

ON PARAMETRIC VARIATION IN BANTU, WITH PARTICULAR  
REFERENCE TO KINYARWANDA<sup>1</sup>BY JOCHEN ZELLER AND JEAN PAUL NGOBOKA  
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## ABSTRACT

Marten, Kula and Thwala (2007) compare the morphological and syntactic properties of ten Bantu languages by postulating 19 micro-parameters with binary values, which capture many of the grammatical differences between the languages in their sample. In our paper, we extend the empirical basis of their study by describing the morpho-syntax of the Bantu language Kinyarwanda (D61) with respect to the same 19 micro-parameters. We then make a proposal about the insights that can be gained from comparative studies of this kind. We suggest that systematically organised data about micro-variation in Bantu offer the opportunity to discover *correlations* between grammatical properties from which descriptive generalisations can be derived. These generalisations shed light on the abstract principles that determine linguistic variation and may lead to hypotheses about underlying ‘major’ parameters which control whole clusters of grammatical surface differences between groups of languages. We also discuss a number of examples of (unidirectional and bidirectional) correlations that we have found in the data, which point to interesting links between morpho-syntactic phenomena such as agreement, relativisation, and word order in the Bantu languages.

## 1. INTRODUCTION

In an influential paper, Marten et al. (2007) (henceforth MKT) compare ten Bantu languages with respect to a range of morphosyntactic properties, which they describe in terms of binary parameters. By assigning a positive or negative value to each parameter in every language in their sample, they systematically organise a considerable amount of comparative data and thereby demonstrate the extent of micro-linguistic variation found even in a small subset of the Bantu family. MKT’s study is especially important for comparative syntax, because it describes grammatical, rather than phonological or lexical, differences between typologically closely related languages.

Our paper has two objectives, one empirical and one theoretical. First, we want to add to the comparative work initiated by MKT by describing the morphosyntax of the Bantu language Kinyarwanda with respect to the parameters proposed by MKT. We consider such a description valuable, not only because it extends the sample of languages whose grammatical properties can be systematically compared, but also because it provides a useful overview of aspects of Kinyarwanda grammar relating to phenomena which have been the subject of

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intense debate in the Bantu literature in recent years, such as object marking, locative inversion or relative clause constructions.

Our second goal is to show that important insights about the grammar of Bantu languages can be gained from the results of comparative studies such as the one conducted by MKT. We suggest that a systematic comparison of grammatical differences between Bantu languages facilitates the search for bidirectional and unidirectional *correlations* between morphosyntactic properties. These correlations, we argue, make it possible to propose descriptive generalisations that may reveal the underlying principles that determine linguistic variation. A theoretical concept that we consider particularly important in this respect is the notion of parameter. In their study, MKT use the term ‘parameter’ to refer to any observable surface difference between two or more languages. We contrast this use of the term with the way it is understood in the principles and parameters theory (Chomsky 1981; 1986; 1995). In this theory, parameters are associated with innate linguistic principles, and a single parameter may control a whole cluster of observable differences between languages. We suggest that comparing descriptive data in light of this interpretation of ‘parameter’ opens up the possibility of developing and testing hypotheses about parametric variation within (and possibly also outside) the Bantu family.

In section 2, we describe the Kinyarwanda data with respect to the parameters proposed in MKT. Section 3 adds our results to the results of MKT’s study, and discusses the implications of our findings for the interpretation of the comparative data offered by MKT. In section 4, we focus on the notion of parameter and present some bidirectional and unidirectional correlations between morphosyntactic properties that we have found in the data. Section 5 provides a brief conclusion.

## 2. SOME MORPHOSYNTACTIC PROPERTIES OF KINYARWANDA

MKT compare a total of ten Bantu languages with respect to 19 different morphosyntactic parameters, which account for cross-linguistic variation observed in six domains of Bantu grammar (object marking, double object constructions, relative clause formation, locative inversion, conjunct agreement, and the conjoint-disjunct alternation). In Table 1 we list the ten Bantu languages examined by MKT and their main area of use.

Table 1. Languages examined in Marten et al. (2007)

Language name and Guthrie classification	Main area of use
Bemba (M42)	Zambia
Chaga (Kivunjo) (E62b)	Tanzania
Chichewa (N31)	Malawi
Ha (D66)	Tanzania
Herero (R31)	Namibia
Lozi (K21)	Zambia
Nsenga (N41)	Malawi / Zambia
SiSwati (S43)	Swaziland / South Africa
Swahili (G42)	Tanzania / Kenya
Tswana (S31)	Botswana / South Africa

In the following subsections, we discuss the relevant grammatical properties of the Bantu language Kinyarwanda (D61), which is spoken in Rwanda and its neighbouring countries. Occasionally, we contrast our Kinyarwanda data with selected examples from other Bantu languages in MKT’s sample, but for reasons of space, we restrict the exposition primarily to the description of Kinyarwanda, and keep the presentation of data from other languages to a minimum. We refer the reader to MKT’s study and the references provided therein for the full presentation of the comparative data.

### 2.1. Object marking

In most Bantu languages, object markers are realised as prefixes which are attached to the verb stem (some languages, mainly those belonging to the western branch, also have post-verbal object markers; see Beaudoin-Lietz et al. 2004). If the object marker occurs without a corresponding NP, it is interpreted as a pronoun, as shown for Kinyarwanda in (1b):<sup>2</sup>

- (1) a. Abagabo bakuunda akazi.  
 a-ba-gabo ba-kuund-a a-ka-zi  
 AUG-2-men 2.SM-like-FV AUG-12-work  
 ‘Men like work’.
- b. Abagabo baragákuunda.  
 a-ba-gabo ba-ra-ka-kuund-a  
 AUG-2-men 2.SM-DJ-12.OM-like-FV  
 ‘Men like it (i.e. work)’.

Bantu languages differ with respect to whether or not they allow the object marker to co-occur with a corresponding NP, where ‘co-occurrence’ is understood as realising the NP and the verb in the same prosodic phrase.<sup>3</sup> While languages such as Bemba, Swahili or Smbaa allow for this possibility (see MKT; Riedel 2009), in other languages, a full NP and the object marker can only co-occur when the object-NP has been left or right dislocated and therefore is part of a separate intonational phrase (see e.g. Baker 2003 for Kinande; Bresnan & Mchombo 1987 for Chichewa; Van der Spuy 1993 for Zulu). Kinyarwanda behaves like the latter languages; post-verbal object-NPs are typically not licensed at all when the object marker appears:

- (2) \*Abagabo ba(ra)gákuunda akazi.  
 a-ba-gabo ba-(ra)-ka-kuund-a a-ka-zi  
 AUG-2-men 2.SM-DJ-12.OM-like-FV AUG-12-work  
 ‘Men like work’.

(2) is (marginally) acceptable only if the object-NP is an afterthought and clearly separated from the preceding clause by an intonational break, as indicated by the comma in (3a). Furthermore, Kinyarwanda also allows for object-marked object-NPs to be left-dislocated, (3b):

- (3) a. ??Abagabo baragákuunda, akazi.  
 a-ba-gabo ba-ra-ka-kuund-a a-ka-zi (right dislocation)  
 AUG-2-men 2.SM-DJ-12.OM-like-FV AUG-12-work  
 ‘Men like work’.

<sup>2</sup> We present each Kinyarwanda example by four lines. Line 1 represents vowel lengthening, surface tone, and phonologically conditioned sound changes (e.g. *ka-* in (1b) becomes *ga-* in front of a voiceless consonant). Line 2 presents the underlying morphemes; the interlinear glosses are in line 3; and line 4 provides a translation. Following the standard practice in the Bantu literature, we mark Bantu noun class prefixes and the corresponding agreement markers through numbers. High tone is marked by an acute accent on the syllable; low tone is unmarked. Morphemes are glossed as follows: 1s/P = first person singular/plural; AA = alternative agreement marker; APPL = applicative; ASP = aspect; AUG = augment; DEM = demonstrative; DJ = disjoint verb form; FOC = focus; FUT = future tense; FV = final vowel; INS = instrumental; LOC = locative; NEG = negation; OM = object marker; PASS = passive; PERF = perfective; POSS = possessive; PRES = present tense; PRO = pronoun; PST = (recent) past tense; REC = reciprocal; REM = remote past tense; RM = relative marker; SM = subject marker; STAT = stative. We have adjusted the glosses of some examples adopted from the literature to our system.

<sup>3</sup> This is how MKT define co-occurrence. A syntactic way of expressing this condition would be to say that in languages which allow an object-NP and an object marker to co-occur, the agreeing object-NP can remain in the VP. In languages which do not allow co-occurrence, agreeing object-NPs can only appear in VP-external positions, if they are licensed in the same clause as the object marker at all.

