

Locative Inversion

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Abstract: Locative inversion patterns are instances of a non-canonical word order where a locative phrase (in a canonically SVO language) moves to preverbal position, leaving the thematic subject postverbally. There are a wide variety of morphosyntactic variations in this basic inversion pattern crosslinguistically (and even within individual languages), and the evidence suggests that different syntactic mechanisms are used in different instances to generate the same surface word orders, both in English and in various Bantu languages. Analyses and diagnostic evidence are presented for all of these languages showing that, despite the range of variation, similar syntactic mechanisms appear to be at play across languages. The non-canonical patterns that occur in locative inversion constructions raise important questions for theoretical assumptions about Case licensing, agreement, and locality in particular, and the theoretical work in those areas is addressed as well.

1 Introduction

Locative inversion has long posed significant analytical and theoretical puzzle; locative inversion as discussed here are when canonically S-V-O-(LOC) languages that invert a locative phrase in discourse-appropriate contexts, resulting in a LOC-V-S word order.

- 1) Down the hill roll the balls.
- 2) Ku-mu-dzi ku-na-bwér-á a-lendô-wo [Chichewa]
17-3-village 17S-REC.PST-come-IND 2-visitor-2those
'To the village came those visitors.' (Bresnan and Kanerva, 1989: 2)

Locative inversion structures have been studied relatively intensely in English/Germanic and variety of Bantu languages, in addition to some Romance languages and some East Asian languages. This chapter will focus mainly on English and Bantu given the depth of research in those areas, though patterns similar to locative inversion had been reported for a range of different languages (see Salzmann 2011 for a summary of a range of relevant patterns in other language families).¹

¹ Postal (2004) voices rather strenuously some reasonable objections to referring to this set of constructions as "locative inversion," citing examples like *To the states is entrusted the power to regulate education (by the Constitution)* and *During the reign of Queen Lulu II were built many fabulous monuments* (17). I continue to use the term both for general convenience due to its broad use in the literature (as does Bruening 2010), but also because the Bantu languages that are considered in depth in this chapter have rich morphology dealing with locatives, with noun classes designated specifically for locations, and it is these morphologically-marked noun classes (in most languages) that participate in locative inversion, suggesting that a focus on location/locatives is not without cause. Postal's concern is not without merit, however, as there are certainly other instances even in Bantu languages of inversion constructions with non-locatives, though in those instances it's not clear that they ought to be analyzed as the same class of constructions as locative inversion. But given the prominence of definitively *locative* inversion both empirically and in the literature, this chapter focuses on these constructions, leaving open the question of whether they can be more broadly subsumed under some more general characterization.

There are a variety of analytical concerns that arise when looking at constructions like that in (1a): what is the position of the preverbal locative phrase? What is the position of the verb? What is the position of the postverbal thematic subject? As we will see, there is not a unitary set of answers for these questions, either within individual languages and cross-linguistically (discussed in sections 2 and 3). As we will see, the rich agreement systems of the Bantu languages give a fresh diagnostic perspective to the English LI patterns that are notoriously difficult to diagnose.

Furthermore, locative inversion constructions raise important theoretical questions, particularly with respect to Case, agreement, and locality. Locality questions are the most salient as they are the heart of locative inversion: how is it that a phrase is capable of raising to subject position over the thematic subject, which canonically does so? The research on locative inversion among Bantu languages also provides useful insight into the nature of syntactic agreement and Case licensing, as the example in (1) shows a core difference between English and Chichewa: in Chichewa (as in many other Bantu languages) the fronted locative phrase triggers subject agreement on the verb, whereas verbal agreement in English is always controlled by the thematic subject. These theoretical issues are discussed in section 4, after the discussion of the structural analysis of locative inversion.

2 The Structural Analysis of English Locative Inversion

2.1 Subject properties of the preverbal locative

From the start, initial evidence suggesting a connection between locative inversion and presentational constructions is that an expletive subject is possible in English sentences equivalent to locative inversion constructions, raising the question of whether the best analysis of locative inversion in (3)a is that there is a null expletive in subject position as shown in (4)b, as opposed to the locative itself being in subject position ((4)a) as the basic word order might suggest:

- 3) a. In the coffee shop sat a man.
b. In the coffee shop there sat a man.
- 4) a. [_{TP} In the coffee shop sat a man.]
b. In the coffee shop [_{TP} \emptyset_{there} sat a man.]

First, as noted by Bresnan (1977: 186), preverbal PPs in locative inversion constructions show subject properties in the form of that-*t* effects, the prohibition (in English, at least) of extracting the subject of an embedded clause in the presence of an overt complementizer:

- 5) a. It is in these villages that we all believe ___ can be found the best examples of this cuisine.
b. *It is in these villages that we all believe that ___ can be found the best examples of this cuisine.
c. It is in these villages that we all believe (that) the best examples of this cuisine can be found.

If only subject extraction creates that-trace effects in this manner, the fact that extraction of a fronted PP in locative inversion creates complementizer-trace effects is evidence that fronted PPs in English are in canonical subject position (or, at least, have occupied that position at some point). Culicover and Levine (2001) note that these effects extend to other instances of subject extraction in the presence of a complementizer, including *whether* and *about* (in gerundives).²

Postal (2004: 21) notes that in English a complementizer is required in subject relative clauses and clefts in the absence of a relative pronoun, whereas this is not the case for non-subjects.

- 6) a. It was those towns (that) he studied.
 b. It was those towns *(that) were studied.
 c. It was those towns (that) she talked about.

As Postal's evidence below shows, the same effect extends to the class of constructions he analyzes that includes locative inversion constructions, suggesting that the fronted locative in (7)b does in fact behave like a canonical subject:

- 7) a. It was in those towns (that) she learned the best techniques for drying fruit ____ .
 b. It was in those towns *(that) ____ were learned the best techniques for drying fruit.

An additional oft-cited argument for the subject status of comes from subject-to-subject raising (cf. Levine 1989, Rochemont and Culicover 1990, Coopmans 1992, Culicover 1991, Bresnan 1994); embedded subjects are capable of undergoing what appears to be subject-to-subject raising.

- 8) a. A picture of Robin seemed [_{TP} ~~a picture of Robin~~ to be hanging on the wall.]
 b. On the wall seemed [_{TP} ~~on the wall~~ to be hanging a picture of Robin.]

One final piece of evidence for the subject-status of the fronted PP comes from Culicover and Levine (2001: 289-290), who note that relevance for the analysis of locative inversion of weak crossover (WCO) effects, which are generally taken to be diagnostic of A'-movement (which triggers reconstruction effects) vs. A-movement (which does not). As (9)c shows, topicalization of a locative phrase (critically not locative inversion) triggers a weak crossover effect because the PP reconstructs to its base position ((9)b) in which a principle C effect occurs. In contrast, in (9)d locative inversion shows no WCO effects:

² Postal (2004), based on Culicover (1992), also notes that the adverb effect—an amelioration of complementizer-trace effects in subject extraction in the presence of an adverb following the complementizer—likewise applies to extraction of preverbal locatives in locative inversion. Likewise, Bresnan 1994 discusses evidence that the parallelism constraint on across-the-board extraction argues for the subjecthood of preverbal locatives in locative inversion, but Bruening (2010) argues that the parallelism constraint is not in fact a subjecthood diagnostic.

- 9) a. An owner peered into every dog's cage.
 b. *Its_k owner peered into every dog_k's cage. (Principle C violation)
 c. *Into every dog_k's cage its_k owner peered. (Topicalization, WCO)
 d. Into every dog_k's cage peered its_k owner. (locative inversion, no WCO)

The lack of WCO effects in (9)d is strong evidence that the locative phrase in English has A-moved to subject position, especially in contrast to the presence of WCO in topicalization in non-inverted contexts. We will see that there are many counter-arguments to the sorts of evidence cited above, but these weak crossover effects noted here will remain a strong argument for A-movement of the fronted locative phrase.

As discussed by Stowell (1981), Rizzi and Shlonsky (2006), and den Dikken (2006), however, there are good reasons to believe that the fronted locative doesn't stay in canonical subject position, even if the locative phrase is assumed to have moved to canonical subject position; the examples in (10) and (11) are adapted from Rizzi and Shlonsky (2006). First is the observation that locative inversion is frequently ruled out in contexts that disallow topicalization, such as sentential subjects (10) and ECM contexts (11).

