents of backed [inverted—JB] subjects is mentioned in the preceding page, whereas over eighty percent of the referents of non-backed subjects were so mentioned (1984:44).'[21]

4.2. THE PRONOMINAL RESTRICTION. Another effect of presentational focus noted by BK is the pronominal restriction: although the postposed subject may be definite or indefinite, it cannot be an anaphoric pronoun (cf. BK:34, exx. 76–77). The same phenomenon has been observed in English by Quirk et al. (1972:949), Emonds (1976:29), and Rochemont (1986:114), among others:

(43) *Rose$_i$? Among the guests of honor was sitting she$_i$/her$_i$.

The reason appears to be that anaphora is inconsistent with the discourse function of presentation. The ill-formedness of 43 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 (1986:114):

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

An inverted deictic pronoun is also more acceptable in Chicheŵa than an anaphoric pronoun (cf. BK:34, ex. 77).

4.3. CONTRASTIVE FOCUS. A third effect of presentational focus observed in Chicheŵa by BK concerns contrastive focus. The inverted subject is not only presented on the scene, it is focussed relative to the locative, and this phenomenon is brought out in the following way. In uninverted Chicheŵa sentences, as in the following English examples, either the locative or the subject can be a focus of contrast for the final but not phrase:

(45) a. Canvasses hung on the wall, but not paintings.
       b. Canvasses hung on the wall, but not on the easels.

But in inverted Chicheŵa sentences, it is more difficult to make the locative a focus of contrast (BK:35, exx. 79–80). English equivalents are shown here:

(46) a.   On the wall hung canvasses, but not paintings.
       b. ??On the wall hung canvasses, but not on the easels.

English differs from Chicheŵa in allowing examples like 46b in 'contexts of repair' (Rochemont & Culicover 1990), where very marked intonation can be used to correct a preceding statement. Thus one might imagine a context for 46b in which speaker A says, 'On the easels hung canvasses', and speaker B

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[21] Note that presentational focus may be used to reintroduce previously evoked referents into the scene or some part of the scene. Birner (1992:104–5) provides several examples which underscore this point, including (i):

(i) McPherson proffered the cigar and a fat hand reached forward and accepted it. The round face was expanded in a grin of anticipated pleasure, and INTO THE WIDE MOUTH WENT HALF THE CIGAR, to be masticated by strong but tobacco-stained teeth.

She argues that it is not likely that this example is intended to introduce the cigar on the scene, given that it has been evoked in the immediately prior context. Yet it seems clear that this and her other examples focus on parts of a larger scene initially sketched. Though the cigar is brought on the scene in the first sentence, the second sentence utilizes a zoom-lens effect, giving a close-up of a part of the scene into which half the cigar is now (re-)introduced.

replies, 'No! On the WALL hung canvasses—NOT on the EASELS.' However, in contexts of repair it is somewhat unnatural to begin the *not* phrase with a conjunction such as *but* as in 46b. Furthermore, no such special contexts are required for the interpretation of the other examples, 45a–b and 46a. For example, I can utter 46a in the course of a narration about my visit to the studio of a distinguished artist. After describing the events taking me there, I might say, 'I entered the studio for the first time.' In this context, 46a would be a natural continuation, but 46b would be distinctly odd. These facts suggest that in locative inversions the theme argument is indeed focussed relative to the locative argument in English as in Chichewa.[22]

4.4. THE EXTRACTION RESTRICTION. The final effect of presentational focus noted by BK is the restriction against extracting the inverted theme by relativization. Although in uninverted examples both the theme and the locative can be relativized, in inverted examples only the locative can be (BK:36, exx. 82–87). The same phenomenon has been observed in English by Langendoen (1973, 1979) and Aissen (1975).

(47) a.   *I expect that on these trails can be found many kinds of mushrooms.*
    b.   *... these trails, on which I expect __ can be found many kinds of mushrooms.*
    c.   ?*... *many kinds of mushrooms, which I expect on these trails can be found (specimens of) __.*

In Chichewa all extractions are based on relativization,[23] and by analyzing the relativized element as the grammatical topic of its clause, we can explain in a straightforward way why it cannot simultaneously be presentationally focussed in the same clause (BK:35–6, Bresnan & Mchombo 1987). English, in contrast, has focussing types of extractions, including exclamatory preposing (*What jokes you know!*) and question formation (*What jokes do you know?*). These operations nevertheless cannot extract the presentationally inverted theme (or even part of it—Ross 1974), a fact which the BK account of Chichewa does not explain:

(48) a.   *?*What kind of mushrooms do you think on these trails can be found __?*
    b.   *?*What kind of mushrooms do you think on these trails can be found specimens of __?*

There is a simple explanation for this fact, however. In Chichewa the position of the presentationally focussed object is immediately adjacent to the verb, as

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[22] Note that *On the wall, but not on the easels, hung canvasses* is fully acceptable. This fact, pointed out to me by Shashi Bhatra (personal communication, 1990), suggests that it is the relative focus on the theme in 41b that is critical, rather than intrinsic inability of the locative to be contrasted.

[23] WH-questions in Chichewa are either in situ or formed from a cleft construction in which the interrogative phrase follows a focussing copula and precedes a relative clause (Bresnan & Mchombo 1987).

shown by word order and phonological phrasing (BK:3–9, Kanerva 1990a,b). In English, in contrast, a presentationally focussed NP is adjoined to the VP in the right focus (or 'heavy NP shift') position (Rochemont 1986), from which no extractions are allowed, quite independently of locative inversion. We can see this restriction in heavy-NP shift examples such as the following (cf. Bresnan 1976, Ross 1974):

(49) a.   *Guess who I located a picture of __ in the police files?*
      b.   **Guess who I located in the police files a picture of __?*
(50) a.   *It's you whom I consider arguing with __ silly.*
      b.   **It's you whom I consider silly arguing with __.*

Indeed, nothing can be extracted from the entire VP of such examples (cf. **Guess which files I located in __ a picture of you?* vs. *Guess which files I located a picture of you in __?*), and this has been observed by Aissen 1975 for presentational focussing in English as well.[24]

Thus, the focussed theme is realized in different structural positions in English and Chicheŵa, and this difference in turn creates differences in word order and in the generality of the extraction prohibition itself. But the extraction restriction on locative inversion in both languages derives ultimately from the presentational focussing of the theme.

4.5. NEGATION. An apparent difference in locative inversion in the two languages concerns negation. Aissen (1975:9) observes of English locative inversions that sentential negation (51a) is ill-formed, while phrasal negation is allowed:

(51) a. **On the wall never hung a picture of U.S. Grant.*
      b.   *On the wall hangs not a picture of U.S. Grant but one of Jefferson Davis.*

Of this difference she comments, 'The restriction on sentential negation is due, I think, to the function ... which is to set a scene in which the locative phrase serves as a backdrop. While the assertion that such a scene does not exist cannot serve this purpose, contrastive negation on the old subject does not affect the assertion that a scene exists for the world of the discourse.'

In contrast to English, negation appears much more freely in Chicheŵa locative inversions. Virtually every example given in BK is equally grammatical when negated (Sam Mchombo, personal communication, 1988). The reason for this difference may be that negation in Chicheŵa is expressed by verbal prefixes whose scope always excludes the subject, unlike English, as 52a illustrates; even in post-VP position (BK:3) the subject of the negative verb is not negated,

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[24] PPs and adverbs are more easily extracted than the NPs shown in 44 and 45, e.g. *For whom did Bill purchase last week an all expense paid ticket to Europe?*, among a few other examples cited by Rochemont & Culicover (1990:132). However, such PPs show much greater mobility in word order than the NP objects. In particular, they can be reordered to follow the entire shifted NP, suggesting a possible source for the extractions outside of the VP to which focussed NPs are adjoined: *Bill purchased last week an all expense paid ticket to Europe for his mother.* (The contrast in extractibility cited by Rochemont & Culicover [1990:132, exx. 2 and 5] does not control for this difference.)

as 52b shows:

(52) a. *A-nthu   ônse s-á-ná-sút-é   fôdya.*
        2-person all   NEG-2.SUBJ-REC.PST-smoke-FV 1A.tobacco
        'Everyone didn't smoke.' (= 'No one smoked.')
     b. *S-á-ná-sút-é   fôdya   a-nthu   ônse.*
        NEG-2.SUBJ-REC.PST-smoke-FV 1A.tobacco 2-person all
        'Everyone didn't smoke.' (= 'No one smoked.')

It seems, then, that the apparent differences in the negatability of locative inversions in the two languages may be related to an independent difference in the scope of sentential negation.

The systematic correspondences we have seen between these two unrelated languages suggest that general principles of grammar underlie the locative inversion alternation and, moreover, that these principles must relate the argument structure to the discourse function.

5. WHY LOCATIVE INVERSION OCCURS. Why is the distinctive theme-location argument structure associated with locative inversion? The answer proposed both by Levin 1985 for English and by BK for Chicheŵa starts from the observation that the semantic role of theme (and patientive roles in general) universally alternates between syntactic subject and object. 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 postverbal syntactic object position in locative inversion. This is, in essence, the unaccusative hypothesis (BK:19–20).

In the BK framework this hypothesis is expressed by universal constraints on the mapping between semantic roles (represented in a-structure) and syntactic functions (represented in f-structure). A-structure roles are provided with a partial specification of the syntactic functions they can be mapped onto in f-structure. Patientlike roles can be mapped alternatively onto subjects or objects; these correspond to 'internal arguments' (cf. Levin & Rappaport 1986). Other roles, such as the agent and locatives, can alternate between subject and oblique; these correspond to noninternal arguments. (The semantically most prominent of the noninternal arguments of a verb is the external argument.) These basic a-structure constraints on the mapping between argument roles and syntactic functions are illustrated in 53:[25]

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[25] The feature $[-o]$ refers to the NONOBJECTIVE syntactic functions, which are the type that can complement intransitive predicators such as N(oun) or A(djective). The feature $[-r]$ refers to the semantically UNRESTRICTED syntactic functions, which are the type that need not have a specific semantic role, or indeed any semantic role. Subjects and objects are $[-r]$, while obliques and restricted objects are $[+r]$; subjects and obliques are $[-o]$, while objects and restricted objects are $[+o]$. See Alsina 1990, 1992, 1993, Alsina & Joshi 1991, Alsina & Mchombo 1993, Austin 1992, Bresnan 1989, BK, Bresnan & Kanerva 1992, Bresnan & Moshi 1990, Bresnan & Zaenen 1990, Huang 1993, Joshi 1993, Mchombo 1992, Simpson 1991, Zaenen 1994, and the references cited in these works for further development and consequences of the theory. The basic ideas of argument classification and function decomposition originate with Levin 1985 and Simpson 1983, respectively.

(53)   'internal' arguments: 'noninternal' arguments:
   a-structure: θ θ
                           $[-r]$ $[-o]$
                           | |
   f-structure: s/o   s/OBL

The lexical mapping theory has the effect of making the agent of a verb the subject, and of making the theme or patient argument the subject only when there is no agent. The reason for this is that the subject function is assigned by default to the most prominent role in the argument structure, and the agent ranks in prominence above the theme and patient. However, when the agent is suppressed or 'demoted' (as in passives), or lacking from the argument structure altogether (as in unaccusatives), or identified with the theme (as in inverting motional verbs), the theme or patient will become the subject. Because locatives rank at the bottom of the prominence hierarchy of semantic roles, they assume by default the oblique function.

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 ⟨th loc⟩ argument structure. Verbs have this argument structure by virtue of their meanings as verbs of location or motion.[26] As we have just seen, the default 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 (see Andrews 1985 for discussion and references), 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 can be subject or object, however, there is a way to solve this problem: make the locative the subject, for it can in fact be interpreted as the more topical argument. General well-formedness conditions will then force the theme to be realized as an object, and the object is the focussable syntactic function par excellence. This solution is illustrated informally in 54:[27]

(54) ⟨ th   loc ⟩
     | |
     o   s
   focus

But this solution has two essential limitations: first, it is conditioned by the

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[26] Some languages generalize locative inversion to nontheme argument structures. Chishona is an example analyzed by Harford 1989 and BK (37–38) within the present framework.

[27] This solution is formally embodied in the focus subject default and parametric constraint on focus of BK (37–38). For more formally explicit analyses of English locative inversion in this theory, see Bresnan 1989. The theta-role labels used here informally are assumed to be eliminable given the appropriate semantics.

special environment of presentational focus; second, it will always fail in the presence of an active agent distinct from the theme in the argument structure, for the active agent (having the most prominent role) becomes the grammatical subject, and blocks any other subject:

(55) *⟨ ag   th   loc ⟩
           | | |
           s   o   s
              focus

(The passivized argument structure, as we saw in §3.6, suppresses the agent argument, and then resembles 54.)

If we think of presentational focus as overlaying a theme-locative predication, as in 54, on the lexical argument structure of the verb, we can explain the phenomenon of fluidity of intransitives already noted (§3.7). The core cases are the lexical argument structures which match the overlay predication. These are a subset of unaccusatives and passives. The penumbra cases are intransitive verbs which designate eventualities whose sole grammatically expressed participant can be located by locating the eventuality. Even if the eventuality is an activity and the participant an agent (canonically unergative properties), location must be predicated of the participant in the context of use. Hence the agent will be identified with the overlay theme, as illustrated in 56, and the mapping theory will be satisfied.

