The preverbal position(s) in Bantu inversion constructions Theoretical and comparative considerations*

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Inversion constructions in Bantu have been discussed from a variety of perspectives over the last decades. Well-known construction types include locative inversion and subject-object reversal, while more recently semantic locative inversion and instrument inversion have been described. Theoretical studies of Bantu inversion constructions have focused on different aspects of the construction, including the licensing and grammatical function, information structure properties and the formal characteristics of pre- and postverbal NPs. With respect to the status of preverbal NPs in inversion constructions, different analyses have probed the status of the NP as subject or topic, or, more recently, as the subject of a Predication relation. The present paper summarises and compares different analyses of the preverbal domain in inversion constructions and brings out empirical and conceptual similarities and differences. In addition, different analyses are related to comparative studies of Bantu inversion constructions, so as to probe how attested variation across Bantu relates to findings of different formal accounts. The paper aims to summarise current research on the preverbal domain in inversion constructions and to indicate directions for future work.

1 Introduction

Bantu inversion constructions have been subject to extensive discussion and analysis and remain a central topic in Bantu linguistics. Examples of inversion

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constructions include locative inversion (1), subject-object reversal (also called patient inversion) (2), semantic locative inversion (3), instrument inversion (4) and complement inversion (5):

(1) M-nándà mù-wéléngél-à Kàtíshà
18-9.house SM18-read-FV 1.Katisha
'In the house Katisha is reading.' (Nsenga, Marten et al. 2007: 227)

(2) Ama-tá y-á-nyôye abâna.
6-milk SM6-PST-drink.PRF 2.children
'Children drank milk.' (Kirundi, Ndayiragije 1999: 400)

(3) I-khishi li-phek-el-a u-mama.
5-kitchen SM5-cook-APPL-FV 1a-mother
'Mother is cooking in the kitchen' (Zulu, Zeller 2013: 1111)

(4) Isi-punu si-dl-a u-John.
7-spoon SM7-eat-FV 1a-John
'John is using the spoon to eat.' (Zulu, Zeller 2012: 134)

(5) a. Gu-kina gu-kuunda aba-ana.
15-play SM15-like 2-children
'It is the children who like to play.' (Kinyarwanda, Morimoto 2000: 183)

b. [Ko aba-ana b-a-gii-ye] by-iibagiw-e umu-gore
COMP 2-children SM2-PST-leave-PRF SM8-forget-PRF 1-woman
'It is the woman (not the man) who forgot that children have left.' (Kinyarwanda, Kimenyi 1980: 193)

While differing in detail, Bantu inversion constructions share a number of core aspects and can characterised by the qualities in (6). I follow Marten and van der Wal's (2014) work on subject inversion here and take as the core quality the inversion of the predicate and the logical subject, rather than the promotion of a non logical-subject to preverbal position. This is mainly because it allows the inclusion of so-called presentational constructions, which do not have a preverbal NP (although I won't have much to say on these presentational constructions in what follows):

(6) Bantu inversion constructions (Marten and van der Wal 2014)

1) The logical subject follows the verb and cannot be omitted
2) The postverbal subject is non-topical (but often underspecified for narrow subject focus or use as a thetic sentence)
3) Object marking is not possible
4) Close 'bonding' between verb and postverbal NP is often indicated in phonological phrasing, absence of augment, conjoint verb form, or complement tone pattern

In addition, as noted above, a non logical-subject NP, such as a locative, may precede the verb, often functioning as topic, and verbal agreement will be with this preverbal NP. Inversion can also be found in relative clauses, but I will concentrate on main clauses here. Although not strictly speaking an inversion construction as defined in (6), passives share a number of properties with inversion constructions and can be regarded as a related construction type.

Bantu inversion constructions are typologically interesting, as Bantu languages display a family of related but different inversion constructions, with a high degree of variation between different Bantu languages, and they also pose a challenge to theoretical analysis as they (appear to) present a mismatch between the syntactic coding and semantic roles of an event's participants. In addition, inversion constructions are related to a specific pragmatic/information structure interpretation, as well as being subject to particular semantic/thematic constraints, and thus provide valuable evidence for the study of structure-meaning interaction.

The present paper presents a summary of recent work on Bantu inversion constructions, bringing together findings from formal and comparative analysis, highlights central issues in the analysis of inversion constructions, and shows some directions for future research.

The paper is organised as follows. Section 2 presents a survey of formal analyses and the specific insights they have produced about different aspects of inversion constructions. Section 3 discusses comparative analyses and relates inversion constructions to their wider cross-linguistic distribution. Finally, Section 4 presents a summary and discussion of the findings.

2 Formal analyses

The most well-analysed Bantu inversion constructions are probably locative inversion and subject-object reversal. The two constructions share a number of similarities – which are also found to varying degrees in other inversion

constructions – but have also been argued to differ in some respects, in part to explain the differences between the two constructions in terms of cross-Bantu distribution. More recently semantic locative inversion – where the preverbal locative NP is not marked morphologically as locative – and instrument inversion have attracted theoretical attention. In this section I discuss a number of different analyses of Bantu inversion constructions to show the conceptual space in which theoretical discussion is taking place, without, however, providing full descriptions or detailed critiques of specific analyses.[1]

2.1 Chichewa locative inversion: Bresnan and Kanerva (1989)

Although found in a number of languages across the world, locative inversion is most widely attested, and most widely studied, in Bantu languages (cf. Salzmann 2011). An early and influential study is Bresnan and Kanerva's (B&K, 1989) LFG analysis of locative inversion in Chichewa, illustrated in (7):

(7) M-nkhalăngo mw-a-khal-á mí-kângo
18-9.forest SM18-PERF-remain-FV 4-lion
'In the forest have remained lions' (Chichewa, B&K 1989: 9)