- b. Akazi            abagabo      baragákuunda.  
a-ka-zi          a-ba-gabo    ba-ra-ka-kuund-a      (left dislocation)  
AUG-12-work    AUG-2-men    2.SM-DJ-12.OM-like-FV  
‘Work, men like it’.

MKT’s first parameter therefore receives a negative value in Kinyarwanda.

Parameter 1: Can the object marker and the lexical object NP co-occur?

Kinyarwanda: NO.

The next parameter distinguishes Bantu languages according to whether or not the co-occurrence of object-NP and object marker is required in some contexts. In Swahili and Smbaa, for example, the object marker is obligatory with all animate NPs. Notice that even in languages in which Parameter 1 is set to ‘No’, the object marker may be required with certain objects. For example, although Chaga generally does not allow the co-occurrence of the object marker and an agreeing object-NP, it requires the object marker with pronominal objects:

- (4) n-á-í-kì-lyí-í-à                              m-kà kyô  
FOC-1.SM-PRES-7.OM-eat-APPL-FV    1-wife 7.PRO  
‘He/she is eating it for/on the wife’.

[Chaga; Bresnan & Moshi 1990: 151]

However, in Kinyarwanda, the co-occurrence of object marker and object-NP is banned even in these contexts (unless the pronoun is a contrastive afterthought):

- (5) \*Abiriira                              umugoré          byó.  
a-bi-ri-ir-a                              u-mu-gore          byo  
1.SM-8.OM-eat-APPL-FV    AUG-1-woman    8.PRO  
‘He eats it for the woman’.

Parameter 2: Is co-occurrence of object marker and object NP required in some contexts?

Kinyarwanda: NO.

A third source of variation in the domain of object marking concerns the availability of locative object markers in a language (see Riedel & Marten 2012). In Kinyarwanda, the class 16 locative object marker *ha-* is used to replace locative objects from all locative noun classes:<sup>4</sup>

- (6) a. Aha      haantu      abáana              baahavuuye.  
(aha    ha-ntu) a-ba-ana              ba-a-a-*ha*-vu-ye  
16.DEM 16-place    AUG-2-children    2.SM-PST-DJ-16.OM-leave-ASP  
‘(This place,) the children have left it/there’.
- b. Ku      ruzítiro      abáana              baahavuuye.  
(ku    ru-zitiro) a-ba-ana              ba-a-a-*ha*-vu-ye  
17.LOC 11-fence    AUG-2-children    2-PST-DJ-16.OM-leave-ASP  
Lit.: ‘(At the fence,) the children have left it/there’.
- c. ?Muu    nzu              abáana              baahavuuye.  
(mu    n-zu)    a-ba-ana              ba-a-a-*ha*-vu-ye  
18.LOC 9-house    AUG-2- children    2.SM-PST-DJ-16.OM-leave-ASP  
Lit.: ‘(In the house,) the children have left it/there’.

<sup>4</sup> In Kinyarwanda, a left-dislocated locative can also be marked by a locative enclitic on the verb instead of an object marker. For unclear reasons, this option is slightly preferred in the case of class 18 locatives, which is why (6c), although grammatical, is slightly marked.

- d. I            Kigalí    abáana            baahavuuye.  
 (I            Kigali) a-ba-ana        ba-a-a-*ha*-vu-ye  
 19.LOC 9.Kigali AUG-2-children 2.SM-PST-DJ-16.OM-leave-ASP  
 Lit.: '(At Kigali,) the children have left it/there'.

Parameter 3 is therefore set to 'Yes' in Kinyarwanda.

Parameter 3: Are there locative object markers?

Kinyarwanda: YES.

We return to locative noun classes in section 2.4.

The next parameter is related to the number of object markers that can be prefixed to the verb in a language. MKT divide this parameter into four sub-parameters 4a–4d, which are not independent from each other, since the setting of parameters 4b–4d may be determined by the setting of parameter 4a. In Kinyarwanda, parameter 4a is set to 'No':

Parameter 4a: Is object marking restricted to one object marker per verb?

Kinyarwanda: NO.

- (7) a. Umwáarimú    yiigiishirije<sup>5</sup>                    mugeenzi    we    ábáana.  
 u-mu-aarimu    a-a-iigiish-ir-ye                    mu-geenzi    we    a-ba-ana  
 AUG-1-teacher    1.SM-PST-teach-APPL-ASP    1-colleague    his    AUG-2-children  
 igifaraansá    ku    ishúuri.  
 i-ki-faraansa    ku    i-shuuri  
 AUG-7-French    18.LOC    AUG-5.school  
 'The teacher taught children French for his colleague at the school'.  
 b. Umwáarimú    yaahakíbamwíigiishirije.  
 u-mu-aarimu    a-a-a-*ha-ki-ba-mu*-iigiish-ir-ye  
 AUG-1-teacher    1.SM-PST-DJ-16.OM-7.OM-2.OM-1.OM-teach-APPL-ASP  
 'The teacher taught it to them there for him'.

As (7b) shows, in contrast to languages such as Swati or Zulu, which only allow one object marker per verb, Kinyarwanda licenses the occurrence of multiple object markers. This possibility exists regardless of the noun class or person of the respective objects. Therefore, Parameter 4b is also set to 'No' in Kinyarwanda.

Parameter 4b: Are two object markers possible in restricted contexts?

Kinyarwanda: NO.

Parameter 4b is set to 'Yes' in a language such as Bemba, which allows multiple object markers, but only under special conditions (i.e. if both object markers are from the animate noun classes 1 and 2, or if the second object marker is the 1st person singular object marker). A negative value is assigned in languages which allow for an unrestricted use of multiple object markers (such as Kinyarwanda), but also in languages that allow only one object marker (and therefore do not license two object markers in restricted contexts).

Parameter 4c is set to 'Yes' in languages which freely allow the use of multiple object markers. As (7b) has shown, Kinyarwanda falls in this category.

Parameter 4c: Are two or more object markers freely available?

Kinyarwanda: YES.

<sup>5</sup> In Kinyarwanda, the subject markers *a-* (class 1 and 6) and *i-* (class 9) are replaced by the glide *y-* when followed by a vowel; 2nd person singular *u-* is replaced by *w-*. If the vowel that triggers glide formation is followed by another, different vowel, it is deleted (cf. (7a)).

In contrast, languages such as Swati, in which only one object marker can occur, and Bemba, which allows the use of multiple object markers, but only in restricted contexts, receive a negative value for parameter 4c.

The final object marking-parameter proposed by MKT specifies whether the order of object markers in languages with multiple object markers is free. In MKT's study, this parameter is only set to 'Yes' for Tswana, because it is the only language with multiple object markers in their sample in which these prefixes can attach to the verb in either order (see Pretorius et al. 2012):

- (8) a. Morutabana o a mo di fa.  
 1.teacher 1.SM PRES 1.OM 10.OM give  
 'The teacher gives it to him/her'.  
 b. Morutabana o a di mo fa.  
 1.teacher 1.SM PRES 10.OM 1.OM give  
 'The teacher gives it to him/her'.

[Tswana; Pretorius et al. 2012: 208]

In contrast to Tswana, there are relatively strict ordering restrictions in Kinyarwanda that apply when more than one object marker occurs. When one object is [+ human] and the other one [- human], then the object marker corresponding to the [+ human]-object must be closer to the verb stem. Therefore, an example equivalent to the Tswana example in (8a) is ungrammatical in Kinyarwanda, (9c):

- (9) a. Umwáarimú yeeretse Muhiire inká.  
 u-mu-aarimu a-a-eerek-ye Muhiire i-n-ka  
 AUG-1-teacher 1.SM-PST-SHOW-ASP 1.Muhire AUG-9-COW  
 'The teacher showed Muhire the cow'.  
 b. Umwáarimú yaayimwéeretse.  
 u-mu-aarimu a-a-a-yi-mu-eerek-ye  
 AUG-1-teacher 1.SM-PST-DJ-9.OM-1.OM-SHOW-ASP  
 'The teacher showed it to him'.  
 c. \*Umwáarimú yaamuyiyéeretse.  
 u-mu-aarimu a-a-a-mu-yi-eerek-ye  
 AUG-1-teacher 1.SM-PST-DJ-1.OM-9.OM-SHOW-ASP  
 'The teacher showed it to him'.

When a verb selects a beneficiary/goal and a theme argument, and both are [+ human], then the object marker closest to the verb stem is necessarily interpreted as the beneficiary/goal:

- (10) a. Umwáarimú yeeretse umwána abashyitsi.  
 u-mu-aarimu a-a-eerek-ye u-mu-ana a-ba-shyitsi  
 AUG-1-teacher 1.SM-PST-SHOW-ASP AUG-1-child AUG-2-visitor  
 'The teacher showed the child to the visitors', or  
 'The teacher showed the visitors to the child'.  
 b. Umwáarimú yaabamwéeretse.  
 u-mu-aarimu a-a-a-ba-mu-eerek-ye  
 AUG-1-teacher 1.SM-PST-DJ-2.OM-1.OM-SHOW-ASP  
 only: 'The teacher showed them to him'.  
 c. Umwáarimú yaamubéeretse.  
 u-mu-aarimu a-a-a-mu-ba-eerek-ye  
 AUG-1-teacher 1.SM-PST-DJ-1.OM-2.OM-SHOW-ASP  
 only: 'The teacher showed him to them'.