(56) lexical a-structure: ⟨ ag ⟩
                                     |
       presentational overlay: ⟨ th   loc ⟩
                                     | |
                                     o   s
                                  focus

Note that a transitive lexical argument structure ⟨ag th⟩ could not be successfully overlaid in this way. By definition, the lexical theme would attract the predication of the overlay locative, and the lexical agent would then remain, to be mapped onto the subject function and prevent inversion, as in 55. Thus examples like *Through the window on the second floor was shooting bullets a sniper could not arise.

The crucial ideas of the mapping theory are that argument roles are lexically underspecified for the possible surface syntactic functions they can assume, and that within the universal constraints imposed by this underspecification, the syntactic functions can alternate to meet the requirements of discourse functions—in this case the theme can be realized as an object and the locative can be a subject, to meet the marked requirements of presentational focus.

Note that locative inversion is not the only syntactic means available to meet the functional requirements of presentational focus. An expletive subject will also cause the theme to invert under similar conditions, as discussed by BK (37). In addition, English has intonational means of presentationally focussing a subject without inversion at all (Guéron 1980:659), although it is very re-

stricted.[28] And in languages where syntactic functions are less rigidly linked to specific word order and phrase structure configurations, the effects of presentational focus could be accomplished by simple reorderings, without altering the syntactic functions of the theme and locative.

We have now established the following results. Locative inversion in English and Chicheŵa shows remarkable similarities which can be explained by hypothesizing the same underlying argument structures and the same general principles for mapping a-structure roles into syntactic functions in the two languages. For both English and Chicheŵa, locative inversion arises when location is predicated of a theme argument which is presentationally focussed, causing the locative to be mapped to the subject and the theme to an unaccusative object in accordance with the LFG mapping theory. See Figure 2.
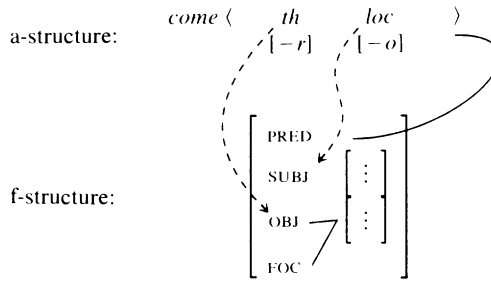

FIGURE 2. A- to f-structure mapping of locative inversion in English and Chicheŵa.

At the level of a-structure, the theme is the most prominent argument—the LOGICAL SUBJECT—and the locative is the least prominent. At the level of f-structure, however, the prominence relations are reversed, the locative now filling the higher-ranking subject function and the theme that of an unaccusative object. This inversion happens in both languages, under the same syntactic, semantic, and discourse conditions, as we have seen. Thus, the underlying (a- and f-)structures and the mapping principles that link them are virtually identical in the two languages, in accordance with the UG hypothesis.

We turn now from the characterization of the a-structure and the mapping principles that give rise to locative inversion to the justification of the f-structure shown in Fig. 2, in particular the treatment of the locative argument as a functional subject.

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[28] One restriction is that the presentationally focussed constituent must be the intonational peak of the verb's argument cluster. To be the peak, the subject must be the rightmost nontopical argument (complement) of the verb:

(i) *The case was judged. Then a LAWYER appeared.*

(ii) *The case was judged. Then a LAWYER appeared before us.*

(iii) *The case was judged. Then a lawyer appeared SICK.*

In (i) the subject *a lawyer* is the rightmost argument or complement of the verb *appeared.* In (ii), it is the rightmost nontopical argument or complement, because *before us* is topical. In (iii), in contrast, it is not rightmost, because the nontopical complement *sick* follows it.

6. LOCATIVE SUBJECTS IN CHICHEŴA. Chicheŵa provides clear and unmistakable evidence that the inverting locative is the grammatical subject. Of the variety of evidence discussed in detail by BK there are three major generalizations that are commonly taken to have crosslinguistic validity in identifying the grammatical subject: subject-verb agreement, control of the subject, and subject raising.

6.1. SUBJECT-VERB AGREEMENT. First, finite verbs in Chicheŵa have an obligatory subject prefix that agrees in person, number, and gender (i.e. noun class) with the grammatical subject. With locative inversion verbs, agreement with the locative subject is obligatory, as illustrated for the three locative classes in 57a–c (BK:29, exx. 22a–c):

(57) a. (Pa)m-sikă-pa   (pá)bádw-a   nkhonya.
       16 3-market-16.this 16.SUBJ.IM.FUT-be.born-FV 10.fist
       'At this market a fight is going to break out.'

    b. (Ku)mu-dzi (ku)na-bwér-á   a-lĕndo.
       17 3-village 17.SUBJ-REC.PST-come-FV 2-visitor
       'To the village came visitors.'

    c. (M)nkhalăngo(mw)a-khal-á   mí-kângo.
       18 9.forest   18.SUBJ-PRF-remain-FV 4-lion
       'In the forest have remained lions.'

Any mismatch of the three locative subject prefixes in these examples would be completely ungrammatical, as BK (9) observe. Tonally, morphologically, and syntactically, the three locative subject prefixes are indistinguishable from the other subject agreement prefixes of the verb. Thus, inverted locatives satisfy a major generalization holding of grammatical subjects in Chicheŵa: the finite verb agrees obligatorily with the subject.

6.2. CONTROL OF ATTRIBUTIVE VPs. Second, Chicheŵa has an infinitival verb form that can be used as an attributive modifier of NPs, much like the English participle that translates it in 58a–b (from BK:13, exx. 35a–b):[29]

(58) a. *m-sodzi*   [$_{VP}$ *w-ó-ík-á*   *nsómbá pa m-pando*]$_{VP}$
       1-fisherman   1-ASC.INF-put-FV 10.fish   16 3-chair
       'a fisherman putting fish on a chair'
    b. *nsómbá* [$_{VP}$ *z-ó-ík-ídw-á*   *pá m-pando*]$_{VP}$
       10.fish   10-ASC.INF-put-PASS-FV 16 3-chair
       'fish being put on a chair'

Observe that the agent role of 'putting' is attributed to the head NP in 58a, and

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[29] The same form can be used predicatively after the copula *ndí* (BK:14). BK (13) note that this verb form is derived by coalescence of a prefix consisting of the class marker plus the adnominal ('associative') marker *á-* with the infinitival/gerund prefix *ku-* to yield the vowel *o*. When the verb stem is monosyllabic, coalescence fails and both prefixes are distinguishable. See Kanerva 1990b for further discussion and references.

the patient role of 'being put' is attributed to the head NP in 58b. The gener-
alization is that the SUBJECT role is attributed: the agent is the subject role of
the active verb form, and the patient is the subject role of the passive verb
form. Notice also that the attributive verb form carries an adnominal prefix
that agrees with the controller in gender class; it agrees with 'fisherman' in 58a
and with 'fish' in 58b. Now when inversion verbs occur in attributive VPs, the
locative role can be attributed to the controller and the adnominal prefix shows
locative agreement, as shown in 59. These facts clearly indicate that the in-
verted locative is the subject (BK:14, ex. 36):

> (59) *m-nkhalangó* [$_{VP}$ *m-ó-khál-á*   *mi-kângo*]$_{VP}$
>   18-9.forest   18-ASC.INF-live-FV 4-lion
>   'in the forest where there live lions'

Thus, inverted locatives satisfy a second major generalization holding of gram-
matical subjects in Chicheŵa: the controlled argument of an attributive VP is
the subject.

6.3. SUBJECT RAISING. Finally, Chicheŵa has a small class of subject raising
verbs which take an infinitival complement and a subject, where the subject
of the raising verb behaves in all respects like the subject of the complement.
Examples include *yenĕra* 'be obligated, have to', *yamba* 'start, begin', and
funa 'want, seem' (BK:14; Bresnan & Kanerva 1992:122). The following ex-
ample from Bresnan & Kanerva (1992:123) shows the raising of an idiomatic
subject of the passivized complement verb:[30]

> (60) ⟨Bôndo⟩*lí-yénerá* ⌐⎺⎺⎺⌐ *kú-nóng'ónez-ĕdw-a.*
>   5.knee 5.SUBJ-must   INF-whisper-PASS-FV
>   'Someone will regret it.' (Lit. 'The knee must be whispered to.')

No other argument of the infinitival complement can be raised except the sub-
ject.

When a locative inversion verb is the infinitival complement, inversion can
occur and the inverted locative argument can be raised, showing that it is indeed
the grammatical subject (BK:14, ex. 40; Bresnan & Kanerva 1992:122, exx.
30a–b). Ex. 61a illustrates raising of the uninverted theme argument; 61b, taken
from Bresnan & Kanerva (1992:122, ex. 30b), illustrates raising of the inverted
locative subject.

> (61) a. ⟨Mvûla⟩*y-a-yamba* ⌐⎺⎺⎺⌐ *ku-gwá ku mu-dzi.*
>   9.rain 9.SUBJ-PRF-start   INF-fall 17 3-village
>   'It has started to rain at the village.' (Lit. 'Rain has started to
>   fall at the village.')

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[30] Raising in the present framework involves not NP movement, but functional identification of
the subject of the raising verb with the understood subject of the infinitive (Bresnan 1982b).

b. *(Ku mu-dzi)* *kw-a-yamba* ⌐ *ku-gwá mvûla.*
   17 3-village 17.SUBJ-PRF-start   INF-fall 9.rain
   'At the village it has started to rain.' (Lit. 'At the village has
   started to fall rain.')

Thus, inverted locatives satisfy a third major generalization holding of grammatical subjects in Chicheŵa: the subject of a raising verb corresponds only to the subject of the infinitival complement.

We see, then, that evidence from agreement, control, and raising converge in identifying the inverted locative, not the theme argument, as the grammatical subject in Chicheŵa.

7. LOCATIVE SUBJECTS IN ENGLISH? When we apply the same major generalizations to locative inversion in English, however, we find mixed evidence for the subject status of the inverted locative.

7.1. SUBJECT-VERB AGREEMENT. First, subject-verb agreement in English locative inversions differs from that in Chicheŵa. Where the Chicheŵa verb shows obligatory agreement with the preposed locative argument, the English verb agrees with the inverted theme.[31]

(62) a. *In the swamp was/*were found a child.*
     b. *In the swamp were/*was found two children.*

7.2. CONTROL OF ATTRIBUTIVE VPs. Second, English has a nonfinite verb form that can be used as an attributive modifier of NPs—the participle, which is used to translate the Chicheŵa examples 58a–b above. As in Chicheŵa, the generalization holds that the semantic role of the subject of this verb form is attributed to or predicated of the controller NP. Thus 63b has the meaning of 63a:

(63) a. *On the corner stood a woman* [CP *who was standing near another* *woman*]CP
     b. *On the corner stood a woman* [∅ *standing near another woman*]

But in contrast to Chicheŵa, the English participle cannot be inverted; that is why there is no English translation of the Chicheŵa example 59 parallel to those of 58a–b. In other words, there is no grammatical English example 64b having the meaning of 64a:

(64) a. *She stood on the corner* [CP *on which was standing another* *woman*]CP
     b. **She stood on the corner* [∅ *standing another woman*]

7.3. SUBJECT RAISING. In contrast, English has a class of subject-raising verbs with exactly the same syntactic properties as those of Chicheŵa. Just

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[31] Beth Levin (personal communication, 1990) reports that 'there are very rare instances of locative inversions where the verb does not agree with the postverbal NP', citing the following example collected by Betty Birner from Studs Terkel's *Working*, 1974, p. 549: *About a half an hour later in walks these two guys ...*

as in Chicheŵa, in English the inverted locative phrases undergo subject raising (Postal 1977):

(65) a. (Over my windowsill) seems ⎯ to have crawled an entire army of ants.

b. (On that hill) appears ⎯ to be located a cathedral.

c. (In these villages) are likely ⎯ to be found the best examples of this cuisine.

No nonsubject constituent can be subject-raised in English: compare *It seems that John, you dislike* and **John seems you to dislike*. Hence, despite the above differences in control and agreement, this evidence seems to show that it is the locative role that is linked to the subject function in locative inversions.

We see that agreement, control, and raising in English, unlike Chicheŵa, give mixed evidence for the subject status of the arguments. What is the source of these differences between English and Chicheŵa? Three types of analyses of locative inversion in English have been proposed in the literature—that the theme is the subject, that there is an expletive subject, and that the locative is the subject. I will consider in turn how well each can explain the similarities and differences between English and Chicheŵa.

8. THE THEME-SUBJECT HYPOTHESIS. The theme-subject hypothesis is that the locative is the subject in Chicheŵa but the inverted theme argument is the subject in English, as shown by the different patterns of subject-verb agreement and control of attributives in the two languages.[32]

The theme-subject hypothesis offers no explanation for the detailed correspondences we have observed between locative inversions in English and Chicheŵa. To account for these correspondences, one might be tempted to reanalyze Chicheŵa in the same way, taking the theme to be the subject there as well (Schachter 1992). Bresnan & Kanerva (1992) show that Chicheŵa cannot be reanalyzed in accordance with the theme-subject hypothesis without loss of generalizations. Further, the theme-subject hypothesis is obviously inconsistent with the evidence from subject raising. Although the inverted theme can be considered the 'logical' or 'thematic' subject, occupying the most prominent position in the role structure, it clearly cannot be the grammatical subject in the subject-raising examples 65a–c. There is further evidence for this conclusion elsewhere within English syntax.[33]

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[32] Versions of the theme-subject analysis of English locative inversion are advanced in Bresnan 1976, Langendoen 1973, 1979, Iwakura 1978, Rochemont & Culicover 1990, and Schachter 1992.

