Chapter 11

Agreement on Proto-Bantu relative verb forms

Mark Van de Velde

LLACAN - Langage, Langues et Cultures d'Afrique (CNRS, INaLCO, EPHE)

This chapter argues that Meeussen's (1967) reconstruction of a Direct and an Indirect relative clause construction in Proto-Bantu (PB) is untenable, because there exists no scenario of morphosyntactic change that can lead from that reconstructed state of affairs to the relative clause constructions attested in contemporary Bantu. Although typologically unusual and widely attested across Bantu, relative verb forms that agree with the relativised noun phrase are not reflexes of a proto-construction with the same properties, but are the result of recent, parallel evolutions driven by a mechanism called the Bantu Relative Agreement (BRA) cycle. The only logically possible starting point from which the currently attested typological variation in Bantu relative clause constructions could have evolved is one in which relative verbs agreed with their subject. This conclusion has consequences for the reconstruction of the PB verbal template, which must have lacked a Pre-initial position.

1 Introduction

In his *Bantu Grammatical Reconstructions* (BGR), Meeussen (1967: 113, 120) reconstructs two relative clause constructions in Proto-Bantu (PB), called Direct and Indirect.[1] As for their verb forms, he only reconstructs their behaviour as agreement targets and the tone of their Final morpheme, stating that any other formal characteristics were "not within reach of reconstruction" at the time of writing.

[1]Following common practice in the typological literature, names for Bantu-specific grammatical forms and categories such as *Direct relatives*, *Final* and *Pronominal prefix* are capitalised. The meaning and use of these terms will be discussed in this introduction.

Mark Van de Velde. 2022. Agreement on Proto-Bantu relative verb forms. In Koen Bostoen, Gilles-Maurice de Schryver, Rozenn Guérois & Sara Pacchiarotti (eds.), *On reconstructing Proto-Bantu grammar*, 465–494. Berlin: Language Science Press. DOI: 10.5281/zenodo.7575835

The PB Direct and Indirect constructions, illustrated in (1), should therefore be interpreted as morphosyntactic templates, rather than full syntactic reconstructions.

(1) Partial PB reconstructions (Meeussen 1967: 113)

a. *mʊ̀-ntʊ̀ jʊ̀-dìm-à ì-pía*
1-person PPr1-cultivate-FV 5-garden
'a person who cultivates the garden'

b. *ì-pía dí-dìm-á mʊ̀-ntʊ̀*
5-garden PPr5-cultivate-FV 1-person
'the garden that the person cultivates'

c. *mʊ̀-ntʊ̀ jʊ̀-tʊ́-dìm-ìd-á ì-pía*
1-person PPr1-VPr1PL-cultivate-APPL-FV 5-garden
'the person for whom we cultivate the garden'

Direct relative clause constructions are used for subject relatives (1a) and for non-subject relatives when the relative verb has a lexical subject (1b) in Meeussen's PB. Their verb form has a prefix of the Pronominal prefix (PPr) paradigm that indexes the relativised noun phrase. Still according to Meeussen, the PB Indirect construction is used for non-subject relatives when the subject of the relative verb is not lexical (1c). Their verb form is characterised by a succession of two agreement prefixes. The first is a Pronominal prefix that indexes the relativised NP and the second is a prefix from the Verbal prefix (VPr) paradigm that indexes the subject of the relative verb (Meeussen 1967: 120). As can be seen in (1b), the relative verb precedes its lexical subject in Meeussen's reconstruction of PB non-subject relative clauses; see also Hamlaoui (2022 [this volume]).

Direct and Indirect relative constructions of the type exemplified in (1) are attested throughout the Bantu area. In contrast, I am not aware of any occurrence in the Benue-Congo languages outside of Narrow Bantu. Moreover, these constructions are formally highly unusual. In the position where other Bantu finite verb forms have a prefix that indexes the subject, the verb of the Direct construction has a prefix that indexes the relativised NP and is taken from a paradigm of agreement markers normally found on adnominal modifiers, whereas the verb of the Indirect construction has a succession of two agreement markers. Their unusual character, their omnipresence in Narrow Bantu and their absence elsewhere in Benue-Congo make the Direct and Indirect templates seemingly perfect candidates for reconstruction in PB. However, I argue that they should not be reconstructed in PB, nor in the proto-language of any of Bantu's major

genealogical subgroupings, such as those corresponding to the numbered nodes in the classification by Grollemund et al. (2015).

This conclusion is based on two observations. First, there are languages in all major subgroups of Bantu that have subject and/or non-subject relative clause constructions in which the relative verb starts with a VPR that indexes its subject. This type of agreement, here called TYPE SBJ and illustrated in (2), is typologically trivial and not reconstructed in PB by Meeussen.

(2) Shi JD53 (Polak-Bynon 1975: 260)
áa-ba-lume Ludúunge a-a-rhum-íre
AUG2-2-man 1.Ludunge VPR1-RPST.PFV-send-RPST.PFV
'the men whom Ludunge sent'

Second, I will show that this widely attested type cannot be a reflex of the Direct relatives reconstructed by Meeussen, because there is no scenario of morphosyntactic change that can replace an adnominal agreement marker used to index the relativised noun phrase by a subject agreement marker.

In contrast, I will show that there exists a scenario of morphosyntactic change, the Bantu Relative Agreement (BRA) cycle (Van de Velde 2021), that can generate the full extent of observed variation in agreement types of Bantu relative clause constructions when the starting point is a PB morphosyntactic template in which the relative verb agrees with its subject, as in (2).

Before moving on to the main topic of this chapter, I will make a number of general methodological observations in §2. §3 provides an overview of the contemporary constructional variation in the domain of relative clauses that a successful reconstruction needs to account for. §4 then shows how the BRA cycle can account for this variation if we assume that PB relative verb forms indexed their subject by means of a prefix of the VPR paradigm. In contrast, §5 argues that there is no path from the reconstruction proposed in BGR to the current situation. §6 provides arguments for the assumption that the BRA cycle must not have been active yet at the PB stage. §7 explores some of the consequences of this chronology for the typological profile of the pre-stem domain in PB and Proto-Benue-Congo. A brief conclusion is given in §8.

