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## Word order and information structure in Makhuwa-Enahara

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## 6. Conclusion

The first part of this thesis provides a short description of Makhuwa-Enahara as a reference for the reader and as a source of linguistic information for Bantuists and typologists. The second part is concerned with the question how syntax and information structure interact and how they influence word order and the conjoint/disjoint alternation in Makhuwa. This chapter summarises the chapters in the second part and tries to answer the question about word order and information structure. The last section of the conclusion indicates areas for further research.

### 6.1 Summary

Chapter 3 first focuses on configurationality, claiming that a language cannot be “non-configurational”. In a so-called configurational language, word order is principally determined by syntactic functions and argument relations, but in a language where syntax and argument structure have less influence on the configuration, the word order is used to express something else: information structure (IS). Considering the crosslinguistic variation in using word order to express syntactic or discourse functions, a black-and-white division “configurational” *versus* “discourse-configurational” is not descriptively adequate. Rather, languages differ in the extent to which they employ word order to express syntactic functions and to express discourse functions, which is suggestive of a continuum between these factors. Word order is thus never free, but is always determined by syntax and/or IS.

In order to arrive at an analysis that combines both of these aspects, the basic notions of information structure on the one hand and (minimalist) syntax on the other hand are laid out. In the IS, three properties in the mental discourse representations of referents are found to be important: relative accessibility, relative salience and exclusivity. If these are the properties that are encoded in the grammar, the prevalent terms “topic” and “focus” can be used to denote the pragmatic relations between a referent and the proposition. But how can these properties be related to syntax?

In a minimalistic approach to syntax, the syntax module is a structure building device that is as simple as possible. Sentences are built by merging linguistic elements and establishing relations and dependencies between them, such as c-command and Agree. Important for Makhuwa is that subject agreement on the verb is always with the logical subject and that the agreeing subject has to move to a position high in the derivation.

Of the many theoretical possibilities for combining IS and syntax, two models are examined in this thesis: a cartographic model and an interface model. The cartographic model assumes a one-to-one mapping between a structural position and a certain interpretation. Elements that have a topic or focus function in a sentence get this interpretation because they move to a functional projection that is specified for topic or

focus. Two important objections to this model are 1. that movement can be motivated not only by the interpretation of the moving element, but also by the interpretation needed for another element (as in the Verb-Subject construction); and 2. that referents in this model only have a discrete value for interpretation (+ or - focus), and cannot account for an interpretation of referents relative to each other (more, or less accessible). In an interface model such as that of Slioussar (2007), these relative notions such as “accessibility” are allowed, and they are used in interpretation rules that function as a filter. They select the correct syntactic structure with the correct and suitable interpretation at the interface. Slioussar uses her model to account for the word order variation in Russian, which is dependent on the relative accessibility and salience of the referents in a sentence. In Makhuwa, word order is also influenced by the discourse representations, and the IS values appear to be evaluated relative to the verb: everything higher than the verb is interpreted as more accessible and less salient than the verb, and the element directly under the conjoint verb form is interpreted as exclusive.

In order to further study the influence of IS on the word order in Makhuwa, chapter 4 examines the properties of the elements in the preverbal and postverbal domains. These include elements that are inherently low in accessibility, such as *wh*-words and indefinites, elements high in salience, such as answers to *wh*-questions, and elements with an exclusive interpretation (for example, when modified by “only”).

In the preverbal domain three syntactically different elements can be distinguished: base-generated scene-setting elements, left-dislocated elements in an A-bar position, and non-dislocated elements in an A position. Only the subject may appear in the high A position, but both subjects and objects seem to be allowed in A-bar positions, which is illustrated by the possibilities for nouns with different degrees of definiteness. Elements with properties related to focus, such as question words and focus particles, were found to be absolutely ungrammatical in the preverbal domain.

The domain after the disjoint verb form is found to host elements that are neither interpreted as topic, nor as (exclusive) focus. They are at most as accessible and at least as salient as the verb. In a canonical sentence the object occurs in the postverbal domain, but the subject may also appear after the verb. This VS order is used to express *thetic* sentences, where the verb and the subject are equally salient, and the subject is “detopicalised”. Assuming that the verb consists of several in-situ inflectional prefixes and a verb stem just above the verb phrase. Considering that the agreeing subject has moved higher than the verb, the VS order is derived by remnant movement of the verbal complex around the high subject. This analysis explains the agreement with the moved subject, the use of the DJ verb form, and the absence of a focus reading of the postverbal subject. Since the verbal complex may also contain the object, the analysis explains why the order VOS is also possible with a *thetic* interpretation.