[33] Rochemont & Culicover (1990) offer examples like *Into the room nude walked John* as evidence for the theme-subject hypothesis in English, arguing that the fronted material is the residue of a VP that has been topicalized after movement of its verb to INFL (followed by inversion of the V in INFL with the subject). However, it is quite clear that adjectives like *nude* can predicate appositively with PPs entirely outside of VP-fronting contexts: *In the room, nude, it suddenly struck him that he has wasted his life*.

8.1. TAG QUESTIONS. One piece of evidence against the subject analysis of the inverted theme is based on tag questions in English. In tag questions, an assertion is followed by a tag consisting of an auxiliary verb and a pronoun. The tag is a reduced question based on the form of the assertion, and the pronoun must match the features of the (surface syntactic) subject of the assertion:

(66) a. *Mary fooled John, didn't she/*he?*
b. *John was fooled by Mary, wasn't he/*she?*

In general, it is difficult to combine tags with locative inversion. Tags are unacceptable even with intonational presentational examples which do not involve inversion: **A man arrived, didn't one/he?* (Guéron 1980:661).[34] However, Bowers (1976:237) cites examples of tag questions such as 67 to argue that the postposed NP in locative inversions cannot be the subject:

(67) *In the garden is a beautiful statue, isn't there?*

The logic here is that there is only one subject argument; whatever it is, it is not the theme argument. (We will explore other hypotheses below.)[35]

8.2. SUBJECT EXTRACTION. As Bresnan (1977:186, ex. 41) observes, the preposed locatives in locative inversions show the constraints on subject extraction adjacent to complementizers:

(68) a. *It's in these villages that we all believe __ can be found the best examples of this cuisine.*
b. **It's in these villages that we all believe that __ can be found the best examples of this cuisine.*

Nonsubject constituents are unaffected by this restriction, as we can see by comparing extraction of the uninverted locatives:

(69) a. *It's in these villages that we all believe the finest examples of this cuisine can be found __.*
b. *It's in these villages that we all believe that the finest examples of this cuisine can be found __.*

Only subjects show the effect:[36]

(70) a. *It's this cuisine that we all believe __ can be found in these villages.*
b. **It's this cuisine that we all believe that __ can be found in these villages.*

8.3. EXTRACTION FROM COÖRDINATE CONSTITUENTS. Another generalization distinguishing subjects from nonsubjects in English is the parallelism constraint

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[34] Guéron (1980:660–1) attributes this fact to the derivation of tags by VP ellipsis and the fact VP ellipsis is unacceptable with presentational sentences: **A riot occurred, and then a flood did.*

[35] Iwakura (1978:331) cites tag questions like *Under the tree was John, wasn't he?* as evidence for the subject status of *John*, although he admits that the example is 'awkward'.

[36] Since inverted locatives show the same effect as subjects, but differ in some other respects from subjects, Bresnan 1977 concludes that the extraction constraint cannot reflect syntactic subject status. This conclusion is rejected in Bresnan & Kanerva 1992 and below.

on extractions from coördinate constituents (Gazdar 1981, Falk 1983, Woolford 1987):

(71) a.   *She's someone that ___ loves cooking and ___ hates jogging.* (SUBJ–
            SUBJ)

     b.   *She's someone that cooking amuses ___ and jogging bores ___.*
            (NONSUBJ–NONSUBJ)

(72) a.   **She's someone that cooking amuses ___ and ___ hates jogging.*
            (NONSUBJ–SUBJ)

     b.   *She's someone that cooking amuses ___ and I expect ___ will hate
            jogging.* (NONSUBJ–EMBEDDED SUBJ)

The generalization is that subject gaps at the top level of one coördinate constituent cannot occur with any other kind of gap in the other coördinate constituent.

The discourse function of locative inversion makes it very difficult to manipulate with embedding, coördination, and extractions. Nevertheless, it is possible to construct acceptable examples in which locative inversions are embedded within coördinate constituents that are jointly relativized. (Relativization of embedded locative inversions in English is observed by Aissen & Hankamer 1972.) When this is done, judgments are delicate, but the inverted locative PPs do show the extraction patterning of subjects:

(73) a.   *That's the old graveyard, in which ___ is buried a pirate and ___
            is likely to be buried a treasure.* (SUBJ–SUBJ)

     b.   *That's the old graveyard, in which workers are digging ___ and
            a treasure is likely to be buried ___.* (NONSUBJ–NONSUBJ)

(74) a.   ??*That's the old graveyard, in which workers are digging ___ and
            ___ is likely to be buried a treasure.* (NONSUBJ–SUBJ)

     b.   *That's the old graveyard, in which workers are digging ___ and
            they say ___ is buried a treasure.* (NONSUBJ–EMBEDDED SUBJ)

(Ex. 74a is perfectly acceptable with *there* replacing the subject gap, which channels the extraction to a nonsubject argument (the oblique). This may account for some of the delicacy of the judgment.)

In conclusion, the theme-subject hypothesis offers no explanation for the detailed correspondences we have observed between locative inversions in English and Chicheŵa, nor for the subject raising of inverted locatives in both languages. The syntactic evidence internal to English—subject raising, parallel extractions from coördinate constituents, subject extractions, and tag questions—is sufficient to reject the hypothesis.[37] However, the English control and agreement facts remain to be explained.

9. THE EXPLETIVE-SUBJECT HYPOTHESIS. An alternative explanation for the syntactic differences between English and Chicheŵa is the expletive-subject hypothesis: the locative is the subject in Chicheŵa, but English has an expletive subject *there*, which is locally deleted (or unexpressed) when the locative

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[37] See Coopmans 1989 and Bresnan & Kanerva 1992 for further arguments against the theme-subject hypothesis based on heavy-NP shift and parasitic gaps.

phrase is preposed.[38] An expletive *there* can in fact occur in many of the examples of locative inversion given here.[39]

Unlike the theme-subject hypothesis, the expletive-subject hypothesis can capture the similarities between English and Chicheŵa by analyzing the theme as an unaccusative object in both languages. This would also explain the failure of the inverted theme to undergo subject raising in both languages. In Chicheŵa the locative would raise; in English the expletive subject would raise and be subsequently deleted by locative preposing. Moreover, this expletive-subject hypothesis can also explain the English control and agreement facts: (i) expletive subjects have no semantic role in the verbal argument structure, which would disallow attribution or predication of the subject role of inverted verbs; and (ii) the overt expletive *there* in English already allows verbal agreement with the postverbal NP:[40]

> (75) a. *In the swamp there was/*were found a child.*
>   b. *In the swamp there were/*was found two children.*

Despite these advantages, the expletive-subject hypothesis is problematic.

9.1. LOCATIVE INVERSIONS WITHOUT AN EXPLETIVE SOURCE. The most obvious problem for the expletive-subject hypothesis is that certain types of locative inversion, particularly directionals, cannot occur at all with overt expletive subjects:

> (76) a. *Into the room (*there) ran Mother.*
>   b. *Out of it (*there) steps Archie Campbell.* (Birner 1992:43)
>   c. *About a half an hour later in (*there) walk these two guys.*
>   d. *Home (*there) came John.*
>   e. *Leaning against the wall (*there) stood a/the raggedy old man.*
>   (Levine 1989:1026, citing Green 1985)

Further, presentational *there* can occur with definite NPs, as observed by Aissen (1975:2, exx. 11–12):

> (77) a. *There still stands on his desk the bowling trophy he won last year.*
>   b. *Suddenly there ran out of the woods the man we had seen at the*
>   *picnic.*

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[38] Versions of this analysis of English have been proposed in Kuno 1971, Postal 1977, Lumsden 1988, and Coopmans 1989.

[39] There are actually two distinct types of inversion with expletive *there* in English, which can be called 'inner' (including existential) and 'outer' (focussed presentational) inversion (Milsark 1974, Aissen 1975, Lumsden 1988). Milsark observes that the outer inversion type is characterized by the VP-final word order of the inverted subject and the absence of the indefiniteness effects found in existentials (illustrated by 72a–b). Aissen 1975 adds other syntactic differences distinguishing the two types, such as extractibility: the inner type may allow it (*What did he say there was on his desk?*), while the outer type does not (*What did he say there stands on his desk?*). Lumsden (1988:38), amplifying observations of Milsark 1974 and Burzio 1981, also points out the unacceptability of motional verbs with the inner inversion type: compare *There remain a few crates of beer in the cellar* and *There lurched an old man into the room.* See also Burzio 1986. By these criteria locative inversion corresponds more closely to outer inversion with *there*.

[40] This is attributed to 'brother-in-law' agreement in Perlmutter 1983, to 'chain formation' in Burzio (1986:93–4), and to a chain of functional identifications in Bresnan 1982a and Levin 1985.

But these definite NPs are interpreted as being reintroduced on the scene; each can be replaced by an indefinite as follows: *There still stands on his desk a bowling trophy—the same one he won last year; Suddenly there ran out of the woods a man—the same one we had seen at the picnic.* If we replace these definite NPs with familiar proper names (that is, proper names whose use implies familiarity to speaker and hearer), the results become much worse:[41]

(78) a. *In the closet there still sat Fido.*
     b. *Suddenly there ran out of the woods Bob and Louise.*

But none of these restrictions holds with locative inversions:

(79) a. *In the closet still sat Fido.*
     b. *Out of the woods suddenly ran Bob and Louise.*

Thus, on the expletive-subject hypothesis, many locative inversions lack a plausible source.[42]

9.2. LOSS OF GENERALIZATIONS IN SUBJECT EXTRACTION. A second problem for the expletive-subject hypothesis is that syntactic constraints on extractions of subjects do not govern the distribution of expletive subjects. The presence of an overt expletive allows extraction of the locative when it is adjacent to the complementizer, as in 80, or when extracting from a conjunct, as in 81. Both examples are ill-formed when the inverted locative is extracted without the expletive subject:[43]

(80) *In which of these towns do you believe that *(there) can be found a museum of Indian art?*

(81) *That's the old graveyard, in which workers are digging and ??(there) is likely to be buried a treasure.*

Therefore, the deletion of the expletive, or licensing of the null expletive pronoun, must be subject to the very same constraints as the extraction of subject constituents by WH-movement processes—a clear loss of generalization. For these constraints do not in general govern the distribution of null expletive subjects, either in the Romance languages with pro-drop or in the Germanic languages which have been argued to drop overt expletive subjects.

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[41] Safir (1985b:300) observes a similar contrast.

[42] Lumsden (1988:76–7) provides a counteranalysis of some of these facts that is designed to be consistent with the *there*-deletion hypothesis. On the counteranalysis, examples like 76c–d are derived by a completely different means from locative inversions: the verb is raised and adjoined to S in front of the subject following movement of the directional adverb to COMP. As evidence he cites examples like *Down jumped the cat from the tree,* where the 'inverted' subject precedes an assumed VP-internal PP following movement of the initial adverb within that PP to COMP. However, the assumption that these final PPs are VP-internal is unsupported. Such examples seem simply to be cases of PP extraposition from the directional particle. The positioning of temporal adverbs supports this conclusion: they can precede the extraposed PPs (*Down jumped the cat, in no time at all, from a tree; Up popped a man every hour from a hole in the ground*), but they cannot precede the VP-internal source for these PPs under the counteranalysis (*The cat jumped (*in no time at all) down from a tree; A man popped (*every hour) up from a hole in the ground*).

[43] The notation '*(...)' or '??(...)' indicates that omission of the material in parentheses is ill-formed. The notation '(*...)' or '(??...)' means that insertion of the material in parentheses is ill-formed.

To see this, let us consider examples from Catalan and Dutch corresponding to 80 and 81 in English.[44] In the Catalan examples (82a–b) the theme arguments of 'arrive' and 'grow' are inverted, and have undergone *en* cliticization or lack the article, which is characteristic of unaccusative objects (Alsina 1993, Picallo 1984, 1990).

(82) a. *A quina d'aquestes ciutats creus   que en   va*
    in which of.these   cities   believe.you that of.them PAST
       arribar un grup?
       arrive a group
      'In which of these cities do you believe that there arrived a group of them?'

    b. *Aquest és el cementiri vell, on   caven els treballadors*
       that   is the cemetery old in.which dig   the workers
       i   ja   no creixen arbres.
       and already not grow   trees
      'That is the old cemetery, in which workers are digging and there are no more trees growing.'

In these examples the preverbal subject position of the unaccusative verbs is empty, indicating the presence of a null expletive subject. This null subject does not prevent extraction of the locative phrase from the *que* complement in 82a or the right conjunct in 82b. The null expletive subject behaves identically to overt expletive subjects with respect to extractions. The same holds for Dutch, in which the overt expletive *er* can be optionally dropped, as in the following examples containing impersonal passives:

(83) a. *Waar denk je   dat (er)   gisteren gedanst werd?*
    where think you that (there) yesterday danced was
      'Where do you think that there was dancing yesterday?'

    b. *Dit is het kerkhof   waar de arbeiders nu   aan't graven*
      that is the graveyard where the workers   now at.the digging
      zijn en (er)   gisteren gedanst werd.
      are and (there) yesterday danced was
      'That is the graveyard where workers are digging now and there was dancing yesterday.'