2 Methodological preliminaries

2.1 Paradigms, functions and positions of verbal morphemes

When Bantuists analyse and gloss a verb form such as that in (1c), we can approach the first two prefixes *jɔ̀-tɔ́-* from three different perspectives, viz. func-

tional, positional and paradigmatic. From a functional point of view, the prefix *tɔ́-* is used to index the subject of the relative verb. It could therefore be glossed SP, short for *subject prefix*. Likewise, the prefix *jɔ̀-* is used to mark agreement with the relativised NP, so could be glossed REL, for instance. A second way to characterise these two prefixes is to situate them in the morphological slot-filler template of the Bantu verb. Using terminology introduced by Meeussen, the prefix *jɔ̀-* occupies the Pre-initial slot of the verb and *tɔ́-* the Initial slot. Consequently, these morphemes can alternatively be glossed as preIN and IN respectively. A simplified version of Meeussen's slot-filler template is provided in (3). A number 1 in the second row means that maximally one morpheme can fill the position, whereas n stands for one or more. Brackets are used to mean that the position can be left empty, depending on the verb form. IN is short for Initial, FO for Formative, IF for Infix (the name of a prefix position, i.e. not an actual infix), EXT for Extension and FV for Final (vowel).

(3) Simplified version of Meeussen's slot-filler template

preIN	IN	postIN	FO	IF	ROOT	EXT	FV	postFV
(1)	(1)	(1)	(n)	(n)	1	(n)	1	(1)

Finally, the prefixes can be characterised in terms of the formal paradigms to which they belong. The *jɔ̀-* prefix belongs to the morphological paradigm called *Pronominal prefixes* (PPR) in Meeussen (1967), whereas *tɔ́-* is a form from the Verbal prefixes (VPR) paradigm. Meeussen (1967) reconstructs five paradigms of class markers in PB, viz. Nominal prefixes (NPR), Numeral prefixes (EPR), Pronominal prefixes (PPR), Verbal prefixes (VPR) and Object prefixes (OPR). These are shown in Table 1.

In most circumstances the distinction between these three perspectives has little relevance for glossing. There is a general preference for functional labels, no doubt because they are the most transparent and universal. Positional and paradigmatic labels are hardly ever used to gloss verb forms. They are often actively discouraged by reviewers and editors, who point out that they are idiosyncratic (restricted to Bantu philology) and potentially misleading. The positional label Initial, for instance, is not necessarily used for the first morpheme of a verb form, nor is the FV always the last morpheme, and the so-called Infix is prefixed to the root, not infixed. The same is true for paradigmatic labels, where Pronominal prefixes do not always show up on pronouns and the term *Verbal prefixes* is arbitrarily assigned to only one of several paradigms of morphemes that can be prefixed to a verb stem. However, it is important to bear in mind that these positional and paradigmatic labels are not descriptive terms, but names for language-

Table 1: The Proto-Bantu class marker paradigms (Meeussen 1967: 97) [abridged]

	NPr	EPr	PPr	VPr	OPr
1SG	-	-	-	*ǹ-*	*ǹ-*
2SG	-	-	-	*ʊ̀-*	*kʊ̀-*
1PL	-	-	-	*tʊ̀-*	*tʊ́-*
2PL	-	-	-	*mʊ̀-*	*mʊ́-*
cl. 1	*mʊ̀-*	*(ʊ̀?)*	*jʊ̀-*	*ʊ́-, á-*	*mʊ̀-*
cl. 2	*bà-*	*bá-*	*bá-*	*bá-*	*bá-*
cl. 3	*mʊ̀-*	*(ʊ́?)*	*gʊ́-*	*gʊ́-*	*gʊ́-*
cl. 4	*mì-*	*(í-?)*	*gí-*	*gí-*	*gí-*
cl. 5	*ì-*	*dí-*	*dí-*	*dí-*	*dí-*
cl. 6	*mà-*	*(á-?)*	*gá-*	*gá-*	*gá-*
cl. 7	*kì-*	*kí-*	*kí-*	*kí-*	*kí-*
cl. 8	*bì-*	*bí-*	*bí-*	*bí-*	*bí-*
cl. 9	*n-*	*(ì-)*	*jì-*	*jí-*	*jí-*
cl. 10	*n-*	*í-*	*jí-*	*jí-*	*jí-*
…	…	…	…	…	…

or family-specific categories, which is conventionally signalled by their initial capitalisation. Hence, it makes perfect sense to write that not all verbal prefixes are Verbal prefixes.

However, when discussing agreement on relative verb forms, it is essential to distinguish between the three above-mentioned perspectives as clearly as possible, since we are interested in determining which slot in the verbal template is occupied by a marker from which paradigm, indexing which element in the syntactic context. Examples in this chapter will mostly be glossed using positional labels, because their assignment is the least dependent on analysis.

There are obviously strong correlations between the three alternative ways in which a verbal morpheme can be characterised, which is definitely another reason why the distinction is rarely made. For instance, morphemes in the Initial position tend to be Verbal prefixes indexing the subject in non-relative verb forms, but there are two complications. First, it is not always clear whether the participant that is indexed by the Initial morpheme is best analysed as a subject, e.g. in some of the so-called inversion constructions. Second, in many languages, including Meeussen's Proto-Bantu, there is strictly speaking more than one paradigm of Verbal prefixes. Paradigms of agreement prefixes are normally minimally

differentiated in the Bantu languages, with only a minor formal distinction in a couple of classes. Since Meeussen reconstructs two prefixes for class 1 in his VPR paradigm, viz. *á-* and *ó́-*, his PB actually has two paradigms of Verbal prefixes, which could be abbreviated as A-VPR and U-VPR. The notion of *Verbal prefixes* is a useful cover term for the A-VPR and U-VPR paradigms in Proto-Bantu and other Bantu languages with similar minor paradigmatic distinctions.

Turning to relative verb forms such as those illustrated in (1), there is only a partial correlation between position in the verbal template on the one hand and paradigm and function on the other. The Initial slot can be occupied by a VPR that indexes the subject of the relative verb (1c) or by a PPR that marks agreement with the relativised NP (1a, 1b). The Pre-initial slot, if present, is always occupied by a PPR marking agreement with the relativised NP. Paradigm and macro-function correlate by definition: Verbal prefixes are used to index an argument of the verb (which is normally the subject, but could be a topic, hence "macro" function). Pronominal prefixes are used to mark class agreement in a relation of adnominal modification between the relativised NP and the relative verb. In subject relatives, where the relativised NP and the subject of the relative verb are co-referential, the choice of paradigm shows us which kind of syntactic relation is being marked: verb-argument (VPR) or head noun-modifier (PPR).