B&K establish a number of key aspects of locative – and related – inversion constructions which in many ways have framed subsequent discussion:

(8) Central aspects of Chichewa locative inversion (B&K 1989)

1) Information structure: The preverbal, locative NP is a (discourse) topic; the postverbal NP (the logical subject) is (presentationally) focussed
2) Grammatical function: The preverbal, locative NP is the grammatical subject, and the postverbal NP the grammatical object
3) Verb morphology: The subject marker is an incorporated pronoun, ambiguous between grammatical and anaphoric agreement; no object marker is possible as the postverbal NP is focus, not topic (and object markers are unambiguously topical)
4) Thematic restriction: Locative inversion is restricted to unaccusative predicates, where the highest thematic role is <theme>
5) Prosody: The verb and the postverbal NP are phrased together and constitute a phonological unit

[1] Detailed discussion of (then) previous work on inversion constructions can be found for example in Morimoto (2000) or Iorio (2014).

In B&K's formal LFG analysis of Chichewa locative inversion a special subject default rule applies by which the locative role is optionally classified as unrestricted when the highest thematic role of the predicate is <theme> (9). The rule applies if there is a focus feature associated with the proposition (10):

(9) Special subject default rule for locative subjects (B&K 1989: 29)

<th … loc>
|
[–r]

(10) Focus as context for LI (B&K 1989: 37)

[f] *loc* / *expl*
|
[–r]

This special subject default allows the locative to be assigned the feature [–r] (that is, unrestricted in terms of grammatical function), and since locatives are also [–o] (non-objects), and themes are intrinsically [–r], the locative comes out as subject and the theme as object (well-formedness conditions – w.f. – require that there can only be one subject and one object):

(11) Chichewa locative inversion with special locative subject default rule (B&K 1989: 29)

	khăla	< *th*	*loc* > ‘remain’
		|	|
Intrinsic:		[–r]	[–o]
Defaults:			[–r]
		O/S	S
w.f.:		O	S

Through the central place accorded to the thematic roles of the predicate, B&K's analysis closely relates locative inversion and predicate type. However, subsequent work has shown that there is considerable cross-Bantu variation in this respect, with languages like Ciluba restricting locative inversion to the copula only, Shona also allowing unergatives, and Otjiherero and Ndebele

allowing locative inversion with an even wider range of predicate types, including transitives (cf. Marten and van der Wal 2014). The availability of different predicate types – and the cross-linguistic variation – is unexpected in B&K's analysis, and it is not fully clear how their analysis can be extended while maintaining their stance on grammatical functions.[2] The analysis of subject and object in inversion constructions has been criticised independently in subsequent work, and from different theoretical perspectives. Another question is whether the observation that locative inversion involves presentational focus (as opposed to, for example, subject-object reversal, which often shows contrastive focus on the postverbal NP) is related to the restriction to specific predicate types, or is quality of the construction.

In sum, B&K have provided key hypotheses about the analysis of Bantu locative inversion, and although there has been considerable subsequent discussion about details in the recent literature, the fundamental dimensions of information structure, morphosyntax, semantics and prosody identified by B&K remain at the heart of current analyses.

2.2 Kinyarwanda/Kirundi subject-object reversal (Morimoto 2000, 2006)

Like locative inversion, subject-object reversal is characterised by an atypical or marked syntactic coding of semantic roles, where the logical object appears in preverbal position, and the logical subject follows the verb:

(12) Igi-tabo ki-som-a umu-huûngu
7-book SM7-read-FV 1-boy
'The boy is reading the book' (lit. 'the book is reading the boy')
(Kinyarwanda, Morimoto 2006: 163)

In many respects subject-object reversal is similar to locative inversion – and indeed to other inversion constructions and passives, all of them sharing similar information structure properties, restrictions on object marking and dependency on specific thematic/semantic restrictions. However, the distribution of the two constructions differs, with many more Bantu languages having locative inversion than subject-object reversal.[3] Indeed, Morimoto (2000, 2006) proposes

[2] Although see e.g. Harford's (1990) analysis of Shona locative inversion for extensions of this approach.

[3] At least according to the findings in Marten and van der Wal (2014). There is a residue doubt about the differences in felicity and frequency between the two constructions, which may have an effect of what has been reported for different languages, but I assume here

that the two constructions are very different structurally. While locative inversion involves a change in grammatical function – the locative becomes subject, the theme becomes object, contrary to unmarked assignments – subject-object reversal in Morimoto's analysis does not. Rather, in her analysis of subject-object reversal in Kinyarwanda and Kirundi, verbal agreement is with an (internal) topic, and not with the subject. The preverbal NP is thus both topic and object, while the postverbal NP is focus and subject. The main points of Morimoto's analysis are summarised in (13):

(13) Central aspects of Kinyarwanda subject-object reversal (Morimoto 2000)

1) Information structure: The preverbal NP is a (discourse/external or internal) topic; the postverbal NP (the logical subject) is focussed
2) Grammatical function: The preverbal NP is the grammatical object, the postverbal NP the grammatical subject
3) Verb morphology: The initial agreement marker is a topic marker (not a subject marker); no object marker is possible as the postverbal NP is the subject
4) Thematic/semantic restriction: Subject-object reversal is restricted by animacy conditions – the logical subject needs to be more animate than the object, or of the same animacy if there is no ambiguity, e.g. if the predicate disambiguates the roles

Among the main differences between Chichewa locative inversion (LI) and Kinyarwanda/Kirundi subject-object reversal (SOR) Morimoto identifies are 1) that SOR, but not LI, is clause-bound, with any extraction from the inversion clause disallowed, 2) that there is no evidence that the preverbal NP has subject status (in contrast to the preverbal locative NP in Chichewa LI where B&K show that such evidence exists), and 3) that Kinyarwanda, which has SOR, does not allow 'grammatical agreement' with the 'subject marker' – that is, all NPs which the subject marker agrees with are topics – while in Chichewa, which does not have SOR, the subject marker can agree with either topics or with (non-topical) subjects. Of these, I will leave to one side the clause-boundedness (which rests on interesting and complex empirical evidence detailed discussion of which would lead us too far afield) and the absence of evidence for

that the overall conclusion about the cross-Bantu distribution of the two constructions is robust.

subjecthood (which – being absent – is hard to assess)[4], and will briefly comment on the cross-linguistic argument.