Observe that the optional dropping of the expletive in these examples does not prevent the extraction of a locative from a *dat* complement in 83a or from the right conjunct in 83b. Again, the dropped expletive behaves identically to overt expletives with respect to these extractions.

To capture the generalization that the hypothesized deletion of the expletive (or licensing of the null expletive pronoun) in English is subject to the same constraints as the extraction of subject constituents by WH-movement pro-

[44] I am grateful to Alex Alsina for providing the Catalan examples, and to Annie Zaenen for the Dutch examples. Catalan has null expletive subjects with unaccusative inversions under much the same conditions as Italian (Perlmutter 1983, Burzio 1986, Belletti 1988). The postulation of null expletive subjects in Dutch is controversial; see Maling & Zaenen 1978, Perlmutter & Zaenen 1984, and Bennis 1986:Ch. 3.

cesses, one might propose that the null expletive subject in English, unlike Catalan or Dutch, has the peculiarity that it is licensed only by a locative PP in the same position as wh-extracted phrases.[45] However, Hoekstra & Mulder (1990:32) provide two arguments against this proposal. They observe that locative inversion can occur in complements where the embedded wh-phrase position ([Spec, CP]) is filled with *how*, and hence unavailable for the locative PP:

> (84) a. *We all witnessed how down the hill came rolling a huge baby carriage.*
> b. *We suddenly saw how into the pond jumped thousands of frogs.*

Second, they point out that questioning the inverted locative fails to trigger auxiliary inversion (I-to-C movement), which is obligatory where there is a subject and impossible where the subject itself has been extracted. Ex. 85a shows that the inverted locative can be questioned without auxiliary inversion; 85b shows that the appearance of the unstressed inverting auxiliary *do* is ungrammatical in this situation.

> (85) a. *On which wall hung a portrait of the artist?*
> b. **On which wall did hang a portrait of the artist?*

This behavior is characteristic of questioned SUBJECTS, as 86a–b illustrate:

> (86) a. *Which portrait of the artist hung on the wall?*
> b. **Which portrait of the artist did hang on the wall?*

In contrast, when the subject position is occupied by something other than the questioned phrase, such as an expletive subject, auxiliary inversion is obligatory:

> (87) a. **On which wall there hung a portrait of the artist?*
> b. *On which wall did there hang a portrait of the artist?*

This evidence underscores our conclusion that, when the inverted locative is questioned, the empty preverbal position has the syntactic attributes of an extraction site, not a null expletive pronoun. Hand-tailoring the licensing conditions for a null expletive 'pro' in order to duplicate the conditions on extracting subjects is a possible descriptive maneuver, but not an explanatory one.

9.3. LACK OF OTHER NULL SUBJECT CHARACTERISTICS IN ENGLISH. A third problem is that the hypothesis of a null expletive subject in English is typologically implausible. No other properties of English point to the presence of such null 'pro' subjects. (i) Null expletive subjects in Romance languages are a consequence of pro-drop (see Jaeggli & Safir 1989 for a review), but English is not a pro-drop language. (ii) Among those Germanic languages for which null expletives have been hypothesized, such as German (Safir 1985a), Dutch

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[45] Different versions of this proposal are made by Lumsden (1988:72–74) and Coopmans (1989: 736ff). Lumsden proposes that *there* adjoins to a PP in COMP, where it cannot be phonetically realized, and Coopmans proposes that a COMP node containing PP is locally coindexed with a pro subject, although he also speculates that a null expletive might be moved into COMP.

(Maling & Zaenen 1978, Perlmutter & Zaenen 1984), Icelandic and Faroese (Platzack 1987), expletive subjects are optional or lacking with extrapositions, existentials, and impersonal passives. But in English, expletive subjects are obligatory in these cases. (iii) In the same Germanic languages, the subject is not fixed in a single structural position; but in English it is. (iv) In the same languages, subject extractions are not restricted by the presence of an adjacent complementizer; but in English they are. In all these respects, English typologically resembles the Germanic languages without null expletive subjects, such as Swedish and Norwegian.

9.4. NULL EXPLETIVE SUBJECTS IN BANTU. A fourth problem for the expletive-subject hypothesis as our parameter of variation is that null expletive subjects are found in some Bantu languages related to Chicheŵa, though Chicheŵa itself lacks them (BK:10–13). In Chishona, for example, the expletive subject takes the form of an invariant, impersonal use of a locative subject prefix with extrapositions and impersonal passives (cf. Perez [Harford] 1983, BK:10). Chishona nevertheless has locative subjects and objects just as Chicheŵa does, and obligatory verb agreement with a locative subject (Harford 1989). Therefore, the occurrence of an expletive use of a locative pronoun or subject marker cannot be the fundamental factor that explains the differences between locative inversion in English and Chicheŵa.

In summary, we have seen that many locative inversions in English lack a plausible expletive source, that a null expletive subject leads to loss of generalizations over subject extractions, that English lacks other characteristics of null-subject languages, and that a null expletive cannot in any event explain the contrasts between English and Chicheŵa. For these reasons, I reject the expletive-subject hypothesis for English locative inversions.

10. THE LOCATIVE-SUBJECT HYPOTHESIS. We have now seen that neither the theme-subject hypothesis nor the expletive-subject hypothesis can satisfactorily explain the syntactic differences between locative inversion in English and Chicheŵa, while capturing their systematic similarities. This brings us finally to the locative-subject hypothesis proposed here.[46] On this hypothesis, the inverted locatives in both languages are indeed subjects, at an abstract level of representation. Their differences are traceable to a fundamental typological difference in the categorization of locatives in the two languages.

On the locative-subject hypothesis proposed here, the argument structure and syntactic functions of locative inversion in English and Chicheŵa are identical; the inverted locative is indeed the subject at a level of representation that abstracts away from their categorial expression. At the level of categorial expression, however, inverted locatives diverge in the two languages, being categorized as PPs in English and as NPs in Chicheŵa. In the present frame-

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[46] Versions of the analysis of the inverted locative PP as a subject in English, proposed by Bresnan in class lectures at MIT in 1978–1980, can be found in Stowell 1981, Levin 1985, Levine 1989, Hoekstra & Mulder 1990, Bresnan & Kanerva 1992, and Levin & Rappaport Hovav 1992.

work these two levels are formally modelled by f-structures and c-structures, respectively.

Just as there are universal constraints on the possible mappings from a-structure to f-structure, as illustrated in 53, so there are general constraints on the possible associations between f-structure and c-structure.[47] One such constraint is formulated in 88:

    (88) If C is a c-structure position restricted to subjects or objects, then C is nominal.

This constraint is interpreted to mean that only nominal categories can occupy configurationally defined phrase-structure positions for subject and object.[48] The converse is not implied by the constraint: NPs may occupy non-subject/object positions, such as those of adjuncts or oblique arguments of verbs.

Thus, crosslinguistically, associations between f-structures and c-structures are constrained by the requirement that the subject and object positions of phrase structure can be filled only by nominal categories. From this constraint flows the variety of distributional differences between locatives in English and Chicheŵa, as we shall see. (Additional differences appear in the syntactic configurations of presentationally focussed objects—see §4.4 above.) In English the inverted locative is not a subject at the level of c-structure and cannot occupy the NP subject position (see Figure 3). In Chicheŵa it is and it can (see Figure 4).

In the present framework, f-structure and c-structure are the domains of distinct sets of principles. On c-structure are defined the various structural configurations for syntactic functions (such as the position of the TOP function), category constraints such as 88, and principles of constituent order such as directionality of heads, specifiers, and complements. On f-structure are defined the functional relations between syntactic functions—principles that constrain agreement, control and binding, government, and extraction. For example, Fig. 3 shows the English locative phrase base-generated in topicalized position as sister of S in the c-structure. It cannot occupy the subject NP position as sister of VP (or I′—see Kroeger 1993), because of 88.

Nevertheless, general principles of the theory link it with the subject function in f-structure (Kaplan & Bresnan 1982 (1980)). COMPLETENESS requires that the verbal a-structure requirements, including the demand for a subject, be met; so something must fill the SUBJ function in f-structure. COHERENCE requires that the grammaticalized discourse functions (TOP and FOC) be identified with a syntactic function such as SUBJ or OBJ (Bresnan & Mchombo 1987); so the topicalized PP must fill some other function in the clause. UNIQUENESS prevents identifying the TOP with a syntactic function borne by a lexically filled con-

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[47] See Bresnan 1982c, Grimshaw 1982, Mohanan 1982, Simpson 1991, Kroeger 1993, and Alsina 1993.

[48] In the formalism defined in Kaplan & Bresnan 1982 (1980), this constraint would restrict the possible annotations of c-structure categories with syntactic function designators. Note that subject and object are the natural class of syntactic functions designated by $[-r]$ in the a-structure mapping theory. See n. 25.
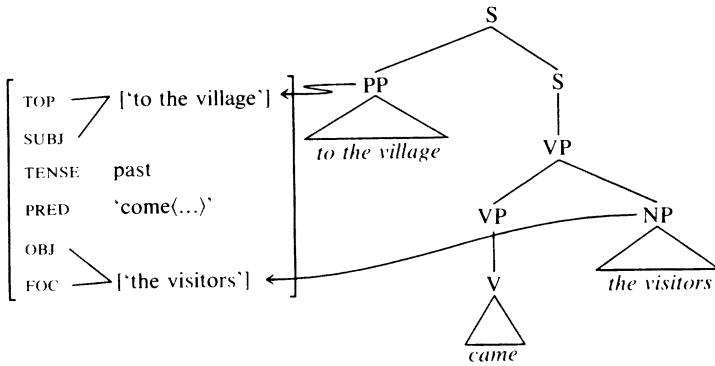
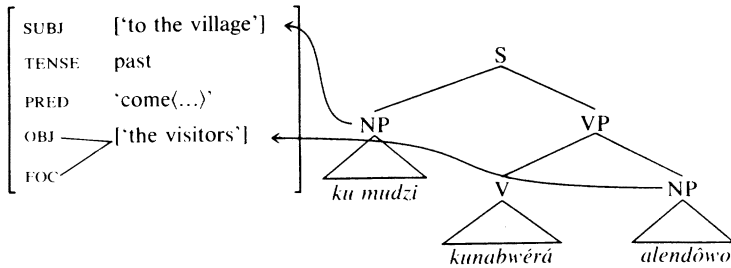FIGURE 3. C- and f-structures of locative inversion in English.

FIGURE 4. C- and f-structures of locative inversion in Chicheŵa.

stituent in c-structure; so there must be an unfilled function—a gap—for the topic to fill. The gap is represented as the omission of the subject NP from its normal c-structure position as sister of VP. In this way the typical elements of an extraction configuration—the identification of a displaced constituent with a lexically empty position—arise nonderivationally from general principles. In contrast to the obligatorily topicalized position of the English inverted locative, forced by 88, the Chicheŵa locative phrase in Fig. 4 is an NP base-generated in subject position in the clause, consistently with 88. In general, c-structure gives the surface positions and forms of constituents, while f-structure gives their functional syntactic relations and attributes. Case markers and agreement morphology are part of c-structure words; the abstract information they carry about person, number, gender, and case are features of f-structure.[49]

With this theoretical background, let us now turn to the evidence for the analysis.

10.1. ENGLISH. The effects of constraint 88 are apparent in English in the syntactic distribution of PP, a nonnominal category. In general, PPs cannot appear in subject or object positions, such as that of the subject immediately

[49] See Wierzbicka 1981, Bresnan & Mchombo 1987, 1993, Andrews 1990b, Mohanan 1990, 1993, 1994.

preceding the VP in 89a, that of the object adjacent to the V in 89b, that of
the object understood as the subject of an infinitive in 89c, or that of the object
of a preposition like the passive *by* in 89d:

(89) a. (*In*) *San Jose makes me happy.*
   b. *I like* (**in*) *San Jose.*
   c. *I expect* (**in*) *San Jose to please me.*
   d. *I'm pleased by* (**in*) *San Jose.*

Instead, locative PPs appear in nonsubject and nonobject positions. For ex-
ample, in 90a the PP is an oblique complement to a verb following its NP object,
and in 90b it is a sentence adjunct:

(90) a. *I left my car* **(in*) *San Jose.*
   b. **(In*) *San Jose, I keep my car in the garage.*

Although these PPs do not appear in subject or object positions, they can
be interpreted as filling those argument positions indirectly, in two ways. The
first is by means of extraposition. In 91a–c the PP is extraposed and is related
to the subject or object positions which it cannot occupy through the inter-
mediary pronoun *it* (Fillmore 1968).