2.2 Distributional criteria versus scenarios

Assessing the validity of reconstructions proposed in BGR is complicated by the lack of an explicit presentation of data and methodology. Some discussion of the methods used for reconstructing grammar can be found in publications on specific grammatical topics by other members of the *Lolemi* programme,[2] such as Nsuka-Nkutsi's (1982) work on relative clause constructions. These methodological remarks give an indication of the decision-making process that may have led to the reconstructions proposed in BGR. It is clear, for instance, that the geographical distribution of currently attested phenomena played a major role, such that forms or patterns that have a very wide or a highly discontinuous distribution were readily recognised as retentions. Moreover, grammatical quirks that are attested in only a handful of non-adjacent languages also made it into PB, such as Burssens' rule changing the word-final *HL sequence of a head noun

[2]The *Lolemi* programme was a large research project at the Royal Museum for Central Africa led by A.E. Meeussen, which started in the early 1960s and aimed at using all grammatical descriptions of Bantu languages available at that time for the historical-comparative study of Bantu morphology and syntax.

into *HH when immediately followed by a connective relator, a possessive pronoun or a relative verb form with an initial *H (Meeussen 1967: 106; Nsuka-Nkutsi 1982: 58). This is no doubt because it was deemed unlikely that such a seemingly random grammatical phenomenon could emerge several times independently. Finally, when alternative candidates for reconstruction have a comparable geographical distribution, there appears to have been a tendency for reconstructing the more complex or elaborate situation and to assume that the more likely diachronic evolution in Bantu is simplification.

Two things are lacking in this approach. One is the pursuit of a detailed and credible diachronic scenario that can lead from a proposed reconstruction to the totality of currently attested patterns. The other is awareness of recurrent morphosyntactic changes that can have occurred independently at different times and places, such that cognate morphemes with a similar function and morphosyntactic behaviour can be the outcomes of parallel evolutions, rather than reflexes of the same proto-form. I will briefly illustrate this with two aspects of Meeussen's PB reconstruction that may need to be reconsidered, viz. the reconstruction of an augment and that of a full paradigm of possessive pronouns.

The augment is a prefix or proclitic that precedes the class prefix of nouns and some adnominal or nominalised modifiers (de Blois 1970). Formally, it is typically either identical to the Pronominal prefix (PPr) or it consists of the vowel of the PPr. Its function, if any, differs from language to language. Often, one can only list the conditions in which it does or does not appear, and the former tend to be far more numerous than the latter. Augments can be found all over the Bantu speaking area. Their loss is also well documented in many languages, because they often leave formal traces, such as so-called "latent augments" (de Blois 1970; Grégoire & Janssens 1999). This is probably why Meeussen (1967: 99) reconstructs an augment in PB, more precisely as a weak demonstrative in prenominal position that functioned as an anaphoric marker in specific syntactic contexts. However, the pre-posing of demonstratives is still a common process in Bantu, including in languages where the noun usually has an augment, which tends to be deleted in the presence of a prenominal demonstrative (Van de Velde 2005). Such prenominal demonstratives are very similar to the augment as reconstructed by Meeussen and arguably represent a new cycle of augment creation. Moreover, there are several Bantu languages in which the augment appears to be a relatively recent innovation, or that have (traces of) an older augment coexisting with a more recently developed one (Van de Velde 2019: 254–255), as in Nyakyusa M31 in (4). Nyakyusa has two paradigms of augments, one with a vocalic shape (4a) and one with a CV- shape (4c). The first one is part of the default form of the noun and has no clear semantic value, whereas the more recent CV-shaped augment is

an anaphoric marker, in line with Meeussen's reconstructed augment. Both are cognate with the proximal demonstrative *ʊ-jʊ* in (4b).

(4) Nyakyusa M31 (Bastian Persohn, p.c.)

a. ***ʊ**-mu-ndʊ* 'the person'
b. *ʊ-mu-ndʊ **ʊ-jʊ*** 'this person'
c. ***jʊ**-mu-ndʊ* 'the very person'

The Nyakyusa data in (4) show that augments can emerge and disappear repeatedly. Since the demonstrative modifiers from which they develop are at least partially cognate, augments in different Bantu languages are cognate as well, without necessarily being reflexes of a single PB paradigm. The recurrent nature of augment creation and erosion makes it impossible to know whether an augment existed at any given proto-stage, much less at which state it was in its grammatical evolution.

The second illustration concerns the paradigm of possessive pronouns. Pronominal forms are extremely unstable in Bantu, with morphological material constantly being added and deleted (as shown, for instance, in Kamba Muzenga (2003), and Idiatov (2022 [this volume])). Consequently, Meeussen (1967: 107) points out that it is very difficult to reconstruct specific proto-forms. Instead, he tentatively provides one out of a number of alternative reconstructions for the forms that could have made up the PB paradigm of possessive pronouns. We are here less interested in the proto-forms of the pronouns than in the structure of their paradigm, and more precisely in the question of how many forms it contained. Among contemporary Bantu languages, there is a typological distinction between those with a full and those with a reduced paradigm. Languages with a full paradigm have a possessive stem for all the nominal classes to which a possessor can belong. The Mituku D13 examples in (5) provide a partial illustration of a full paradigm: possessors expressed by means of a noun of class 3, 4, 12 or 13 are each indexed by means of a different possessive stem (bolded in the examples).

(5) Mituku D13 (Stappers 1973: 32)

a. *meli y-**aɔ̂*** 'its roots' (of a tree, cl. 3)
b. *meli y-**ayɔ̂*** 'their roots' (of trees, cl. 4)
c. *beópí b-**ákɔ̂*** 'its wings' (of a bat, cl. 12)
d. *beópé b-**átɔ̂*** 'their wings' (of bats, cl. 13)

In contrast, languages with a reduced paradigm have only two stems for third person possessors: one for the singular and one for the plural. In the Mwera P22 examples in (6), the human class 1 possessor is indexed by means of the same pronominal stem as the class 14 possessor, the one also used for all other 3SG possessors.

(6) Mwera P22 (Harries 1950: 59)

a. *meyo g-**a:kwe*** 'her eyes' (the woman's, cl. 1)

b. *kunoŋa kw-**a:kwe*** 'its tastiness' (the beer's, cl. 14)

Both types of paradigm are found throughout the Bantu area (Van de Velde Forthcoming), so that current geographical distributions do not provide a clear hypothesis for reconstruction.[3] Meeussen reconstructs a full paradigm, perhaps due to a general preference for the more complex of alternative reconstructions. However, in terms of diachronic scenarios, the path from a reduced to a full paradigm is much more likely than the reverse path. Possessive pronouns for third person possessors of class 2 upwards in full paradigms are transparent genitive (aka connective) constructions with a personal pronoun in the modifier position. This can be seen in (5), where the possessive stems consist of the genitive linker *a*, followed by a class marker and the personal pronoun stem *ɔ*. The scenario for the emergence of full paradigms is therefore trivial. In contrast, we would expect much less formal transparency in full paradigms if they had been handed down from PB. Moreover, there is no obvious reason why so many Bantu languages would have reduced their original paradigm. The hardest thing to explain in a scenario of paradigmatic reduction that must have repeated itself independently on numerous occasions is the uniform all-or-nothing nature of the typological distinction. All examples of reduced paradigms known to me have six members (one for each person and number) and all full paradigms have as many third person forms as they have noun classes, on top of first and second person forms. A plausible scenario of paradigmatic reduction would have resulted in partially reduced systems in at least some languages, e.g. along lines of animacy.