When one of the two arguments is first person singular, then this object marker must be closest to the verb, regardless of its thematic role:

- (11) a. Umwáarimú yaabányeeretse.  
 u-mu-aarimu a-a-a-*ba-n*-eerek-ye  
 AUG-1-teacher 1.SM-PST-DJ-2.OM-1s.OM-show-ASP  
 ‘The teacher showed them to me’, or  
 ‘The teacher showed me to them’.
- b. \*Umwáarimú yaambéeretse.  
 u-mu-aarimu a-a-a-*n-ba*-eerek-ye  
 AUG-1-teacher 1.SM-PST-DJ-1s.OM-2.OM-show-ASP  
 ‘The teacher showed me to them/them to me’.

In light of these data, we conclude that parameter 4d is set to ‘No’ in Kinyarwanda.

Parameter 4d: Is the order of multiple object markers structurally free?  
 Kinyarwanda: NO.

However, notice that there are some cases in which the order of multiple object markers is free in Kinyarwanda, namely in double object constructions in which neither object is [+human] (see Bizimana et al. 1998):

- (12) a. Yahaaye ingurube ibijumba.  
 a-a-ha-ye i-n-gurube i-bi-juumba  
 1.SM-PST-give-ASP AUG-9-pig AUG-8-sweet\_potatoes  
 ‘He has given the pig sweet potatoes’.
- b. Yabiyíhaaye.  
 a-a-a-*bi-yi*-ha-ye  
 1.SM-PST-DJ-8.OM-9.OM-give-ASP  
 ‘He has given them to it’.
- c. Yayibíhaye.  
 a-a-a-*yi-bi*-ha-ye  
 1.SM-PST-DJ-9.OM-8.OM-give-ASP  
 ‘He has given them to it’.

There is no semantic or pragmatic difference between the orders in (12b) and (12c). These examples show that thematic role or animacy does not impose any constraints on the order of the object markers when both refer to non-human entities.

## 2.2. Double object constructions

Baker (1988), Bresnan and Moshi (1990) and Alsina (1996), among many others, discuss the fact that Bantu languages can be divided into ‘symmetrical’ and ‘asymmetrical’ types. Symmetrical languages are those in which both objects of a ditransitive verb may display so-called ‘primary object’ properties, while only one object may have these properties in an asymmetrical language. MKT’s parameters 5–7 address three of these primary object properties, namely the ability of an object to be adjacent to the verb, to be passivised, and to be object-marked.

In Kinyarwanda, the order of objects is quite flexible. This is illustrated by the instrumental construction in (13):<sup>6</sup>

- (13) a. Umugabo yateemesheje igiti úmuhero.  
 u-mu-gabo a-a-tem-iish-ye i-ki-ti u-mu-horo  
 AUG-1-man 1.SM-PST-cut-INS-ASP AUG-7-tree AUG-3-machete  
 ‘The man cut the tree with the machete’.
- b. Umugabo yateemesheje umuhoro igití.  
 u-mu-gabo a-a-tem-iish-ye u-mu-horo i-ki-ti.  
 AUG-1-man 1.SM-PST-cut-INS-ASP AUG-3-machete AUG-7-tree  
 ‘The man cut the tree with the machete’.

[Zeller & Ngoboka 2006: 117]

In benefactive applicative constructions, the word order of the internal arguments is also free, although some speakers show a slight preference for the order beneficiary > theme (cf. Gary & Keenan 1977):

- (14) a. Ishuúri rizaagurira abáana améézá.  
 i-shuuri ri-zaa-gur-ir-a a-ba-ana a-meeza  
 AUG-5.school 5.SM-FUT-buy-APPL-FV AUG-2-children AUG-6.table  
 ‘The school will buy tables for the children’.
- b. ?Ishuúri rizaagurira améézá abáana.  
 i-shuuri ri-zaa-gur-ir-a a-meeza a-ba-ana  
 AUG-5.school 5.SM-FUT-buy-APPL-FV AUG-6.table AUG-2-children  
 ‘The school will buy tables for the children’.

However, locative constructions differ from most other double object constructions in Kinyarwanda in that their word order is fixed. The locative object-NP must precede the theme:

- (15) a. Umwáana yaanditseho í-gikapu í-zína.  
 u-mu-ana a-a-aandik-ye-ho i-ki-kapu i-zina  
 AUG-1-child 1.SM-PST-write-ASP=17.LOC AUG-7-bag AUG-5.name  
 ‘The child wrote the name on the bag’.
- b. \*Umwáana yaanditseho ízína igikapú.  
 u-mu-ana a-a-aandik-ye-ho i-zina i-ki-kapu  
 AUG-1-child 1.SM-PST-write-ASP=17.LOC AUG-5.name AUG-7-bag  
 ‘The child wrote the name on the bag’.

The word order contrast between locative and instrumental constructions in Kinyarwanda is discussed in Zeller & Ngoboka (2006). They show that the syntax of locative double object constructions is derived from an underlying dative construction in which the locative argument is part of a PP (cf. Baker 1988; Larson 1988; Nakamura 1997). Therefore, the locative in (15a) is not an underlying argument of the verb, but of a preposition (which is realised as the clitic *-ho* in (15)).<sup>7</sup> In this respect, constructions such as (15) differ from lexical double object constructions such as those in (13) and (14), in which both objects

<sup>6</sup> Both causative and instrumental constructions are formed with the morpheme *-iish* in Kinyarwanda (see Kimenyi 1976; Jerro 2013).

<sup>7</sup> As argued in Nakamura (1997) and Zeller and Ngoboka (2006), the prepositional clitic combines with the verb via head movement. As a result, its locative NP-complement must also move (for case reasons) and ends up in a position from where it linearly precedes the theme-NP.



are internal arguments of the verb. Zeller & Ngoboka (2006) show that the word order contrast observed above follows from this difference. Since ‘genuine’ double object constructions show flexible word order, we conclude that parameter 5 has a positive value in Kinyarwanda.

Parameter 5: Can either object be adjacent to the verb?

Kinyarwanda: YES.

The next parameter concerns passivisation. Here, the value for Kinyarwanda is also ‘Yes’; benefactive and instrumental double object constructions allow either internal argument to be promoted to subject position (Kimenyi 1976; Gary & Keenan 1977):

- (16) a. Umuhoro watemeeshejwe igití.  
 u-mu-horo u-a-tem-iish-w-ye i-ki-ti  
 AUG-3-machete 3.SM-PST-cut-INS-PASS-ASP AUG-7-tree.  
 Lit.: ‘The machete was cut the tree with’.
- b. Igití cyaatemeeshejwe umuhoro.  
 i-ki-ti ki-a-tem-iish-w-ye u-mu-horo  
 AUG-7-tree 7.SM-PST-cut-INS-PASS-ASP AUG-3-machete  
 ‘The tree was cut with the machete’.
- (17) a. Améezá azaagurirwa abáana n’ishuúri.  
 a-meeza a-zaa-gur-ir-w-a a-ba-ana n’-i-shuuri  
 AUG-6.table 6.SM-FUT-buy-APPL-PASS-FV AUG-2-child by-AUG-5.school  
 ‘The tables will be bought for the children by the school’.
- b. Abáana bazaagurirwa améezá n’ishuúri.  
 a-ba-ana ba-zaa-gur-ir-w-a a-meeza n’-i-shuuri  
 AUG-2-child 2.SM-FUT-buy-APPL-PASS-FV AUG-6.table by-AUG-5.school  
 ‘The children will be bought tables by the school’.

Locative constructions again differ from (16) and (17) in that the theme-NP cannot be passivised when the locative is a full NP-object, (18b) (Kimenyi 1976; Dryer 1983). However, passivisation of the theme-NP becomes possible when the locative-NP is realised as an object marker, (18c) (Zeller & Ngoboka 2006):

- (18) a. Igikapú cyaanditsweho ízína n’úumwáana.  
 i-ki-kapu ki-a-aandik-w-ye-ho i-zina n’uu-mu-ana  
 AUG-7-bag 7.SM-PST-write-PASS-ASP=17.LOC AUG-5.name by-AUG-1-child  
 Lit.: ‘The bag was written on the name by the child’.
- b. \*Ízína ryaanditsweho ígikapú n’úumwáana.  
 i-zina ri-a-aandik-w-ye-ho i-ki-kapu n’uu-mu-ana  
 AUG-5.name 5.SM-PST-write-PASS-ASP=17.LOC AUG-7-bag by-AUG-1-child  
 ‘The name was written on the bag by the child’.
- c. Izína ryaacyaanditswehó n’úumwáana.  
 i-zina ri-a-ki-aandik-w-ye-ho n’uu-mu-ana  
 AUG-5.name 5.SM-PST-7.OM-write-PASS-ASP=17.LOC by-AUG-1-child  
 ‘The name was written on it by the child’.