(91) a. *It makes me happy in San Jose.*
   b. *I like it in San Jose.*
   c. *I expect it to please me in San Jose.*

The second means of interpreting a non-NP as filling a subject or object position
is by topicalization (Kaplan & Bresnan 1982 [1980], Stowell 1981, Kaplan &
Zaenen 1989:33–37). For example, topicalized sentential *that* complements,
which are nonnominal in English (Emonds 1976) (though not of course in all
languages), can be interpreted as filling subject or object positions which they
cannot occupy directly:

(92) a. *That he might be wrong he didn't think of* ___.
   b. **He didn't think of that he might be wrong.*
        Cf. *He didn't think of the fact that he might be wrong.*

In the same way, the inverted PP locative in English can be indirectly inter-
preted as filling the subject position by topicalization (Stowell 1981, Bresnan
& Kanerva 1992):

(93) a. *On this wall I expect* ___ *will be hung a picture of Leonard Pabbs.*
   b. *In San Jose* ___ *lived a woman.*

Note that topicalization in these examples ignores the differences in category
between the topicalized constituent and the gap. This property follows from
the analysis of topicalization within the present framework. Rather than in-
volving movement of a constituent from one phrase-structure position to an-
other, topicalization involves the identification of the values of two functions
in f-structure, the grammaticalized discourse function (TOP or FOC) and a syn-
tactic function such as SUBJ or OBJ, as remarked above. The c-structure posi-
tions and categories of these functions may differ without affecting their
identification in f-structure, a distinct level which abstracts away from c-struc-

ture category information (Saiki 1985, 1986, Bresnan & Mchombo 1987, Kaplan & Zaenen 1989, Kroeger 1993).

In sum, given the constraint on instantiating subject and object functions by nominal categories (88), then from the fact that the inverted locatives in English are PPs it follows that they cannot occupy the subject position in English surface structure. Nevertheless, by means of topicalization they can be interpreted indirectly as filling the subject argument position at the level of the abstract functional organization of the sentence—f-structure, in the present framework. In this way English locatives satisfy the universal argument structure for locative inversions that was isolated above in ex. 54 (and see also Fig. 2).

The topicalized PP subject analysis explains the mixed subject properties of locative inversions in English. First is agreement. The features of subject-verb agreement are inherently associated with nominal categories. Deictic features such as proximity are distinguished in locative pronouns (*here, there*), but person, number, and gender—the universal categories of verb-argument agreement—are lacking. This is why expletive subjects derived from locative pronouns (such as existential *there*) do not determine the number of the verb:[50]

    (94) a. *There are/*is infinitely many prime numbers.*
        b. *There is/*are one even prime number.*

Either the number of the verb is determined by another argument or it takes an invariant form (third person singular in English). In contrast, expletives derived from personal pronouns (such as *it*) do determine the number of the verb:

    (95) a. *It is/* are my friend that we have to consider.*
        b. *It is/*are my friends that we have to consider.*

Like the locative pronoun *there*, locative PPs are not morphologically categorized for agreement features (though the NP object of the preposition may be). Hence, they can never determine the number of the verb. This is why inversion verbs cannot show the normal agreement pattern expected of nominal subjects, which ARE categorized for agreement features. This is also why inversion verbs show the same peculiar agreement pattern as expletive subjects derived from locative pronouns (such as existential *there*). We will return to this agreement pattern below.

Second is the control of attributive VPs. These VPs are nonfinite, and all nonfinite phrases in English prohibit topicalization:

    (96) a. *I expect that John, you won't like.*
        b. **I expect for John, you not to like.*
        c. **I expect John, you not to like.*
        d. **I anticipated John, your not liking.*

---

[50] Recall that case markers and agreement morphology are part of c-structure words, but the information they carry about person, number, gender, and case are f-structure attributes. Existential *there* is an NP at the level of c-structure, although, probably because of its historical derivation from a locative, it does not carry the f-structure agreement attributes associated with other nominals.

From this it follows on the present hypothesis that locative inversion is impossible in nonfinite clauses (Aissen 1975:10, ex. 52).[51]

(97) a. *I expect that on this wall will be hung a picture of Leonard Pabbs.*
     b. **I expect for on this wall to be hung a picture of Leonard Pabbs.*
     c. **I expect on this wall to be hung a picture of Leonard Pabbs.*
     d. **I anticipated on this wall being a picture.*

Hence there can be no locative inversion in the attributive VPs. Moreover, the null subject of nonfinite verbs ('PRO') can be controlled by NPs, but not by the locative PPs, presumably because it has features of a PERSONAL pronoun—that is, a pronoun with person, number, and gender features. This would explain why expletives derived from personal pronouns can be anaphorically controlled (as in *After raining for an hour, it began to snow*), while those derived from locative pronouns cannot (as in *After *(there) having been no women professors for years, there were three promoted last month*). This accounts for the failure of control in the attributive VP modifiers in 64.

Third are raising and subject extraction. Because the topicalized locative PP is a subject at an abstract level of representation (f-structure), it will show the subject properties of that level, such as subject raising and constraints on subject extraction.[52] Hence 98a–b are predicted:

(98) a. *On this wall __ is likely to be hung a portrait of our founder.*
     b. *On this wall I expect __ to be hung a portrait of our founder.*

The fact that the inverted locative is governed by constraints on subject extraction also follows directly from this analysis.[53]

Finally, because the topicalized PP subject is not in the subject NP position at the level representing categorial expression (c-structure), it does not behave like a syntactic subject at that level. This explains certain word-order asymmetries between the behavior of NP subjects and the locative PP subjects. For example, while NP subjects may undergo subject-auxiliary inversion, the locative PP and sentential subjects may not:

(99) a. *Do you remember? *Did on the wall hang a Mexican serape?*
     b. **Was among the ruins found a skeleton?*

Given that subject position must be filled for auxiliary inversion to occur, the ill-formedness of 99a–b follows if the inverted PPs are not in subject position

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[51] Locative inversion is not always possible in finite clauses, however. There are semantic and discoursal factors which further restrict it. For discussion of such factors, see Hooper & Thompson 1973, Aissen 1975, Green 1976, 1980, McCawley 1977, and Birner 1992. These factors probably also account for the unacceptability of some locative inversions with modal verbs noted by Emonds (1976) and Coopmans (1989:729), although many instances do occur (cf. 97a).

[52] Both raising and long-distance extractions such as topicalization have been defined as identifying (unifying) the values of two different grammatical functions at f-structure (Bresnan 1982c, Kaplan & Bresnan 1982 [1980], Falk 1983, Saiki 1985, 1986, Kaplan & Zaenen 1989).

[53] Falk 1983 analyzes subject extraction constraints within an early version of this framework, which would require modification in the light of subsequent developments (Saiki 1985, 1986, Kaplan & Zaenen 1989, Kaplan & Maxwell 1988, Kroeger 1993).

(or Spec of IP), but adjoined to the clause (or IP) as topics.[54] We cannot attribute the ill-formedness of 99a–b simply to the discoursal effects of presentational focus, because subject-auxiliary inversion is far better with presentational *there,* when appropriately contextualized as in 100a–b:

> (100) a. *Do you remember? Did there hang on the wall a Mexican serape?*
>
> b. *?Was there found among the ruins a skeleton?*

Assuming that presentational *there* is in subject position (cf. n. 50), the auxiliary can invert with it grammatically.

Another word-order asymmetry between NP and PP subjects appears with raising verbs. Unlike NPs, the inverted locative PPs cannot be raised objects (or 'exceptionally case-marked subjects' in Chomsky's 1981 theory), although they can be raised subjects:

> (101) a. **I expect on this wall to be hung a portrait of our founder.*
>
> b. *On this wall is likely to be hung a portrait of our founder.*

We have seen that the PP cannot occur in subject or object positions in c-structure, but can be related to subject or object arguments through topicalization. We have also seen (in 96) that nonfinite complements prohibit topicalization. The asymmetry in 101 follows from these facts. In 101a the position of the PP following the verb is inconsistent with topicalization; in 101b the position preceding the verb is consistent with topicalization, as is that in 98b, where a raised object PP has been topicalized at the front of the finite clause. Again there is some discourse interference in 101a that could account in part for its unacceptability, but it is unlikely to be the sole explanation. Aissen (1975: 10) and Stowell (1981:272) both observe that presentational *there* is far more acceptable in object raising cases such as 102:

> (102) *I expect there to be hung on this wall a portrait of our founder.*

Thus the asymmetry in 101a–b follows directly from the topicalized subject analysis: only finite complements have a position for topicalized phrases.

In sum, the present hypothesis can explain the mixed subject properties of inverted locatives in English by appealing to divergent properties of the argument at different syntactic levels. At the level where word order and surface categorial structure are represented, the locative PP is not a subject: it cannot appear in the phrase-structure positions of subjects and it lacks the nominal morphology (and hence the agreement features) of subjects. At the level where more abstract grammatical relations are represented, the inverted locative is a subject: it undergoes subject raising, it obeys the constraints on subject extraction, and it appears under precisely the same conditions of argument structure and discourse function as the locative subjects of Chicheŵa.

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[54] Hoekstra & Mulder (1990:32) offer an argument against the adjunction to IP analysis based on 85, but it is purely theory-internal, failing to apply, for example, to Falk's 1983 analysis within an early version of the present framework.

Strong support for this hypothesis comes from considering the properties of those PPs in English that DO appear in NP positions:

> (103) a. UNDER THE CHAIR *is a nice place for the cat to sleep.* (Stowell
>   1981:268: ex. 27a)
>   b. *He had spent* FROM ELEVEN TO ONE *at his church.* (Jespersen 1927:
>   5ff., cited in Jaworska 1986)
>   c. *They considered* AFTER THE HOLIDAYS *to be too late for a family
>   gathering.* (Jaworska 1986:359, ex. 16b)

Unlike the inverted locative PPs, these PPs can appear in postverbal object positions, as in 103b–c, they allow subject-auxiliary inversion, as in 104a, and they permit tag-formation with a coreferent personal pronoun, as in 104b–c:

> (104) a. *Is* UNDER THE BED *a good place to hide?*
>   b. *Under the bed is a good place to hide, isn't* IT?
>   c. *Between six and seven suits her fine, doesn't* IT?

Moreover, these examples allow plural verb agreement when they are conjoined in subject position (105), in contrast to inverted locative PPs, which do not induce plural agreement when conjoined (106) (Levine 1989:1015):[55]

> (105)   *Under the bed and in the fireplace* ARE *not the best* (*combination
>   of*) *places to leave your toys.* (Levine 1989:1015, ex. 8)
> (106) a. **Down through the hills and into the forest* FLOW *the little brook.*
>   (Levine 1989:1015)
>   b. **In dry open country and along the roadside* ARE *found the turkey
>   vulture.*

Finally, these PPs permit control of attributive VPs:

> (107) *Under the bed, not being a particularly warm and cozy spot, is not
>   the cat's favorite place to sleep.*

In all these respects these examples behave like nominal phrases, not PPs. The simplest analysis is simply that they are place or time NPs whose missing nominal heads are contextually interpreted as instances of ellipsis:

> (108) [NP (A PLACE) [PP *under the bed*]]
>   [NP (A TIME) [PP *between six and seven*]]

This analysis can also explain why these examples have an elliptical flavor and are best in contexts in which the semantics require or the context presupposes a place or time argument. For example, 103a explicitly predicates being a place of the subject; in 103b the verb *spend* implies a temporal object; in 103c the predicate complement also implies a temporal object. If we substitute these same PPs in our original examples 89a–d, where the context does not impose a temporal or locative interpretation on the subject or object, the results are much worse:

> (109) a. ??*Under the chair makes me happy.*
>   b. ??*I like from eleven to one.*

---

[55] Levine notes that the negative element in 105 disqualifies the example as a locative inversion construction. As we have already observed (§4.5), locative inversion prohibits sentential negation in English.

    c. ??*I expect after the holidays to please me.*
    d. **I'm pleased by under the bed.*

Finally, this analysis can account for the following type of contrast, due to Kaisse (1985:40).

    (110) a. *Under the bed /z/ a great place to hide.*
         b. *In San Jose */z/ a great restaurant.*

As Kaisse observes, voicing assimilation of the reduced form of *is* is possible when the pre-clitic phrase occupies the subject position, but not when it appears in the fronted position of topics or interrogatives.

We find, then, that these PPs that can occupy NP positions show the complete cluster of properties lacking in the locative PPs considered earlier: they occupy object as well as subject positions, they need not be topicalized, and they allow subject-auxiliary inversion, tag questions with coreferent personal pronouns, subject-verb agreement, and control of attributive VPs. The fact that the agreement and control properties coincide with the NP-distributional properties strongly supports the analysis proposed here.

Let us now consider Chicheŵa under the locative subject hypothesis.

10.2. CHICHEŴA. While the inverted locatives are clearly categorized as non-nominal categories in English, they are just as clearly nominal categories in Chicheŵa (Bresnan & Kanerva 1989:Appendix 1, 38–41, Bresnan & Mchombo 1989, 1993). This immediately explains the subject-verb agreement and control properties we have observed, which distinguish inverted locatives in Chicheŵa from those in English. In addition, it explains pervasive differences in the syntax of locatives in the two languages.

First, locatives in Chicheŵa freely occur in the subject and object positions of semantically compatible verbs. Thus the Chicheŵa counterparts of ungrammatical English examples like 89a,b,d are grammatical.[56]

    (111) a. *Ku San José kú-ma-ndi-sangalâts-a.*
           17 San Jose 17.SUBJ-PRS.HAB-1.sg.OBJ-please-FV
           'It pleases me in San Jose, (Being in) San Jose pleases me.'
        b. *Ndí-ma-kónd-á*   *ku San Josê.*
           1sg.SUBJ-PRS.HAB-love-FV 17 San Jose
           'I like it in San Jose.'
        c. *Ndí-ma-sangalats-ídw-á*   *ndí ku San Josê*
           1sg.SUBJ-PRS.HAB-please-PASS-FV by 17 San Jose
           'I'm pleased by (being in) San Jose.'

