Focus strategies and the incremental development of semantic representations: evidence from Bantu[1]
Lutz Marten, SOAS

1. Introduction

In this paper, I discuss different word orders found in different Bantu languages which are associated with specific discourse-pragmatic contexts, such as topicalising or focussing a particular constituent, both at the left and at the right periphery, but which express the same semantic, or truth-conditional content. I will argue that the distinction between discourse-pragmatic function and truth-conditional meaning is important, and should be reflected in the syntactic analysis of topic and focus constructions. In particular, I will show that Dynamic Syntax (Kempson et al. 2001, Cann et al. 2005), which models how hearers build semantic representations from the time-linear string of words encountered in context, provides the tools which express this distinction formally. One consequence of the Dynamic Syntax analysis is that notions like 'topic' and 'focus' are indeed pragmatic notions, but are not part of the syntactic vocabulary of natural language (Kempson et al. 2004). Rather, syntactic configurations can be exploited for the expression of topic and focus, without the need to postulate dedicated syntactic topic and focus projections as is often done in Principles and Parameters approaches to syntax (e.g. Rizzi 1997), or as primitive predicates in a feature structure matrix as in Lexical Functional Grammar (e.g. Bresnan and Mchombo 1987). In this, I hope that the analysis presented in this paper raises an alternative to current analyses of topic and focus which will contribute to a better understanding of these notions.

The paper is organised as follows; in Section 2, a short background discussion of the relevant notions and approaches to word order, topic and focus is provided, and a brief introduction to the tools of Dynamic Syntax is given. Section 3 is dedicated to the discussion of presentational focus, identificational focus and background topics at the right periphery, while Section 4 looks at focus and topic at the left periphery. Section 5 presents

conclusions from the analysis presented and indicates problems and directions for further research.

2. Background

Before starting the discussion of word order and information structure in Bantu, a short background discussion is provided in this section about the position of the analysis I am going to develop with respect to wider work on topic and focus, as well as of the model of Dynamic Syntax and the tools which are relevant in the present context.

2.1. Syntax and information structure

Information structure has become a central topic in syntax in the last two decades or so. That discourse-pragmatic functions like topic and focus play an important role for word order is especially clear when looking at Bantu languages. For example, Bresnan and Mchombo (1987) observe for Chichewa, that in the presence of an object clitic functioning as an incorporated pronoun, all permutations of S, O, and V of a transitive clause are possible:[2]

(1) a. *Njûchi   zi-ná-wá-lum-a*   *a-lenje*   [Chichewa]
        10.bees   SC10-PAST-OC2-bite-FV   2-hunters
        'The bees bit them, the hunters'

    b. *Zináwáluma alenje njûchi*   (VOS)
    c. *Alenje zináwáluma njûchi*   (OVS)
    d. *Zináwáluma njûchi alenje*   (VSO)
    e. *Njûchi alenje zináwáluma*   (SOV)
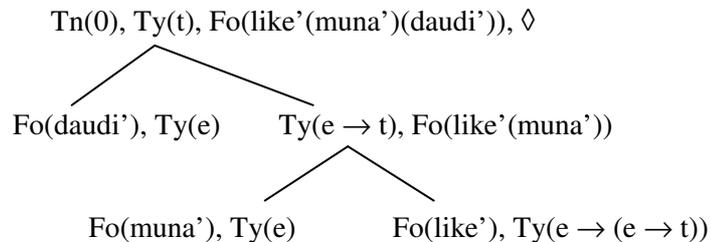   f. *Alenje njûchi zináwáluma*   (OSV)

Bresnan and Mchombo's (1987) main interest was to show that subject and object clitics in Chichewa can be analysed as incorporated pronouns,[3] and while they discuss the relation of subject and object clitics with topicalised full NPs quite extensively, the discussion of focus is restricted to a few remarks. However, from their discussion it is clear that they assume that NPs can be co-indexed with Focus and Topic predicates at f-structure, and

that topics may stand in an anaphoric agreement relation with the subject and object clitics. Similar observations about word order freedom in Xhosa are found in du Plessis and Visser (1992: 13), who also draw attention to the relation between different word orders and prosodic information, a point which is further discussed in Downing et al. (2004, 2005), who, again using Chichewa, show that different word orders are related to specific patterns of phonological phrasing. However, no fully worked-out analysis of patterns like the one illustrated in (1) has been proposed. In the following sections, I will outline an analysis of different word orders using the Dynamic Syntax tools of LINK and *Adjunction, and show how these relate different word orders to the context in which they are felicitous, and to their possible discourse-pragmatic functions. Before doing this, however, I give a brief introduction to Dynamic Syntax in the next section.

2.2. Dynamic Syntax

Dynamic Syntax (Kempson et al. 2001, Cann et al. 2005) models the process by which hearers construct semantic representations of content from words in context as a model of linguistic competence. Semantic representations, or 'logical forms', corresponding to the hearer's representation of what she thinks is the intended message of the speaker are formally given in the model as annotated trees which transparently show the predicate argument structure of the proposition:[4]