Morimoto (2000: 283) proposes three types of Bantu languages with respect to the difference between topic agreement and subject agreement and concomitant presence or absence of SOR. Type I has topic agreement and SOR (Kinyarwanda, Kirundi, Dzamba), Type III has subject agreement and no SOR (Chichewa), while Type II languages (Sesotho, Setswana) are in the middle between Type I and Type III and have simultaneous topic and subject agreement and no SOR – like Kinyarwanda, there are no non-topical subjects, but like Chichewa, there is no SOR. This last type is conceptually less convincing than the other two types – the evidence from the absence of non-topical subjects in Setswana or Sesotho indicates topic agreement, and the subject agreement feature appears to have been added to explain the absence of SOR without much further empirical support. Furthermore, the proposed typology is not easy to extend to a wider set of languages: Swahili, for example, has subject agreement like Chichewa (e.g. Marten 2011) but also SOR, unlike Chichewa. Similarly, there are a number of languages which look like 'topic' languages – and so similar to Kinyarwanda – but which do not have SOR, for example Otjiherero (Marten 2011) or Bembe (Iorio 2014), but which, on the other hand, differ from Setswana or Sesotho with respect to, for example, inversion in object relatives (Bembe) or locative agreement (Otjiherero), and thus do not look like belonging to exactly the same type in terms of agreement properties. While it seems correct that there is a difference between SOR and LI, and between the languages which allow the two constructions, and that this difference might be related to the relation between topics, subjects, and agreement, it seems unlikely, in view of cross-linguistic variation, that it can be reduced solely to a difference between subject and topic agreement.

Morimoto (2000) also notes the central role played by the semantic restrictions on subject-object reversal, and this seems to be a promising line of research. The complexity of these semantic factors has been described in some detail in Gibson (2008), who discusses different models of semantic analysis to explain it – including next to animacy, a contained-container metaphor. It is also noteworthy that while both SOR and LI are subject to comparable semantic/thematic constraints on the participating NPs, in LI the semantic difference between the two NPs is almost by definition greater and more predicable than in SOR, and it might be that this provides a key aspect to

[4] But cf. e.g. Ndayiragije (1999) who assumes that the preverbal NP in Kirundi SOR is the grammatical subject.

explaining the difference between LI and SOR, instead of, or in addition to, differences in agreement and topic/subject status of the preverbal NP.

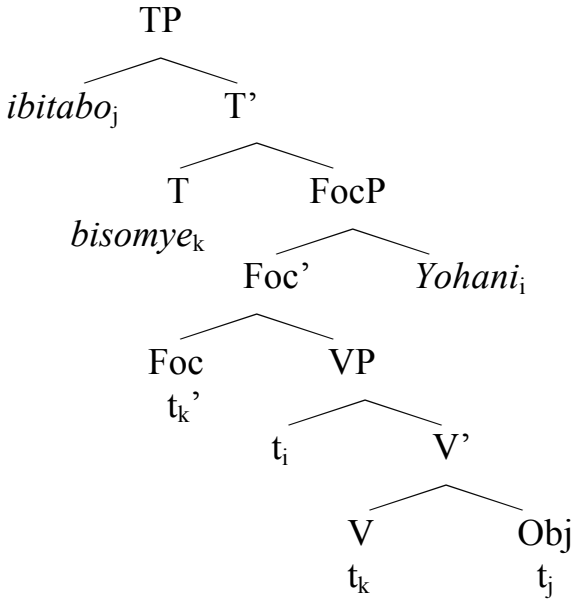
2.3 Movement analyses of subject-object reversal and locative inversion

The interplay between topic and subject agreement, which was central to Morimoto's analysis, has also played a central role in movement analyses of subject-object reversal and locative inversion.

Ndayiragije (1999) proposes for subject-object reversal in Kirundi that the logical object moves to Spec,TP, the position normally occupied by subjects, while the logical subject moves to a right-branching focus phrase (FocP). The verb moves to T and agrees with the logical object in the specifier.

(14) Ibi-tabo bi-á-somye Yohani.
8-book SM8-PST-read.PRF 1.Yohani
'Yohani (not Peter) read the books.' (Kirundi, Ndayiragije 1999: 415)

(15) SOR in Kirundi with overt A' movement of the logical subject to [Spec, FocP] and raising of Obj to [Spec, TP] (Ndayiragije 1999: 415, 424)