Now that more Bantu descriptive and comparative studies are available, we can and should be more attentive to attested patterns of morphosyntactic change in an attempt to verify whether plausible diachronic scenarios lead from proposed PB reconstructions to the current morphosyntactic variation. I will do this for relative clause constructions in the remainder of this chapter.

[3]Full paradigms may be absent in zones A and B, i.e. the far North-West. This needs to be verified. If they are, this would strengthen the case for reconstructing a reduced paradigm in PB, as pointed out by Koen Bostoen.

3 Typological variation in Bantu relative clauses

According to much of the literature starting with Nsuka-Nkutsi (1982), the three types of agreement patterns in Table 2 can be found on the relative verb in contemporary non-subject relative clause constructions.

Table 2: Agreement patterns on the relative verb in contemporary non-subject relative clause constructions

Type	Agreement pattern
SBJ	agreement with the subject only
NPrel-SBJ	agreement with the relativised NP and the subject (Meeussen's Indirect)
NPrel	agreement with the relativised NP only (Meeussen's Direct)

Type SBJ agreement is illustrated in (2), type NPrel-SBJ in (1c) and type NPrel in (1a–1b). These three agreement types strongly correlate with the choice of a paradigm of agreement markers. Agreement of type SBJ tends to be expressed by means of a Verbal prefix and agreement of type NPrel by a Pronominal prefix. Consequently, agreement of type NPrel-SBJ is normally expressed by a PPr-VPr-succession. Since Pronominal prefixes are typically used on adnominal modifiers to mark agreement with their head noun, this correlation is not surprising.

This general picture has to be clarified and completed on three accounts. First, as will be illustrated below, an additional marker of agreement with the relativised NP can occur in types NPrel and NPrel-SBJ, giving rise to two more agreement types, namely type NPrel-NPrel and type NPrel-NPrel-SBJ. Second, contrary to what appears to be generally assumed in the literature, all types of agreement can be found in subject relatives as well as in non-subject relatives. Third, in many relative clause constructions across the Bantu domain, agreement markers on the verb belong to a morphological paradigm that formally differs from the paradigms of both Verbal prefixes and Pronominal prefixes and that is found exclusively in relative verb forms. I will use the term *Relative prefixes* (RPr) to refer to such paradigms of agreement markers dedicated to relative verb forms. Nsuka-Nkutsi (1982) did not recognise a separate RPr paradigm because he relied on a binary distinction, identifying every paradigm of agreement markers as PPr as soon as it diverges from the VPr paradigm. As we saw in §2.1, the most important distinction is between paradigms that contain first and second person forms and those that do not. Dedicated RPr paradigms tend to be of the latter type.

Indeed, in subject relative clauses, the distinction between adnominal NPrel agreement and SBJ agreement is easiest to see with first or second person relativised NPs, because paradigms of adnominal agreement markers only have third person forms. Example (7) illustrates agreement type NPrel-SBJ in a subject relative clause. The first person plural form is indexed twice on the relative verb, once as its relativised NP (by a third person plural prefix of class 2 in Pre-initial position) and once as its subject (by a first person plural prefix in Initial position).

(7) Yao P21 (Sanderson 1922: 73)
uwe [u-tu-li ŵa-yao]
1PL preIN2-IN1PL-be 2-yao
'we who are Yao'

In contrast, the second person plural pronoun in (8a) is indexed twice on the relative verb as its relativised NP and never as its subject, illustrating agreement of type NPrel-NPrel. Both agreement prefixes, *a-* and *ba-*, are class 2 forms, i.e. third person forms. Both differ from the second person plural prefix *mu-* seen in the following main verb *mu-raire*. Example (8b) illustrates agreement of type NPrel-NPrel-SBJ. It also shows how agreement prefixes in relative verbs can be formally distinct from those of both the VPR and the PPR paradigms. In Nkore-Kiga JE13/14 non-subject relative clause constructions, prefixes that would have an /a/ in the VPR or PPR paradigm have an /u/ in the RPR paradigm, hence *a-bu-* in (8b), instead of *a-ba-*. Something similar can be observed in (7). In Yao the class 2 RPR in the Pre-initial slot is *u-*, instead of the *a-* we would have found in the class 2 form of other paradigms.

(8) Nkore-Kiga JE13/14 (Taylor 1985: 23)

a. *imwe [a-ba-tuura aha], mu-raire buhooro*
2PL preIN2-IN2-live here IN2PL-sleep well
'You, who live here, how are you (lit. did you sleep well)?'

b. *a-ba-ntu a-bu-tu-twire omu n-si*
AUG2-2-person preIN2-preIN2-IN1PL-live.PFV LOC 9-country
y-aabo
PPR9-their
'the people in whose country we live'

Individual languages can have multiple constructions that belong to different agreement types. Moreover, individual constructions can show a split in agreement type depending on properties of their agreement controllers. With respect

to his Indirect type (= type NPrel-SBJ), Meeussen (1971) points out that in some constructions it only appears when the subject of the relative verb is of the first or second person. With a third person subject, these constructions are of the Direct type (i.e. with type NPrel agreement). Following Meeussen, I will refer to these as Luba-type constructions, and to "normal" type NPrel-SBJ constructions that do not show such a split as Lega-type constructions. Luba-type constructions can be found in the East of the DRC and in Eastern Angola. The Mituku D13 non-subject relative clause construction in (9) is an example. In (9a) the relative verb has a first person subject and agreement is of type NPrel-SBJ: the relativised NP is indexed on the verb by the prefix *ɔ́-* and the subject by the prefix *tɔ-*. In (9b) the relative verb has a third person subject (expressed by means of the postverbal independent pronoun *bô*) and agreement of type NPrel.

(9) Mituku D13 (Stappers 1973: 59)

a. *mɔ-ntɔ ɔ́-tɔ-tɔ́ma*
1-person preIN1-IN1PL-send
'the person we send'

b. *mɔ-ntɔ ɔ́-ˡtɔ́ma bô*
1-person IN1-send they
'the person they send'

Finally, relative clause constructions of all agreement types across Bantu can involve one or more optional or obligatory relativisers. There is formal variation between the attested relativisers, which is due to the great number of their possible sources (different types of demonstratives, personal pronouns, connective relators, etc.) and to the fact that many of them are clearly recent innovations. Since relativisers immediately precede the relative verb in many cases, it is often impossible to determine in a non-arbitrary way whether one is dealing with an independent relativiser or with an agreement prefix that indexes the relativised NP, a recurrent ambiguity that is inherent to the BRA cycle. This indeterminacy can be illustrated by the alternative ways in which Nkore-Kiga non-subject relatives such as (10) have been analysed in the literature.