Parameter 6: Can either object become subject under passivisation?

Kinyarwanda: YES.

Finally, the same patterns are observed with respect to object marking. Instrumentals and benefactive applicatives allow object marking of either object, while object marking of the theme in locative constructions is ungrammatical, unless the locative is also object-marked (Kimenyi 1976; Gary & Keenan 1977; Dryer 1983; Zeller & Ngoboka 2006):

- (19) a. Umugabo yagitemeesheje umuhoro.  
 u-mu-gabo a-a-*ki*-tem-iish-ye u-mu-horo  
 AUG-1-man 1.SM-PST-7.OM-cut-INS-ASP AUG-3-machette  
 ‘The man cut it with a machette’.
- b. Umugabo yawutemeesheje igití.  
 u-mu-gabo a-a-*wu*-tem-iish-ye i-ki-ti  
 AUG-1-man 1.SM-PST-3.OM-cut-INS-ASP AUG-7-tree  
 ‘The man cut a tree with it’.
- c. Umugabo yakiwútemeesheje.  
 u-mu-gabo a-a-a-*ki-wu*-tem-iish-ye  
 AUG-1-man 1.SM-PST-DJ-7.OM-3.OM-cut-INS-ASP  
 ‘The man cut it with it’.
- (20) a. Ishuúri rizaayagurira abáana.  
 i-shuuri ri-zaa-ya-gur-ir-a a-ba-ana  
 AUG-5.school 5.SM-FUT-6.OM-buy-APPL-FV AUG-2-child  
 ‘The school will buy them for the children’.
- b. Ishuúri rizaabagurira améézá.  
 i-shuuri ri-zaa-*ba*-gur-ir-a a-meeza  
 AUG-5.school 5.SM-FUT-2.OM-buy-APPL-FV AUG-6.table  
 ‘The school will buy tables for them’.
- c. Ishuúri rizaayabagurira.  
 i-shuuri ri-zaa-ya-*ba*-gur-ir-a  
 AUG-5.school 5.SM-FUT-6.OM-2.OM-buy-APPL-FV  
 ‘The school will buy them for them’.
- (21) a. Umwáana yacyaanditseho ízína.  
 u-mu-ana a-a-*ki*-andik-ye-ho i-zina  
 AUG-1-child 1.SM-PST-7.OM-write-ASP=17.LOC AUG-5.name  
 ‘The child wrote the name on it’.
- b. \*Umwáana yaryaanditseho ígikapú.  
 u-mu-ana a-a-*ri*-andik-ye-ho i-ki-kapu  
 AUG-1-child 1.SM-PST-5.OM-write-ASP=17.LOC AUG-7-bag  
 ‘The child wrote it on the bag’.
- c. Umwáana yaricyaanditsehó.  
 u-mu-ana a-a-*ri-ki*-andik-ye-ho  
 AUG-1-child 1.SM-PST-5.OM-7.OM-write-ASP=17.LOC  
 ‘The child wrote it on it’.

Parameter 7: Can either object be expressed by an object marker?

Kinyarwanda: YES.

The reader is referred to Zeller & Ngoboka (2006) for further discussion and analysis of double object constructions in Kinyarwanda.

### 2.3. Relative clauses

The third domain of cross-linguistic variation in Bantu discussed in MKT is relativisation. Many Bantu languages have at least one relative clause formation strategy in which a segmental relative marker appears (cf. Henderson 2006). While this relative marker agrees with the relativised constituent (the head noun) in most of the languages examined in MKT, the relative marker in the Nguni group of Bantu languages (which includes Swati) does not agree with the head noun (see Zeller 2004; 2006). This difference is captured by parameter 8 in MKT.

Kinyarwanda does not use overt segmental relative markers, but marks relativisation with a high tone on the verb, (22b):

- (22) a. Umukózi      abara      ibitabo.  
          u-mu-kozi   a-bar-a      i-bi-tabo  
          AUG-1-worker 1.SM-count-FV AUG-8-book  
          ‘The worker counts books’.
- b. ibitabo      umukózi      abará  
          i-bi-tabo      u-mu-kozi      a-bar-a  
          AUG-8-book    AUG-1-worker 1.SM-count-FV  
          ‘the books that the worker counts’

Therefore, parameter 8 is set to ‘No’ in Kinyarwanda, although a ‘non-applicable’ value would perhaps be more appropriate.

Parameter 8: Does the relative marker agree with the head noun?

Kinyarwanda: NO.

Notice that Kinyarwanda relatives show what is known as an ‘anti-agreement’ (Schneider-Zioga 2007) or ‘alternative agreement’ (Diercks 2010) effect. In subject relative clauses, the usual agreement marker of class 1 *a-* is replaced by *u-* (Kimenyi 1976):

- (23) a. Uyu    mugabo    acuruuza    ihené.  
          uyu    mu-gabo    *a*-curuuz-a    i-hene  
          1.DEM 1-man    1.SM-sell-FV AUG-10.goat  
          ‘This man sells goats’.
- b. umugabo    ucúruuza    ihené  
          u-mu-gabo    *u*-curuuz-a    i-hene  
          AUG-1-man    1.AA-sell-FV AUG-10.goat  
          ‘the/a man who sells goats’

Although (23b) exhibits a specific marker that shows agreement with the head noun, the subject prefix in these constructions is not a relative marker. Therefore, the value for parameter 8 remains unchallenged by the alternative agreement effect.

MKT’s next parameter is concerned with the possibility of using resumptive object markers in object relative clauses. It is divided into three related sub-parameters. Parameter 9a groups the languages in MKT’s sample according to whether or not object markers are obligatory in object relatives. Parameter 9b distinguishes languages which never allow object markers in relative clauses from those in which object markers are possible (either allowed or required). Parameter 9c puts together languages which either require or disallow the object marker, as opposed to languages in which object marking in object relatives is optional. The value of this parameter in a language can be derived directly from the values of parameters 9a and 9b; it is set to ‘Yes’ if a language has both parameters 9a and 9b set to ‘No’, and to ‘No’ otherwise.

Kinyarwanda never allows resumptive object markers in object relative clauses. Compare (24) with (22b) above:

- (24) \*ibitabo umukózi abibará  
 i-bi-tabo u-mu-kozi a-*bi*-bar-a  
 AUG-8-book AUG-1-worker 1.SM-8.OM-count-FV  
 ‘the books that the worker counts’

The setting of parameters 9a–9c is therefore straightforward.

Parameter 9a: Is an object marker required in object relatives?

Kinyarwanda: NO.

Parameter 9b: Is an object marker disallowed in object relatives?

Kinyarwanda: YES.

Parameter 9c: Is an object marker optional in object relatives?

Kinyarwanda: NO.

#### 2.4. Locative inversion

Many Bantu languages have three locative noun classes, expressing nearness (class 16), distance (class 17), and insiderness (class 18). In locative inversion constructions, the order of a locative phrase and the logical subject argument is inverted, such that the locative precedes, and the subject follows, the verb (see Bresnan & Kanerva 1989; Demuth & Mmusi 1997; Marten 2006; Diercks 2011; Zeller 2013):

- (25) Mù-ngándá mù-lé-imb-á á-bà-nà.  
 18-9.house 18.SM-ASP-sing-FV AUG-2-children  
 ‘The children are singing in the house’.

[Bemba; Marten 2010, ex. (3)]

While languages such as Chichewa only license locative inversion with unaccusative predicates (including passivised transitive verbs), other languages (e.g. Herero, Bemba or Tswana) also license the construction with other types of verbs. In Kinyarwanda, locative inversion is possible with unaccusative and unergative predicates, and to some extent also with transitive verbs:

- (26) Mu muháanda hahagazemó Bageni.  
 mu mu-haanda ha-hagarar-ye-mo Bageni  
 18.LOC 3-road 16.SM-stand-ASP=18.LOC 1.Bageni  
 Lit.: ‘In the road stands Bageni’.

- (27) Muri íiri shuíri hiigiramo ábáana baké.  
 muri iri shuuri ha-iig-ir-a-mo a-ba-ana ba-ke  
 18.LOC 5.DEM 5.school 16.SM-study-APPL-FV=18.LOC AUG-2-children 2-few  
 Lit.: ‘In this school study few children’.