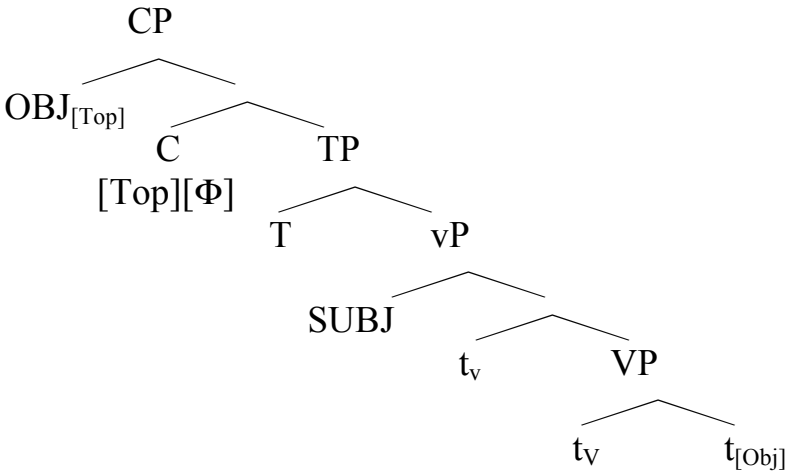


Ndayiragije emphasises the focus reading of the logical subject, and assumes that the logical object ends up as the grammatical subject, based on the observation that, like ordinary subjects, the preverbal subject controls agreement and can be omitted, as well as based on weak cross-over and embedding facts (Ndayiragije 1999: 418-422, cf. Carstens 2011: 723). Kinyalolo (1991) presents similar arguments for Kilega. However, subsequent analyses have explored

options of moving the logical object to topic position, rather than the logical object to focus.

Henderson (2006, 2011), for example, builds on the parallelism between subject-object reversal and subject inversion in object relative clauses in languages like Dzamba, arguing that both involve information-structure related movement of the object to some discourse-relevant head within the complementizer domain. Two potential problems need to be addressed to make this work: The object needs to move/match across the subject and the intervening T head, and verbal agreement with the object/topic rather than with the subject needs to be explained. The movement of the object is assumed to result from an unvalued TOP feature in C which can be checked against the TOP feature of the object. Since under this analysis the subject is in its normal position (e.g. in Spec,vP), and there are presumably unvalued features in T, it is not clear why verb agreement can be with the topic in this case.

(16) SOR with TOP feature (Henderson 2011: 746)



In (16), the TOP features in C match the TOP features of the topicalised object, but the phi-features in C match the phi-features of the subject, so the question arises which features are spelled out. The solution to this involves modifications to the technical apparatus of the theory with respect to the direction and locality of agree relations and how they are computed, as well as to the nature of (morphological) agreement as reflecting structural configuration (such as c-command) or feature dependencies. One analysis based on relevant modifications is that phi features in T agree with phi features in C, with one set of features subsequently erased – this resulting in verb agreement with the preverbal object/topic (cf. Carstens 2011). Apart from technical implementation, Henderson's analysis resembles Morimoto's (2000) analysis in several respects

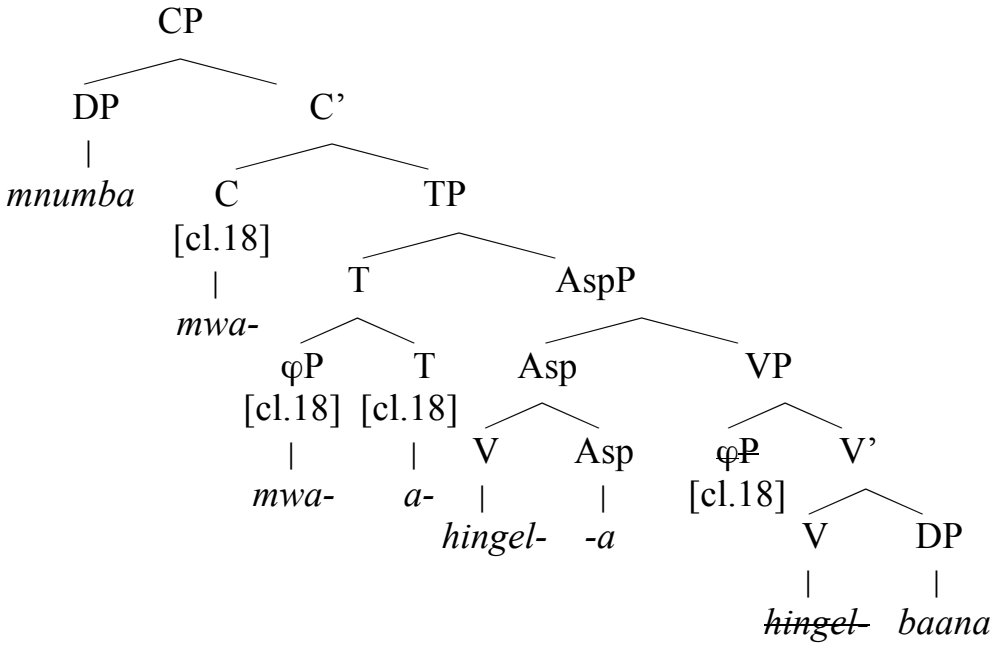
– the initial NP is analysed as object/topic, the postverbal NP as subject, and verbal agreement is analysed as topic agreement.

A slightly different implementation of an information-structure induced movement analysis is developed by Hamlaoui and Makasso (2013), who approach subject-object reversal within the context of passive and passive-like structures. They propose that the logical subject moves to Spec,TP – and is thus a standard grammatical subject – that the verb moves to a TopP – this movement possibly triggered by a preference for the focused subject to be clause-final, and that the logical object moves to the specifier of this topic projection (Spec,TopP), which is, however, within the I-domain, that is lower than in, for example, Henderson's (2006) proposal. Cross-linguistic variation in agreement is related to a difference between role-based agreement, where the verb agrees with the highest thematic role or logical subject, and configuration-based agreement, where the verb (in TopP) agrees with the topic in the specifier of TopP. Subject-object reversal like in Kinyarwanda under this analysis results from the verb movement to TopP and the configuration based agreement preference in the language. A typological prediction of the analysis is that languages with subject-object reversal should have no or very limited agreeing inversion, as this would result from role-based agreement. However, languages like Kagulu, Luguru and Lusoga pose a challenge for this prediction as these languages have both subject-object reversal and agreeing inversion.