(10) Nkore-Kiga JE13/14 (Taylor 1985: 22)
a-ka-cumu ku w-aakozesa
AUG12-12-pen preIN12 IN2SG-used
'a pen you used'

Taylor writes *ku* separately from the verb, apparently analysing it as an independent relativiser, whereas Nsuka-Nkutsi (1982: 124) treats it as a prefix of the relative verb. In (10) Taylor's analysis is reflected in the orthography and Nsuka-Nkutsi's in the glosses.

4 From PB agreement type SBJ to the present

The goal of this section is to show how the BRA cycle can generate every construction attested in contemporary Bantu if we start from a proto-language that had subject and non-subject relative clause constructions with type SBJ agreement. Translated into Meeussen's PB, this starting point looks like (11). Note that in (11a) the Verbal prefix indexes the noun *mʊ̀-ntʊ̀* 'person' as the subject of the relative verb, not as the relativised NP. The construction in (11a) does not differ from a non-relative clause construction and as such is ambiguous between the readings 'the person who cultivates' and 'the person cultivates'. The examples in (1) and (11) are only partial reconstructions that concentrate on agreement. There may have been a relativiser and/or prosodic or morphological differences between relative and non-relative constructions. That being said, many instances of morphosyntactic ambiguity between relative and non-relative constructions exist in the contemporary Bantu languages as well.

(11) Meeussen's (1967: 113) PB examples reanalysed

a. *mʊ̀-ntʊ̀ á/ʊ́-dìm-á ì-pía*
1-person VPR1-cultivate-FV 5-garden
'a person who cultivates the garden'

b. *ì-pía á/ʊ́-dìm-á mʊ̀-ntʊ̀*
5-garden VPR1-cultivate-FV 1-person
'the garden that the person cultivates'

c. *mʊ̀-ntʊ̀ tʊ́-dìm-ìd-á ì-pía*
1-person VPR1PL-cultivate-APPL-FV 5-garden
'the person for whom we cultivate the garden'

The great majority of contemporary instances of type SBJ agreement can be considered direct reflexes of the proto-situation illustrated in (11). The other agreement types are the result of the BRA cycle, schematised in Figure 1. The stages will be commented on and illustrated in what follows. Figure 1 is illustrative rather than exhaustive, in that it only schematises the BRA cycle applied to

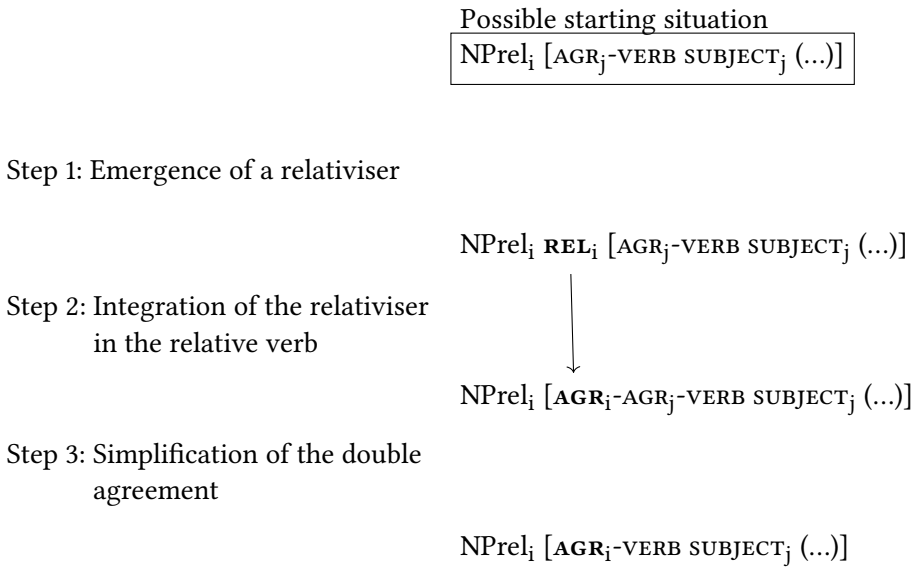

Figure 1: Illustration of a possible BRA cycle

non-subject relatives with a postverbal lexical subject. Subscripts $_i$ and $_j$ signal a relation of agreement between two elements. REL is short for relativiser.

The first stage of the BRA cycle involves the emergence of a relativiser in-between the relativised NP and the relative clause, which can originate in a demonstrative, a personal pronoun, a connective relator, or another element. Whatever its origin, the relativiser agrees with the relativised NP. The overwhelming variety of origins and forms of this relativiser, and its random distribution in the Bantu domain,[4] make it clear that its presence is in most cases a recent innovation and therefore that the BRA cycle is often and easily initiated in the Bantu languages. The first stage of the BRA cycle can be illustrated with the Chokwe K11 example in (12).

(12) Chokwe K11 (Kawasha 2008: 50)
ly-onda [lízé a-a-mbách-ile pwo]
5-egg REL5 IN1-TNS-carry-RPST 1.woman
'the egg which the woman carried'

Relative verb forms with agreement of type NPrel-SBJ (i.e. "Indirect" relatives) are the result of the second stage in the BRA cycle: the gradual integration of

[4]For a detailed discussion of the origins, use and distribution of relativisers in Bantu, see Nsuka-Nkutsi (1982: 1–93).

an erstwhile independent relativiser into the verb. Evidence for this stage can be found in the sometimes unexpected shape of the prefix in Pre-initial position that indexes the relativised NP, due to the fact that it is usually a reflex of a morphologically complex relativiser, rather than of a Pronominal prefix. The unexpected *bu-* shape (versus expected *ba-*) of the Pre-initial in the Nkore-Kiga example (8b) may illustrate this, although its origin is currently not clear. Moreover, in non-subject relative clause constructions with a lexical subject, there is a very strong correlation between agreement of type NPrel-SBJ and the postverbal position of the lexical subject and between type SBJ agreement and a preverbal subject. The straightforward historical explanation in terms of the BRA cycle is that a preverbal lexical subject hampers the integration of a relativiser into the relative verb form (see also Hamlaoui (2022 [this volume])).