The locative phrase is a subject in 111a, an object in 111b, and the object of the preposition 'by' in 111c, which is the passivized version of 111a. Note that in 111a the class 17 locative verbal prefix *ku-* agrees with the locative noun-class marker *ku* of the subject *ku San Jose* 'in San Jose'. As we have seen (§6.1), exactly the same agreement properties hold for inverted locatives. There is no difference in agreement between 'basic' locative subjects, as in 111a, and locative subjects derived by passivization or locative inversion (BK:29).

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[56] Chicheŵa lacks object-raising verbs corresponding to 89c.

Second, the locatives in object position pass the classical object tests for Bantu—object marking on the verb, passivization, and word order (Hyman & Duranti 1982). The following examples adapted from Bresnan & Mchombo 1993 illustrate these points. In 112a a locative phrase appears with locative object agreement on the verb. In 112b the same phrase is the subject of the passive verb. In 112c another such locative phrase appears as an applied object with either a beneficiary or locative role; with the beneficiary interpretation the locative phrase must be adjacent to the verb, exactly as with applied NPs of other classes (Baker 1988, Alsina & Mchombo 1990, 1993).

(112) a. *A-lěndo á-ma-pa-kônd-a*   *pa mu-dzi.*
           2-visitor 2.SUBJ-PRS.HAB-16.OBJ-love-FV 16 3-village
           'Visitors love it, the village.'
      b. *Pa mu-dzi   pá-ma-kond-édw-á*   *ndí á-lěndo.*
           16 3-village 16.SUBJ-PRS.HAB-love-PASS-FV by 2-visitor
           'The village is loved by visitors.'
      c. *A-ku-lúk-ír-a*   *pa m-chenga u-konde.*
           2.SUBJ-PROG-weave-APPL-FV 16 3-sand   14-net
           'They are weaving a net for/on the beach.'

Whereas the English locative phrases can only be indirectly related to subject/ object positions through extraposition and topicalization, the Chicheŵa locatives can directly occupy the subject/object phrase-structure positions. Thus in these examples the locatives have exactly the same word-order positions as ordinary, nontopicalized arguments of a verb or preposition. Bresnan & Kanerva (1992) show that inverted locatives as well are clearly nontopicalized: subject raising of locatives in Chicheŵa, control of nonfinite phrases, and the interactions of locative subjects with in situ questions clearly rule out obligatory topicalization of the locative from subject position.

Third, all Bantu NPs have modifiers and specifiers showing concord with the noun class of the head, including possessives, demonstratives, adjectives, and the like. The same is true of locatives in Chicheŵa, as illustrated by the following examples adapted from Bresnan & Mchombo 1993. In 113a the locative noun phrase 'in the village' is modified by a possessive 'our' and an attributive phrase 'attracting interest', both showing locative concord; the same phrase appears as the passivized subject in 113b. In 113c the locative phrase 'on the beach' is also modified by an agreeing possessive and attributive.

(113) a. *A-lěndo á-ma-pa-kônd-a*   *pa mu-dzi   p-áthú*
           2-visitor 2.SUBJ-PRS.HAB-16.OBJ-love-FV 16 3-village 16-our
              p-ó-chítítsa   chǐ-dwi.
              16-ASC.INF-attract 7-interest
           'Visitors love it, our interesting village.'
      b. *Pa mu-dzi   p-áthú p-ó-chítítsa   chǐ-dwi*
           16 3-village 16-our 16-ASC.INF-attract 7-interest
              pá-ma-kond-édw-á   *ndí á-lěndo.*
              16.SUBJ-PRS.HAB-love-PASS-FV by 2-visitor
           'Our interesting village is loved by visitors.'

    c. *A-ku-lúk-ír-a*   *pa m-chenga p-áthú*
       2.SUBJ-PROG-weave-APPL-FV 16 3-sand   16-our
             p-ó-sángálatsa   u-konde.
             16-ASC.INF-please 14-net
             'They are weaving a net for/on our pleasing beach.'

In sum, Chicheŵa locatives appear in subject and object NP positions in phrase structure, pass the classical tests for subject and object NPs in Bantu, and allow NP specifiers and modifiers showing locative concord. They show clear syntactic evidence of being NPs, as argued in BK, Bresnan & Mchombo 1989, 1993, Bresnan 1991, and Myers 1987 (for Chishona).[57] For this reason inverted locatives in Chicheŵa satisfy the constraint that subjects and objects can only be instantiated by nominal categories in phrase structure 88.

While only NPs can occupy the phrase-structure positions of subject and object, it is not true that all NPs do so. In English, which lacks overt case morphology on nouns, PPs typically fill oblique and adjunct functions, and the exceptions (like *most evenings* in *She's away most evenings* and *home* in *Come home!*) have been regularized by some syntactic analysts as covert PPs (Emonds 1976). However, uncontestable NPs do appear as adjuncts and obliques in languages that lack morphological case and have few prepositions. Chicheŵa is a good example of this. It has only two uncontroversial, nonnominal prepositions, an instrumental and a temporal (Kanerva 1990b). Oblique relations marked in other languages by case or prepositions are marked by 'applied' verb morphology in Chicheŵa, as in Bantu in general. In view of these facts, it is not surprising that in Chicheŵa the same locative NPs that serve as subjects and objects can also serve as obliques and adjuncts.[58]

The Chicheŵa locatives in 114a–b are adjuncts parallel to the English examples given in 90. (Note that the locatives in these examples do not have object properties, as indicated by the impossibility of the object marker in 114a.)

   (114) a. *Ndi-na-síy-á*   *gálimoto y-ânga   ku mu-dzi*
           1sg.SUBJ-REC.PST-leave-FV 9.car   9-1sg.POSS 17 3-village
             kw-âthu.
             17-our
             'I left my car in our village.'
             (Cf. **Ndi-na-KÚ-síyá gálimoto ... *')
       b. *Ku mu-dzi   kw-âthu ndí-ma-súng-á*   *gálimoto*
           17 3-village 17-our   1sg.SUBJ-PRS.HAB-keep-FV 9.car
             y-ángá   m' garâji.
             9-1sg.POSS 18 5.garage
             'In our village I keep my car in the garage.'

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[57] The status of locative phrases in those Bantu languages that have lost their initial locative classifiers is much more difficult to determine, and it is possible that some of these locatives have been reanalyzed as PPs. However, recent work on two such languages of Southern Africa provides evidence supporting the NP analysis: see Demuth & Mmusi 1992 on Setswana and Machobane 1992 on Sesotho.

[58] Bare NPs serve as passive agentive phrases in several Bantu languages, including Kichaga (Bresnan & Moshi 1990:163) and Kihaya (Hyman & Duranti 1982:222).

Also as in English, the locatives that undergo inversion in Chicheŵa are oblique complements of intransitive or passive verbs (cf. BK:2,4):

(115) a. *A-lendô-wo   a-na-bwér-á*   *ku mu-dzi   uku.*
        2-visitor-2.those 2.SUBJ-REC.PST-come-FV 17 3-village 17.this
        'Those visitors came to this village.'

     b. *Ku mu-dzi   uku   ku-na-bwér-á*   *a-lendô-wo.*
        17 3-village 17.this 17.SUBJ-REC.PST-come-FV 2-visitor-2.those
        'To this village came those visitors.'

(116) a. *Mw-ăna a-na-péz-édw-á*   *kú dâmbo.*
        1-child   1.SUBJ-REC.PST-find-PASS-FV 17 5.swamp
        'The child was found in the swamp.'

     b. *Ku dâmbo   ku-na-péz-édw-á*   *mw-ána.*
        17 5.swamp 17.SUBJ-REC.PST-find-PASS-FV 1-child
        'In the swamp was found the child.'

These locative phrases are structurally identical in every way to those that serve as subjects and objects. For example, they take the same set of adnominal modifiers and specifiers. Observe the locative possessive modifier *kwâthu* 'our (loc)' in 114a–b and the locative determiner *uku* 'this (loc)' in 115a–b.

Given the clear evidence that Chicheŵa locatives are NPs, let us turn to the question of their internal structure. Should they be analyzed along the lines of the English PPs with nominal distribution discussed above (ex. 103)—that is, are they simply PPs modifying NPs whose nominal heads have undergone ellipsis?[59]

(117) a. [NP (*A PLACE*) [PP *under the bed*]]
     b. [NP (...) [PP [P *ku*] [NP *San Jose*]]]

There is evidence against this analysis.

First, unlike the English examples (117a), there are no lexical instantiations of the missing head noun in Chicheŵa (117b). In fact, in contrast to English PPs, Chicheŵa locatives cannot be used as direct adnominal modifiers at all, as the following examples from Bresnan & Mchombo (1993, exx. 53a–d) illustrate:

(118) a. *ku mu-dzi   kw-âthu*
        18 3-village 18-our
        'at our village'

     b. *A-na-fík-á*   *ku mu-dzi   kw-âthu.*
        2.SUBJ-REC.PST-arrive-FV 18 3-village 18-our
        'They arrived at our village.'

     c. **mw-aná ku mu-dzi   kw-âthu*
        1-child   18 3-village 18-our
        ≠ 'a child at our village'

     d. *mw-aná w-á   ku mu-dzi   kw-âthu*
        1-child   1-ASC 18 3-village 18-our
        'a child from our village'

[59] A similar analysis is proposed by Carstens (1991:45–6).

As we see in 118d, an 'associative marker' must intervene between the head noun and the locative phrase modifier of a noun.[60]

Second, on this analysis it is unexplained why the nominal specifiers and modifiers of the locative NP show concord with the embedded PP. True PPs in Chicheŵa have no gender class and disallow concord altogether.

Third, unlike the English PPs, these putative Chicheŵa PPs would never appear unembedded outside of NPs. All Chicheŵa locatives allow NP specifiers and modifiers, even in what are 'PP' position in English (the positions of adjuncts and oblique arguments). We have seen examples of this in 114–115.

For these reasons, the analysis of Chicheŵa locatives as PPs embedded within NPs should be rejected. Chicheŵa locatives never give any evidence of nonnominal syntactic properties.

All of the above factors point to one salient difference in the phrase structure of inverted locatives in the two languages: in English they have the structure of PP headed by a nonnominal preposition; in Chicheŵa they have the structure of NP headed by a nominal locative marker:

(119)

PP
P — in
NP — San Jose

NP
Cl — ku
NP — San Jose
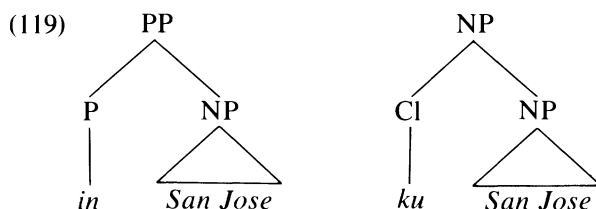
Note that the inner NP following the Chicheŵa locative classifier can have its own specifiers and modifiers, giving rise to so-called 'alternative concord'. The grammaticality of all of the above examples is preserved under alternative concord, and under simultaneous modification by inner and outer NP modifiers. (See Myers 1987 and Bresnan & Mchombo 1989, 1993 for further evidence in support of this analysis.)[61]

We have now come to the following conclusion. At the level of argument structure and syntactic functions, locative inversions in English and Chicheŵa are virtually identical. The BK theory explains these similarities. At the level of categorial structure, however, the two languages diverge: inverted locatives are PPs in English and NPs in Chicheŵa.

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[60] The same observation is made by Myers (1987:85) for Chishona.

[61] Carstens (1991:45) argues that the locative marker must be a preposition rather than a nominal, because elsewhere nominals do not take direct NP complements. However, the relation an NP bears to its sister locative marker is NOT one of complementation, but classification. See below. She also argues that if the classifiers were nouns they would violate a Bantu constraint against monomoraic nouns, which would not be violated if they are prepositions. It is true that all major lexical categories in Chicheŵa must contain at least one foot of two syllables (see n. 5 above and Kanerva 1990b). But from this it follows only that the phonological structure of locative classifiers is not typical of major lexical categories; they could still be minor nominal categories or functional categories in the X'-theoretic sense, with nominal features (cf. Grimshaw 1991).

11. THE CATEGORIZATION OF LOCATIVES. This brings us to the fundamental typological question to be addressed in this study: WHY do English and Chichewa differ in the categorization of locatives? One might suspect that it is a difference in semantics that determines the difference in syntactic category. English has NPs for places (e.g. *this area, place, school*), but these cannot generally be used as locative obliques and adjuncts—**I came this area, *She went school, *We've lived this place for years*—and they can be used as subjects and objects of nonlocative verbs: *This area frightens me, She likes school, We've owned this place for years.*[62] Perhaps the locative NPs in Chichewa have the semantics of English place NPs, and not the semantics of its locative PPs, which denote the properties of being located in places. On this view the syntactic categories NP and PP can be individuated by their semantic types, so that when the semantic type differs, the syntactic category must differ. If this were the correct explanation for the different syntax of locatives in English and Chichewa, then we would expect to find that the locative NPs of Chichewa do NOT have the uses of locative PPs in English. However, this expectation is not borne out, as we saw in §10.2. Despite the fact that Chichewa locatives have uses corresponding to PPs in English, their morphological and syntactic structure is in every way indistinguishable from the Chichewa locatives that correspond to NPs in English. Thus an explanation that presupposes semantic determination of syntactic category is not adequate.