- 10) a. *[That in the chair was sitting an old man] is obvious. Locative inversion
 b. *[That this book, you should read] is obvious. topicalization
- 11) a. *I expect [in the room to be sitting an old man.] locative inversion
 b. *I expect [this book John to read.] topicalization

A similar argument is made by this example from Postal (2004:18), showing that locative inversion is impossible inside the non-finite complement of a *possible* verb.³

- 12) *It is impossible for on the wall to have been standing two large blackbirds.

This is further demonstrated by a pattern presented by Postal (2004) and den Dikken (2006): when the base subject position is clearly in an embedded non-finite clause, locative inversion is possible when the locative is in a left-peripheral position, but is ruled out when occurring in the base position (despite these positions being available for subject DPs more generally) (Postal 2004: 18).⁴

- 13) a. On the wall I believe ___ to have been standing two large blackbirds.
 b. *I believed on the wall to have been standing two large blackbirds.

³ Den Dikken (2006: 99) provides several other similar arguments, including the lack of do-support in locative inversion, the possibility of inversion in embedded non-finite clauses if the locative is in fact topicalized, though den Dikken concludes that locative PPs are base-generated in the left periphery, with a null predicate undergoing A-movement to Spec,TP.

⁴ Rizzi and Shlonsky (2006) and den Dikken (2006) rely on the lack of do-support in questioning locative inversions as a sign that the locative is topicalized, but Bruening 2010 interprets this as the result of a more general complementary distribution between contexts that allows Subj-Aux inversion and those that allow locative inversion.

What we find, then, is that even on an analysis that the fronted PP in English A-moves to canonical subject position, there is good reason to believe that the PP does not stay in that position, instead being topicalized to the left periphery. In this way, then, we rule out the possible analysis that the locative is a subject in canonical subject position in English locative inversion, but with many researchers maintaining that there is some kind of derivational/representational link with subject position (Culicover and Levine 2001, Collins 1997, Doggett 2004, Bresnan 1994, Rizzi and Shlonsky 2006, den Dikken 2006, Bresnan 1994).

2.2 More on the null expletive analysis

The alternative analytical possibility is that in locative inversion sentences the locative is not at all linked with subject position, which is instead occupied by a null expletive, with relevant work including Postal (1977, 2004), Coopmans (1989), Maruta (1985), Hoekstra and Mulder (1990), and Bruening (2010).⁵

2.2.1 Arguments for a null expletive account

As Bruening (2010) discusses (relying heavily on Postal 2004), locative inversion constructions also have alternates that include an overt *there*, and those constructions show the same patterns with respect to non-occurrence with adjectival passives, disallowing complement clauses, and incompatibility with get-passives, with the last shown as an illustrative example in (15):

- 14) a. To Gloria (there) will fall a number of unpleasant tasks. (Bruening 2010:47)
b. At that time (there) were built a number of warships.
- 15) a. In that field were/*got executed dozens of partisans. (Postal 2004: 46)
b. In that field there were/*got executed dozens of partisans.

Many of these arguments are based on correlation, showing that many similar kinds of constraints hold for both locative inversion constructions and presentational *there* constructions (see the cited work for the full range of empirical examples).

2.2.2 Arguments against a PP-as-subject account

Bruening (2010) summarizes a range of arguments from preceding work (featuring prominently arguments from Postal 2004) that preverbal locatives ought not be considered canonical subjects. This evidence includes the fact that inverted PPs don't trigger subject agreement, they cannot antecede floated quantifiers, they can't antecede floating emphatic reflexives, they can't control PRO, and they can't act like subjects for the purpose of binding. As points of illustration, the subject agreement facts and the floating quantifier facts are given below. Notably in both cases, unambiguous (i.e. non-inverted) PP subjects *can* trigger subject agreement and *can* antecede floating quantifiers, so the subjecthood of PPs is not to blame, rather, some aspect of the locative inversion constructions is.

⁵ This section follows the structure of argumentation in Bruening (2010).

- 16) Lack of agreement with preverbal PP in LI
- a. From that great conflict and from our incompatible viewpoints has/*have emerged a new, exciting idea for progress.
 - b. Under the bed and in the fireplace are/*is not the best places to leave your toys.
(Levine 1989:1015, as cited in Bruening 2010: 49)
- 17) Preverbal PP in LI cannot antecede a floating quantifier
- a. Those woman have all/both/each filed a complaint.
 - b. To those women was (*all/*both/*each) proposed a distinct alternative.
 - c. To those women there was (*all/*both/*each) proposed a distinct alternative.
 - d. Under the table and under the bed would both be good places to store your ski equipment.

Postal (2004) notes that many of these diagnostics may have alternative explanations (since inverted locatives are clearly not canonical subjects, so it is perhaps not surprising that there might be differences between preverbal locatives in inversion and canonical subjects). In general, however, Postal and Bruening both rely on the preponderance of differences between canonical subjects and preverbal locatives, and the preponderance of similarities between locative inversion and *there*-expletive constructions, to build an overall argument for the null expletive analysis of English locative inversion. This leaves some issues remaining, notably, how to deal with the arguments and evidence *for* the subjecthood status of the fronted PP, which is discussed in the next section.

2.2.3 Countering arguments for the subject status of PP

As discussed above, a prominent argument for the subject status of fronted locatives is that they can apparently undergo subject-to-subject raising. As pointed out by various people, however, this is readily explained on a null-expletive account if it is in fact the null expletive that raises, supported by the fact that overt expletives are possible in the same context (Postal 2004, Culicover and Levine 2011, Bruening 2010).

- 18) On the wall (there) seemed to be hanging a picture of Robin.

Postal (2004) accepts in general that the complementizer-trace effects and the complementizer effect (see (6) and (7)) are strong arguments for the subjecthood of preverbal locatives in these inversion constructions, calling the result a paradox necessitating a different set of theoretical assumptions. Bruening, on the other hand, concludes that each of these can be explained away essentially by showing that all of them can be subsumed under more general structural constraints and that they are therefore not in fact truly diagnostic of subjecthood.

One outstanding discussion has to do with how Bruening accounts for the weak crossover patterns in (9), which the reader will recall was evidence from Culicover and Levine (2001) showing that a quantifier in a preverbal locative can bind a variable inside the postverbal thematic subject, a relatively straightforward argument for A-movement of the fronted locative to subject position. Specifically, Bruening addresses the proposal from Doggett (2004) that there is a critical distinction between locative inversion and instances with an overt expletive, as shown in (19) with respect to WCO:

- 19) a. In every dog_k's cage hung its_k collar.
 b. *In every dog_k's cage there hung its_k collar.

Bruening however points to instances (attributed to Farrell Ackerman and Postal 2004) where it is acceptable for a variable to be bound by a fronted locative phrase with an expletive in subject position, arguing that to whatever extent (19)b is degraded, it is probably due to a definiteness effect.

- 20) a. In every dog_k's cage there hung its_k overpriced and gaudy collar.
 b. Into every dog_k's cage there peered its_k outraged owner.

To this author's ear, however, the examples in (20) are degraded, and such disagreements in judgments about such sentences surely necessitates empirical work with a larger set of speakers to come to more replicable documentation of the empirical patterns. But no matter the conclusion about sentences like those in (19) and (20), Bruening's counter-argument overlooks the fundamental contrast that Culicover and Levine build their argument on, namely, the difference between topicalization of the locative phrase and locative inversion constructions (Culicover and Levine 2001: 289-290).