(2)   *Daudi likes Muna*

$$Tn(0), Ty(t), Fo(like'(muna')(daudi')), \Diamond$$

$$Fo(daudi'), Ty(e) \qquad Ty(e \rightarrow t), Fo(like'(muna'))$$

$$Fo(muna'), Ty(e) \qquad Fo(like'), Ty(e \rightarrow (e \rightarrow t))$$

The tree shows that verb phrase interpretation is a function of the interpretation of the main predicate and the interpretation of the object, and that the interpretation of the sentence, the main proposition at the top node Tn(0), is a function of applying the interpretation of the subject to the in-

terpretation of the VP. Note, however, that the trees do not show natural language syntax, but purely semantic composition: the tree-nodes are decorated with semantic information from words, but not by the words directly, and the structure of the tree only reflects semantic composition, e.g. predicate-argument structure, without projecting word order as part of the tree. The fact that the predicates are on the right-hand side branches, and arguments on the left-hand side branches is a matter of convention and not related to natural language syntax and word order. In fact, the whole point of the Dynamic Syntax enterprise is that natural language syntax reflects the way humans are able to build complex semantic structures like the one in (2) from a linear string of sounds.[5] Generalizations about syntax, like word order, grammaticality and well-formedness, are expressed through the process of tree growth, from a minimal tree as a starting point, through a succession of partial trees, to a fully annotated logical form: the dynamics of the system lie in the incremental mapping from linearly-ordered words to structured semantic representations, during which trees 'grow' as a result of syntactic transition rules or lexical actions.[6]

To illustrate, here is a sample derivation for the string in (3):

(3)   *Daudi likes Muna.*

At the outset of the derivation, a minimal tree is assumed with just one node, and no branches. The node is annotated with Tn(0), indicating that it is the root node, and ?Ty(t), indicating that at this node a requirement holds for an expression of type Ty(t), that is, a proposition. This expresses hearers' justified expectation for information of propositional type which may interact with currently held assumptions (cf. Sperber and Wilson 1995). Finally, the diamond indicates that the node is the current node (somewhat trivially, since there is only one node so far):

(4)   Tn(0), ?Ty(t), ◊

However, since in most cases, not the whole proposition is communicated at once, syntactic rules license the introduction of subtasks in this situation:

(5)   Tn(0), ?Ty(t)

        ?Ty(e), ◊   ?Ty(e → t)

The rationale behind this move is that the satisfaction of both subtasks leads automatically to the satisfaction of the overall goal, and that the sub-tasks may be easier to accomplish than the task at the root node. The fact that the argument node (on the left-hand side) becomes the current node, rather than the predicate node on the right, is a parametric value of SVO languages.[7]

At this stage, the first lexical information is scanned, namely information from *Daudi*. Lexical information in Dynamic Syntax is modelled as procedural, and as interacting with the tree annotations directly:

(6)   'Daudi'   IF $?Ty(e)$
                  THEN $put(Fo(daudi'), Ty(e))$
                  ELSE   abort

The IF statement in the lexical information from *Daudi* states that the word can be introduced into the derivation if there is a current node with a re-quirement $?Ty(e)$. If this is so, then at that node, '$Fo(daudi')$' and '$Ty(e)$' can be added. On the other hand, if *Daudi* is parsed when the current node does not have a requirement for $Ty(e)$, the parse ends. In the case at hand, the condition of the IF clause is met, as the current node in (5) has a re-quirement for $Ty(e)$, and the tree can be developed further:

(7) $Tn(0), ?Ty(t)$

       $Fo(daudi'), Ty(e)$ $?Ty(e \rightarrow t), \Diamond$

The next step is the expectation of the development of the predicate node, and the parsing of *likes* (ignoring tense and agreement for the moment):

(8)   'like'   IF $?Ty(e \rightarrow t)$
                 THEN $make(<\downarrow_1>), put(Fo(like'), Ty(e \rightarrow (e \rightarrow t)))$,
                           $go(<\uparrow>), make(<\downarrow_0>), go(<\downarrow_0>), put(?Ty(e))$
                 ELSE   abort

The information from *like* shows that lexical information does not only decorate existing nodes, but may also build new nodes. The actions of the THEN clause result in the building of a new predicate node, and a corre-

sponding argument node with a requirement ?Ty(e), which becomes the current node:

(9)

Tn(0), ?Ty(t)

Fo(daudi'), Ty(e)   ?Ty(e → t)

?Ty(e), ◊   Fo(like'), Ty(e → (e → t))

The next word is *Muna*, which comes with lexical information similar to that of *Daudi*, and can fulfill the requirement at the current node:

(10)

Tn(0), ?Ty(t)

Fo(daudi'), Ty(e)   ?Ty(e → t)

Fo(muna'), Ty(e), ◊   Fo(like'), Ty(e → (e → t))

In the final tree of the derivation all information established during the parse is accumulated and all requirements are fulfilled:

(11)   *Daudi likes Muna*

Tn(0), Ty(t), Fo(like'(muna')(daudi')), ◊

Fo(daudi'), Ty(e)   Ty(e → t), Fo(like'(muna'))

Fo(muna'), Ty(e)   Fo(like'), Ty(e → (e → t))

The tree is identical to the one in (2), corresponding to the logical form associated with the string *Daudi likes Muna*.

2.3. *Adjunction and LINK structures

So far, the tree development, that is, the order of transitions, matched the SVO word order of our example (recall that the arrangement of the nodes in the tree does not reflect word order). However, this is not always the case, as there is word order variation both between and within languages. For example, information may be presented early or late, or in other words, at the left and right periphery. One way of modelling this is by employing structurally underspecified tree relations, established by introducing unfixed nodes, dominated only by the root node, by *Adjunction (named after the Kleene* operation, the reflexive-transitive closure over tree nodes):
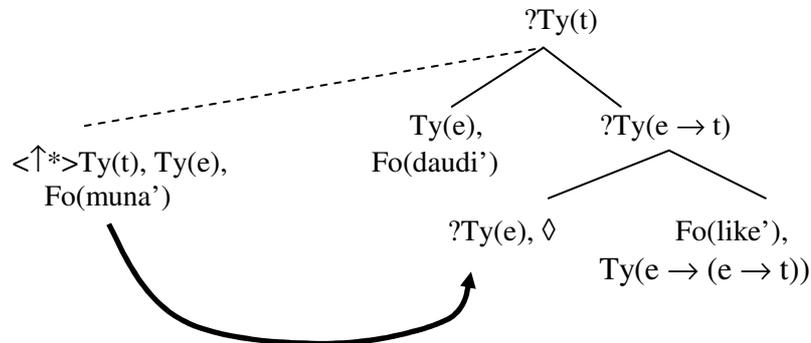
(12)   *Muna, …*