Relative verbs with agreement of type NPrel ("Direct" relatives) are the result of the third and last stage of the BRA cycle, viz. the reduction of the succession of two agreement prefixes to a single one. This can happen through merger or through the deletion of one of the prefixes. In theory, when a PPr-VPr succession of prefixes is simplified through the deletion of one of them, the surviving prefix can be the second, i.e. the one that indexes the subject. It is impossible to know whether this may have happened in the history of a construction with agreement of type SBJ, but there are some rare examples of reduction through merger in which the newly forged agreement marker indexes the subject. For instance, the initial *a* of the class 2 RPr *abá* in (13a) from Mbagani L22 is very likely a reflex of the initial *a* that also shows up on (optional) relativisers (13b). Crucially, the resulting subject index is the reflex of a prefix that had been there from the start, accreted by an invariable initial element.[5]

(13) Mbagani / Binji L22 (van Coillie 1948: 272)

a. *di-kamá [abá-bátúlɛ́·la]*
5-foot REL.IN2-cut_off DEM
'the foot that they cut off'

b. *di-kamá [(a)di abá-bátúlɛ́·la]*
5-foot REL5 REL.IN2-cut_off DEM
'the foot that they cut off'

[5]The Nguni S40 languages have a non-subject relative clause construction with a Relative Prefix of the shape (l)V(-)VPr-, in which the quality of the first vowel (here represented as V) is determined by that of the vowel of the Verbal prefix. This appears to suggest that this Relative prefix originates in a form that contained a succession of two prefixes that both index the subject, which is not obviously compatible with the BRA cycle. However, this Nguni Relative prefix is similar to the one found in Mbagani. Its initial *a* comes from a demonstrative stem *la* and undergoes anticipatory assimilation.

The BRA cycle also accounts for the minority patterns mentioned in §3, such as NPrel-NPrel agreement, which is the result of successive applications of the cycle. It explains why dedicated paradigms of RPR's have emerged in many languages, either as reflexes of relativisers, or of mergers between two prefixes; and why there is no fundamental distinction in agreement types between subject and non-subject relatives. A relativiser can appear before relative verbs of any agreement type, because the BRA cycle can be re-initiated while constructions are halfway or fully through a previous cycle. The BRA cycle also makes perfect sense of constructions of the Luba-type, which have agreement type NPrel-SBJ when their subject is of the first or second person, but agreement type NPrel elsewhere. These constructions are halfway between stage 2 and stage 3 of the cycle. The reason why reduction has not taken place with subject agreement prefixes of the first and second person is that the non-lexical subject in these constructions is expressed by means of a postverbal pronoun, whose paradigm lacks first and second person forms in languages with Luba-type constructions (Nsuka-Nkutsi 1982: 42, 222).

The fact that BRA cycles are easily started and that they can evolve fast is illustrated by languages that have multiple alternative relative clause constructions that can be shown to be at different stages of a BRA cycle. Van de Velde (2022) illustrates this with examples from Punu B43, taken from Blanchon (1980).

5 No path from Meeussen's PB to the present

As a reminder, Meeussen's (1967) partial reconstruction of relative clause constructions has three features that are relevant for relative verbs as agreement targets:

1. a distinction between a Direct (PPR-) and an Indirect (PPR- VPR-) construction;
2. the PPR indexes the relativised NP and the VPR the subject of the relative verb;
3. the Indirect construction was used for non-subject relatives if the relative verb has a pronominal/grammatical (i.e. non-lexical) subject and the Direct construction elsewhere.

The picture we find in contemporary Bantu differs considerably from this reconstructed situation. First, there are some additional agreement types, namely

type SBJ, NPrel-NPrel and NPrel-NPrel-SBJ. Moreover, subject relatives and both types of non-subject relatives (with lexical versus grammatical subject) can belong to any of the attested agreement types. Third, a wide variety of relativisers has emerged, distributed randomly over the Bantu domain, as well as a number of dedicated RPr paradigms in individual languages. For the sake of the argument, we will assume in this section that Meeussen's partial reconstructions are valid. Starting from that assumption, we will try and identify paths of morphosyntactic change that can lead from that reconstruction to the morphosyntactic variation that is currently attested in Bantu. As will become clear, this turns out to be impossible.

Nevertheless, if we take Meeussen's reconstruction as the starting point, the BRA cycle could account for much of the needed morphosyntactic change. For instance, the evolution from Indirect to Direct relatives involves the type of prefix reduction found in stage 3 of the BRA cycle. The constant emergence of new relativisers corresponds to stage 1 of the cycle, and type NPrel-NPrel agreement corresponds to stage 2 of a BRA cycle that has a 'direct' relative as its starting point.

However, since the BRA cycle cannot generate a VPr that indexes the subject of the relative verb, contemporary constructions with agreement of type SBJ are problematic, and so are constructions with agreement of type NPrel-SBJ that are used for subject relatives or non-subject relatives with a lexical subject. I will address the problems arising from Meeussen's reconstruction in order of increasing complication. The least complicated are non-subject relatives with a pronominal subject, as these are reconstructed as Indirect, so that a VPr that indexes the subject of the relative verb is already present from the start. All we need to assume is the simplification of the original PPr-VPr- succession of prefixes through the loss of the PPr in the constructions that today have agreement of type SBJ, as schematised in (14).

(14) BGR attested agreement type

relativised NP_x [PPr_x-VPr_y-VERB…] ⟶ relativised NP_x [VPr_y-VERB…]

Although such an evolution is in theory possible, it is impossible to show that it has taken place, because it leaves no traces. We do know that when reduction of a PPr-VPr succession takes place through merger, the resulting RPr tends to be a continuation of the PPr, in that it indexes the relativised NP. The Mbagani example in (13) is one of the few clear counterexamples that I could find. This may point to a tendency for the PPr to survive and the VPr to be deleted, and

could therefore be an argument against the likelihood of the evolution in (14). Yet, Nsuka-Nkutsi's sample contains 128 non-subject relative verb constructions with a pronominal subject and agreement of type SBJ in languages from every Guthrie zone except B (Nsuka-Nkutsi 1982: 217–228). Constructions with type NPrel-SBJ agreement are also widely attested in Nsuka-Nkutsi's sample: 46 examples in all zones except C, F, R and S. This means that we would have to assume that the evolution schematised in (14) must have happened dozens of times independently. This is in theory possible, because it is in line with the observation that the BRA cycle is permanently available and that it can evolve fast. But again, it can only be assumed, not observed, and most facts indicate that the VPR is the most likely to go when a PPR-VPR succession is reduced.

Moving on to subject relatives and non-subject relatives with a lexical subject, Meeussen's reconstruction runs into trouble, because many currently attested constructions would imply the evolutions in (15).

(15)

BGR	attested agreement type
a. relativised NP_x [PPR_x-VERB] ⟶ relativised NP_x	[VPR_y-VERB]
b. relativised NP_x [PPR_x-VERB] ⟶ relativised NP_x	[PPR_x-VPR_y-VERB]

If (15a) could be shown to be possible, its output would be a potential input construction for a BRA cycle of which the output of (15b) would represent stage 2. Therefore, the evolution in (15b) does not strictly need to be assumed to have taken place. We will concentrate on the morphosyntactic change represented in (15a) that needs to be assumed if Meeussen's reconstructions are valid.