- 21) a. *In every dog_k's cage its_k collar hung. (Topicalization, WCO)
 b. In every dog_k's cage hung its_k collar. (Locative Inversion, no WCO)
- 22) a. *Into every dog_k's cage its_k owner peered. (Topicalization, WCO)
 b. In every dog_k's cage peered its_k owner. (Locative Inversion, no WCO)

These are classic weak crossover contexts, where the degraded sentences are those in which the variable is in subject position and is clearly not subject to a definiteness effect. So while there is still empirical determination to be made about sentences like those in (19) and (20), a null expletive account has questions to answer about why a null expletive in subject position (or, why a subject in its base position) would enable binding of the variable, whereas this is not possible for a preverbal subject.⁶

It is important to note that the evidence presented here is only a subset of the relevant evidence both for explicit arguments for a null expletive account and for general parallels between locative inversion constructions and expletive constructions (Postal 1977, 2004; Coopmans 1989; Maruta 1985; Hoekstra and Mulder 1990; Bruening 2010): readers are referred to the relevant literature for fuller discussion of the evidence and argumentation. As will be seen in what follows, because of additional argumentation from Culicover and Levine (2001) and because of additional crosslinguistic empirical evidence, it is assumed here that preverbal locatives are at least in principle available as

⁶ Of course, a major critique of the null expletive analysis of English locative inversion is that null expletives would essentially be a constructional novelty, as an essential and well-studied property of English is that expletives more generally in the language are non-null (e.g. *It is raining*, *There are three men in the garden*). This is in fact the main thrust of Bruening's argument, that the human language faculty allows for language-specific sets of rules that are more *ad hoc* and construction specific than generative syntacticians generally assume (more on this in section 4).

subjects: this analysis explains a crucial contrast between Weak Crossover Effects in different sorts of English inversions, as shown in section 2.4.2.

2.3 Postverbal subject

A final aspect of the structural analysis of English locative inversion is the position of the postverbal logical subject. This discussion will be left relatively underdeveloped at this point: the discussions of Culicover and Levine (2001) and Diercks (2011) engage the questions of the position of postverbal logical subjects directly and are discussed in depth in what follows. It is worth overviewing the kinds of proposals that have been set forth, however.

The first proposal (and perhaps to be considered the basic one) is that the logical subject is simply in its base merge (i.e. ‘original’) position, at least for locative inversion with unaccusative verbs (Collins 1997, Bresnan 1994, Culicover and Levine 2001). At least one piece of evidence that has been invoked to that end is that a postverbal thematic subject cannot control PRO inside an adjunct the way it can in its canonical position, presumably because the postverbal subject has remained in a low position, too low to control PRO (example from Coopmans 1989, cf. Maruta 1985, Postal 1977).

- 23) a. Two sheiks lay near the oasis [without PRO talking]. **(Not) Controlling PRO**
b. *Near the oasis lay two sheiks [without PRO talking].

As pointed out by Bresnan and Kanerva (1989), however, despite the VP-internal position of the postverbal thematic subject (i.e. in object-like position), the thematic subject does not behave in a standard object-like manner - it cannot be passivized, be object marked (in Chichewa and other Bantu languages), or be extracted (see also Bresnan 1994, Stowell 1981, Rizzi and Shlonsky 2006):

- 24) a. Out of the barn ran a black horse. **Non-extractability of thematic subject**
b. *Which horse out of the barn ran? Coopmans (1989: 732)

- 25) a. Down the hill rolled the ball. **No Passives in Locative Inversion**
b. *the ball was rolled by down the hill.

Reflective of approaches to the position of the postverbal subject, Coopmans (1989:732) says, “It is often assumed that stylistically inverted subjects occupy positions that make them inaccessible to further movement,” citing Rochemont (1978) as using this kind of evidence to argue that inversion is a PF phenomenon of right-adjunction, explaining its lack of participation in other syntactic processes. And in fact, the inaccessibility of passed-over phrases in inversion contexts is a relatively general property of inversions in general (cf. Ndayiragije 1999, Doggett 2004, den Dikken 2006), with more syntactic approaches to the problem being that the thematic subject is in some sort of syntactic focus projection (also perhaps right-adjoined) (cf. Ndayiragije 1999, Doggett 2004).

That said, it is relatively widely accepted that in many instances locative inversion the subject is in its base position, which is partially widely accepted because of the clear links of availability of locative inversion with verbs of particular argument structure, specifically, with unaccusative verbs (see, for example, Collins 1997, Doggett 2004,

Bresnan 1994, among others, though the explanation of the inaccessibility of the postverbal thematic subject is often undiscussed).

2.4 Thematic restrictions on English locative inversion

2.4.1 Locative Inversion with Unaccusatives, Unergatives, and Transitives

As has been pointed out by many researchers (e.g. Coopman 1989, Emonds 1976, and most following), many languages show a restriction against locative inversion occurring in a clause with an object.

- 26) a. Down the hill rolled the ball.
b. *Down the hill rolled John the ball.

The traditional assumption has been that locative inversion is restricted to intransitive verbs, and specifically to unaccusative verbs. This argument is made explicitly by Bresnan and Kanerva (1989) and Bresnan (1994), who states that “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,” essentially, limiting the available verbs to unaccusatives (80).⁷

Many researchers have noted that locative inversion seems to be available with verbs not traditionally considered unaccusative like ‘walk,’ ‘run,’ and ‘fly’ (Coopmans 1989, Hoekstra and Mulder 1990). Levin and Rappaport Hovav (1995: chap 6) demonstrate this point most convincingly, that English locative inversion in fact occurs with unergative verbs of many different sorts.

- 27) a. Opposite the landing-place stood half-a-dozen donkeys with saddles on their backs and bunches of flowers in their bridles, and around them CHATTERED and SANG as many girls with the silver spadella stuck through their black tresses and a red handkerchief tied across their shoulders. (L&RH 1995: 256)
b. Above her flew a great gaggle of geese, honking their way south. (L&RH 1995: 257)

Levin and Rappaport Hovav conclude that locative inversion is in fact generally available for all intransitive verbs, constrained solely by the discourse/pragmatic constraints that are present for all inversion constructions, citing Birner’s (1992, 1994) extensive work on the interpretation of English inversion (see also Birner 1995).

Leaving aside the details for the sake of space, they conclude along with Birner that it is in fact the information structure constraints on locative inversion that explain its prohibition with transitive verbs. As we will see in section 2.4, the fact that there is crosslinguistic variation such that locative inversion is readily available with transitive verbs in languages like Digo and Herero (without any clear indication of differences in the discourse/pragmatic functions of locative inversion) suggests that there is in fact a syntactic component to the (non)availability of locative inversion with transitive verbs.

⁷ Though also see also Coopmans 1989 and Hoekstra and Mulder 1990 for additional discussions on the topic.

2.4.2 Two kinds of locative inversion in English

Culicover and Levine's (2001) cede L&RH's argument that locative inversion is available with both unergatives and unaccusatives, but show that there are different syntactic structures associated with each. Crucially they argue that only locative inversion with unaccusative verbs consists of PP movement to subject position and the postverbal subject in its base position (*light inversion*). In contrast, locative inversion with unergative verbs includes (direct) topicalization of the locative phrase and heavy-NP shift of the subject to the right edge of the clause (*heavy inversion*). The conclusion is that while locative inversion is available with all intransitive verbs in English, there are different syntactic structures that underlie the surface-similar word order (C&L 2001: 284).

28) Light Inversion:

$$[\text{IP e I} [\text{VP V NP}_{\text{subj}} \text{ V PP } \dots]] \rightarrow [\text{IP PP I} [\text{VP V NP}_{\text{subj}} \text{ V } t_{\text{PP}} \dots]]$$

29) Heavy Inversion:

$$[\text{IP e I} [\text{VP NP}_{\text{subj}} \text{ V PP } \dots]] \rightarrow [\text{IP NP}_{\text{subj}} \text{ I} [\text{VP } t_{\text{subj}} \text{ V PP } \dots]] \rightarrow$$

$$[\text{IP } t_{\text{subj}} \text{ I} [\text{VP } t_{\text{subj}} \text{ V PP } \dots] \text{ NP}_{\text{subj}}] \rightarrow [\text{IP PP} [\text{IP } t_{\text{subj}} \text{ I} [\text{VP V } t_{\text{subj}} \text{ V } t_{\text{PP}} \dots] \text{ NP}_{\text{subj}}]]$$

C&L use VP-adjoined adverbs as a key diagnostic, as a central distinction between light inversion and heavy inversion is that the postverbal subject is VP-internal in light inversion, but is right-dislocated in heavy inversion. As the examples below show, locative inversion with unergative verbs is much more acceptable if the postverbal subject is phonologically heavy and occurs outside a VP-adjoined adverb, whereas it is wholly acceptable to have the postverbal subject occur inside the adverb with unaccusative verbs (Culicover and Levine 2001: 292ff).