$$?Ty(t), \Diamond$$

$$<\uparrow\!*\!>Ty(t), Ty(e),$$
$$Fo(muna')$$
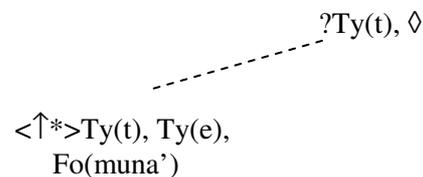
In (12), the information from *Muna* is projected onto an unfixed node, which means that the node will be part of the eventual tree, but that at the time of the introduction of the word, it is not clear yet at which exact position it will be. *Adjunction can be employed for the analysis of clause-initial *wh*-words, or for fronted NPs such as *Muna* in (13):

(13)   *Muna, Daudi likes.*

After the introduction of the information from *Muna* at an unfixed node, the tree will be developed as usual. The unfixed node will remain part of the tree until a suitable stage in the derivation can be found where the information at the unfixed node can be incorporated in the tree (which has to be found within the current tree). For example, a requirement might be introduced at the object node from the verb, where the unfixed node can merge:

(14)   *Muna, Daudi likes.*

$$?Ty(t)$$

$$<\uparrow*>Ty(t), Ty(e), \quad Ty(e), \quad ?Ty(e \rightarrow t)$$
$$Fo(muna') \qquad Fo(daudi')$$

$$?Ty(e), \lozenge \qquad Fo(like'),$$
$$Ty(e \rightarrow (e \rightarrow t))$$

The eventual tree for (13) will be identical to the trees in (2) and (11), expressing the fact that semantically, (3) and (13) are identical. On the other hand, the two analyses differ, not in the end result, but in the steps of transitions which were involved in deriving the final tree. It is this difference in derivation which expresses the pragmatic and information structure differences between the two examples, such that, in (14), for example, the use of *Adjunction can be used to express focus on the preposed NP. I will discuss this point in more detail below in relation to *Adjunction and the corresponding Late *Adjunction, which can be used to introduce information late.

A second mechanism for introducing information outside of canonical position is called LINK transition, which allows the building of two parallel trees, linked by a shared term, in which one tree can be exploited to provide a particular context for the other. LINK structures are used in Dynamic Syntax for example for the analysis of relative clauses, conjunction and topic constructions:

(15)   *Muna, Daudi likes her.*

In examples like this one, the initial term is projected onto a linked tree which provides the background for the main tree to be developed. Formally, the tree to be developed carries a requirement that the formula value of the linked term be part of the new tree ($?<\downarrow*>Fo(muna')$), thus ensuring that the new tree is built within the context set up by the LINK structure, and that a term is shared across the LINK structure. Note that the LINK transition does not provide a copy of the formula value, but merely intro-
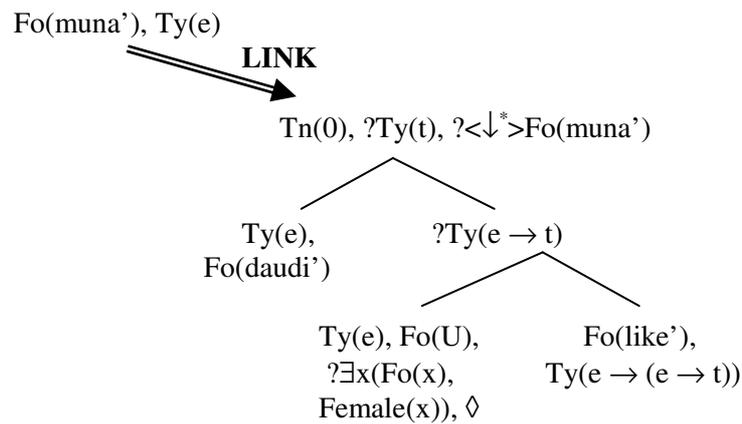
duces a requirement that such a copy should be part of the tree to be built, and so the presence of this information in the tree following the LINKed node has to be ensured by some other means, for example by the presence of a 'resumptive' pronoun:

(16) *Muna, …*

Fo(muna'), Ty(e)

LINK

Tn(0), ?Ty(t), ?<$\downarrow^*$>Fo(muna'), $\Diamond$
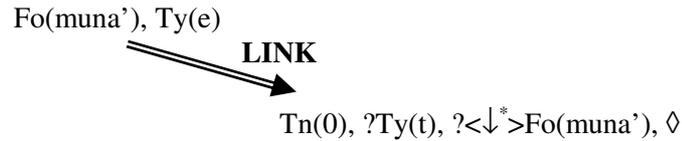
The main tree is then built as previously, but this time the object position is filled by a pronoun:

(17) *Muna, Daudi likes her.*

Fo(muna'), Ty(e)

LINK

Tn(0), ?Ty(t), ?<$\downarrow^*$>Fo(muna')

Ty(e),
Fo(daudi')   ?Ty(e $\rightarrow$ t)

Ty(e), Fo(U),   Fo(like'),
?$\exists$x(Fo(x),   Ty(e $\rightarrow$ (e $\rightarrow$ t))
Female(x)), $\Diamond$

The lexical specification of the pronoun is the same for its ordinary use and the 'resumptive' use as in this example: it specifies its type and introduces an underspecified formula value with the metavariable U, and the requirement that the metavariable be enriched to a full formula value (restricted by Female(x) to be female, following the gender specification in *her*).[8] This enrichment is a pragmatic process, and may involve formula values from the context, even in this case. The reason for the 'resumptive' interpretation is that any choice other than Fo(muna') as formula value in object position will not satisfy the requirement at the root node that Fo(muna') be

part of the tree. However, once Fo(muna') is chosen as the formula value, the tree will end up as being identical to (2) and (11) (except for the linked 'topic' node) – again, indicating that all of the examples (3), (13) and (15) are semantically identical, but differing in pragmatic meaning, which is expressed as a function of the interaction between the different transitions involved in the establishment of the final trees and the context. It is a general feature of Dynamic Syntax that grammaticality (and felicity) are determined by the set of transitions, and not by the final tree alone.