- (28) ?Mu biro haandikiramo íbitabo  
 mu biro ha-andik-ir-a-mo i-bi-tabo  
 18.LOC 8.office 16.LOC-write-APPL-FV=18.LOC AUG-8-book  
 abashaakashaatsi beénshi.  
 a-ba-shaakashaatsi ba-iinshi  
 AUG-2-researchers 2-many  
 Lit.: ‘In the office write many researchers books’.

There are two complications here that need to be mentioned. First, there is speaker variation with respect to the acceptability of examples such as (28); not all Kinyarwanda speakers judge (28) as perfectly grammatical. Second, notice that the verbs in (27) and (28) are modified with an applicative marker. While the addition of the applicative marker is optional with many unergative verbs, the applicative is considered obligatory in Kinyarwanda in order to license locative inversion with a transitive predicate, presumably in order to introduce the locative as an argument of the verb.<sup>8</sup> Nevertheless, since the majority of speakers accept constructions such as (28) in Kinyarwanda, we conclude that the tenth parameter proposed by MKT is set to ‘No’.<sup>9</sup>

Parameter 10: Is locative inversion thematically restricted to intransitives?

Kinyarwanda: NO.

In the Bemba locative construction in (25) above, the verb agrees in noun class with the fronted locative. However, not all Bantu languages with three locative noun classes also have the full set of corresponding locative subject markers. Lozi, for example, only uses one locative subject marker (that of class 17) in locative inversion constructions, regardless of the noun class of the fronted locative (Marten 2010).

Kinyarwanda is one of the few Bantu languages which has maintained a fourth locative noun class (class 19). However, Kinyarwanda, like Lozi, only has one locative subject marker, class 16 *ha-*, which appears with fronted locatives of all four noun classes:

- (29) a. Aha haantu haageze abaantu.  
 aha ha-ntu ha-a-ger-ye a-ba-ntu  
 16.DEM 16-place 16.SM-PST-arrive-ASP AUG-2-people  
 ‘There have arrived people in this place’.
- b. Ku ruzitiro haagezeho abajuura.  
 ku ru-zitiro ha-a-ger-ye-ho a-ba-juura  
 17.LOC 11-fence 16.SM-PST-arrive-asp=17.LOC AUG-2-thief  
 ‘There have arrived thieves at the fence’.
- c. Muu nzu haagezemo abáana.  
 mu n-zu ha-a-ger-ye-mo a-ba-ana  
 18.Loc 9-house 16.SM-PST-arrive-ASP=18.LOC AUG-2-children  
 ‘There have arrived children in the house’.
- d. I Kigali haagezeyo abakinnyi.  
 i Kigali ha-a-ger-ye-yo a-ba-kinnyi  
 19.LOC 9.Kigali 16.SM-PST-arrive-ASP=19.LOC AUG-2-player  
 ‘There have arrived players in Kigali’.

Parameter 11 is therefore set to ‘No’ in Kinyarwanda.

Parameter 11: Are there three different locative subject markers?

Kinyarwanda: NO.

<sup>8</sup> Notice that the presence or absence of the applicative marker with unergative verbs is correlated with systematic differences in the interpretation of the fronted locative. Interesting questions (which we cannot address here) arise regarding the role of the locative clitics, which resemble the locative clitics found in ditransitive locative constructions of the type discussed in section 2.2 above.

<sup>9</sup> Parameter 10 in MKT distinguishes between intransitive verbs (unaccusatives and unergatives) and transitives. However, there are reasons to believe that a more meaningful binary split is between languages which only license locative inversion with unaccusative verbs on the one hand, and those which also allow it with unergative and transitive verbs on the other. See Zeller (2013) for arguments and discussion.

### 2.5. *Conjunct agreement*

A conflict arises in Bantu languages if agreement needs to be expressed between the verb and an NP that consists of two conjoined nouns belonging to different noun classes. Different languages have different strategies to resolve this conflict, which may depend on the semantic and/or grammatical properties of the conjoined nouns, their order, or the position of the conjoined NP in relation to the verb (see Bosch 1985; Marten 2005; De Vos & Mitchley 2012; Simango 2012). With parameter 12, MKT distinguish between languages which use a default agreement marker in case of noun class conflict, and those in which partial agreement (i.e. agreement with the noun class of one of the two conjoined nouns) is possible. Partial agreement is illustrated by the Swahili example in (30):

- (30) M-guu w-a meza na ki-ti ki-me-vunj-ik-a.  
 3-leg 3-POSS 9.table and 7-chair 7.SM-PERF-break-STAT-FV  
 ‘The leg of the table and the chair are broken’.  
 [Swahili; Marten 2000, ex. (28); glosses slightly modified]

In contrast to Swahili, but like most of the languages in MKT’s sample, Kinyarwanda does not permit partial agreement. Instead, when two [+ human] nouns from different classes are conjoined, the noun class prefix *ba-* of class 2 is used as a default agreement marker:

- (31) a. Inkumí n’ ábasóre barakúundana.  
 i-n-kumi n’ a-ba-sore ba-ra-kuund-an-a  
 AUG-10-young\_girls and AUG-2-young\_men 2.SM-DJ-love-REC-FV  
 ‘Young girls and young men love each other’.  
 b. Impugúuke n’ íbimúga bari hamwé.  
 i-n-huguuke n’ i-bi-muga ba-ri hamwe  
 AUG-10-experts and AUG-8-disabled 2.SM-be together  
 ‘Experts and the disabled are together’.

In all other cases, the marker *bi-* of noun class 8 must be used as the default marker:

- (32) a. Imbwá n’ ábaantu birakúundana.  
 i-n-bwa n’ a-baa-ntu bi-ra-kuund-an-a  
 AUG-9-dog and AUG-2-people 8.SM-DJ-like-REC-FV  
 ‘Dogs and humans like each other’.  
 b. Améezá n’ íntébe ntibitaaná.  
 a-meeza n’ ii-n-tebe nti-bi-taan-a  
 AUG-6.table and AUG-9-chair NEG-8.SM-separate-FV  
 ‘A table and a chair are always together (lit. ‘do not separate’)’.

Since no other subject marker is possible in any of the examples in (31) and (32), parameter 12 receives a negative value in Kinyarwanda:

Parameter 12: Is partial agreement with conjoined NPs possible?  
 Kinyarwanda: NO.

### 2.6. *The conjoint-disjunct alternation*

Some Bantu languages mark the (prosodic or syntactic) relation between the verb and a following constituent through the so-called ‘conjoint/disjunct’ alternation. Typically, the conjoint form is chosen when the post-verbal constituent is in the same (prosodic or syntactic) domain as

the verb, while the disjoint form signals that nothing follows the verb within the relevant domain (see Van der Spuy 1993; Creissels 1996, 2012; Buell 2006; Van der Wal 2009; Halpert 2012). The alternation can be marked through tone, through segmental morphology, or both.

In Kinyarwanda, the disjoint verb form is marked by the prefix *a-* in the recent past, and by the prefix *ra-* in the present and remote past tense (see (33b) and (33c)). Kimenyi (1976) calls this element an ‘action-focus’-marker; Ndayiragije (1999) refers to *ra-* in Kirundi as an ‘antifocus’-marker:

- (33) a. Bakina           imikino.  
           ba-kin-a       i-mi-kino  
           2.SM-play-FV AUG-4-game  
           ‘They play games’.
- b. Barakina.  
       ba-ra-kin-a  
       2.SM-DJ-play-FV  
       ‘They play’.
- c. Barayikina.  
       ba-ra-yi-kin-a  
       2.SM-DJ-4.OM-play-FV  
       ‘They play them’.

There are also tonal differences between phrase-final and phrase-medial verbs in Kinyarwanda, even in some of the tenses/moods which do not mark the disjoint form segmentally. It is clear, therefore, that parameter 13 is set to ‘Yes’ in Kinyarwanda.

Parameter 13: Is there a (tonal) distinction between conjoint/disjoint forms?

Kinyarwanda: YES.

Another phenomenon, which according to MKT is found only in western Bantu languages and which is related to the conjoint/disjoint alternation, is tone case. In Herero, for example, the tone on the noun class prefix of a noun changes, depending on the syntactic position of the NP in the clause (see Kavari et al. 2012). Kinyarwanda, like all of the other languages described by MKT for which data were available, does not have tone cases.

Parameter 14: Is there a (tonal) distinction of nominal ‘cases’?

Kinyarwanda: NO.

This concludes our description of the grammatical properties of Kinyarwanda.

### 3. RESULTS

Marten et al. (2007: 283) summarise the results of their study in a table which lists the setting of each of their 19 parameters for all ten Bantu languages in their sample. We reproduce these results in Table 2, and add our findings from Kinyarwanda in the rightmost column.