A particular aspect of the movement analyses discussed so far is that, in contrast to the LFG analysis developed by Morimoto, the grammatical subject needs to be structurally represented – through a structural position, relevant features, or through the postulation of an empty element like pro. This is because movement analyses can only make reference to one level of syntactic representation, and not, as in LFG, define grammatical relations in f(unctional)-structure, rather than in c(onstituent)-structure: In Morimoto's (2000) analysis, subject is an f-structure attribute, and verbal agreement is part of the lexical features of the verb – an incorporated pronoun – rather than a syntactically active head. A different approach to Bantu subject agreement in GB/MP is developed by Iorio's (2014) analysis of inversion in object relatives in Bembe. Following Roberts (2013), Iorio proposes that Bantu agreement markers are φ-phrases (φP) – phrases which adjoin to an attracting head, and so function as phrases in argument position, but as heads when moved, somewhat mimicking a pronoun incorporation analysis. Bembe does not allow subject-object reversal, but the φP analysis can be applied to locative inversion:

(17) M-numba mwa-a-hingel-a ba-ana.
18-9.house SM18-N.PST-enter-FV 2-child
'Into the house have entered children.' (Bembe, Iorio 2014: 323)

(18) Bembe locative inversion (Iorio 2014: 324)



According to Iorio's analysis, the locative NP is a topic in CP, but the locative φ-phrase originates as subject, and then adjoins to T. The logical subject is analysed as object, and is non-topical – the absence of a TOP feature is according to Iorio the explanation for the absence of SOR in Bembe. Of the two agreement markers in C and T, one is erased under identity, as already noted briefly above. In Iorio's analysis, while the locative NP is a topic, the locative agreement marker is the subject, and no TOP feature is assumed.

A further question raised by inversion constructions in movement analyses is the licensing of the postverbal NP. While the postverbal NP was analysed as being in a dedicated focus position in Ndayiragije's (1999) analysis, there remains a more general question about its syntactic status: If the preverbal NP is licensed by agreement with the verb, it is not clear how the postverbal NP is licensed, since it does not show agreement, and is not licensed through a semantic relation with the verb as objects might be (unless in possibly with unaccusative predicates in locative inversion). This observation has led to the proposal that Bantu languages lack abstract case – the standard regulative for licensing overt NPs – and that this accounts for the presence of subject-object reversal and other constructions not found commonly in, for example, European languages (e.g. Carstens 2011, Dierks 2012).

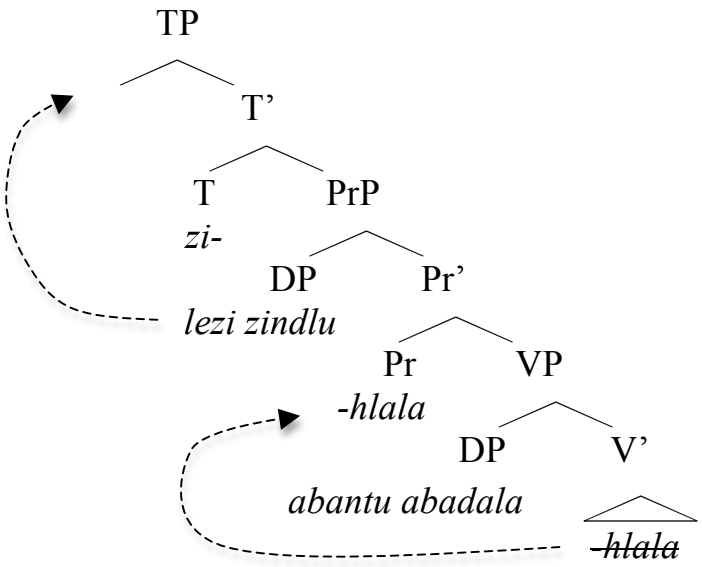
In sum, several movement/match analyses address subject-object reversal and locative inversion focussing on information structure, grammatical function and syntactic coding, verbal agreement, and, to a lesser extent, semantic constraints on inversion. However, a different approach is taken by Zeller (2012, 2013), discussed in the next sub-section.

2.4 Inversion and predication (Zeller 2012, 2013)

A somewhat different approach to Bantu inversion constructions is developed in Zeller (2012, 2013). Based on evidence from Zulu semantic locative inversion – locative inversion constructions without formal marking of the preverbal locative phrase (Buell 2007) – and instrument inversion, Zeller proposes that these inversion constructions involve a predication relation, formally expressed by a predication phrase (PrP, Bowers 1993), in which the preverbal NP is base generated in Spec,PrP and where the Predication head takes a VP complement – analogous to, for example, copula constructions, or adjectival or nominal predicates.

(19) Lezi zindlu zi-hlala aba-ntu aba-dala.
10.these 10.houses SM10-live 2-people 2-old
'Old people live in these houses.' (Zulu, Buell 2007: 108)

(20) Inversion involving a Predication Phrase (Zeller 2013: 1123)



The locative/instrument phrase thus does not originate in the VP, but as part of the PrP. The verb moves to the Pr head and subsequently to T, while the

preverbal NP moves from Spec,PrP to Spec,TP to check relevant unvalued features. In parallel to other predication relations, inversion is restricted to unaccusative predicates, or if used with other predicates requires the presence of an applicative marker, which Zeller proposes might be an overt reflex of the predication relation. While the analysis does not centrally address information structure properties of inversion constructions, it provides a direct answer to two syntactic properties of inversion: the restriction to certain predicate types, and the syntactic inertness of the VP. The restriction to particular predicate types has been noted above, with reference to locative inversion, and receives here a different, principled explanation. However, it is the evidence from the syntactic inertness of the VP which probably provides the strongest evidence for the analysis. The most obvious aspect of this inertness is the absence of object marking in locative inversion – and indeed in most other inversion constructions. This is usually explained as resulting from the analysis of the postverbal NP as subject, not object, and so object marking is reasonably debarred. However, what is less straightforward under this analysis is the absence of object marking not only of the postverbal logical subject, but of any postverbal NP, including any remaining object in transitive locative inversion:

(21) a. Pò-ndjúwó pé-tjáng-èr-à òvá-nàtjè ò-mbàpírà
16-9.house SM16.HAB-write-APPL-FV 2-children 9-letter
'At the house write the children a letter' (Marten 2006: 115)

b. *Pò-ndjúwó pé-ì-tjáng-èr-à òvá-nàtjè
16-9.house SM16.HAB-OM9-write-APPL-FV 2-children
Intd.: 'At the house write it the children' (Zeller 2013: 1138)

In (21), *òvánàtjè* 'children' is the postverbal subject, and so absence of class 2 object marking is expected, but what (21b) shows is that also the theme object *òmbàpírà* 'letter' cannot be object marked, and this is surprising given the analyses discussed so far. However, from the point of view of the PrP analysis, the Pr head is a phase head, and so intervenes between the object and any necessary functional structure relevant for object marking which is assumed to project higher in the structure (cf. Riedel 2009) – object marking is thus impossible for any postverbal NP, irrespective of its grammatical status.

The predication analysis of inversion proposes that there is no direct syntactic relation between the preverbal NP and the object position of the predicate. The locative and instrument NPs are assumed to be base-generated as part of the PrP, and the semantic relation between the location/instrument and the event expressed by the verb is established through a semantic operation of

event identification. However, it is not quite clear to what extent this analysis can be extended to subject-object reversal as here the preverbal NP is much more clearly an argument of the predicate itself and so less easily analysed as an argument of which a (saturated) predicate holds. In some sense, the predication analysis thus assumes that locative and instrument inversion differ structurally from subject-object reversal – a conclusion similar to the one proposed by Morimoto (2000), although for rather different reasons.

2.5 Inversion and the dynamics of structure building (Marten and Gibson 2013)

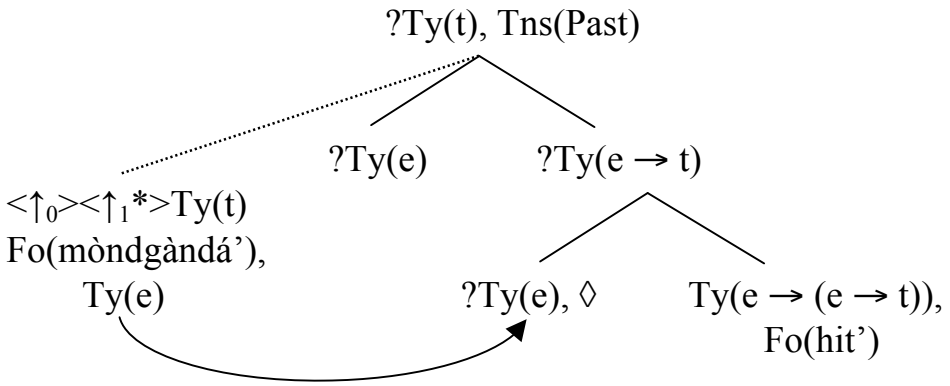
A final approach briefly reviewed here is the Dynamic Syntax analysis of passives and inversion constructions developed in Marten and Gibson (2013). Dynamic Syntax is a parsing-based model of syntax, in which syntactic well-formedness is construed as the possibility to derive an interpretation by constructing on-line semantic representations from the words encountered in the utterance. Semantic representations are formalised as partial trees, and growth of information as tree growth process which is driven by lexical information and restricted by general constraints on tree growth (Cann et al. 2005).

The specific analysis developed in Marten and Gibson (2013) draws on parallels between different inversion constructions, as well as passives, and proposes that they share certain formal characteristics: The initial NP is projected onto a Link structure (used for establishing a contextual value against which the ensuing proposition is parsed) or onto an unfixed node (a structural option to project semantic information early in the parse without specifying as yet the eventual semantic contribution to the overall proposition). The subject marker then projects a locally unfixed node, which allows the early projection of semantic information within a propositional domain, and which can be merged with the information already available (that is, the information from the preverbal NP). This means that before the verb is parsed, underspecified information – possibly, if projected on a Link structure, marked as 'discourse topic' – is available about an argument of the verb, without information as to this argument's role in the proposition. Next tense-aspect morphology and/or the verb is parsed, providing relevant argument positions for the logical subject and any logical objects. At this stage, the information from the preverbal NP holding at the locally unfixed node can be merged with either argument position. If it is merged in subject position, a 'non-inverted' interpretation will result, which might be a 'fairy tale' interpretation if one is available (for example, 'The evil spoon ate the little boy'). However, the locally unfixed node may merge with the logical object position, in which case the interpretation of the logical subject

remains to be established. This (i.e. the interpretation of the logical subject) can now be achieved either by the use of a passive suffix, which under this analysis provides a weak subject annotation (the existence of an 'agent'), or by the parsing of the postverbal NP. Since in inversion constructions no passive morphology is involved, this latter strategy is the only option to complete the parse, and so the presence of the postverbal NP is obligatory. The late placement of the logical subject in the linear string, and the attendant delay of providing a subject interpretation can be seen as giving rise to pragmatic effects, resulting in a focus or thetic reading. A further structural claim of the analysis is that the absence of object marking follows from the presence of the locally unfixed node until a fixed object argument position is introduced by parsing the verb. Up to this point, no further locally unfixed node can be constructed to host information from a potential object marker, since the system only allows the presence of one locally unfixed node at any one time in the parse.[5]

(22) M-òn-gàndá mw-á hìtí òvá-ndù.
18-9-house SM18-PST enter 2-people
'Into the house entered people.' (Otjiherero, Marten 2006: 98)