With these tools in hand, I will now return to word order and information structure in Bantu, starting with focus (and topic) at the right periphery.

3. The expression of focus and topic at the right periphery

The tendency to place new or focused information late in the utterance has often been observed, and examples of this tendency can also be found in Bantu languages, for example in presentational and identificational focus constructions. In presentational focus constructions in Nsenga, for example, the unmarked SV order is reversed and the subject is introduced after the verb:[9]

(18) a. *À-léndò* *à-fwík-à*   [Nsenga]
   2-visitors SC2.PAST-arrive-FV
   '(The) guests have arrived'

  b. *À-fwík-à*   *à-léndò*   [Nsenga]
   SC2.PAST-arrive-FV 2-visitors
   'There have arrived (the) guests'

VS order expressing presentational focus is freely available in Nsenga, and is not restricted to a subset of verbs (such as unaccusative verbs); it is also found with transitive verbs, with the subject following the verb and the object:

(19) a. *Kàtíshà* *ó-wéléng-à* *má-bùkù* [Nsenga]
   Katisha SC1.PAST-read-FV 6-books
   'Katisha was reading books'

b. *Ó-wéléng-à*   *má-bùkù*   *Kàtíshà*   [Nsenga]
SC1.PAST-read-FV   6-books   Katisha
'Katisha was reading books ('There is reading books Katisha')'

Inversion structures like (18b) and (19b) are part of a number of constructions expressing new information or emphatic focus (also including locative inversion and subject-object reversal) and are used to emphasise the newness of (the referent of) the subject in the discourse. An example is provided in (20) from Swahili (from Bearth 1995: 198), where the two new participants of the story are introduced through the use of VS structures:

(20)   ... *watu*   *wa-ka-pand-a*   *fiwi.*   *Ka-j-a*
      ... people   SC2-CONS-plant-FV   beans   SC1.PERF-come-FV

      Talafa ... A-ka-toke-a   *Mzee Mgomba ...*   [Swahili]
      Tafala ...SC1-CONS-appear-FV   Mzee Mgomba ...

      '... the people were planting beans ... There came Talafa ... Then arrived Mzee Mgomba ...'

The analysis of these structures involves the interplay between the pronominal nature of Bantu subject clitics and structural underspecification, in particular Late *Adjunction. Following Bresnan and Mchombo (1987) I assume that subject clitics may function like pronouns, encoding a meta-variable as formula value which can be updated from context (as well as restrictions as to the permissible kinds of substitutions, e.g. for class 2, that the substituend be human (Human(x)) and a group (PL(x)), cf. Cann et al. 2005, Marten and Kempson 2002 for further discussion of the analysis of Bantu agreement in DS). Thus, if it is clear that we are talking about guests, no overt subject is necessary:

(21)   *À-fwík-à*   [Nsenga]
      SC2.past-arrive-FV
      'They (i.e. the guests) have arrived'

VS inversion structures can be used for focussing the post-verbal subject, as well as in 'afterthought' topic constructions, discussed further below. VS structures involving focus arise in situations where it is not clear from the context who the intended referent of the subject clitic is. There may be
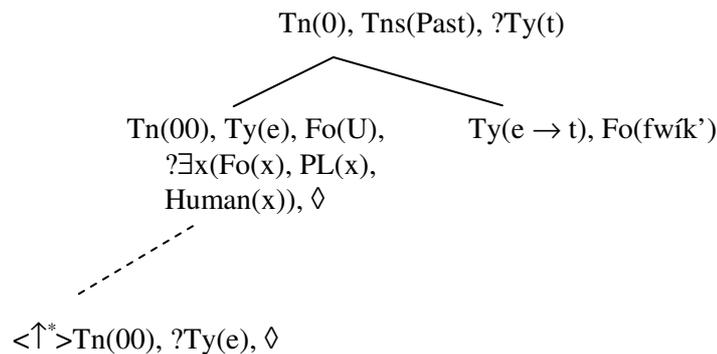
various reasons for this, for example, the referent may be discourse new, as in (20), or may be provided as a response to a clarification question, giving rise to identificational focus (example (26) below). These different uses are a function of the particular context, and receive the same structural, syntactic analysis in Dynamic Syntax, namely that the meta-variable projected form the subject clitic cannot be assigned a value, and the task to provide a suitable formula value remains open even after the predicate node is built:

(22)   *À-fwík-à* .... ('they came')

Tn(0), Tns(Past), ?Ty(t)

'??????'

Ty(e), Fo(U)
?∃x(Fo(x), PL(x),
Human(x)), ◊

Ty(e → t), Fo(fwík')
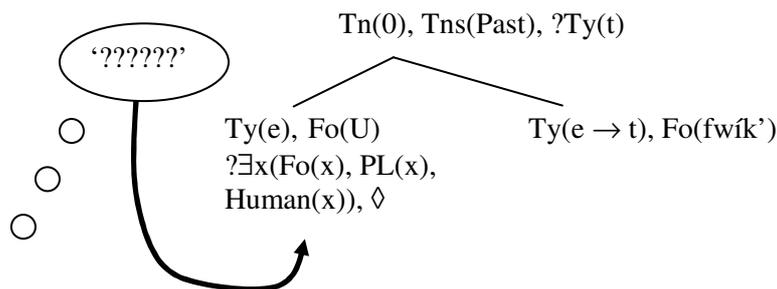
The lack of an appropriate referent from the context (indicated by the question marks in the bubble) means that the parse cannot be completed after the introduction of the verb, and that further information is necessary. This information is provided by the post-verbal subject, which is introduced into the parse by Late *Adjunction, that is, the application of *Adjunction not at the outset, but at the final stage of the parse when all nodes are type-complete, but with an outstanding requirement for a formula value only.