30) Light Inversion

- a. Into the room walked Robin carefully. **with unaccusative**
- b. *In the room slept Robin fitfully. **with unergative**

31) Heavy inversion (with unergatives)

- a. *In the room slept fitfully Robin.
- b. In the room slept fitfully the students in the class who had heard about the social psych experiment that we were about to perpetrate.

These patterns support their proposed distinction between light inversion and heavy inversion: locative inversion is indeed possible with unergatives, but via a different syntactic mechanism (heavy NP shift and a topicalized locative, as opposed to locative A-movement) with the result that the thematic subject is in a different structural position. The core idea is that a number of apparent stylistic inversion constructions are not true syntactic inversions (in the sense of subversions of expected A-locality).

Beyond the position of the postverbal subject, the distinction between light inversion and heavy inversion also predicts differences between the properties of preverbal locative phrases: left peripheral topics in heavy inversion, but PP subjects in light inversion. We have already seen above that Culicover and Levine use the absence of

weak crossover in locative inversion as an argument for A-movement of the PP to subject position (eg: *Into every dog_k's cage peered its_k owner*), and they utilize the same evidence to argue for a distinction between light inversion and heavy inversion.

- 32) a. In every dog_k's cage hung its_k collar.
b. *In every dog_k's cage hung on a hook its_k most attractive and expensive collar.

As they state, “the difference in the status of the inversion and topicalization example respectively shown here follows immediately on the assumption that in [(32)a] the PP is in an A-position and the subject is in VP, while in [(32)b] the PP is topicalized and the subject is linked to [Spec,[T]P].” When the PP acts as if it has reconstructed below the subject, this is a sign that there is not an A-movement. The conclusion, of course, is that light inversion includes a distinct derivational history of the fronted locative than occurs in heavy inversion (*contra* the null expletive analysis of locative inversion, see also the discussion in section 2.2.3 above).^{8,9}

2.5 Intermediate Summary, looking forward

It should be clear from what precedes that there are still some analytical puzzles to be solved for English. But what does emerge nonetheless is that English locative inversion constructions are not a unitary phenomenon (structurally speaking), instead arising out of two very different syntactic derivations. It is worth noting standing debate over the position of the fronted PP in English locative inversion is not theoretically benign—if the proper analysis is something akin to the null-expletive approach, this alleviates the major theoretical concern of how a locative phrase A-moves to subject position over the thematic subject, which is presumably available and capable of making the same A-movement. As we will see in the next section, however, this theoretical benefit would be illusory as there are many Bantu languages where the subject status of fronted locatives can be much more transparently analyzed as being canonical (grammatical) subjects.

3 The Structural Analysis of Locative Inversion in Bantu languages

The debated structures for English locative inversion find clear parallels in the various Bantu structures that occur. What we begin to find is that no matter what the analytical conclusion for English, each of the various proposed analyses for English locative

⁸ It is worth noting that C&L include discussion of why transitive locative inversion is ruled out, as their analysis of heavy inversion in fact provides a mechanism, but for the most part they leave their comments at the speculative level. The reader is referred to their paper for the details.

⁹ An important discussion that deserves more space than can be given it here is Doggett's (2004) extended discussion of apparent counter-evidence to the C&L data, where a collection of examples of apparently unergative verbs allow binding of a variable in a postverbal subject from the fronted locative (suggesting they are light inversion constructions). There is not space to engage the issue here, but a first-pass look at the examples suggests that there may be instances where these manner of motion or visual stimulation verbs in fact take on unaccusative structure (his examples include the verbs *glitter*, *wave*, *flutter*, *prance*, *swim*). Perhaps the most likely explanation is that certain unergative verbs take on an unaccusative argument structure in certain contexts, as proposed by Mendikoetxea (2006). In a similar fashion, Coopmans (1989:741) noted that apparently unergative verbs in Dutch can select the unaccusative auxiliary just in instances that there is a locative PP included. He concludes, “[t]hese and other observations suggest that the subjects of verbs of locomotion can be internal arguments when combined with adverbial PPs, and that in this respect they are no different from subjects of the more common unaccusative verbs” (741-2).

inversion actually finds independent morphosyntactic support in various Bantu languages: that is to say, there is strong evidence from Bantu languages that locative inversion is not a unified phenomenon cross-linguistically, and need not be so within an individual language either.

3.1 Relevant Bantu morphological patterns

Before getting to locative inversion itself, it will be useful to introduce some basic morphological background on Bantu languages. Most Bantu languages divide their nominal inventory into a number of noun classes, which have traditionally been ordered numerically, numbering 1-20 (or so), with each odd number being a singular noun and the immediately ascendant even number generally being that class's plural (therefore class 2 is the plural of class 1, class 4 is the plural of class 3, etc). Other elements in the clause often occur with concord/agreement morphology: in the Swahili example in (33) the adjective shares class 2 concord with the class 2 noun *watoto*, and the subject marker on the verb agrees in class 2 with the class 2 subject *watoto wakubwa*.

- 33) wa-toto wa-kubwa wa-me-ondoka
 2-child 2-big 2S-PERF-leave
 'The large children left.'

Proto-Bantu had three noun classes (16, 17, 18) for referring to locations with different interpretations for each (see (34) for an illustration). Nouns from other classes can be marked as locatives, with the result that they behave as locations at the clause level. Lubukusu, for example, replaces the first nominal prefix with a locative prefix, yielding a locative phrase (34); Swahili, on the other hand, suffixes an invariant locative marker onto nouns to make them locatives (though the agreement relations that those locatives trigger still retains the three-way distinction between classes 16-18).¹⁰

- 34) a. **ku**-mu-lyaango 'door' [Lubukusu]
 3-3-door (Mutonyi, 2000)
 b. **a**-mu-lyaango 'near the door'
 16-3-door
 c. **khu**-mu-lyaango 'on the door'
 17-3-door
 d. **mu**-mu-lyaango 'in the door'
 18-3-door
- 35) a. nyumba 'house' [Swahili]
 9house
 b. nyumba-ni 'at the house/home'
 9house-LOC

¹⁰ While there are different proposals about whether locative phrases are DPs or PPs, and languages may in fact differ in those respects, for our purposes this distinction is peripheral (see, for example, Carstens 1997 and Bresnan and Mchombo 1995).

3.2 Bantu locative inversion, a classic case

The seminal works on Bantu locative inversion deal with Chichewa, including Bresnan and Kanerva (1989) and Bresnan (1994). Perhaps the most salient feature of locative inversion in many Bantu languages is that subject agreement on the verb is valued by the fronted locative phrase, instead of by the thematic subject, as is canonically the case in non-inversion contexts. So in (36)a subject agreement on the verb is triggered by the canonical pre-verbal logical subject, whereas in (36)b it agrees with the preverbal locative.

- 36) a. A-lendô-wo a-na-bwér-á ku-mu-dzi [Chichewa]
 2-visitor-2those 2S-REC.PST-come-IND 17-3-village (B&K 1989: 2)
 ‘Those visitors came to the village.’
- b. Ku-mu-dzi ku-na-bwér-á a-lendô-wo
 17-3-village 17S-REC.PST-come-IND 2-visitor-2those
 ‘To the village came those visitors.’

Bresnan and Kanerva (1989) and Bresnan (1994) establish a range of patterns that show that Chichewa locative inversion mirrors the properties of English light inversion. There is good evidence in Chichewa, for example, that the postverbal thematic subject is inside the VP: (37) shows that a VP adverbial that demarcates the right edge of VP must occur to the right of the thematic subject, whereas right-dislocated elements (like the locative in (a)) occur outside the adverbial.

- 37) a. [_{VP} Ku-na-bwér-á a-lëndo pa-njĩnga] ku-mu-dzi
 17S-REC.PST-come-IND 2-visitor 16-10bicycle 17-3-village
 ‘To the village came visitors on bicycles.’
- b. *Ku-mu-dzi [_{VP} ku-na-bwér-á pa-njĩnga a-lëndo]
 17-3-village 17S-REC.PST-come-IND 16-10bicycle 2-visitor
 ‘To the village came visitors on bicycles.’

Bresnan and Kanerva also demonstrate that phrasal tone patterns yield a similar conclusion, that the postverbal thematic subject occurs inside the VP.