Before we discuss the data in Table 2, a caveat must be mentioned. In some cases, assigning a specific value to a parameter in a language may not be entirely straightforward, either because the relevant properties of the language are not homogenous (consider, for example, the discussion of double object constructions in Kinyarwanda in section 2.2), or because the available data are ambiguous (e.g. because there is speaker variation regarding the acceptability of certain examples). Furthermore, MKT’s decision to work only with binary choices and to assign a value to every parameter, which we have

Table 2. Values for eleven Bantu languages

	Swah.	Chaga	Ha	Bem.	Chich.	Nseng.	Tswa.	Lozi	Swati	Her.	Kiny.
1 OM – obj NP	Yes	No	Yes	Yes	No	?	No	Yes	No	No	No
2 OM obligatory	Yes	Yes	?	No	No	?	No	No	No	No	No
3 OM loc	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
4a One OM	Yes	No	No	No	Yes	?	No	Yes	Yes	Yes	No
4b Restr 2 OM	No	No	No	Yes	No	?	No	No	No	No	No
4c Multiple OM	No	Yes	Yes	No	No	?	Yes	No	No	No	Yes
4d Free order	No	No	No	No	No	?	Yes	No	No	No	No
5 Sym order	No	No	Yes	No	No	?	Yes	No	No	No	Yes
6 Sym passive	No	Yes	?	No	No	?	Yes	Yes	Yes	Yes	Yes
7 Sym OM	No	Yes	?	No	No	?	Yes	Yes	Yes	Yes	Yes
8 AgrRel mark	Yes	?	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
9a Res OM oblig	No	?	No	No	Yes	No	Yes	No	Yes	No	No
9b Res OM barred	No	?	No	Yes	No	No	No	Yes	No	Yes	Yes
9c Res OM option	Yes	?	Yes	No	No	Yes	No	No	No	No	No
10 LI restr	Yes	Yes	?	Yes	Yes	No	Yes	Yes	Yes	No	No
11 Full loc SM	Yes	No	No	Yes	Yes	Yes	No	No	No	Yes	No
12 Partial agr	Yes	?	No	No	No	Yes	?	?	Yes	No	No
13 Conj/disj	No	No	Yes	Yes	No	?	Yes	?	Yes	No	Yes
14 Tone case	No	No	No	No	No	?	No	?	No	Yes	No

Source: Marten et al. (2007: 283) and own data.

adopted in our study, also raises potential problems. For example, we assigned a negative value to parameter 8 in Kinyarwanda ('no agreement between the relative marker and the head noun'), because Kinyarwanda does not have relative markers (and hence no agreement). However, this parameter value makes Kinyarwanda look similar to a language like Swati with respect to relative clause formation, although the relativisation strategies of the two languages are in fact very different. We ignore these potential problems in the following discussion and assume that the parameter values provided in Table 2 are accurate and adequately capture the relevant grammatical properties of the eleven languages examined.

The data discussed by MKT are collected from their original fieldnotes and the literature. As Table 2 shows, complete information for all 19 parameters was only available for five of the ten languages examined by MKT, namely Bemba, Chichewa, Herero, Swahili and Swati. For these five languages, MKT provide a quantitative analysis of the data by calculating the degree of similarity between any two languages in their sample. They do this on the basis of the binary (Yes-No) values for 15 of the 19 parameters shown in Table 2 (ignoring parameters 4b, 4c, 4d and 9c). For example, Bemba and Chichewa receive the same value for 10 of these 15 parameters and hence count as '67% similar'. In Table 3, we reproduce the data from MKT's (2007: 285) Table 5 and add the Kinyarwanda percentages.<sup>10</sup>

MKT use these statistics to speculate about the implications of their research. One interpretation they offer links the similarities reflected by the percentages in Table 3 to the geographical location of the regions where the respective languages are spoken. According to Table 3, Swahili shows the highest degree of similarity with Chichewa and Bemba; Bemba is most similar to Swahili and Chichewa, and Chichewa is most similar to Swahili and Bemba. Swahili, Chichewa and Bemba are all spoken in the central and northeastern areas of the Bantu zone and hence in close proximity to each other, but

<sup>10</sup> We have corrected the percentages provided by MKT for the Swahili-Chichewa and the Swahili-Bemba similarity scores.



Table 3. Similarities based on 15 parameters (%)

Chichewa	73				
Bemba	67	67			
Herero	47	60	53		
Swati	40	53	33	40	
Kinyarwanda	20	33	53	60	53
	Swahili	Chichewa	Bemba	Herero	Swati

Source: Marten et al. (2007: 285), and own data.

further away from Herero (in the west) and Swati (in the southeast). On the basis of this observation, Marten et al. (2007: 287) put forward the hypothesis that ‘there is a relation between structural similarity and geographical proximity’ that is revealed by the data.

We are not convinced that the statistics produced by MKT justify this hypothesis. As MKT themselves acknowledge, the selection of their parameters is to some extent arbitrary, and partly determined by the available data. It is easy to see that the similarity relations expressed in Table 3 can change quickly once more parameters are added. Furthermore, as noted above, the choice of a value is not always straightforward for all parameters, and in some cases, a ‘non-applicable’ value may have been more appropriate (problems that MKT recognise as well). The addition of Kinyarwanda presents another challenge for MKT’s hypothesis. Our data show that the similarity score of Kinyarwanda is lowest in relation to Swahili and Chichewa, while the highest degree of similarity is attested with Herero, followed by Swati and Bemba. This is not consistent with the hypothesis that the similarities displayed in Table 3 are a reflection of spatial distance: Swahili is mainly spoken in Tanzania and Kenya, which are all close to Rwanda (Tanzania and Rwanda share a border), but also in other countries of the Great Lakes Region, namely in Burundi, the DRC, Uganda and notably, even in Rwanda. Conversely, Kinyarwanda is most similar to Herero and Swati, which are spoken in areas which are further away from Rwanda.

However, we acknowledge that the main goal of MKT’s article is descriptive, and in this respect, their study makes an important contribution to the comparative Bantu literature. Our primary goal is not to criticise the interpretation offered by MKT, but rather to point out possible insights that can be gained from their data. We explore this in the next section.

#### 4. PARAMETRIC VARIATION AND DESCRIPTIVE GENERALISATIONS

##### 4.1. *Parameters and bidirectional implications*

Marten et al. (2007: 257) note that their use of the notion ‘parameter’ to describe the variation observed in their sample ‘is different from the more theoretical notion of parameter in some syntactic models (e.g. in *Principles and Parameters*, Chomsky 1981)’. While MKT refer to every observable surface difference listed in Table 2 as a parameter, the principles and parameters theory (Chomsky 1981; 1986; 1995) views parameters as encoding those aspects of grammatical knowledge that are not fully determined by (possibly innate) universal principles. Parameters are options that identify how invariant principles that underlie linguistic competence can apply; the grammar of a specific language is acquired by setting these parameters. Importantly, not every surface difference between two languages is caused by a different parameter. Rather, a particular setting of a single parameter may have a whole range of observable effects. One of the goals of comparative work within the principles and

parameters theory has been to identify clusters of cross-linguistic differences that can be linked to the same underlying parameter.<sup>11</sup>

As noted in Kayne (2005, chapter 12), the examination of micro-comparative data is of particular relevance for this type of work, because morphosyntactic differences between closely related languages can offer insights into the way grammatical properties are linked to parameters:

We can take one language or dialect, then look for another very similar one that differs with respect to a property we are interested in. The closeness of the languages and dialects in question will make it relatively more likely that any other syntactic property that we discover to vary between the two will be parametrically related to the first. (Kayne 2005: 282)

According to this view, whenever we discover that two related and otherwise quite similar languages A and B differ with respect to two grammatical properties, we have arrived at a hypothesis about a potential parameter. We can then look at other languages, if possible from the same language family, and test this hypothesis. It is supported if every language C that we examine behaves either like language A or like language B with respect to both properties.

The comparative data in Table 2 provide a strong empirical basis for this type of analysis. We can choose any two Bantu languages which differ with respect to two properties, and then check whether the two properties are also correlated in every other language in the sample. Therefore, what we are looking for in the data are bidirectional implicational generalisations: if every language that has property X also has property Y, and if every language that does *not* have property X also does *not* have property Y,<sup>12</sup> then X and Y are potentially reducible to the same parameter. In the remainder of this sub-section, we examine the eleven languages in Table 2 with this strategy in mind. (In order to distinguish the notion of parameter just described from the different ‘parameters’ distinguished by MKT, we refer to the former as ‘major’ parameters in our discussion.)

Consider Chichewa and Swati. Both languages differ with respect to passivisation (parameter 6): Swati allows for either object of a double object construction to be passivised, but Chichewa does not. A second difference between the two languages concerns object marking: Swati allows for either object of a double object construction to be object-marked; again, this possibility does not exist in Chichewa (parameter 7). This leads to the hypothesis that one single major parameter controls both object marking and passivisation in double object constructions.