(23)   *À-fwík-à* ('they came ...')

Tn(0), Tns(Past), ?Ty(t)

Tn(00), Ty(e), Fo(U),
?∃x(Fo(x), PL(x),
Human(x)), ◊

Ty(e → t), Fo(fwík')

$\langle\uparrow^*\rangle$Tn(00), ?Ty(e), ◊

Like *Adjunction, Late *Adjunction allows the building of an unfixed node, but this time the unfixed node is dominated by the argument node with the outstanding requirement ('Tn(00)'). It is decorated with a requirement for a Ty(e) expression, a requirement which the information from *àléndò* can fulfill (for reasons of space, only the unfixed node is shown):

(24)

$\langle \uparrow^* \rangle$Tn(00), Fo(àléndò'), Ty(e), ◊
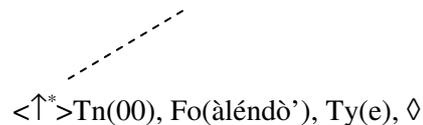
As a final step, the unfixed node is merged at subject position, and the final tree has all requirements completed:

(25)   *À-fwík-à à-léndò* ('they came the visitors')

Tn(0), Tns(Past), Ty(t), Fo(fwík'(àléndò')), ◊

Ty(e), Fo(àléndò')   Ty(e → t), Fo(fwík')
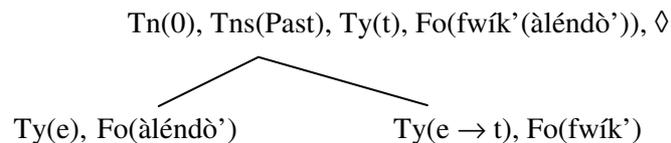
The final tree of both the SV and the VS orders is identical, reflecting their identical predicate-argument structure. However, the intermediate trees leading to the derivation of the final tree differ, and the difference between the two versions lies only in the steps which have been taken to reach it. The claim is that semantically the two utterances in (18) (as well as those in (19)) are identical, and this is reflected in the identical final trees, but that they differ in pragmatic felicity. In particular, the VS order in the focus examples here works only in a context where the subject clitic cannot be fully interpreted from the context, and the postverbal subject is focused.

The use of *Adjunction for VS structures means that the left and right periphery are analysed by the same structural means, and that asymmetries between left and right periphery are a function of the incremental nature of structure building and context (cf. Cann et al. 2004). The advantage of this analysis is that it distinguishes between structural aspects of the left and right periphery, which are modelled as uniform, and the asymmetry between the two peripheries, which is explained in the present analysis as

resulting from the difference in contextual information available at the outset and at the end of the parse.

As mentioned above, the same structural analysis can be given to post-verbal identificational focus, as in the following question-answer pair from Chichewa. Downing et al. (2005), from which the example is taken, comment on this that there is identificational focus on *àlèéndó* in the answer, as it gives a choice from a known list of possibilities:[10]

(26)   Q: *À-ná-m-dyéts-á*   *nsóòmbà ndàáni?* [Chichewa]
         SC2-PAST-OC1-eat.CAUS-FV fish   who
         'Who fed him fish?'

      A: *À-ná-m-dyèts-à*   *nsóòmbà*   *àlèéndó*
         SC2-PAST-OC1-eat.CAUS-FV   fish   2-guests
         'The visitors fed him fish'

The structural analysis in Dynamic Syntax for examples like these is identical to the analysis of presentational focus: the subject at the right periphery is introduced by Late *Adjunction. What is different in (26) from (20) is that a set of potential referents is available in the context, giving rise to an identificational reading.

Notice that the analysis provides a formal, syntactic reflex of an observation often made in the literature on focus, namely that the focused element provides a value to an open proposition, or gives rise to 'alternative' propositions (e.g. Lambrecht 1994, Rooth 1996, Bearth 1999). In the *Adjunction analysis, there is transparently a stage in the derivation at which the open proposition $\lambda x[\text{fwík'}(x)]$ is entertained, and a stage at which $\lambda x[\text{fwík'}(x)](\text{àléndò'})$ is entertained. Yet, semantically, in terms of truth conditions, both SV and VS end up as Fo(fwík'(àléndò')). This analysis differs from analyses with designated Focus (and Topic) projections (as in P&P), or with primitive TOP and FOC attributes (as in LFG). The Dynamic Syntax claim is that structural configurations (such as late unfixed nodes) can be exploited for specific pragmatic effects, arising in the process of tree construction in a given context, but that information theoretic notions are not part of the eventual (semantic) representation (LF), or any other representational level (such as LF', proposed by Vall-duví (1990)). Information structure and propositional structure can thus be seen as intertwined, but distinct aspects of structure building in natural language.

It is worth pointing out that there is another instance of VS order, and that is so-called afterthought constructions:

(27) *À-fwík-à,*   *à-léndò*   [Nsenga]
      SC2.PAST-arrive-FV   2-guests
      'They have arrived, the guests'

(28) Q: *À-ná-m-tàání*   *nyàání*   *à-lééndó?*   [Chichewa]
         SC2.PAST-OC1-do.Q   baboon   2-visitors
         'What did the visitors do to the baboon?'