As for the position of the preverbal locative phrase, in Chichewa there are additional reasons to believe that it is in fact a canonical subject, beyond the strong evidence of the presence of locative subject agreement. Bresnan and Kanerva show that this subject agreement is not a default locative marker: even instances of null subjects in locative inversion relating anaphorically to a locative topic cannot take a default locative agreement, instead matching in phi features. Bresnan and Kanerva (1989: 13) also show that VPs may be used attributively as nominal modifiers, with the consistent pattern being that these VPs modify nouns that correlate to their subjects – preverbal locatives in locative inversions show the same pattern.

38) Attributive VPs

- a. m-sodzi [VP w-ó-ík-á nsómbá pa-m-pando] [Chichewa]
 1-fisherman 1-ASC INF-put-IND 10fish 16-3-chair
 ‘a fisherman putting fish on a chair.’
- b. m-nkhalangó [VP m-ó-khál-á mi-kângo]
 18-9forest 18-ASC INF-live-IND 4-lion
 ‘in the forest where there live lions’

There is also evidence from raising verbs, as shown in (39), which suggests again that the fronted locative is behaving like a subject, capable of undergoing subject-to-subject raising. The raising verb agrees with the raised locative, making an expletive-raising analysis much less likely.

- 39) ... pa-chi-dzala pá-fúna ku-túkúmbuká chi-nthu ... [Chichewa]
 16-7-rubbish.pit 16S.IM.FUT-want INF-emerge 7-thing
 ‘... there seems to be something coming out of the rubbish pit ...’

It is therefore widely accepted that preverbal locatives are relatively canonical subjects in Chichewa locative inversion, with similar arguments applying to other languages with locative-agreeing locative inversion (e.g. Zulu and Lubukusu, discussed below).

Turning to the properties of postverbal subjects, we already saw above that postverbal subjects appear inside VP-adjuncts, suggesting that they remain VP (or vP) internal. And as was observed for the English cases, despite lacking canonical subject properties in Chichewa (including both word order but also agreement properties), postverbal subjects do not show canonical object properties either. Example (40) shows that thematic subjects cannot passivize in locative inversion in Chichewa, and (41) shows that they cannot be object marked (the canonical way of pronominalizing an object consist of an object marker appearing on the verb) (Bresnan and Kanerva 1989: 15).¹¹

- 40) a. Ku-mu-dzi ku-na-bwér-á a-lendô-wo.
 17-3-village 17S-REC.PST-come-IND 2-visitor-2those
 ‘To the village came those visitors.’
- b. *A-lendô-wo a-na-bwér-édw-á ndí ku-mu-dzi
 2-visitor-2those 2S-REC.PST-come-PASS-IND by 17-3-village
 Lit: The visitors were come by to the village.
- 41) *Ku-mu-dzi ku-na-wá-bwér-a a-lendô-wo.
 17-3-village 17S-REC.PST-2O-come-IND 2-visitor-2those
 Lit: To the village came them, those visitors.’

Furthermore, as is the case for English, Chichewa thematic subjects cannot be extracted in locative inversion (B&K: 15).

¹¹To this author’s knowledge, these ‘non-object’ properties of postverbal subjects in Bantu locative inversion holds for all documented cases, though many authors simply assume this or don’t address it, so explicit data is not offered in many studies.

- 42) a. Pa-m-chenga p-a-im-a nkhandwe.
 16-3-sand 16S-PERF-stand-IND 9fox
 ‘On the sand is standing the fox.’
- b. *N’chi-yâni chi-méné pa-m-chenga p-á-ím-a ____ ?
 COP7-Q 7-REL 16-3-sand 16S.REL-PERF-stand-IND
 Lit: What is it that on the sand is standing?

As we will see below, there is more to be said about verbs of different argument structure, though Bresnan and Kanerva’s (1989) and Bresnan’s (1994) conclusion is that Chichewa locative inversion is restricted to unaccusative verbs. In many ways Chichewa locative inversion has been taken to be the quintessential example of Bantu locative inversion, and many similar properties in fact hold in other languages. This being said, the situation within the Bantu language family is the same for locative inversion as it is for most constructions—there is a large amount of morphosyntactic variation in parallel contexts as you look across languages.

3.3 Two Locative Inversion Strategies in Lubukusu

A good example from within a single language of the diverse syntactic structures of locative inversion comes from Lubukusu: all of the data and analysis here are drawn from (Diercks, 2010, 2011).¹² Lubukusu has two distinct locative inversion strategies, distinguished most clearly by their different patterns of subject agreement: both strategies utilize a postverbal locative clitic as well. Diercks (2011) referred to the first strategy (b) as disjoint agreement, because the verb agrees with both the fronted locative phrase (via the postverbal clitic) and subject-agrees with the postverbal subject. The second strategy (c) is referred to as *repeated agreement* because there are two agreement forms on the verb that agree with the fronted locative phrase.

- 43) a. Kú-mú-saala kw-á-kwá **mu-mu-siiru.** [Lubukusu]
 3-3-tree 3S-PST-fall 18-3-forest **Declarative**
 ‘A tree fell in the forest.’
- b. **Mú-mú-siirú** kw-á-kwá-mó kú-mú-saala. **Disjoint Agreement LI**
 18-3-forest 3S-PST-fall-18L 3-3-tree
 ‘In the forest fell a tree.’
- c. **Mú-mú-siirú** mw-á-kwá-mó kú-mú-saala. **Repeated Agreement LI**
 18-3-forest 18S-PST-fall-18L 3-3-tree
 ‘In the forest fell a tree.’

If subject agreement alone were to be relied on as a subjecthood diagnostic (as it often is for various Bantu languages: e.g. Bresnan and Kanerva 1989) this might suggest that in repeated agreement locative inversion (RALI) the locative is in subject position, whereas it is not so in disjoint agreement locative inversion (DALI). In fact, a variety of diagnostics support this result. For example, there are subject/non-subject extraction

¹² Dalgish (1976) reports a similar sort of locative inversion construction in Olutsootso (Tsootso), a related Bantu language from the Luyia subgroup, discussed also by den Dikken (2006).

asymmetries in Lubukusu where non-subjects require an independent complementizer under extraction, whereas subjects require an extra agreement morpheme on the verb itself. As the relative clause examples below show, in DALI the locative behaves like a non-subject (requiring an independent complementizer), whereas the locative in RALI behaves like a subject, triggering an additional agreement morpheme on the verb.

44) a. **mú-mú-siiru ní-mwó kw-a-kwa-mo kú-mú-saala** [Lubukusu]
 18-3-forest COMP-18 3S-PST-fall-18L 3-3-tree **Disjoint Agreement**
 ‘the forest in which fell a tree’

b. *mu-mu-siiru mu-kw-a-kwa-(mo) ku-mu-saala
 18-3-forest 3C -3S-PST-fall-18L 3-3-tree

45) **mú-mú-siiru mú-mw-á-kwá-mó kú-mú-saala** [Lubukusu]
 18-3-forest 18C-18S-pst-fall-18L 3-3-tree **Repeated Agreement**
 ‘the forest in which fell a tree’

Additional similar evidence is given in Diercks (2010,2011), including raising constructions and wh-movement of D-linked locative phrases (e.g. *mu-mu-siiru siina* ‘which forest’), likewise supporting the conclusion that fronted locative in RALI has subject-properties, whereas the fronted locative in DALI has non-subject properties. On the assumption that the subject-properties in extraction contexts arise from movement from TP to CP (see Diercks 2009, 2010, also Henderson 2013), this supports the conclusion that locatives in RALI are in Spec, TP, but locatives in DALI are somewhere left of that, presumably left-dislocated locative topics.

46) Repeated Agreement LI
 [TP LOC T-V [VP SUBJ \forall LOC]]

47) Disjoint Agreement LI
 [CP LOC C-V [TP SUBJ ... [VP ~~SUBJ~~ \forall LOC]]]

You will note that this analysis also necessitates different analyses of the postverbal thematic subject in both constructions: in RALI the subject remains VP-internal, whereas in DALI constructions the subject has raised to canonical subject position, triggering subject agreement in that position (Diercks 2010, 2011 provides evidence based on clefts and adverb positions supporting these different analyses). The reader will note the strong similarities here between the two strategies noted here and Culicover and Levine’s (2001) Light Inversion and Heavy Inversion discussed above. And just as in those cases, the thematic properties of the verbs plays a heavy role as well.