These data can be accounted for by an interface rule that only allows elements more accessible and less salient than the verb to be in a position higher than the verb, and thus to occur in the preverbal domain. These elements can then assume the

pragmatic function of topic, while the verb and possible elements in the postverbal domain form a comment to the topic.

In the grammar of Makhuwa the pre- and postverbal distribution of elements with a certain IS value is not the only means to encode information structure. A special alternation in conjugations, called the “conjoint” (CJ) and “disjoint” (DJ) verb forms, is also used to mark information structure. Chapter 5 examines the grammaticality and preferences for use of these CJ and DJ verb forms. The difference between the CJ and DJ conjugations is visible in the inflectional markers, the tone pattern on certain following elements and the sentence-final distribution of the verb forms. The difference in meaning between the two forms is not in the tense/aspect semantics or focus on the verb, but in the interpretation of the element immediately following the verb. This element is interpreted as exclusive after a CJ form, but not after a DJ verb form. A focal interpretation on an element following the verb has become known as the effect of the Immediate After Verb position (IAV). Only in this position can an element function as “focus”, which in Makhuwa has an exclusive interpretation.

In a cartographic model a low focus projection lower than the verb accounts for the interpretation and place of the (element in) IAV position. Although for languages like Zulu and Aghem the cartographic approach does not make the right predictions with respect to the use of the CJ or DJ verb form and/or the interpretation of the element in IAV, the model can explain the specific properties of the unique position and exclusive interpretation in Makhuwa. Nevertheless, an interpretation rule linking the highest element c-commanded by the CJ verb form to exclusivity also makes the right predictions in a configurational interface model. The rule was shown to account for the use and interpretation of sentences with a CJ verb form, as well as the use of cleft constructions.

## 6.2 Word order and information structure

After discussing all of these properties and interpretations of different word orders in Makhuwa-Enahara, an answer should be given to the question how word order and information structure interact in this language. Where is Makhuwa on the continuum between IS and syntax as determinants of word order? As mentioned in chapter 3, Stucky (1985:192) concludes that the language “seems to be about midway between the relatively fixed order of English and the very free order of Warlpiri”. Indeed, there is considerable variation in word order in Makhuwa, but it is to a greater or lesser extent restricted by syntax and determined by discourse representations. Taking discourse into account, word order in Makhuwa can be said to be determined partly by the need to encode syntactic functions and partly by the need to encode discourse functions.

The word order in Makhuwa reflects the IS of the sentence in confining the preverbal domain to elements whose referents are more accessible and less salient than the verb (and following elements). These referents can all be said to have a topic function in the sentence, limiting the set of circumstances and/or referents to which the

main predication applies. Whether or not an element appears in the preverbal domain is thus highly dependent on the discourse status of its referent. Another way in which word order is used to express IS is in the Immediate After Verb position. Only the referent of the element in this position is interpreted as exclusive and can be said to have a focus function in the sentence. Under É. Kiss's (1995) definition of discourse configurationality, mentioned in chapter 3, Makhuwa could qualify as a discourse configurational language, since it reserves a certain position for focal elements and a certain domain for topical elements. However, these positions do not appear to be *structural* positions (as in the definition), but *relative* positions. It is not the absolute position that results in a topic or focus reading; it is the position relative to the verb that ensures the right interpretation. Furthermore, it is not defensible to claim that sentence configuration in Makhuwa is *completely* dependent on information structure.

Word order in Makhuwa is not free to concern itself with discourse functions alone. Unlike in the languages Mithun (1987) describes, in Makhuwa there are syntactic restrictions to word order. For example, the subject marker on the verb always agrees with the logical subject in Makhuwa and the subject must always move to a high position. Even if the IS favours placing a focused element in the position directly under the verb, this is impossible for a focused subject. If word order were only determined by IS, the order  $V_{cj} S_{[foc]}$  should be perfectly fine, contrary to fact. As another example, the data suggest that the relative ordering of elements within the preverbal domain is determined more by their syntactic status than by the IS. In short, although at first sight Makhuwa word order appears to be determined by IS (encoding discourse functions), syntactic restrictions apparently also affect the word order.