      A: *À-ná-m-dyèts-à*   *nsóòmbà*   ! *à-lèéndó*
         SC2.PAST-OC1-eat.CAUS-FV   fish   2-guests
         'The visitors fed him fish'
         (Downing et al. 2005)

Afterthought constructions differ from focus constructions in their prosody, as they involve an intonational break between verb and subject (27), or are marked by tonal downstep (indicated by '!') as in (28), and in their pragmatic felicity, as here the referent of the subject is not introduced as new into the context, but is given as a reminder or clarification of the context; it is thus more (background) topical than focused. As the referent is not discourse new, the difference to the focus constructions discussed above is that here, the subject clitic *is* interpreted from the context, and that the post-posed subject provides information to ensure that it is interpreted correctly. The emerging tree is thus different, in that in afterthought constructions, the subject clitic is completed, and the post-verbal subject needs to match the interpretation assigned to it; these constructions thus are in a sense the inverse of hanging topic constructions, discussed above, where a LINK relation ensures the identity of the left-dislocated topic and the 're-sumptive' pronoun. Taking this parallelism as starting point, the Dynamic Syntax analysis of afterthought topic constructions does not involve Late *Adjunction, but the building of a LINK structure after the proposition has been built, with the requirement that the formula value of the linked node, i.e. Fo(àléndò') in (27), be part of the proposition, which is fulfilled if the hearer has picked the right referent from context when interpreting the subject clitic.

Like the use of *Adjunction, LINK structures provide a single structural means for introducing information at the left and right periphery, either as

providing a context for an assertion yet to be developed, or as clarifying an intended context as an afterthought. But these different functions are solely the result of contextual information available at the different stages in structure building reached when the linked node is built, and do not need to be stipulated as part of the structural specification of the LINK transition, as will also be seen when looking at the left periphery in the next section.

4. The expression of focus and topic at the left periphery

In addition to the focus (and topic) effects on the right periphery, information structure can be expressed at the outset of the parse, at the left periphery, involving *Adjunction and initial LINK structures. However, there is a further point to be raised with respect to the left periphery, and that is the role of subjects and subject clitics in Bantu. The pronominal nature of Bantu subject clitics seems to indicate an analysis where subject clitics are projected directly onto the subject node of the emergent tree structure, or as locally unfixed nodes (Marten and Kempson 2002, Marten 2005). In either case, this would allow the option that overt subject NPs are in general introduced at linked or unfixed nodes, an assumption supported by the word order flexibility of Bantu languages illustrated earlier. But this implies that the initial unfixed node is not available for other constituents when it is filled by the subject (as there can only be one unfixed node at any one time), and, furthermore, that pragmatic effects are reduced, since the introduction of unfixed nodes is a standard strategy for introducing subjects. Still, initial focus examples can be found (Downing 2005: 6):[11]

(29) *Ngô:ma* *ti-zamu-limilir-a* *namach!ê:ro* [Tumbuka]
     9.maize   SC1PL-FUT-weed-FV   tomorrow
     'Maize we will weed tomorrow'

(30) *Ma-bû:ku* *wa-ka-p!ás-a* *!wâ:na* [Tumbuka]
     6-books   SC2-PAST-give-FV   children
     'They gave the children books'

On the example in (29), Downing comments that maize is being contrasted with some other possible crop, and on (30) that it is an answer to 'What did they give to the children?', indicative of contrastive and new information focus. Furthermore, prosodic evidence (the initial NP is in a separate pho-

nological phrase) as well as the absence of an object clitic (otherwise strongly preferred with left-dislocated objects) support the status of the construction as focus related. In the Dynamic Syntax analysis the initial constituent is projected onto an unfixed node by *Adjunction as shown in the introduction. It is interesting that in both examples, no overt subject is expressed, leaving the unfixed node to be used by the focused object.

Another example of initial focus is the answer in (31), from Chichewa:

(31) Q: *Ndàání   á-ná-m-dyéts-á   nsóòmbà* [Chichewa]
          Who   SC1-PAST-OC1-eat.CAUS-FV fish
          'Who fed him fish?'

      A: *À-lèéndó   à-ná-m-dyèts-à   nsóòmbà*
          2-guests   SC2-PAST-OC1-eat.CAUS-FV fish
          'The visitors fed him fish'
          (Downing et al. 2005)

The subject *àlèéndó* is in its own phonological phrase indicating new information focus, as is also indicated by the context, and contrasts with the subject *àlèndó* in (32) through the absence of the high tone on the penultimate syllable and penultimate lengthening, the two criteria Downing et al. (2005) identify as indicative of phonological phrase boundaries:[12]

(32) Q: *Kù-nà-chítík-á   chìyáànì?*   [Chichewa]
          SC17-PAST-happen-FV   what?
          'What happened?'

      A: *À-lèndó   à-ná-m-dyèts-à   nsóòmbà*
          2-guests   SC2-PAST-OC1-eat.CAUS-FV   fish
          'The visitors fed him fish'

That the use of initial *Adjunction is possible for the expression of focus is further supported by examples with multiple focus, where both *Adjunction and Late *Adjunction are employed in the same structure:

(33) *Pa-mu-pâ:nda zi-ka-d!úk-a   mb!û:zi*   [Tumbuka]
     16-3-wall   SC10-PAST-jump-FV   10.goats
     'Over the wall jumped goats' ('The goats jumped over the wall')
     (And something else jumped over something else)
     (Downing 2005: 7)

In (33) both the locative NP *pa-mu-pâ:nda* and the subject *mb!û:zi* are contrasted with something else, and are prosodically marked as constituting separate phonological phrases, and are hence, according to Downing (2005), focused. Both NPs are dislocated, at least under the reasonable assumption that the locative phrase is part of the VP, and so, in Dynamic Syntax terms, (33) can be analysed as involving *Adjunction for the locative NP, which merges with a fixed node supplied by the predicate, and Late *Adjunction for the subject, which is introduced as unfixed with respect to the subject node which lacks a full interpretation from the context.