Presumably, movement of the locative to subject position (and taking on subject properties) is an A-movement and should be constrained by normal sorts of A-movement locality constraints, whereas this would not necessarily be expected to be the case for movement to the left periphery, as with the locative phrase in DALI constructions. This suggests, however, that a verb with an unaccusative subject ought to behave differently

than a verb with an unergative subject: whereas the former presumably in a local relation with the locative phrase that inverts, the unergative subject is canonically located structurally higher than both of them:

- 48) a. [_{VP} AGENT [_{VP} V LOC] Unergative structure
 b. [_{VP} [_{VP} V THEME LOC] Unaccusative structure

This predicts that we should see some kind of intervention effect based on the thematic structure of the verb: unergative subjects ought to intervene in an attempted A-movement to Spec, TP. This is in fact seen in Lubukusu, where verbs with unaccusative (i.e. THEME) subjects regularly allow either sort of locative inversion construction, as illustrated with the verb *-ola* ‘arrive’ in (49):

- 49) a. Mú-nju b-ólá-mo bá-bá-ana. ✓ **Disjoint Agreement**
 18-home 2S-PST.arrive-18L 2-2-child
 ‘Inside/at home arrived the children.’
 b. mú-nju mw-ólá-mo bá-bá-ana. ✓ **Repeated Agreement**
 18-home 18S-PST.arrive-18L 2-2-child
 ‘Inside/at home arrived the children.’

In contrast, verbs with agentive (i.e. unergative) subjects in Lubukusu regularly disallow RALI constructions, being restricted to DALI constructions:

- 50) a. Mú-kanisa b-éngila-mo bá-bá-andu. ✓ **Disjoint Agreement**
 18-church 2-PST.enter-18L 2-2-person
 ‘In the church entered people.’
 b. *mu-kanisa mw-engila-mo ba-ba-andu * **Repeated Agreement**
 18-church 18S-PST.enter-18L 2-2-person

This follows on the conclusions of Culicover and Levine (2001) for English: locative inversion constructions that involve the canonical subject position are restricted to unaccusative predicates mainly; those that do not involve subject position can be formed with a larger number of predicates. Diercks’ (2010, 2011) conclusion followed theirs, that RALI is formed by A-movement of a locative to subject position while leaving the thematic subject in its base position, but the fronted locative in DALI is topicalized, A’-moved to the left periphery, with canonical subject position being available to the thematic subject in these instances.¹³

3.4 Locative Inversion with verbs of different argument structure

As we have seen above, the two different constructions in Lubukusu are possible with different sorts of verbs: RALI constructions occur only with unaccusatives, whereas DALI constructions can occur with unaccusatives and unergatives; this being said,

¹³ See Collins (2004) for binding evidence from Swahili that unagreed-with thematic subjects in locative inversion remain in their base positions.

neither form of locative inversion in Lubukusu is possible with transitive verbs. As a series of work has shown (Bresnan and Kanerva 1989, Harford 1990, Demuth and Mmusi 1997, Marten 2006, van der Wal and Marten 2014), there is a wide range of cross-linguistic variation in the argument-structural constraints on locative inversion, but it occurs in an implicational hierarchy, with more marked forms of locative inversion implying the presence of more unmarked forms.

First, Harford (1990:137) shows that the Karanga variety of Shona allows locative inversion with unaccusatives but not with unergatives and transitives, confirming the same patterns that Bresnan and Kanerva (1989:16) demonstrate for Chichewa, given below:

- 51) a. M-mi-têngo mw-a-khal-a a-nyăni. [Chichewa]
 18-4-tree 18S-PERF-sit-IND 2-baboon
 ‘In the trees are sitting the baboons.’
 b. *M-mi-têngo mu-ku-ím-b-á a-nyăni.
 18-4-tree 18S-PERF-sing-IND 2-baboon
 Lit: ‘In the trees are singing the baboons.’
 c. *Kw-á á-tsíkana ku-na-túmíz-a a-lenje ma-zira
 17-ASS 2-girl 17S-REC.PST-send-IND 2-hunter 6-egg
 Lit: ‘To the girls sent the hunters the eggs.’

As Demuth and Mmusi (1997: ex. 4) show, however, that Setswana allows locative inversion with unergative verbs and unaccusative verbs alike, though still disallowing locative inversion with transitive verbs.¹⁴

- 52) Mo-le-fatshe-ng go-fula di-kgoma [Setswana]
 18-5-country-LOC 17S-graze 10-cattle
 ‘In the country are grazing the cattle.’

Even still, the restriction against locative inversion with transitive verbs is not absolute: both Otjiherero and Digo allow locative inversion with transitives in addition to verbs with simpler argument structures:

- 53) pò-ngàndá pé-kávàrùrìrà òv-à-nàtjè òv-à-èndá [Otjiherero]
 16-9house 16S.HAB-visit 2-children 2-guests (Marten 2006: 115)
 ‘At home visit (the) children (the) guests.’
- 54) a. Muho-ni pha-na-heka atu madzi.¹⁵ [Digo]
 river-LOC 16S-CONT-draw 2people 6water (Diercks 2012: 15)
 ‘People are drawing water at/from the river.’ (see Nicolle 2013)

¹⁴ Setswana locative inversion occurs with an invariant subject marker, but Demuth and Mmusi demonstrate that the inverted locative has subject properties, suggesting that the subject agreement morphology is simply underspecified, as opposed to analyzing these as null expletive subject constructions.

¹⁵ Locative morphology on Digo nouns (as in closely related Swahili) is featurally deficient (realized by an invariant location marker), though the distinctions do appear on elements that agree with the locative.

- b. Mo chumba-ni mu-na-andika mutu baruwa.
 18DEM room-LOC 18S-CONT-write 1person 9letter
 ‘Someone is writing a letter in the room.’

It is worth noting that many languages much more freely allow locative inversion and presentational constructions with passive verbs of any argument structure (see van der Wal and Marten 2014). Van der Wal and Marten (2014) summarize the cross-linguistic situation as described in the chart below, modified here to include the Lubukusu RALI/DALI patterns discussed above.¹⁶

55) Availability of locative inversion with verbs of different argument structures

	ciLuba	Chichewa Chishona Kichaga Lub. RALI	Sesotho Setswana Lub. DALI	Otjiherero Digo Ndebele
Unaccusative active	*	OK	OK	OK
Unergative active	*	*	OK	OK
Transitive active	*	*	*	OK

The interesting pattern that results is that this occurs in an implicational hierarchy, as pointed out by Marten (2006): if a language allows locative inversion with unergatives, it will also allow it with unaccusatives, and if it allows it with transitives, it will allow it with both unaccusatives and unergatives. While the patterns in languages like Setswana, Digo, and Herero are in need of more detailed structural diagnosis, the patterns from the Lubukusu and English constructions are telling enough to suggest a direction of analysis. The prevalence of locative inversion with unaccusatives suggests that the lack of an external argument in unaccusatives in some way enables (presumably a locality effect of some sort, in that raising a locative over an internal argument creates fewer potential pitfalls than raising over an external argument). And while both Lubukusu and English readily allow locative inversion with unergatives, there is strong evidence (as discussed above) to suggest that these constructions are achieved by different means, namely, by A'-moving the locative to a left peripheral position, and positioning the unergative subject postverbally by some other means (verb raising and right-dislocation, respectively). The relative rarity of locative inversion with transitives, therefore, suggests even more conditions that must converge in a language to allow locative inversion in the presence of transitive objects, though it is as of yet unclear what those conditions are. The situation is not transparently so, however, given that in both Digo and Herero the fronted

¹⁶ Note that this chart collapses some distinctions, including the how the various languages deal with passivization of verbs of different argument structures, as well as copular constructions (which allow locative inversion for all the languages that van der Wal and Marten document). See Van der Wal and Marten (2014) for full details and discussion.

locative triggers subject agreement on the verb (unlike, for example, in Lubukusu DALI). It is clear, then, that more research is needed in the transitive-inversion languages to test whether the locatives have in fact raised to canonical subject position, and where precisely that subject position is.