(23) Locative inversion as dynamic structure building: Snapshot of the derivation after parsing *hìtí* 'enter' (Marten and Gibson 2013)



The stage of the derivation seen in (23) shows the imminent merger of the unfixed node holding the information from the locative with the fixed (logical) object position. This position has been lexically supplied by the verb, so only

[5] Logical annotations in the Dynamic Syntax tree are Ty = logical type, Fo = formula, Tns = Tense. Type values 'e' (for entity) and 't' (for truth-evaluable) and their combination are familiar type-logical grammar types. The question mark '?' indicates a requirement for information yet to be supplied; the diamond '◊' indicates the current node under development; expressions in angled brackets such as $<\uparrow_0>$ are tree modalities, expressing relations between different tree nodes, which might be underspecified.

becomes available when the verb has been parsed. Note that the semantic subject position still requires proper annotation. This will be supplied when the postverbal NP is parsed.

The dynamic analysis is similar to Zeller's (2012) PrP analysis in that it addresses the absence of object marking in (presumably) all inversion constructions as well as in passives in a number of Bantu languages, and provides a structural reason for this. However, like most other analyses of inversion constructions, it assumes a monoclausal structure where both the preverbal and postverbal NP are analysed as arguments of the same clause. It is just that a number of qualities of the construction are attributed to the way inversion constructions allow hearers to dynamically construct semantic representations, rather than to aspects of a static syntactic representation.

2.6 Summary

This section has surveyed major analyses of Bantu inversion constructions, and shown both similarities and differences between them. While there is wide-spread agreement that inversion constructions involve information structural, morphosyntactic and semantic aspects, there are a variety of approaches to spell these out in detail. With respect to the preverbal position, different proposals about their syntactic role and information structure have been made. Syntactically, the preverbal NP has been analysed as (verbal) subject, as topic, or as predication subject. Correspondingly, the information structural function of the preverbal NP has variously been analysed as external discourse topic, as internal topic, or as 'holder' (of the predication), that is, an entity of which a given state (introduced by the VP) holds as a property. A related difference is found with the analysis of verbal agreement, with analyses varying between analysing agreement as incorporated pronoun, as agreeing with a topic, or as agreeing with the subject. While some differences between different analyses result from varying theoretical assumptions, the development of different formal analyses has also been driven by the consideration of cross-linguistic data and variation in inversion constructions across different Bantu languages. In a way it is the cross-linguistic variation which provides one of the most interesting aspects of Bantu inversion constructions, and so it is this variation which will be discussed in the following section.

3 Comparative analyses

The previous discussion of different formal approaches to inversion constructions has shown that comparative, cross-Bantu evidence is often central

for showing specific aspects of a given analysis. On the other hand, the very complex variation in inversion constructions also means that often specific analysis are too restricted to fully address the variation encountered, and that variation cannot easily be reduced to two or there underlying parameters. In this section I provide a brief discussion of three comparative studies of Bantu inversion constructions, each of them shedding a different light on aspects of variation, and setting inversion constructions in different contexts.

3.1 Variation in locative inversion

Variation in locative inversion has already been mentioned in Section 2.1 above. While originally assumed to be restricted to unaccusative predicates, subsequent research in locative inversion has shown that at least five predicate types need to be distinguished to account for variation between different languages. This is summarised in Table 1 (based on Marten and van der Wal 2014).

Table 1: Inversion variation with respect to predicate type (*italics: languages with only default agreement inversion*)

	Copula 'be'	**Unaccusative active**	**Transitive passive**	**Unaccusative passive**	**Unergative passive**	**Unergative active**	**Transitive active**
Cilubà	OK	*	*	*	*	*	*
Chichewa, Chaga	OK	OK	OK	*	*	*	*
Shona	OK	OK	OK	OK	OK	*	*
Sesotho, Tswana	OK	OK	OK	OK	OK	OK	*
Otjiherero, *Ndebele*	OK	OK	OK	OK	OK	OK	OK

The eight languages in Table 1 fall into five distinct types with respect to the predicates which are licensed in locative inversion. The difference cross-cuts the distinction between languages which have 'true' locative inversion such as Chichewa, and those which have default agreement inversion, with an optional preposed locative, such as Tswana. Although other inversion constructions show restrictions on the participating predicates, it is not clear whether the thematic

restrictions (or at least what looks like thematic restrictions) seen in locative inversion play a role for other inversion constructions.

3.2 Inversion and passives

The similarity of inversion constructions and passives has often been noted. Birner and Ward (1998), in a study of different constructions of English and their relation to information structure, note that in both inversion constructions and *by*-phrase passives the preverbal NP is relatively familiar in the discourse, while the postverbal NP is relatively unfamiliar (1998: 256/7, cf. Morimoto 2000: 17). In Bantu, Demuth (1989: 68) and Demuth and Kline (2006) note the use of passives for agent questions in Sesotho. Following intuitions like this, Hamlaoui and Makasso (2013) include subject-object reversal in their study of (non-canonical) passives, showing that subject-object reversal falls naturally into a typology of passive marking as summarised in Table 2.

Table 2: A 'mini typology' of transitive passives (Hamlaoui & Makasso 2013: 9)

	Grammatical promotion of object	**Grammatical demotion of subject**
O-V by S **(English, French)**	+	+
O expl-V by S ***expl-V O by S*** **(Bemba)**	–	+
O-VS **(Kinyarwanda)**	+	–
OS-V (pro) **(Bàsàa, Mbuun)**	–	–

The constructions identified in Table 2 share their basic syntax – the logical object precedes the logical subject – and have comparable information structure – the logical object is topical, the logical subject often focal – but differ in terms of exact morphosyntactic coding. However, the participation of subject-object reversal in this typology serves as a reminder that passives are a construction type which is useful to keep in mind when thinking about inversions.