    The examples discussed here show that *Adjunction can be used for the expression of focus in Bantu, even though, for the reasons outlined at the outset of this section, other strategies are more common.

    One of these other strategies is in fact to employ LINK structures, more usually associated with topichood, to introduce new information:

(34) Q: *Ba-ntfwana,   ba-ba-nik-e-ni?*   [Swati]
       2-children   SC2-OC2-give-PAST-what
       'What did they give to the children'

     A: *Tin-cwadzi,   ba-ti-nike   ba-ntfwana*
       10-books   SC2-OC10-give-PAST   2-children
       'Books, they gave (them) to the children'

Both the question and the answer in (34) have a left dislocated NP, co-referential with an object clitic. *Bantfwana* in the question appears to be a discourse topic, and as such may be analysed as linked to the main tree, where the information from the linked node is introduced through the object clitic *-ba-*. However, *tincwadzi* in the answer provides pragmatically new information, but it is co-referenced with an object clitic in the verb, which is commonly analysed as being cross-referenced to topics, not to focused elements. From the Dynamic Syntax perspective, the structure may be analysed as involving either a LINK structure, implying that there is no one-to-one correspondence between structural operations and pragmatic

function, or as an unfixed node under the assumption that object clitics in Swati can be merged with information from full NPs. This latter option appears to be more in line with the argument presented here, but a full discussion will have to await a more in-depth Dynamic Syntax study of the function of object clitics in Swati, and in Bantu more widely.

5. Conclusion

In this paper, I have shown how different structural possibilities at the right and left periphery are exploited for the expression of focus (and topic) in Bantu. On a theoretical level, my main concern was to show that the model does not assign any syntactic meaning to pragmatic notions like topic and focus, in contrast to most alternative analyses. From the Dynamic Syntax perspective, pragmatic effects arise from the particular building steps involved in constructing the semantic representation associated with the utterance, but are not reflected in the final representation itself, thus providing a formal reflex of the distinction between propositional, semantic structure and pragmatic information structure. Furthermore, an important part of the Dynamic Syntax analysis is the way in which utterances are tied to the context, as identical structural analyses can represent different pragmatic readings (e.g. the difference between identificational and presentational focus) as a function of different contexts. From a functional perspective, this might be seen as an instance of the versatility of natural language, which expresses an infinite range of meanings by limited structural means.

On the Bantu side, there are a number of questions outstanding, which have to be addressed on another occasion, partly due to reasons of space, and partly due to the fact that the relevant Dynamic Syntax analyses are still in progress. Amongst those, two in particular deserve a brief mention.

First, all structures which I have discussed show the expression of focus at the clausal periphery. However, it is well known that the immediate postverbal position in Bantu is associated with focus (e.g. Bearth 1999). The extension of the Dynamic Syntax analysis to such examples presupposes a Dynamic Syntax analysis of the Bantu verb phrase, which has yet to be fully developed.[13]

Secondly, with respect to presentational focus structures, another set of data needs to be mentioned, and that is presentational focus constructions with locative subject clitics:

(35) a. *Kwà-fwík-á*   *à-léndò*   [Nsenga]
         SC17.PAST-arrive-FVconj   2-visitors
         'There have arrived guests'

     b. **A-lendo*   *kwa-fwik-a*   [Nsenga]
         2-visitors   SC17.PAST-arrive-FV
         Intd.: 'There have arrived guests'

By assumption, the postverbal subject is introduced, like in the cases discussed in section 3, by Late *Adjunction. But the function of the subject clitic is more difficult to analyse, as it may be taken as a full locative clitic, or as an expletive element, or as something in between the two. In addition, the verb form in (35) is marked as 'conjoint' by the high tone on the final vowel, in contrast to verbs in VS order with subject agreement as discussed here, presumably indicating that the following NP is part of the core clause. I will leave a more detailed discussion of examples like (35) for a future occasion, as it would require more space than is available here.

To conclude, I hope to have shown the interest and relevance to questions of information structure of the new framework of Dynamic Syntax, and of data from Bantu, which, with about 400 different languages, remains a valuable and largely untapped resource for linguistic theory formation.

Notes

1. I would like to thank Laura Downing, Ruth Kempson, Nancy Kula, Al Mtenje, Laura Mutti, Clara Simanga, Nhlanhla Thwala and two reviewers for comments and discussion of the points made in the article. Swati examples were provided by Nhlanhla Thwala. Nsenga examples were provided by Clara Simanga during a research visit at the Centre of Language Studies of the University of Malawi in April 2004, whose hospitality is hereby gratefully acknowledged. Parts of this research were supported by AHRB award B/RG/AN8675/APN16312.
2. The following abbreviations are used in the glosses: SC = subject concord; OC = object concord; FV = final vowel; CONS = consecutive tense; PERF = perfect; CAUS = causative; FUT = future; Q = question particle. Numbers refer to noun classes.
3. More precisely, Bresnan and Mchombo argue that the object clitic is always an incorporated pronoun, while the subject clitic can also function as a marker of grammatical agreement. Discussion of this point would lead too far afield, but see e.g. Demuth and Johnson (1989), Marten and Kempson (2002).
4. Tree annotations in this example are: Tn – treenode identifier, Ty – logical type, Fo – formula value, ◊ (diamond) – indicating the current node. The type value 'e' stands for 'entity' and corresponds roughly to NPs, 't' stands for 'truth-evaluable', that is, a proposition, corresponding to a sentence, and combination of the two indicate functions, e.g. 'e → t', a function from an entity to a proposition, corresponding to VP interpretation, or to intransitive verbs. More annotation will be introduced in the course of the discussion. The type value is similar to the types used in type-logical grammar, and correspondingly, formula values can be thought of as lambda terms. Like in Montague or Categorial Grammar (e.g. Steedman 2000), logical form is the only level of (syntactic and semantic) representation.
5. Or, more correctly, Dynamic Syntax is concerned with how information from the suitably phonologically parsed input-string is built up into larger structures. The parsing perspective adopted here is shared with models like Government Phonology (Kaye 1989) in phonology, and with several pragmatic theories, in particular Relevance Theory (Sperber and Wilson 1995).
6. Note that, although the perspective adopted is related to parsing, the Dynamic Syntax model is not a parsing model in the traditional sense, as crucially, Dynamic Syntax does not presuppose an independently defined competence model. Rather, the claim is that the dynamics of building semantic representations is all there is to syntax.
7. For more discussion of pointer movement see Cann et al. (2005).