Of course, it is exactly this hypothesis that has been put forward and explored in work by Baker (1988), Bresnan and Moshi (1990), Alsina (1996) and many others. The common idea behind these studies is that the setting of an underlying ‘Symmetry Parameter’ determines a whole range of cross-linguistic differences between Bantu languages:

- (34) Symmetry Parameter (Alsina 1996: 675): a clause may include
- (i) no more than one internal argument with property U
  - (ii) more than one internal argument with property U

<sup>11</sup> A well-known example of how a cluster of grammatical differences between closely related languages can be reduced to one single binary parametric choice is the so-called ‘null subject’ (or ‘pro-drop’) parameter, which controls (amongst other things) whether or not a language has null subjects, licenses post-verbal subjects, and allows for subject extraction across an overt complementiser (Taraldsen 1978; Chomsky 1981; Rizzi 1982). See Baker (2001) for instructive discussion and further examples of parameters.

<sup>12</sup> The second part of this statement is equivalent to “every language that has property Y also has property X”.

‘Property U’ refers to an underlying property of internal arguments that allows them to undergo grammatical processes such as passivisation and object marking. Regardless of how exactly this property is defined in a particular framework (see Alsina 1996 for discussion), (34) determines that a language either allows or disallows more than one argument to have this property. Therefore, the behaviour of objects with respect to passivisation will always match their object marking behaviour in a language; the hypothesis that object marking and passivisation are governed by the same major parameter predicts that these two grammatical processes are always correlated.

Comparative studies such as the one conducted by MKT, which we have extended in section 2, provide the data to test this hypothesis. Every language in Table 2 which patterns with either Chichewa or Swati with respect to parameter 6 is predicted to have the matching value for parameter 7. As can easily be verified, this is exactly what we find: all languages that allow either object in a double object construction to be object-marked also allow either object to be passivised, and the languages that do not have the first possibility also lack the second. At least with respect to the eleven languages examined here, the hypothesis that a major parameter controls the two properties described by parameters 6 and 7 in Bantu can therefore be maintained. (The relation between these two parameters and parameter 5, which describes another ‘primary object property’ in Bantu, is discussed in section 4.2.)

Note that although the Symmetry Parameter in (34) has been proposed specifically for Bantu, there is no reason why its scope should be limited to this language group. In fact, whatever aspect of grammar corresponds to property U in Bantu should also be subject to parameterisation in non-Bantu languages. Whether the surface differences caused by a particular setting of this parameter in a non-Bantu language are comparable to those captured by parameters 6 and 7 is another question. For example, a language which does not have passive or double object constructions obviously will not display the grammatical properties that led to the postulation of the parameter in (34). Nevertheless, the part of its grammatical system that is associated with property U is parameterised in the same way as it is in Bantu languages, even if the setting of the parameter has no, or different, surface effects.

The data in Table 2 can also be used to test other hypotheses about parametric differences in Bantu that have been proposed in the literature. For example, Henderson (2006: 66) argues that the following generalisation holds in Bantu:

- (35) Languages that allow an object marker and a corresponding NP to co-occur require, or at least allow, object markers in relative clauses; languages which do not allow this co-occurrence also do not allow object markers in object relatives.

If this generalisation was correct, then the two properties could be linked to a major parameter. Unfortunately, (35) is not confirmed by the data in Table 2. The two relevant properties are MKT’s parameters 1 and 9b. Example (35) predicts that every language in which parameter 1 is set to ‘Yes’ should have the value ‘No’ for parameter 9b, and vice versa. However, Bemba and Lozi contradict the first part of the biconditional, and Chichewa, Swati and Tswana the second.<sup>13</sup> It seems that in the light of this counterevidence, the idea that the

<sup>13</sup> Another language which contradicts Henderson’s generalisation is Manyika (Bax & Diercks 2012), which licenses the co-occurrence of object markers and object-NPs, but does not tolerate object markers in relative clauses. It must be noted that according to Henderson (2006), Zulu (which is closely related to Swati) and Chichewa do allow the co-occurrence of object marker and object-NP. However, the assumptions he makes to support this claim are not unproblematic, and, at least in the case of Zulu, based on a misinterpretation of the data. See Bresnan and Mchombo (1987) for arguments that object-marked NPs in Chichewa are right-dislocated; Van der Spuy (1993) shows the same for Zulu.

two properties described by parameters 1 and 9b are connected via a major parameter cannot be upheld.

Of course, before an otherwise well-motivated hypothesis about a potential major parameter is rejected in the light of isolated counterexamples, the problematic data should first be closely examined, in order to establish whether independent factors may cause a language to behave in unexpected ways. For example, not all Bantu languages show entirely consistent behaviour with respect to the setting of the Symmetry Parameter in (34) (see e.g. Rugemalira 1991 on Runyambo; and Mchombo & Firmino 1999 on Gitonga), but studies such as Bresnan and Moshi (1990) or Alsina (1996) have shown that many of the inconsistencies disappear on closer examination of the problematic data. However, since the generalisation in (38) is contradicted by quite a number of languages in Table 2, we consider it relatively unlikely that it can be rescued in its present form.

Interestingly, the data in Table 2 do reveal a bidirectional correlation between parameters 2 and 9c:

- (36) Languages which require the object marker with certain NPs also allow (but do not require) an object marker in object relatives; languages which do not require the object marker with certain NPs either require or disallow the object marker in object relatives.

Most languages in Table 2 provide evidence for the second part of the generalisation: every language with a negative value for parameter 2 also has a negative value for parameter 9c. The support for the first part of the generalisation in (36) that can be gained from Table 2 is relatively weak, since Swahili is the only language in the sample which requires the object marker with certain NPs and which has optional object marking in relative clauses (the information for Chaga, which has a ‘Yes’-value for parameter 2, and for Nsenga and Ha, which have a ‘Yes’-value for parameter 9c, is incomplete). However, there is at least one other language that we know of that behaves like Swahili in the relevant respects. Riedel (2009) shows that object markers in Sambia are required with all proper names of humans, (cf. (37)), first and second person pronouns, and with titles and kinship terms. As predicted by (36), resumptive object markers are optional in object relatives, (38):

- (37) a. N-za-mw-ona Stella  
 1S-PERF.DJ-I.OM-see 1.Stella  
 ‘I saw Stella’.  
 b. \*N-za-ona Stella  
 1S-PERF.DJ-see 1.Stella  
 ‘I saw Stella’.

[Sambia; Riedel 2009: 44]

- (38) Matonte n-(ya)-m-nk-iye-yo ya-aa-izw-iye  
 6.bananas 1s-(6.OM)-give-PERF-6.RM 6.SM-REM.DJ-ripen.PASS-PERF  
 ‘The bananas which I gave him are ripe’.

[Sambia; Riedel 2009: 160]

Therefore, the generalisation in (36) is supported by at least twelve Bantu languages. It seems that Henderson’s (2006) main insight is correct, even if it is not adequately captured by his generalisation in (35): there is a link in Bantu languages between the existence of resumptive object markers in relative clauses and the co-occurrence of object markers and agreeing object-NPs.

Possibly, this link is related to the widely-debated question of whether object markers in Bantu should be analysed as agreement markers or pronouns. Henderson (2006) suggests that this question receives a different answer for different Bantu languages, and he argues that this is what determines the parametric difference captured by his generalisation in (35): Bantu languages in which object markers are pronouns do not allow the co-occurrence of object marker and object-NP and do not license object markers in relative clauses. In contrast, languages in which object markers express object agreement allow both options. However, Henderson's generalisation (35) was shown to be contradicted by the data in Table 2. Moreover, it is doubtful that object marking in Bantu can be adequately characterised by a strict pronoun-agreement dichotomy: object markers in many Bantu languages have 'mixed' properties and cannot easily be classified as either agreement markers or pronouns (see e.g. Zeller 2012 for discussion). Nevertheless, an interesting task for future research is to explore whether the link captured by our generalisation in (36) can be explained with reference to parameterised properties of the grammatical system underlying the process of object marking in Bantu languages.

#### 4.2. *Unidirectional implications*

The search for major parameters can be a frustrating task. Even though Table 2 displays results for only a relatively small sample of eleven languages, only a few bidirectional correlations have emerged from the data. However, we now show that comparative data such as those in Table 2 offer new insights even when no hypotheses about major parameters or parametric clusters can be derived.

As discussed above, the postulation of major parameters requires correlations in the data to be bidirectional. However, it is also worthwhile to examine comparative data by looking for unidirectional implications between grammatical properties. Such 'weaker' generalisations still provide clues about the way properties of different languages interact. In fact, most of Greenberg's (1963) universals are formulated as unidirectional implications. In the remainder of this section, we therefore discuss some examples of unidirectional generalisations that emerge from the data in Table 2 and that we find noteworthy.

First, consider locative marking. There are five languages in Table 2 which have parameter 11 set to 'Yes' (Swahili, Bemba, Chichewa, Nsenga and Herero), and all of these languages also have a positive value for parameter 3. Based on this correlation, we can state the following generalisation:

- (39) If a Bantu language has a full set of locative subject markers, then it has locative object markers.