An alternative semantic theory of locatives is Jackendoff's (1987), according to which a location is composed semantically of an object as reference point and a place or path function which takes the reference point as an argument. Locative NPs in Chichewa reflect this semantic complexity within their nominal structure, which consists of a locative noun-class marker adjoined to a noun (Bresnan & Mchombo 1989, 1993). Thus in Chichewa a locative NP already designates a location. In English, in contrast, a place NP designates only the reference point for a semantic place or path function. These functions are either designated by prepositions or incorporated into verb meanings, as with certain intrinsically locative verbs (*enter, climb, pass*; Jackendoff 1987). On this view, the difference between the Chichewa sentence *Ku San José kúmandisangalâtsa* and its literal English equivalent **In San Jose makes me happy* is syntactic rather than semantic. This conclusion is not implausible, because the Chichewa example has the same range of meanings as the English example with the locative extraposed: *It makes me happy in San Jose.*

Why then are locatives categorized as NPs in Chichewa and PPs in English? I believe that this difference stems from a profound typological difference in the grammatical systems within which locatives are categorized in the two languages: CASE and GENDER. Note that grammatical gender need not be sex-based. Gender refers to genus, and sex is but one categorization into kinds. In Chichewa, locatives are not cases, but gender classes; that is, they are part of

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[62] An exception is *home*, which behaves both like an NP and like a (directional) PP: compare *Home makes me happy* and *She went home*. *Home* also undergoes locative inversion: *Home came John.*

a system that signals contrasts among grammatical categorizations of people, things, locations, qualities, and the like—kinds of things (genera), designated by NPs (Orr & Scotton 1980, BK:Appendix 1, Bresnan & Mchombo 1989, 1993).[63] Their nominal categorization explains the greater freedom with which locatives are distributed in Chicheŵa syntax. In English, in contrast, locatives are PPs, and the categorial distinction between NP and PP reflects a basic case-like opposition of direct and oblique (or indirect) phrases. Consequently, locatives in English are syntactically excluded from direct argument (NP) positions. This accounts for their narrower syntactic distribution compared to Chicheŵa, and it is the key to understanding the different agreement patterns in locative inversion in the two languages.

Gender, like person and number, is universally a category of subject-verb agreement across languages (Givón 1976, Lehmann 1982, 1988). From the categorization of locatives as genders, the possibility of locative agreement of the verb follows at once. The idea of locative genders is alien to speakers of European languages, but the evidence in support of it internal to Bantu is overwhelming. Chicheŵa has a system of eighteen gender classes, including classes which are associated with animates, plants, artifacts, and their plurals (although the classes are largely formal). Each of these classes has special forms for verb agreement as well as nominal concord. For example, there are eighteen different classes of determiners, of quantifiers, of pronouns, of adjectives, and of other modifiers, as well as of subject and object prefixes to the verb. Among these eighteen gender classes are the three locative classes. Europeans often think of genders as partitioning the set of noun stems of a language into mutually exclusive classes; in Chicheŵa, in contrast, only a few noun stems are inherently locative in class, and virtually any noun can take a locative class marker, creating a shift in meaning. This use of gender can be compared to sex gender in some European languages, which is much less productive but is still available for semantic shifts, as in Italian *ragazzo* 'boy', *ragazza* 'girl' (Lyons 1971:287–8). The appearance of the locative gender markers outside an inner class prefix is not exceptional; other Bantu gender class prefixes such as diminutive and augmentative share this property (Bresnan & Mchombo 1993).

In sum, locatives are grammatically categorized as genders in Chicheŵa. Gender is prototypically a system for distinguishing kinds of things, designated by NPs, and is a universal category of verb agreement.

In contrast to gender, indirect or oblique case is very generally incompatible with verb agreement: in languages which permit indirect case subjects, the verb ceases to agree with the subject; it either assumes an invariant form or agrees with its highest-ranking direct-case argument, which may be a nominative object, as in Icelandic (Thráinsson 1980, Andrews 1982, 1990a) and Hindi (Mohanan 1990, 1993). Thus the analysis of the English locative PP as an indirect argument provides some insight into the peculiar pattern of agreement of the

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[63] The term 'noun class' is often used in Bantu in place of 'gender'. Allan 1977, in a useful survey of classifier languages, points out how Bantu both resembles and differs from paradigmatic classifier languages. He designates the Bantu type as 'concordial classifier languages'.

verb: the verb cannot agree with the locative subject, which is an indirect argument, so it agrees with the theme object, which is its highest-ranking direct argument. This insight allows us to unify the agreement patterns of English and Chicheŵa under a single generalization: the verb agrees with its most prominent argument (according to the functional hierarchy of SUBJ > OBJ > ...) that lacks indirect case. Hence Chicheŵa, a typologically caseless language, always shows agreement with the subject; English shows agreement with the subject if it has direct case, and with the object otherwise.[64]

The indirect case analysis also explains further facts. In 120a the PP cannot appear in the subject NP position, but it can be interpreted as the subject through topicalization. Why doesn't the same mechanism work in 120b?

(120) a.   *In San Jose* ___ *lives a woman.*
      b. **In San Jose* ___ *pleases me.*

The solution is evident from our present perspective. Indirect case arguments are universally associated with specific semantic roles. Indeed, the oblique cases of traditional grammar are NAMED by semantic role: 'instrumental', 'ablative', 'locative', and the like. English verbs that take locative arguments associate indirect case with their locative (PP) roles and direct case with other (N) roles.[65] In this way the verb *lives* in 120a differs crucially from the verb *pleases* in 120b: *lives* has a locative role in its semantic argument structure; *pleases* does not. As used in 120a, the verb *live* does not mean merely to exhibit the characteristic signs of life, but to inhabit or occupy a place in the world, to reside somewhere. In this use, living is construed as a relation between an individual and a place. Pleasing is also a two-place relation, but neither of its two roles is locative. Assuming that indirect case is associated with locative roles, *lives* can take an indirect case (PP) argument; *pleases* lacks such a role and takes only direct arguments. It then follows that the PP as an indirect argument cannot be related by topicalization to direct arguments without producing an inconsistency of case. This result follows from the general principles of the theory outlined above. All f-structure attributes, including case and agreement features, must satisfy the uniqueness condition, which ensures consistency of their values. Topicalization is the identification of two functions at f-structure, not a movement between two positions in c-structure. Hence, the f-structure attributes of the topic and the gap function must be identical, in-

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[64] We have seen that with locatives as with the expletive *there*, this agreement can appear across subject-raising verbs: *Through the valley seems/*seem to flow a river, Through the valley *seems/ seem to flow two rivers.* This nonlocal agreement has been formally analyzed within the present framework by decomposing it into a chain of local agreements, unifying the agreement features of the object argument with the indirect subject (which lacks all agreement morphology). Variants of this solution are proposed in Bresnan 1982b, Andrews 1982, and Levin 1985.

[65] As noted above, a subclass of these verbs, including *enter, cross,* and *pass,* take NP (direct) arguments which are intuitively thought of as locative. However, on Jackendoff's 1987 account they designate not place or path functions, but the individuals that serve as the reference points of these functions; the place or path function is incorporated into the verbal meaning.

cluding case and agreement features, even though the respective c-structure categories of the two functions may be mismatched, as we saw previously.[66]

Finally, the idea that the categorial difference between NP and PP expresses a direct/indirect case opposition in English receives support from Maling's 1983 work on 'transitive adjectives'. Maling observes that in the Germanic languages with productive case marking, including Old English, adjectives can take NP complements, which bear indirect cases such as dative or genitive. Modern English has replaced the indirect case NPs with PPs, *to* replacing dative case and *of* replacing genitive case, for example. She traces the loss of transitive adjectives in English to the almost complete loss of morphological inflection, reasoning that with this loss the NP complements were no longer recognized as having indirect case, leading to reanalysis of the construction. Most became PPs, but in a few instances, Maling argues, the adjective was reanalyzed as a preposition taking a direct NP complement.

In sum, in English, unlike Chicheŵa, locatives are grammatically categorized as indirect or oblique phrases. This explains both their narrower syntactic distribution and their peculiar agreement pattern, since indirect case generally precludes verb agreement.

12. IMPLICATIONS FOR THE CATEGORIAL UNIFORMITY THESIS. The comparison of locative inversion in English and Chicheŵa has shown us that the argument structures, the syntactic functions, and the mapping principles that link them are virtually identical in the two languages. However, the alignment of semantic roles with syntactic (c-structure) categories reflects a profound typological difference: in Chicheŵa locatives are represented by nominal categories (NPs), reflecting their categorization in a gender class system; in English they are characteristically represented by nonnominal categories (PPs), reflecting their oblique categorization in a case-like opposition of direct and indirect phrases. Let us consider the implications of these results for the categorial uniformity thesis.

Following Stowell 1981, it has been widely assumed that the categorial difference between NP and PP is not basic in the X' component, but is derived from Case properties. Stowell argues that all of the positions which PPs can occupy in English phrase structure are positions where Case is NOT assigned— at the periphery of the sentence in extraposed or topicalized positions, or as obliques or adjuncts, which do not receive Case from the verb. NPs appear in the complementary set of environments. This difference correlates with the fact that the head of a PP is itself a Case assigner, while the head of an NP is not. Thus Stowell (1981:146) proposes the CASE RESISTANCE PRINCIPLE (CRP): categories that assign Case cannot receive Case. In this way a primitive cat-

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[66] As for CPs in English, they are simply unspecified for the case attribute, like other categories outside the direct/indirect opposition. Hence, when they bear the TOP function, they can be identified in f-structure with the direct-case function of a semantically compatible verb, such as the subject of *please*. Nevertheless, they cannot occupy the c-structure subject position, which according to the function-category constraint 88 is an NP position.

egorial difference between NP and PP (and other categories) can be eliminated from UG. The X' component of grammar is category-neutral. As undifferentiated maximal projections, PPs can occupy subject or object positions as well as NPs, provided only that they move out of these positions before Case is assigned at S-structure.

This proposal suggests that the similarities between locative inversion in English and Chicheŵa could be captured by means of an X' theory which abstracts away from the categorial differences between NP and PP, while the differences could be traced in some way to Case theory and the CRP, which govern the overt expression of categories. This proposal would maintain the categorial uniformity thesis of UG—that the underlying structure of all languages resembles English surface structure—by characterizing both structures in an abstract, category-neutral way.

Let us examine this proposal in greater detail. Stowell's (1981:269–76) analysis of locative inversion in English assumes that the subject position is vacated by adjunction of the NP subject to VP, and a locative PP is then moved into the subject position (to capture subject properties), where the CRP forces it to be topicalized to avoid Case (to capture topic properties). In the following structure, XP_j is the preposed locative PP and XP^i is the postposed subject NP:

(121) XP_j [$_{IP}$ [e]$_j^i$ [$_{V''}$ [$_{V'}$ V [e]$_j$] XP^i]]

Chicheŵa in this framework would by hypothesis have an identical underlying structure, but the locative XP_j would not be Case-resistant, and hence would remain in the subject NP position. Plausible though this proposal may seem on its face, it fails.

Consider first the status of the CRP in Chicheŵa. In English the distributional difference between subjects and objects versus adjuncts and noun modifiers corresponds to a difference in the phrase structure and categorization of constituents: only the NPs appear in subject and object positions; PPs appear in the adjunct and modifier positions. Hence it appears possible to reduce the categorial difference to the distributional difference, deriving the opposition between NP and PP from the Case Resistance Principle. But in Chicheŵa, as we have seen, there is no such correspondence between syntactic distribution and categorial structure. Chicheŵa locatives have the distribution of both PPs and NPs in English. Despite this fact, their categorial structure is completely invariant. If they were Case-receivers, they would have NP distribution; if they were Case-assigners, they would have PP distribution. In fact, they have both distributions, and there is simply no evidence for categorial ambiguity, or for PP status at all. Put in another way, Case plays no discernible role in determining either the distribution or the internal structure of locatives in Chicheŵa.

Second, even in English the CRP does not succeed in eliminating categorial differences. Consider the contrast between *In San Jose lives a woman* (120a) and **In San Jose pleases me* (120b), discussed above. If topicalization in 120a removes the PP from the subject position, where it would receive Case, why can it not do the same in 120b? Stowell (1981:268–9) notes this problem and makes the special stipulation that reconstruction in Logical Form is obligatory

for PPs. Under reconstruction, the locative PP in 120a would appear in its original position as an oblique postverbal argument of *live,* where it is not assigned Case by the verb; but the PP in 120b would appear in the subject position, where it would be assigned Case, violating the Case Resistance Principle. (This account also assumes that the Case Resistance Principle holds at Logical Form.) Crucially, this proposal singles out PPs from other Case-resistant categories such as S' (CP), which must NOT be obligatorily reconstructed in their base positions (cf. 92). In this way, primitive categorial distinctions that are eliminated from the X' characterization of phrase structure simply reappear elsewhere in the grammar.