A first relevant observation is that there is no way in which the BRA cycle can lead to the integration of a prefix that indexes the subject of the relative verb into a relative verb form. In other words, a prefix that indexes the relativised NP in Initial position is a dead end for the BRA cycle. It could only be replaced by another prefix that indexes the relativised NP. Therefore, another type of morphosyntactic change than those that make up the BRA cycle would be needed to achieve (15a).

The only alternative possibility that I am aware of is proposed in Nsuka-Nkutsi (1982: 250–251), who endorses Meeussen's reconstructions. He explains the switch from a PB PPR paradigm to a VPR paradigm in the Initial position of relative verb forms in terms of analogical levelling, by pointing out that the formal differences between both paradigms are minimal. Nsuka-Nkutsi further points out that the majority of contemporary subject relative clause constructions in his sample have a PPR if they lack a relativiser, but that a VPR is more common in

constructions with a relativiser.[6] He proposes a functional motivation for this correlation: analogical levelling is more likely to occur if it does not lead to ambiguity between a relative and a non-relative construction, an ambiguity that is lifted by the presence of a relativiser. There are two problems with an explanation in terms of analogical levelling. First, analogical change is not as rigidly systematic as needs to be assumed in this case. Second, while it could explain formal changes in parts of paradigms of agreement markers, it cannot explain a change in agreement controller. This second problem dismisses the hypothesis of analogical levelling for non-subject relatives with a lexical subject. If the inherited PPr in the Initial position of their relative verb were to acquire the shape of a VPr, this prefix would still index the relativised NP, rather than the subject of the relative clause, which is *not* the type of agreement we find in the contemporary Bantu constructions with an Initial VPr. Example (16a) repeats Meeussen's pseudo-PB example from (1b). Analogical levelling of the PPr and VPr paradigms would bring about no changes whatsoever, as the two paradigms were identical from the outset for class 5 controllers. However, what we find in the contemporary constructions with a VPr in their Initial position is a reflex of (16b), repeated from (11b), i.e. my proposal for reconstruction translated in Meeussen's PB.

(16) Meeussen's (1967: 113) PB examples reanalysed

a. *ì-píà* *dí-dìm-á* *mʊ̀-ntʊ̀*
5-garden PPr5-cultivate-FV 1-person
'the garden that the person cultivates'

b. *ì-píà* *á/ʊ́-dìm-á* *mʊ̀-ntʊ̀*
5-garden VPr1-cultivate-FV 1-person
'the garden that the person cultivates'

Turning to the first problem with analogical levelling, we will now see why analogical levelling does not work for subject relatives either. According to Meeussen's (1967: 97) PB reconstruction, the VPr and PPr paradigms differ from each other in that the PPr paradigm lacks first and second person forms and that it has a low tone in classes 1 and 9, where the Verbal prefixes are high. Moreover, there is a segmental difference in class 1, where the PPr is **jʊ̀-* and the VPr **á-* or **ʊ́-*. Therefore, if we take the reconstructed PB situation as a starting point, three formal changes are needed in order for the PPr and the VPr paradigms to

[6]Note that what Nsuka-Nkutsi counts as Pronominal prefixes includes dedicated Relative prefixes. According to my counts using his sample, 42% of subject relative clause constructions have a VPr. This percentage goes down to 28% in constructions that lack a relativiser, but it goes up to 67% in constructions with a relativiser.

collapse in the third person: a tone change in class 1, a tone change in class 9 and a segmental change in class 1. These three changes are each very minor and individually plausible, but in the context of analogical change they have to be counted as separate evolutions. In contrast, the formal changes needed for a merger of both paradigms are by no means minor in the case of first and second person controllers. In the singular, a PPr **jʊ̀-* would have to change to VPr **ǹ-* (first person) or **ʊ̀-* (second person). In the plural, the PPr **bá-* has to change to VPr **tʊ̀-* (first person) or **mʊ̀-* (second person). All in all, these are seven formal changes, of which four are minor (including 2SG) and three are radical. Now, if we look at the geographical distribution of subject relative clause constructions in Nsuka-Nkutsi's sample, we find that those with a VPr Initial are found in every Guthrie zone (albeit marginally in zones E, H and J) and those with a PPr Initial in all zones except N and S. Whatever the direction of change one wishes to assume, one has to conclude that changes must have taken place recently. Otherwise, we would find more clustering along regional and genealogical lines. In other words, the exact same set of seven formal changes motivated by analogical levelling should have produced itself dozens of times independently. This is by no means plausible and it is not what we find in languages where analogical levelling can be shown to have taken place. In Cuwabo P34, for instance, the PPr and VPr paradigms have collapsed in their third person forms (17), but relative clauses with a relativised NP of the first or second person have a class 1 prefix in the Initial slot of the relative verb (18), showing that we have agreement of type NPrel and a PPr in Initial position.

(17) Cuwabo P34 (Guérois & Creissels 2020: 478)

a. *Múyáná oṇgúlíhá nigagádda.*
mú-yaná ***o****-ní-gul-íh-a* *ni-gagádda*
1-woman IN1-IPFV-buy-CAUS-FV.CJ 5-dry_cassava.H1D
'The woman is selling dry cassava.'

b. *múyaná oṇgúlíha nígágádda*
mú-yaná ***o****-ní-gul-íh-a* *ní-gagádda*
1-woman IN1-IPFV-buy-CAUS-FV.REL 5-dry_cassava
'the woman who is selling dry cassava'

(18) Cuwabo P34 (Guérois & Creissels 2020: 480)
nootéene íy' óoṃvívéérívatákûl' aápa
ni-oté=ene íyo ***o****-ní-viveéri va-tákulu ápa*
1PL-all=INT 1PL.PRO IN1-IPFV-live.REL 16-9A.house 16.DEM.I
'all of us who live in this house'

Another example of a language where analogical levelling has taken place is Orungu B11b. Here, too, the resulting picture differs considerably from what we find in languages where relative verbs have a VPR that indexes the subject. The tonal differences between the PPR and VPR paradigms have disappeared in Orungu, leaving only a segmental distinction in class 1 and in the first and second person forms, which are absent in the PPR paradigm (Van de Velde & Ambouroue 2017). Moreover, the choice between a PPR and a VPR is free in class 1 in some relative clause constructions, suggesting that partial analogical levelling is still ongoing.