This generalisation is unidirectional. For it to be a biconditional, we would also have to find that every language that has locative object markers also has the full set of locative subject markers. But this is not the case: Ha, Tswana and Kinyarwanda have a positive value for parameter 3, but a negative value for parameter 11. Therefore, the implicational relation between locative subject and object markers is only valid in one direction.

Another predictor of locative object marking is the existence of multiple object markers. All languages in Table 2 that have parameter 4a set to 'No' have parameter 3 set to 'Yes':

- (40) If a Bantu language has multiple object markers, then it has locative object markers.

The generalisation in (40) holds for Chaga, Ha, Tswana, Kinyarwanda, and even for Bemba, which allows multiple object markers only in restricted contexts.

Our next example of a unidirectional correlation based on the data in Table 2 concerns object marking and relativisation. Like the bidirectional generalisation in (36) above, it links

the co-occurrence of object marker and object-NP to the use of resumptive object markers in relative clauses, but it sheds light on the link between these two phenomena from a slightly different angle. What we find is that every language in the above sample that has parameter 1 set to ‘Yes’ has parameter 9a set to ‘No’. This leads to the following generalisation:

- (41) If a Bantu language allows for the co-occurrence of object marker and object-NP, then object markers are not obligatory in object relative clauses in this language.

In Bemba and Lozi, object-NPs and their object markers can co-occur, and these languages never allow object markers in relative clauses. In Swahili and Ha, which also allow co-occurrence, object markers are possible, but not required, in relatives. Notice that there are languages (namely Herero and Kinyarwanda) which do not allow resumptive object markers but also do not allow co-occurrence of object marker and object-NP. Therefore, the conditional in (41) can only be stated unidirectionally.

Generalisation (41) is logically equivalent to (42):

- (42) If a Bantu language has obligatory object markers in relative clauses, then it will not allow object-NPs and object markers to co-occur.

Example (42) captures the fact that none of the three languages in the sample which require resumptive object markers in relative clauses (Chichewa, Swati and Tswana) licenses an object marker and a corresponding object-NP within the same prosodic (or syntactic) domain.

Another correlation which strikes us as potentially significant is expressed in (43):

- (43) If a Bantu language has (freely available) multiple object markers, then it has symmetrical passives and symmetrical object marking.

Four languages in Table 2 have parameter 4c set to ‘Yes’. Three of these languages (Chaga, Tswana and Kinyarwanda) are also ‘symmetrical’ with respect to passivisation and object marking (the respective information for Ha is missing). Since there are also symmetrical languages without multiple object markers (e.g. Swati or Herero), (43) cannot be stated as a biconditional.

The next three generalisations all concern languages with symmetrical word order (parameter 5: yes), which are represented by Ha, Tswana and Kinyarwanda in our sample. Free word order seems to be correlated with the existence of multiple object markers in Bantu:

- (44) If a Bantu language has symmetrical word order in double object constructions, then it has (freely available) multiple object markers.

Only Ha, Tswana and Kinyarwanda have parameter 5 set to ‘Yes’, and in these languages, parameter 4c is set to ‘Yes’ as well. Interestingly, Chaga is the only language with (freely available) multiple object markers in Table 2 that does not have symmetrical word order. If it was not for Chaga, the generalisation in (44) could be formulated as a bidirectional implication, giving rise to the hypothesis that free word order and the existence of multiple object markers in Bantu are linked to a major parameter. However, as shown in Moshi (1998), double object constructions in Chaga with an animate beneficiary/goal and a theme argument require the order beneficiary/goal > theme, unless the theme is contrastively focused. Since we follow MKT in assuming that languages are not truly symmetrical if a particular order of object-NPs is only licensed with a specific topic/focus interpretation, we have to accept that Chaga contradicts the major parameter-hypothesis. Nevertheless, we can conclude that, as far as the languages in Table 2 are concerned, multiple object markers are a necessary condition for symmetrical word order. Consequently, parameters 4a and 5 are also correlated: languages with only one object marker (parameter 4a: yes) never license symmetrical word order (parameter 5: no).

According to Bresnan & Moshi (1990), the ability of an object to be adjacent to the verb is another 'primary object property' which is controlled by the Symmetry Parameter in (34) above. If this was correct, then we would expect parameters 6 and 7 to be bidirectionally correlated with parameter 5. However, this is clearly not the case: while some languages with symmetrical passives and symmetrical object marking also have symmetrical word order (e.g. Kinyarwanda), other languages do not (e.g. Chaga). Nevertheless, the generalisation in (45), which is a logical consequence of the two generalisations in (43) and (44) above, captures the fact that parameter 5 is unidirectionally correlated with parameters 6 and 7:

- (45) If a Bantu language has symmetrical word order in double object constructions, then it has symmetrical passives and symmetrical object marking.

The generalisation in (45) also captures the fact that the three languages in Table 2 in which parameters 6 and 7 are set to 'No' (Swahili, Bemba and Chichewa) also have a negative value for parameter 5. In fact, (45) predicts that we should never find a Bantu language which is asymmetrical with respect to passivisation and object marking, but symmetrical with respect to word order.

It is interesting that all generalisations discussed so far, including the bidirectional implications presented in section 4.1, refer to object marking and relate this process to some other aspect of Bantu grammar, such as locative subject marking, relativisation, or word order. This fact may be a reflection of the prominent role that concordial agreement plays in the grammatical system of Bantu languages, but it is more likely a consequence of the fact that 10 of the 19 parameters formulated by MKT are concerned with the number, use, or nature of object markers. However, the following generalisation, which also follows from Table 2, does not imply object marking:

- (46) If a Bantu language has symmetrical word order in double object constructions, then it has a (tonal) distinction between conjoint and disjoint verb forms.

Ha, Tswana and Kinyarwanda, which license free word order in double object constructions, also mark the conjoint/disjoint alternation (parameter 13: yes). Since there are also languages (namely Bemba and Swati) which distinguish conjoint and disjoint verb forms, but do not license symmetrical word order, (46) can only be stated as a unidirectional implication. Notice that both the conjoint/disjoint alternation and word order are often associated with information structure in Bantu languages (see e.g. Van der Wal 2009; Creissels 2012). For example, some Bantu languages use the conjoint form of the verb to mark focus on a postverbal element, while some asymmetrical Bantu languages express contrastive focus on an object by deviating from the canonical word order in double object constructions (see e.g. the discussion of Chaga in relation to (44) above). Since this latter possibility does not exist in Bantu languages in which word order is generally more flexible, these symmetrical languages may be more likely to have developed or maintained alternative grammatical means of expressing information structure, such as the conjoint/disjoint alternation.

We have discussed the above generalisations in some detail, because we consider it plausible that in these examples, there is indeed a meaningful relation between the correlated properties. There are more unidirectional implications that can be derived from the data in Table 2, but in many of these, the grammatical relation between the correlated properties is less obvious. For example, the data also are consistent with the following generalisations:

- (47) If a Bantu language has symmetrical word order, then it does not have a full set of locative subject markers (parameter 5: yes; parameter 11: no).

- (48) If a Bantu language has obligatory object markers in relative clauses, then locative inversion is restricted to intransitive verbs (parameter 9a: yes; parameter 10: yes)
- (49) If a Bantu language has a full set of locative subject markers, then it does not have (freely available) multiple object markers (parameter 11: yes; parameter 4c: no).
- (50) If a Bantu language has partial agreement, then it allows for resumptive object markers in relative clauses (parameter 12: yes; parameter 9b: no)

Although it is not immediately clear which aspect of grammar may be responsible for the correlations between the properties in (47)–(50), these generalisations, like the ones presented in (39)–(46), should only be rejected if they are refuted by the results of further empirical research. However, should any of the generalisations discussed in this section withstand future attempts to falsify them, then they may serve as the basis for theoretical studies that examine the underlying grammatical principles behind the observed surface correlations.

## 5. CONCLUSION

Although the Bantu languages are typologically closely related and share major grammatical characteristics, they also show interesting and intriguing differences at the micro-level. In this paper, we have suggested that the systematic comparison of these differences can lead to descriptive generalisations that reveal possible links between grammatical properties and processes. We are aware that some of the correlations we have derived from the data examined in this paper may be contradicted by the results of further empirical research and by the properties of Bantu languages that we have not considered here. But the main objective of the theoretical discussion in this paper has been methodological: we have sought to demonstrate that interesting descriptive generalisations can be derived from comparative morphosyntactic data in Bantu and that these generalisations may even enable us to formulate hypotheses about abstract parameters which control micro-variation. We consider the testability of the predictions that follow from such generalisations a welcome aspect of the approach for which we have argued here, and we hope that this approach will stimulate future work on grammatical variation in the Bantu family.

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