3.3 A Bantu inversion typology

A more comprehensive study of cross-Bantu comparison is Marten and van der Wal (2014) which compares seven inversion constructions types (plus passive) across a sample of 46 Bantu languages. Although for many languages available information is incomplete, the study shows that there is some variation with respect to the presence of different inversion constructions across Bantu. A snapshot of the findings of the study is provided in Table 3.

Table 3: Distribution of inversion constructions (based on 46 languages in total) (Marten and van der Wal 2014)

	Formal Locative Inversion	**Semantic Locative Inversion**	**Patient Inversion**	**Instrument Inversion**	**Complement Inversion**	**Default Agreement Inversion**	**Agreeing Inversion**
Languages with data	41	19	28	18	9	30	26
Yes (n/%)	25 (61%)	9 (47%)	10 (36%)	6 (33%)	2 (22%)	24 (77%)	16 (62%)
No (n/%)	16 (39%)	10 (53%)	18/64%	12 (67%)	7 (78%)	6 (19%)	10 (38%)
Languages without data	5	27	18	28	37	16	20

The data in Table 3 show that among languages for which there are data, formal locative inversion, default agreement inversion and agreeing inversion are the more widely attested constructions, while the remaining constructions are less common. The study also shows that formal locative inversion and semantic locative inversion are almost in complementary distribution,[6] and that all languages which have instrument inversion, and all languages which have patient inversion (= subject-object reversal) also have (either formal or semantic) locative inversion. If this latter observation remains true when more languages are included in the sample, it seems to indicate that, rather than being

[6] Languages which have both formal and semantic locative inversion are Swahili and Olutsootso, as well as Cuwabo (Guérois, this volume) which was not part of the database of Marten and van der Wal (2014).

complementary, subject-object reversal implies the presence of locative inversion (though not the other way around).

3.4 Summary

The three typologies discussed in this section provide ample evidence for the high degree of microvariation in Bantu inversion constructions. In part because of this, most typologies focus on comparing specific constructions and their distribution, rather than on comparing specific languages. While ultimately necessary in order to gain a full understanding of inversion constructions, it seems premature to develop a robust typology of Bantu languages based on inversion constructions. However, the typological context provides a valuable background for better understanding of inversion constructions, and for assessing different formal analyses.

4 Conclusions

The present paper has aimed to provide an overview of formal and comparative aspects of Bantu inversion constructions. Given the rich literature on the topic, and the high degree of cross-linguistic variation, the discussion was necessarily confined to main aspects and a number of details have been omitted. Rather the discussion has focused on the main parameters involved in analysing the construction, and on the relation between the analysis of different construction types and their cross-linguistic distribution.

A key area of theoretical discussion is the distinction between subject and topic, the corresponding agreement relations, and how these are syntactically represented. In subject-object reversal, the preverbal NP is in most analyses analysed as a topicalised object, and the postverbal NP as both the logical and the grammatical subject. In contrast, analyses of locative inversion and instrument inversion often assume that the preverbal NP is the grammatical subject, and the postverbal NP is the grammatical object. The difference is based mainly on the absence of extraction from subject-object reversal (at least in Kinyarwanda and Kirundi),[7] whereas the initial NP in locative inversion displays a higher degree of syntactic freedom, in parallel with subjects.

However, in terms of information structure all inversion constructions are remarkably similar – with the preverbal NP topical and the postverbal NP focused, or optionally expressing thetic focus – even though the question

[7] Although the situation for Kirundi and Kinyarwanda is unclear. Kilega (Kinyalolo 1991) and Kagulu (Petzell 2008: 171/2) appear to place fewer restrictions on preverbal NPs in subject-object reversal.

remains whether there is a systematic relation between different inversion constructions and focus type. Furthermore, absence of object marking seems to be consistently found in all inversion constructions (and in some languages also in passives), indicating some shared morphosyntactic underlying structure.

The question of how many different kinds of inversion constructions there are and how they are related is also addressed in the comparative studies discussed. Here it becomes clear that different inversion constructions are found across different languages. However, some distributional patterns seem to be emerging, although it is too early to tell whether they are fully reliable. Among them is the near-complementarity of formal and semantic locative inversion, and the implicational relations between locative inversion and subject-object reversal and instrument inversion respectively.

In part this distribution might be explained by varying degrees of explicit morphological marking and the degree of divergence from the unmarked case (cf. Morimoto 2000). Thus passives are more explicitly marked (by passive morphology) than 'proper' inversion constructions, and are more common, and formal locative inversion is more explicitly marked (by locative morphology) than other inversion constructions, and is more common than other inversions. Furthermore, the semantic/thematic difference between locatives and agents in locative inversion is bigger than the difference between patients and agents in subject object reversal, and possibly the initial NP in locative inversion is easier to parse correctly (as not being the agent) in language comprehension than the initial NP in subject-object reversal. This would at least in part explain both the restricted syntactic freedom of subject-object reversal, as well as the restricted distribution.

A final question which deserves further investigation is the effect of semantic/thematic restrictions on inversion constructions. These have been identified as central for all inversion constructions, although in different terms – e.g. in terms of thematic relations of the predicate or in terms of (differences between) animacy of the participants. However, more detailed studies of the lexical semantics involved in inversion constructions may well prove fruitful.

The short summary of findings presented in this section has highlighted the two – to my mind – central areas of research in inversion constructions. On the one hand, there is the question of how the different and often quite distinct qualities of inversion constructions along different dimensions – information structure, morphosyntax, semantics and pragmatics, and, although I haven't mentioned this here in much detail, prosody – can be explained in a unified analysis. And on the other hand, there is the question of how the complex cross-Bantu variation of inversion constructions can be explained as following from

(the interaction of) relevant underlying structures or parameters in a principled way.

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