With respect to the CJ/DJ alternation, it is also the morphosyntax that creates the possibility of encoding IS in the conjugational system. Some conjugations express a combination of temporal and aspectual meaning, some of tense and modality, and in Makhuwa some conjugations express temporal information as well as information on the discourse interpretation of the element directly following the verb (and the verb itself). This encoding device necessarily conspires with word order, giving rise to the effects of the position immediately following the CJ verb form. Additionally, the close relation between the verb in a CJ conjugation and the following element can also be marked prosodically by the different tone pattern on the element following the CJ verb form.

Makhuwa-Enahara thus uses word order together with subject agreement to encode syntactic functions and argument relations, and word order in conjunction with the CJ/DJ alternation to encode information structure.

### 6.3 Further research

In the course of the research focusing on word order, information structure and the CJ/DJ alternation I came across many interesting issues, which fall outside the scope of the research but are nevertheless interesting enough to mention. Some of these issues are indicated in the respective chapters, but four of them are discussed here in particular: the focus-verb adjacency, double object constructions, adverbs, and copular constructions.

The IAV position in Makhuwa turned out to be the only position in which an element receives an exclusive focus interpretation, and there is an undeniable connection between the CJ verb form and the IAV position. However, there are other languages in which a position immediately adjacent to the verb is analysed as the focus position. Examples are not only Aghem, for which the term “IAV” was invented (Watters 1979), but also languages in which the focus appears immediately *before* the verb, like Turkish (Ozsoy and Goksel 2003), Hungarian (É. Kiss 1998) and Korean (Jo 1986). While for Aghem one might possibly find a historical connection between the IAV position and a CJ/DJ alternation, apparently there is something more universal about the position directly adjacent to the verb. Can this link between interpretation and position be modelled in configurational interface rules or specific projections, or is there maybe a more fundamental syntactic or interpretational characteristic of the (inflected) verb that allows or requires the focus interpretation of the element in its direct environment?

A second issue that deserves more attention is the double object construction in Makhuwa. This thesis starts with intransitive and monotransitive predicates and examines the various word orders and interpretations in sentences with these types of verbs. Here and there some hints are given on the characteristics of sentences with ditransitive or applicative verbs, but during fieldwork sessions and in the database the grammaticality and appropriate uses of these sentences remained unclear. For example, in elicited sentences it would be grammatical to have a CJ verb form be followed by two objects, of which only the first is interpreted as exclusive. When constructing an appropriate context for such a sentence (799a), however, it often happened that the “non-exclusive” object was left-dislocated to precede the verb, as in (799b).

- (799) a. o-n-thum-el-alé páni ekúwo?  
 2SG-1-buy-APPL-PERF.CJ 1.who 9.cloth
- b. ekúwó o-n-thum-el-alé páni?  
 9.cloth 2SG-1-buy-APPL-PERF.CJ 1.who  
 ‘who did you buy a cloth for?’

Ditransitive verbs could also be interesting in the subject inversion construction. This construction is possible with intransitive and transitive verbs (VS and VOS). If the remnant movement hypothesis is on the right track, theoretically it should be possible to have a VOOS word order with a thetic interpretation. The question remains whether this is also possible pragmatically: is there ever a situation in which two objects, a subject and a verb have the same salience? Another question is why Makhuwa seems to be typologically different from other Bantu languages when it comes to canonical word order of ditransitive verbs. While the order of the two postverbal objects can be influenced by hierarchies of animacy, person, etc., many Bantu languages have the order S V IO DO in the most neutral case of an inanimate theme as the direct object and a

human beneficiary as the indirect or applied object. Why would Makhuwa use S V DO IO in this case?

A third remaining issue is the position of adverbs. Although adverbs seem quite free in their location with respect to other elements in the sentence, there are some restrictions, especially for manner adverbs. It is unclear so far what influence these restrictions have and what the motivation behind them is. Does the relative order of adverbs and arguments in Makhuwa reflect the information structure or the syntactic conditions under which an adverbial phrase can be merged? Makhuwa does not have many “higher” sentence adverbials like “fortunately” or “honestly” (Cinque 1999), if they exist at all. But even adverbial clauses that are assumed to be more flexible in their positions, like temporals or locatives, can appear high in the clause and in different positions. What could be the difference between the order S-adv-V and adv-S-V, for example?

Adverbs are also an interesting issue in combination with the CJ/DJ alternation. Since the element following a CJ form is interpreted as exclusive, it always evokes a set of alternatives. The CJ form is ungrammatical if no exclusive set can be generated, as for example when the object is modified by “every”. The CJ form is ungrammatical (743a), unless the object is relativised (743b), which makes an exclusive interpretation possible again.