The place where we find ourselves, then, is that locative inversion cannot be argued to be restricted to unaccusative verbs, or even to intransitive verbs. Nonetheless, locative inversion is still in some sense linked with unaccusativity (as it most readily occurs with verbs of unaccusative argument structure) and whatever mechanisms allow locative inversion more liberally also allow it with verbs of more basic argument structure.

3.5 Additional Bantu locative inversion patterns

The agreement patterns seen above are not the only attested patterns cross-linguistically. Buell (2007) distinguishes between formal locative inversion and semantic locative inversion: what he labels as ‘formal’ is exemplified by the Chichewa example above, where the locative phrase and concomitant agreement is in a locative noun class (class 17 in the example above). ‘Semantic’ locative inversion, on the other hand, is where a noun phrase denoting a location undergoes locative inversion, but without any locative noun class morphology.

- 56) a. Abantu abadala ba-hlala ku-lezi zindlu. [Zulu]
 2people 2old 2s-stay at-10these 10houses Buell (2007: 107)
 ‘Old people live in these houses.’
 b. Lezi zindlu zi-hlala abantu abadala.
 10these 10houses 10-stay 2people 2old
 ‘Old people live in these houses.’

While are some studies on Zulu locative inversion (Buell 2007, Zeller 2013), it’s not yet clear if there are systematic structural differences between semantic locative inversion and formal locative version. Zulu carries an additional pattern (also attested in some other languages) where the verb bears a default locative agreement in the context of locative inversion (Buell 2007: 108), very plausibly analyzed as a null expletive construction:¹⁷

- 57) Ku-lezi zindlu ku-hlala (khona) abantu abadala. [Zulu]
 at-10these 10houses 17-stay (there) 2people 2old
 ‘Old people live in these houses.’

In short, we are seeing from the range of morphosyntactic variation in locative inversion across the Bantu family that most of the proposed analyses for English (locative-as-subject, locative-as-topic, null expletive, light vs. heavy inversion) are in fact attested cross-linguistically. This of course doesn’t solve the English analytical questions, but does clarify what our syntactic theories are (and are not) responsible to explain.

¹⁷ There still remains a range of work on Bantu locative inversion that is not possible to cover in the available space. The reader is referred to Zerbian (2006), Van Otterloo (2011), Morimoto (2000), Nicolle (2013), Creissels (2011) as additional relevant works on the topic.

4 Theoretical Implications of Studies of Locative Inversion

To this point this paper has discussed the structural analysis of locative inversion; the sections that follow re-orient towards the theoretical implications of this research. The intention is not to completely explain the relevant theoretical issues, instead assuming some familiarity with them and pointing to the kinds of theoretical debate that center around locative inversion. As can be seen here, disparate veins of theoretical conclusions have come out of research on locative inversion, and their discussion is separated out into subsections here.

4.1 Approaches to Subverting Locality

It is an important theoretical question as to how canonical structural hierarchy may be subverted in locative inversion: whereas canonical subjects appear structurally higher than canonical location phrases, they appear structurally lower in inversion constructions, which is of course part of the entire puzzle of locative inversion. The architecture of the Minimalist Program (Chomsky 1995, 2000, 2001) is carefully built on notions of locality for movement and Agree determined by closest c-command, which locative inversion constructions appear to violate. A null-expletive account of locative inversion avoids this theoretical issue by positing that the fronted locative has not superseded the thematic subject by raising to subject position, but as we've seen, there are strong cross-linguistic arguments that A-movement of the locative to subject position is syntactically possible for some constructions in some languages (e.g. Lubukusu RALI and Chichewa LI), even if it is not attested in all instances of locative inversion.

One frequently-assumed stance is that movement of the preverbal locative to subject position is made possible because the locative phrase and the postverbal thematic subject are sufficiently close to each other within the VP so as to be equidistant from the structurally higher probe that they agree with/raise to. This proposal can be traced back at least to Ura (1996) and Collins (1997) (relying on notions of equidistance from Chomsky 1995), and is assumed by a range of researchers looking at locative inversion and similar inversion constructions (cf. Bailyn 2004, Rezac 2006, den Dikken, 2006; Diercks 2011; Rizzi and Shlonsky 2006).

Locative inversion in Lubukusu gives some interesting morphosyntactic evidence that an equidistance analysis may be an empirically inadequate solution, however. As documented in depth in Carstens and Diercks (2013) the Lubukusu manner wh-phrase – *rieena* ‘how’ agrees with the subject of its clause in person and noun class (gender+number):

58) **Ki**-mi-saala **ki**-a-kw-ile **ki**-rie(na)? [Lubukusu]
4-4-tree 4S-PST-fall-PST 4-how
‘How did the trees fall?’

Carstens and Diercks analyze this as the result of an Agree relation between the manner wh-adjunct (adjoined to vP) and the subject in its base position in Spec, vP. Interesting for our concerns here is how this agreement works in locative inversion: as can be seen in the example below, for one set of speakers, the only possible agreement pattern in a manner question of a repeated agreement construction (RALI, where the verb agrees with the fronted locative) is where the manner adjunct agrees with the postverbal thematic subject.

- 59) **Mu-mu-siiru mw-a-kwa-mo ku-mu-saala ku-rie / *mu-rie? RALI**
 18-3-forest 18SA-PST-fall-18L 3-3-tree 3-how/ *18-how
 ‘How did a tree fall in the forest?’ (Lit: In the forest fell a tree how?)

In this context, then, the locative has raised to canonical subject position and triggered subject agreement, whereas agreeing ‘how’ agrees with the postverbal thematic subject (and for these speakers, crucially, cannot agree with the fronted locative phrase). This pattern of agreement is problematic for an approach where the theoretical mechanism enabling the inversion process is equidistance, as it’s not clear why the locative phrase and the thematic subject should be equidistant inside the VP for the purposes of agreement with (and movement to) T, whereas they are *not* equidistant for the purposes of agreement with the manner *wh*-phrase. Carstens and Diercks therefore conclude that equidistance is an empirically inadequate account of locality subversion in the Lubukusu cases.

To account for this, Carstens and Diercks relied on the proposal in Diercks (2011) that the postverbal locative clitic in Lubukusu locative inversion constructions arises on an AgrL head below T (but above *v*P) that is only capable of agreeing with locative phrases. Their claim is that this head essentially undergoes relativized probing (cf. Preminger 2011), only capable of being valued by locative features. It is agreement with this head that first raises a locative phrase over the thematic subject, such that while an inversion has occurred, no strict locality violation has been incurred, as AgrL could never have been valued by the thematic subject. The result is that inversion is made possible specifically for locative phrases due to the specific locative-oriented functional structure.

Den Dikken (2006: 105) draws a different conclusion from the presence of a similar morpheme in Olutsootso (a related Bantu language from the Luyia subgroup), which he analyzes as an instance of the head of the locative phrase (assumed to be PP) that has incorporated into the verb. Den Dikken’s analysis is actually built on the core notion of equidistance, with the added feature that raising of the head of the PP (or, more generally, the head of any predicate) to functional projections above the thematic subject extend the minimal domain of the subject/locative so as to render the subject and the locative/predicate equidistant from a higher probe. Therefore equidistance is still the core explanation for inversion, but it is made possible by raising of the head of the locative/predicate.¹⁸

There is another line of argumentation that is worth pointing to here, that of Zeller (2013), who proposes that locative inversion construction do not consist of syntactic inversion at all. Instead, in locative inversion constructions locative phrases are first merged late in the derivation, structurally higher than the thematic subject of the verb. On Zeller’s account, locatives are merged in this position as part of a non-canonical predication relationship between the verb and its arguments and the location phrase (which in the Zulu cases that Zeller analyzes is a non-locative and a non-PP, rather, is simply a DP interpreted as a location, Buell’s *semantic locative inversion* introduced in section 3.5 above).

¹⁸ Den Dikken’s (2006) analysis does not, however, address the broader patterns of the locative clitic in Lubukusu or Olutsootso that do *not* relate to inversion or any clear instance of P-incorporation, as this morpheme is used in many more contexts than simply inversion (see Diercks 2010, 2011 for discussion of these patterns).