Third, the program of eliminating category differences as syntactic primitives crucially depends upon the perfect projectivity of categories: all categories are projections of lexical properties of X^0 categories, except for null categories admitted under strict licensing conditions (such as government by a head or by a movement antecedent). Thus a PP can be differentiated from an NP only by means of the lexical features of its X^0 head (prepositions being Case assigners and nouns being Case receivers, for example) or in the case of null categories, by means of its relation to a moved or governing category in a proper syntactic relation to it. Violations of endocentricity, such as a PP immediately dominated by a headless NP, are nonexistent on this theory. The examples of PPs having nominal distribution (§10.1) are therefore highly problematic for this approach.[67] The idea of postulating a null N head for the NP is hampered by the licensing constraints on null categories, which would impose specific distributional limitations that do not in fact match the contextual constraints actually observed (§10.1). The tactic of postulating abstract nominal heads with lexical content but no phonetic content, or equivalently of allowing deletion of heads at the level of P[honetic] F[orm], where the licensing conditions on null categories do not hold, is unattractive. For one thing, there is too much contextual variation in the interpretations of the ellipsis to be explained by deletion of lexical nouns (e.g. *Wouldn't back and forth (to that tree) be the best way to negotiate the slope?* vs. *??the way back and forth*). For another, there is too little constraint on hypothetical syntactic deletions at PF, so the effect is merely to allow violations of perfect projectivity in by a back door. If, in contrast, primitive categorial differences between categories are admitted, then endocentric projection of lexical features is not required to differentiate categories. Matching of category features between phrases and their heads may be unmarked, but instances of imperfect projectivity may also occur (see also Bresnan 1982c, Kroeger 1993, and Bresnan & Mchombo 1993).

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[67] Stowell suggests that the unexpected well-formedness of examples like 103a, *Under the chair is a nice place for the cat to sleep,* in which a Case-resistant PP appears in a subject NP position where it must receive Case, 'is due to a special property of copular constructions which permits nominative case to be absorbed or deflected away from the subject position' (1981:268). However, Jaworska 1986 shows that the phenomenon of PPs in NP positions is not restricted to copular verbs, contrary to Stowell. She cites examples such as 103b, *He had spent from eleven to one at his church* (Jespersen 1927:5ff.), where the locative PP is in a position to which Case is assigned by a main verb which is not copular.

Fourth, the categorial uniformity thesis implies that the underlying structure of Chicheŵa locative inversions must closely resemble the derived structures postulated for English, such as Stowell's (shown in 121). Yet differences in the syntax of the two languages, including differences in the positions of the inverted subject and in subject-verb agreement, indicate that this implication is not true.

Consider the positions of the inverted subject in Chicheŵa. BK (9) show that '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 Chicheŵa (Bresnan & Mchombo 1987).' BK point out that the evidence specifically 'rules out an analysis in which the inverted subject is adjoined to the VP' as in Stowell's 1981 theory of locative inversion in English (BK:5). For example, we show that a VP adjunct 'by bicycle' (122a) cannot separate the inverted theme argument 'visitors' from the verb (122b):

(122) a. *Ku-na-bwér-á*   *a-lĕndo pa njĭnga   ku mu-dzi.*
          17.SUBJ-REC.PST-come-FV 2-visitor 16 10.bicycle 17 3-village
          'To the village came visitors by bicycle'

     b. **Ku mu-dzi ku-na-bwér-á   pa njĭnga   a-lĕndo.*
          17 3-village 17.SUBJ-REC.PST-come-IND 16 10.bicycle 2-visitor
          'To the village came visitors by bicycle.'

The locative 'to the village' may either precede or follow the VP, like other subjects; in either case the verb shows obligatory subject agreement with it (BK:3–5, 9, Bresnan & Mchombo 1987). BK (4–5) show that the VP adjunct cannot be preposed to the front of the sentence or follow the postposed locative subject. It remains at the right edge of the VP, quietly disconfirming the subject VP-adjunction analysis.

Thus in Chicheŵa, unlike English, the inverted theme is clearly positioned in the smallest projection of the verb, and so could not be derived by VP adjunction of a subject (BK:5). Instead, it occupies object position. BK (34) explain the absence of object marking with this object as following from the presentational focus function, which is inconsistent with pronominal anaphora, together with Bresnan & Mchombo's 1987 analysis of the Chicheŵa object marker as prefixed pronoun. In a neighboring Bantu language, Emakua, which has true grammatical object agreement markers (Bresnan & Mchombo 1987: 777), the inverted theme CAN be object-marked.[68] In 123 the locative class 16 co-occurs with the locative suffix -ni on 'house':

(123) a. *A-tthu   a-ho-w-a   va-tthoko-ni.*
          2-person 2.SUBJ-PRF-come-FV 16-house-LOC
          'People came home.'

     b. *Va-tthoko-ni va-ha-a-w-a   a-tthu.*
          16-house-LOC 16.SUBJ-PRF-2.OBJ-come-FV 2-person
          'Home came people.'

[68] I am grateful to Dr. Mateus Katupha for providing me with the following data from his dialect of Emakua.

As we see in example 123b, the class 2 object marker appears in agreement with the postposed class 2 subject 'people'.[69] In short, the subject VP-adjunction analysis of locative inversion in English cannot be generalized to Chicheŵa and other Bantu languages such as Emakua.

The subject VP-adjunction analysis has a second serious flaw: it wrongly permits locative inversion with transitive as well as intransitive verbs. Stowell (1981:224–5, n. 39) assumes that the external theta role can be assigned 'indeterminately', either to the pre-VP subject or to the post-VP adjoined position, in order to allow for the presence of an expletive (*there*) subject when the NP subject is adjoined to VP. Hence, nothing would prevent the subject of a transitive verb from receiving its theta role in the adjoined post-VP position, allowing the preposing of a locative into the pre-VP subject position.

A possible solution to this problem is proposed by Levin & Rappaport Hovav (1992), who adopt essentially Stowell's 1981 analysis supplemented by the VP-internal subject hypothesis (Kuroda 1988, Koopman & Sportiche 1985). (On the latter hypothesis all theta roles, including that of the deep subject, are assigned within the VP. The VP-internal subject moves from the VP to the Spec of IP position to get Case.) In locative inversion, Levin & Rappaport Hovav propose, it is the locative phrase that moves into Spec of IP position, and the VP-internal subject undergoes rightward adjunction to its dominating VP, presumably to receive Case.[70] This analysis, like Stowell's, overgenerates by allowing transitive verbs to undergo locative inversion.[71] To prevent such overgeneration, Levin & Rappaport Hovav assume that the discourse function of locative inversion has a filtering effect on the syntax, excluding all constructions in which the verb is not 'informationally light', as Birner (1992:191–205) proposes. 'Informationally light' means that the verb's content is evoked or inferable from the discourse or sentential context. Verbs of existence and appearance ('copular' verbs in Hoekstra & Mulder's 1990 sense) are paradigm examples. Apart from the problems with this proposal already pointed out (n. 18), note that it fails to explain the transitivity restriction in examples like the following. The intransitive verb *dance* used motionally allows locative inversion (124b), but the transitive cognate object verb *dance* does not (125b):

(124) a. *The women danced around the fire.*
      b. *Around the fire danced the women.*

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[69] The example is also grammatical with the object marker omitted, although the object marker is obligatory with simple transitive verbs.

[70] The mechanism of Case assignment to the VP-adjoined subject is not spelled out. It could be assumed that INFL assigns nominative Case either leftward to Spec of IP or rightward to the VP-adjoined NP, which also lies in its governing domain, given the appropriate definitions. (See Belletti 1988 and Coopmans 1989 for discussion of theory-internal details and problems of this account.) However, if INFL assigns Case rightward, away from the locative subject, then Case resistance cannot be invoked to explain the typological differences between locative subjects in English and Chicheŵa.

[71] Levin & Rappaport Hovav (1992:201ff.) argue that unergative verbs can in fact undergo locative inversion; we have seen examples of this phenomenon in the discussion of the fluidity of intransitives in context (§3.7 and §5).

(125) a. *The women danced dances around the fire.*
      b. **Around the fire danced dances the women.*

It is hard to see how the cognate object in 125 lessens the informational lightness
of the example.

Even if transitive VP configurations could somehow be filtered out by an
appropriately defined discourse function, however, the subject VP-adjunction
analysis still fails to generalize to Chicheŵa. Chicheŵa locative inversions
share the core argument structure, the presentational discourse functions, the
fluidity of intransitives in context, and the mapping to syntactic functions of
the English inversions. But their phrase-structure configurations do not match
those of English and, in particular, they are not compatible with the subject
VP-adjunction analysis.[72]

We could amend Stowell's 1981 analysis along the very different lines sug-
gested by Coopmans 1989 by keeping the external theta-role assignment uni-
formly on the pre-VP subject position. (The VP-internal subject hypothesis is
inconsistent with this account, which assumes a single subject position—Spec
of IP.) Then the locative argument could not move into the subject position
when that position was theta-marked by a transitive verb, but it could do so
when the verb was unaccusative or passive; such verbs are supposed to assign
an internal theta role to the underlying object position, as in 126, and have no
external role for the subject position. In this case, subject postposing would
not be needed at all. As Coopmans (1989:731) proposes, NP^i could be optionally
adjoined directly to VP without moving through subject position:

(126) PP_j $[_{IP}$ $[e]_j$ $[_{VP}$ V NP^i $[e]_j]]$

To account for the differing word order and agreement properties of the post-
verbal NP in English and Chicheŵa, we could further assume that the verb
assigns inherent Case to the postverbal NP in Chicheŵa but not in English,
along the lines of Belletti 1988 and Coopmans (1989:742ff) (but see BK 20–22
for problems). Then the theme NP in Chicheŵa locative inversions can remain
in VP-internal position, while in English it will be forced to move to receive
Case. We could further assume that in English, but not in Chicheŵa, INFL
switches direction when the subject position is occupied by the locative phrase,
and assigns nominative Case rightward to the postverbal NP, which is in the
governing domain of INFL only when adjoined to VP (cf. Coopmans 1989:736,
745). These assumptions would allow us to maintain that agreement follows
the direction of nominative Case assignment in both English and Chicheŵa,
going leftward with the locative subject in Chicheŵa locative inversions and
rightward with the theme object in the English inversions.[73] Thus the analysis

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[72] The same considerations argue against the VP-preposing analysis of Rochemont & Culicover
1990, in which the residue of the VP after verb raising is preposed. (See n. 33.) In addition to the
problems it shares with other versions of the theme-subject hypothesis (§8), this analysis is in-
consistent with the phrase-structure configuration of Chicheŵa, in which the inverted subject is
internal to the VP.

[73] Chicheŵa locative subjects can also appear to the right of the VP, however, as we have seen
in 122.

would also link the differing word-order positions of the theme arguments in the two languages to their differing agreement patterns. But if INFL assigns Case rightward in English inversions, Case resistance cannot then explain why the locative argument on the left is forced to evacuate subject position. (Indeed, unlike Stowell 1981, Coopmans 1989 assumes that the locative never moves into subject position, but is fronted by topicalization or adverb preposing directly to S-initial position, from which it licenses semi-pro drop. But this hypothesis, rejected for English in §9 above, cannot be applied to Chicheŵa.) To put this point in a slightly different way, in order to capture the word-order and agreement differences between English and Chicheŵa locative inversions, the above analysis cannot derive, but must presuppose, the categorial difference between locatives in the two languages.[74]

In conclusion, the idea of capturing the similarities of locative inversion in English and Chicheŵa by means of a category-neutral X′ theory, while explaining the differences in terms of varying case-theoretic or agreement mechanisms, cannot be supported by the work reviewed here. This work attempts to use X′ theory to model the inner syntactic relations of locative inversion in English in the vocabulary of its outer structural form, in accord with the projection principle. Although we have seen that English and Chicheŵa are substantially parallel in this inner structure, the outer, categorial properties of English syntax on which this work depends are not shared by Chicheŵa.

Locative inversion thus shows us that it is a mistake to represent the underlying levels of grammar universally in terms which, like syntactic phrase-structure category and Case, turn out to be typologically parochial. This study shows the need for an alternative architecture of UG that does not embody the categorial uniformity thesis. The modified LFG architecture assumed here is a promising alternative. It can be used to model the most significant results of the movement approach to word-order variations (Netter & Kärcher 1986, Netter 1988, Kroeger 1993, King 1993), yet it also provides insight into some of the deeper sources of variation that defy the conventional framework, such as the categorial mismatches we have seen in locative inversion.

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[74] Similar problems arise for Hoekstra & Mulder's rather different 1990 analysis of locative inversion (cf. n. 4). According to this analysis, the locative PP is a small-clause predicate complement to a copular verb. Such complements may move up into Spec of IP, where they receive nominative Case and transmit it to the postverbal NP subject of the small clause via Spec-Head agreement in base position. As they point out, 'Sharing of case features between subject and predicate is a general phenomenon' (1990:33), and the same is true for number and gender features. However, if the PP receives nominative Case in subject position, Stowell's Case Resistance Principle can no longer be invoked to explain the peripheral distribution of PPs in English. Nor does this analysis extend to Chicheŵa, where the verb agrees with the locative subject, inversion of nonlocative predicate complements is not allowed (as we saw in 9), and small-clause constructions are lacking altogether (Sam Mchombo, personal communication, 1993).

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