- (800) a. CJ \* yéná oon-alé kut’ éfiílíme  
 1.PRO 1.see-PERF.CJ every 9.film  
 int. ‘he saw every film’
- b. CJ Kaásímú oon-alé kút’ éfiílímé  
 1.Casimo 1.see-PERF.CJ every 9.film  
 e-thum-iy-é n’ itáát’ ááwe  
 9-buy-PASS-PERF by 1.brother 1.POSS.1  
 ‘Casimo watched every film bought by his brother’

The prediction is then that adverbs that cannot produce a set, are not allowed to occur after a CJ form (since they cannot be interpreted as exclusive). Could this be the case with the adverb *saána* ‘well’, which may only follow a DJ verb form in Makhuwa? Are adverbials like “everywhere” and “always” also ungrammatical after a CJ verb form?

A fourth issue that deserves more attention is copular clauses. As mentioned in chapter 5, elements with an exclusive interpretation may appear before or after the copula in copular constructions. If sentences with non-verbal predication would behave similar to sentences with verbal predication, the prediction of the interpretation rules is that elements with an exclusive interpretation may only occur in the post-copular position. Referentiality also seems to play a role in this distribution, which for Makhuwa raises more questions. For example, in a question like in (801a), can the predicative and referential part also be inversed, so that the *wh*-word *pani* ‘who’ precedes the copula?

Another question is whether the answer in (801b) could also be used as a reply to a question like “who is your brother?”, where the focus is on the predicative part of the copular clause.

- (801) a. o-pwesh-alé      evaásó    ti    pani | ti    wéyáánó    nhim’      áu?  
 1-break-PERF.REL 9.vase    COP 1.who COP 2SG.PRO    1.brother    1.POSS.2SG  
 ‘who broke the vase: you or your brother?’
- b.    nhim’      ááká            t’    í-pwésh-ale            (evaáso)  
 1.brother    1.POSS.1SG    COP 1-break-PERF.REL    9.vase  
 ‘my brother broke (the vase)’  
 lit. ‘my brother is the one who broke (the vase)’

A more general issue raised in this thesis is whether information structure is encoded in the grammar as absolute or relative notions. For Makhuwa it is shown that the properties “accessibility” and “salience” are useful in describing the distribution of elements in the pre- or postverbal domain. Whether a referent is more or less accessible and more or less salient than the verb determines the position of the corresponding element in the sentence. Specifically, only if a referent is more accessible and less salient than the verb can the element that corresponds to it occur higher than the verb. This type of relative notion cannot be used in a cartographic model, but it can in an interface model. As noticed in the citation at the beginning of chapter 3, the topical nature of the elements in the preverbal domain is a more general characteristic of Bantu languages. The general impression is indeed that there is a ban on focus in the preverbal domain and that in languages like Sotho, Rundi, Chichewa and Zulu the preverbal elements are highly accessible and have a topic function. The first interpretation rule proposed in this thesis thus seems to work across the board and could also be applied in other Bantu languages.

As to the CJ/DJ distinction, the Makhuwa data show that the CJ verb form combines with an exclusive interpretation of the referent corresponding to the highest element c-commanded by the verb. Exclusivity is a concrete, non-relative notion, which can be captured in a cartographic model. However, the interpretation and IAV position can also be formulated in an interface rule. An interface account seems especially interesting for other languages, where a cartographic model does not make the right predictions because the CJ/DJ alternation exhibits different properties. In fact, after arguing that the Zulu CJ/DJ alternation cannot be accounted for in an analysis depending on a specific focus projection, Buell (2007) proposes the interface constraint in (802) and Cheng and Downing (2007) adopt this constraint in their analysis as well.

- (802)    Focus-Induced Extraposition  
 When a focused element appears in the verb phrase, no other elements appear in the verb phrase.



This constraint takes into account the role constituency plays in Zulu in the relation between word order and information structure. It is not just the first element after the verb, but anything left in the VP that gets a focus interpretation. This allows for the occurrence of more than one focal element, as in multiple *wh*-questions. Elements that are not in focus may not remain in the VP and should be pronominalised or dislocated to the left or right periphery of the sentence.

Whatever the direct or indirect relation is between constituency, focus interpretation, IAV position, and *CJ/DJ* marking in the various languages, it would be interesting to see how an interface account working with relative notions can be applied in other Bantu languages, as well.