As is evident here, there is a clear link between analyses of locative inversion and theoretical architecture with respect to structural/hierarchical locality. While hierarchical locality is considered to only apply to elements that are sufficiently structurally distinct from each other with theories of equidistance, more recent approaches suggest that any structural asymmetry is in fact significant for the purposes of locality, and that there are distinct mechanisms in the grammar that can facilitate inversion. On the other hand, if Zeller's approach is in fact broadly applicable to all sorts of locative inversion, it might eliminate the need to posit such functional mechanisms in the first place. But it is not clear yet if this approach is in fact generalizable to all forms of locative inversion.

4.2 Impact on Theories of Case and Agreement

Locative inversion constructions in Bantu languages have played a significant role in theoretical proposals about the nature of Agree, an operation that continues to take on a larger and larger role in syntactic theorizing. In particular, the Bantu locative inversion constructions where canonical subject agreement is controlled by the preverbal locative are interesting challenges for theories of agreement where structural licensing of subjects is linked with Agree with T. Collins (2004) and Carstens (2005) both argue based on locative inversion constructions (largely in Kilega and Kiswahili) as well as other constructions that Agree in Bantu languages must be specified as linked with movement (OCC/EPP features) rather than with structural licensing (and, as argued explicitly by Carstens 2005, not dependent on structural Case, *contra* Chomsky 2000,2001).

- 60) Agreement Parameter Collins (2004: 116):
Let Agree(X,YP), where X contains the probe [uPhi], and YP contains the goal, then X has an OCC feature that is satisfied by YP.
- 61) Feature-linking Parameter Carstens (2005: 266):
u ϕ has as a subfeature:
a. EPP: Bantu
b. (Case): Indo-European

The crucial innovation here is that while Agree *may* be linked with structural licensing (i.e. Case), it need not be, instead being linked much more directly and uniquely with valuation of phi features and interacting with movement.

Baker (2008) argues for a similar sort of conclusion, though with a different implementation: for him, heads may in principle probe either upward or downward in the syntax, and languages may be specified as probing only upward. Likewise, languages are either specified (or not) as to whether Agree is Case-dependent.

- 62) The Case-Dependency of Agreement Parameter (Baker 2008: 155):
F agrees with DP/NP only if F values the case feature of DP/NP or vice versa.
- 63) The Direction of Agreement Parameter (Baker 2008: 155):¹⁹
F agrees with DP/NP only if DP/NP asymmetrically c-commands F.

¹⁹ Baker adds a third value to the Direction of Agreement Parameter, but it is not relevant for our present purposes, so only his preliminary version is presented here.

All of these proposals allow for the agreement effects visible in locative inversion in many Bantu languages, though with their different implementations generating slightly different predictions. As Agree has become a mechanism for implementing many sorts of syntactic relationships in the syntax, the directionality of probing of Agree has become an even larger source of theoretical debate, with locative inversion constructions being an important empirical data point in that debate.

Likewise (and not unrelated to the discussions of agreement) locative inversion constructions have played an important role in discussions of Case-marking, especially from the Bantu languages where the subject agreement on the verb does not agree with the thematic subject, suggesting that structural licensing of those thematic subjects is divorced from agreement with T (i.e. subject agreement). Given that Agree is the main mechanism that is assumed to license Case on arguments (Chomsky 2001), this raises important questions about how postverbal thematic subjects are Case-licensed in constructions like Chichewa LI and Lubukusu RALI. Various proposals have been advanced in the face of these patterns and others like it from Bantu languages, with some proposing that Bantu languages simply don't have abstract Case ([Harford] Perez 1985, Diercks 2012), and others proposing variations in standard Case Theory to account for them (Halpert 2012a, 2012b). Case Theory is a continued area of investigation in Bantu languages because of constructions like these (and others), with the end results surely helping us understand the role of noun phrase licensing within the human language faculty more generally.

4.3 Locative inversion and theories of the general architecture of syntax

The focus of this chapter has been mainly on the structure of locative inversion and the impact of that structure on theories of the syntactic mechanisms that enable locative inversion to occur. It would be somewhat irresponsible, however, to conclude the chapter without some discussion of the alternative theoretical approaches that have been defended as a result of research on locative inversion. This discussion will remain quite brief and won't do justice to any of the proposals discussed here, with the main purpose of pointing the reader to the relevant existing ideas, but to leave pursuit of the details to the reader themselves.

Locative inversion constructions have often been used to make meta-theoretical arguments, weighing frameworks against each other. Postal (2004) takes as very significant the fact despite holding to an analysis that English locative inversion is derived via a null expletive in subject position, inverted locatives in English still display subject-like properties in extraction contexts. He claims that this is best modeled in *Metagraph Grammar*, where subject-like properties are derived from multiple sources. Bresnan (1994) likewise concludes that locative inversion is problematic for a standard Chomskyan approach to Universal Grammar. Bresnan concludes that the surface mismatches between grammatical function/role, syntactic positions, and syntactic categories at play, especially when crosslinguistic variation is taken into consideration, concluding that these facts are overly problematic for a theory based on the idea that all languages are built on identical underlying structures, and the idea that all levels of grammar are represented with identical sorts of syntactic structures that are connected by transformations like movement. She instead argues that the mismatches that make locative inversion analytically interesting are precisely those which are better explained

by a model with multiple, parallel information structures as is the case in Lexical Functional Grammar—constituent structure, functional structure (for grammatical roles), and argument (thematic) structure, as different properties of components of the locative inversion construction can be encoded in different levels of representation.

In an entirely different line of conclusions, Bruening (2010) demonstrates that there is an extensive correlation between contexts where do-support occurs in English and contexts where locative inversion cannot occur. Bruening concludes that a language-specific rule for English that specifies a special purpose sort of auxiliary (necessarily present for do-support, and necessarily absent for locative inversion). Bruening's overarching conclusion that language-specific rules are a necessary component of syntactic analysis, and that our view of UG has to allow for rather robust language-specific rules. This of course is not such a large departure from Minimalist theorizing (at least, not so much as Postal's and Bresnan's proposals), but still represents a shift in mindset at least from what stereotypical assumptions are among Chomskyan syntacticians.

5 Conclusion

This chapter has overviewed the major research results regarding the syntax of locative inversion, giving a sense of both the empirical patterns that have been uncovered and the theoretical conclusions, including both the structural analysis of locative inversion itself and more general kinds of architectural issues that arise in the discussion of locative inversion. It has become clear that locative inversion is not a unitary syntactic phenomena, and that various grammatical mechanisms are employed between and within languages to generate the stereotypical LOC-V-SUBJ word order (for languages under discussion). Whereas the locative is clearly a subject in locative inversion in many Bantu languages such as Chichewa or Lubukusu RALI, there are additional constructions where this is clearly not the case, for example in Lubukusu DALI, Zulu expletive locative inversion, and in English Heavy Inversion.

These constructions have generated much useful theoretical debate about the nature of syntactic locality (and of apparent violations of syntactic locality), and the constructions in Bantu languages in particular have played a major role in understanding crosslinguistic variation in Case and Agreement patterns, research that is at present very much still underway. Likewise, the apparently consistent information structure patterns that arise in locative inversion crosslinguistically (both Bantu and English) make locative inversion an interesting test-case for investigating the syntax-pragmatics interface.

The cross-linguistic variation of availability of locative inversion constructions with verbs of different argument structures among the Bantu languages both confirms fundamental observations that arise out of the analysis of English (the primacy of locative inversion with unaccusatives) while simultaneously broadening the range of empirical patterns, showing robust inversion with unergatives and transitives in some languages. But while locative inversion is in fact possible with a range of argument structures, there is in fact a primacy of "true" locative inversion (i.e. A-movement of the locative to subject position) with unaccusative verbs, whereas unergative verbs appear to require distinct mechanisms to create the requisite word order (though more detailed syntactic work is necessary on languages like Setsoto, Herero, and Digo before too many conclusions can be drawn regarding the nature of the inversion in those

transitive/unergative constructions). Overall, then, locative inversion constructions continue to be a rich area of research, informing ongoing theoretical work regarding locality, Case, and agreement in particular, which are all central architectural concerns in modern syntactic frameworks.

SEE ALSO

Complementizer-Trace Effects; Existential Sentences and Expletive *There*; Case; Stylistic Fronting; Weak Crossover;

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