8. In addition, locality restrictions on interpretation take care of binding effects, but I ignore those here; see Cann et al. (2005).
9. The Nsenga past tense marker *à* fuses with the preceding subject concord as follows: SC2 *à* + *à* = *à*; SC1 *ú* + *à* = *ó*; SC17 *kù* + *à* = *kwà*.
10. Chichewa examples are tone marked as in the source. In the following examples (as well as in examples (28) and (31)), there appear to be tonal differences between the questions and answers. Although Downing et al. (2005) do not comment on this, the difference may be related to the expression of the different clause types.
11. It is sometimes claimed that initial focused constituents are impossible in Bantu, since Bantu languages express focus on the right periphery. However, the Dynamic Syntax analysis seems to be preferred in that it allows initially focussed constituents, but also has something to say about why they are rare.
12. I am grateful to Al Mtenje for making this point clear to me.
13. But see Marten (2002) for some Dynamic Syntax discussion of verb phrase structure and Bantu applicatives.

References

Bearth, Thomas
   1995   Wortstellung, Topik und Fokus. In Gudrun Miehe and Wilhelm
            J.G. Möhlig, eds., *Swahili – Handbuch*, Köln: Köppe, 173-205.

Bearth, Thomas
   1999   The contribution of African linguistics towards a general theory
            of focus. Update and critical review. *Journal of African Lan-
            guages and Linguistics* 20: 121-156.

Bresnan, Joan and Sam Mchombo
   1987   Topic, pronoun, and agreement in Chichewa. *Language* 63: 741-
            782.

Cann, Ronnie, Ruth Kempson, Lutz Marten, Masayuki Otsuka and David Swin-
            burne
   2004   On the left and on the right. In David Adger, Cécile de Cat and
            George Tsoulos, eds., *Peripheries: Syntactic Edges and their Ef-
            fects*, Dordrecht: Kluwer, 19-47.

Cann, Ronnie, Ruth Kempson and Lutz Marten
   2005   *The Dynamics of Language: An Introduction.* Oxford: Elsevier.

Demuth, Katherine and Mark Johnson
   1989   Interaction between discourse functions and agreement in Seta-
            wana. *Journal of African Languages and Linguistics* 11: 21-35.

Downing, Laura
   2005   The prosody of some focus-related enclitics in some Southern
            Bantu languages. Paper presented at the 5th Bantu Grammar: De-
            scription and Theory Meeting, SOAS. Handout available on-line
            at http://mercury.soas.ac.uk/users/lm5/bantu_project.htm.

Downing, Laura, Al Mtenje and Bernd Pompino-Marschall
   2004   Prosody and information structure in Chichewa. *ZAS Papers in
            Linguistics* 37: 167-186. Available on-line at
            http://mercury.soas.ac.uk/users/lm5/bantu_project.htm.

Downing, Laura, Al Mtenje and Bernd Pompino-Marschall
    2005   Non-accentual prosodic cues to focus in a tone language: the case of Ntcheu Chichewa. Paper presented at Between Tone and Stress, University of Leiden, 16-18 June 2005.

Du Plessis, J.A. and M. Visser
    1992   *Xhosa Syntax*. Pretoria: Via Afrika.

Kaye, Jonathan
    1989   *Phonology: A Cognitive View*. Hillsdale, NJ: Lawrence Erlbaum.

Kempson, Ruth, Ronnie Cann and Jieun Kiaer
    2004   Topic, focus and the structural dynamics of language. Ms. Available on-line at http://semantics.phil.kcl.ac.uk/ldsnl/papers/.

Kempson, Ruth, Dov Gabbay and Wilfried Meyer-Viol
    2001   *Dynamic Syntax: The Flow of Natural Language Understanding*. Oxford: Blackwell.

Lambrecht, Knut
    1994   *Information Structure and Sentence Form*. Cambridge: Cambridge University Press.

Marten, Lutz
    2002   *At the Syntax-Pragmatics Interface: Verbal Underspecification and Concept Formation in Dynamic Syntax*. Oxford: OUP.

Marten, Lutz
    2005   Passive, locative inversion and subject-object reversal. Ms. SOAS.

Marten, Lutz and Ruth Kempson
    2002   Pronouns, agreement, and dynamic construction of verb phrase interpretation: A Dynamic Synatx approach to Bantu clause structure. *Linguistic Analysis* 32: 471-504.

Rizzi, Luigi
    1997   The fine structure of the left periphery. In Liliane Haegeman, ed., *Elements of Grammar*, Dordrecht: Kluwer, 281-337.

Rooth, Mats

1996   Focus. In Shalom Lappin, ed., *The Handbook of Contemporary Semantic Theory*, Oxford: Blackwell, 271-297.

Sperber, Dan and Deirdre Wilson
1995   *Relevance: Communication and Cognition*. 2nd ed. Oxford: Blackwell.

Steedman, Mark
2000   *The Syntactic Process*, Cambridge, Mass.: MIT Press.

Vallduví, Enric
1990   The Information Component. Unpublished PhD dissertation, University of Pennsylvania.