The near impossibility of full analogical levelling across the entire paradigm having taken place independently dozens of times can be contrasted with the trivial nature of the changes that make up the BRA cycle and that can easily explain the evolution from a construction with a VPR that indexes the subject to one with a PPR indexing the relativised NP in a relative verb form. Likewise, in order to explain a certain correlation between the presence of a relativiser and a VPR in Initial position, Nsuka-Nkutsi had to make the awkwardly functionalist claim that ambiguity avoidance would have blocked analogical levelling time and again in the absence of a relativiser. Compare this to the straightforward explanation that can be found in the application of the BRA cycle to a situation in which most languages have inherited relative verbs with a VPR that indexes the subject in Initial position: some have never started a BRA cycle (type SBJ, VPR-, no relativiser); some are in Stage 1 (type SBJ, VPR-, relativiser), some are in Stage 2 (type NPrel-SBJ, PPR-VPR) and some are in Stage 3 (type NPrel, PPR). The latter two can have a relativiser too, but this implies that they have started a second BRA cycle, which is less common.[7]

To conclude, there is no scenario of morphosyntactic change that can lead to the contemporary typological variation in Bantu relative clause constructions when starting from Meeussen's PB reconstruction. In contrast, if we reconstruct relative verb forms with a Verbal prefix that indexes the subject of the relative verb, the BRA cycle can handle the full catalogue of currently attested constructions without problems. Its strength is that it consists of small, trivial changes, all of which are widely attested, often in one and the same language. Meeussen

[7] In fact, Nsuka-Nkutsi (1982) does not recognise a subject relative clause construction with type NPrel-SBJ agreement. This strongly suggests that his analytical choices were influenced by the absence of Indirect subject relatives in the Bantuist tradition. It might explain, for instance, why Nsuka-Nkutsi (1982: 98) recognises an augment in the verb of subject relative clause constructions more than three times as often as in non-subject relatives, where the same morpheme would have more readily been analysed as a PPR. Likewise, the distinction between an independent relativiser and an agreement prefix that indexes the relativised NP is often vague, and indeed fully arbitrary.

(1967: 120) observes that it is not clear whether the Indirect construction he reconstructs was of the Lega-type or of the Luba-type. Remember that the latter is a hybrid of Direct and Indirect relatives: Direct in the case of a third person subject, Indirect elsewhere. In the absence of a clear scenario for morphosyntactic change, the evolution from either to the other is puzzling. However, as we saw in §4, the Luba-type is clearly an innovation as compared to the Lega-type in view of the BRA cycle and neither can be reconstructed in PB.

6 Which path from pre-PB to BGR?

The crucial argument against the reconstruction proposed in BGR with a Direct (PPR-) and an Indirect (PPR-VPR-) relative verb form is that no path has been identified that could lead from that reconstructed state of affairs to the current situation. In this short section, for the sake of the argument we will also assume, as we did in §5, that the reconstructions in BGR are right, and ask how this PB situation could have come about.

According to Meeussen (1967: 113), there are no clear indications for reconstructing morphological differences between relative verb forms and their non-relative counterparts, other than their agreement prefixes in (Pre-)Initial position and the tone of their Final morpheme (although see Meeussen 1971 for the latter). Therefore, the adnominal nature of the agreement marked by the PPR in BGR's PB relative verb forms is a participial characteristic of otherwise fully finite verb forms, which is typologically unusual and in need of an explanation. This need is strengthened by the fact that, to my knowledge, relative verb forms do not show agreement with the relativised NP in any of the Benue-Congo languages outside of Narrow Bantu, so that BGR's Direct and Indirect constructions must be Bantu innovations. This brings up a question similar to the one discussed in the previous section: which scenario of morphosyntactic change could have led from the most likely (typologically usual and universally attested) pre-Bantu situation in which relative verbs agree with their subject to BGR's Direct and Indirect constructions?

An obvious candidate for such a scenario is the BRA cycle. The question is then how old the BRA cycle is. If we wish to assume that it was already active at the PB or pre-PB stage, then we also have to assume that a BRA cycle had created a Direct and an Indirect construction in PB, while the pre-Bantu construction with type SBJ agreement continued to exist. The problem with this latter assumption is that every agreement type is currently attested in languages of almost every Guthrie zone. Therefore, one would also have to make the extremely unlikely

assumption that this tripartite distinction (VPR-, PPR-VPR-, PPR-) has continued to exist for many centuries, surviving in all branches at every split of the Bantu tree, which is only imaginable if there had been for some reason a long cross-Bantu pause in the activity of the BRA cycle. It is therefore far more straightforward to assume that the BRA cycle was not yet active in PB.

7 Consequences for the PB verbal template

Since the BRA cycle consists of a succession of small steps, each of which must be independently motivated, the question is which innovation exactly could have activated the BRA cycle in early Bantu. As far as I can see, there are two options. First, it could be the tendency for relativisers to emerge, corresponding to stage 1 of the cycle. Second, it could be the tendency of verb forms to attract and integrate morphological material at their left hand side (stage 2 of the BRA cycle).

The first option is unlikely to be a feature that could set apart Narrow Bantu from the other Benue-Congo languages. The emergence of relativisers from all kinds of sources is typologically very common (cf. e.g. Hendery 2012 for an overview of the multiple sources of relativisers in the languages of the world). Besides being typologically common, the emergence of relativisers is also widely attested in contemporary Benue-Congo languages outside of Narrow Bantu. In a small sample of 25 languages covering the major sub-branches of Benue-Congo, the great majority of relative clause constructions are introduced by a relativiser.[8] In slightly more than half of these cases, this relativiser is invariable. Elsewhere it agrees with the relativised NP. Most languages in which relativisers are invariable lack noun classes. Agreeing relativisers can have different sources. As in the Bantu languages, they can originate in a demonstrative (as in Bafut, Southern Bantoid, Tamanji 2009), in a personal pronoun (as in Noone, Southern Bantoid, Hyman 1981) or in another element (e.g. *-yī* in Kuche, Plateau, Wilson 1996). It is therefore by no means unlikely that PB had one or more agreeing relativisers.

[8]The six Southern Bantoid languages in my sample (Noni, Mungong, Medumba, Bafut, Ejagham and Mundabli) have an agreeing relativiser, which in Mundabli follows the relative verb. The three Northern Bantoid languages are typologically maximally diverse: Vute has no relativiser, Wawa a non-agreeing one and Tikar an agreeing relativiser. The three Edoid languages have a non-agreeing relativiser (Engenni, Degema and Bini); some Plateau languages have a non-agreeing relativiser (Migili, Fyem, Birom), some an agreeing relativiser (Tyap, Kuche). The Delta Cross (Obolo, Ibibio, Eleme) and Jukunoid (Kuteb, Mbembe) languages have either no relativiser or an invariable one. The two Kainji languages in the sample (C'lela, Cicipu) have an agreeing relativiser. Finally, Oko has an invariable relativiser.

In contrast, as far as I know, there are no Benue-Congo languages outside of Narrow Bantu that have relative clause constructions of agreement type NPrel-SBJ or NPrel, or that otherwise show signs of the integration of an original relativiser into the relative verb form. Their relative verb forms either agree with their subject, or show no agreement at all. Many have subject markers that are analysed as separate pronouns, rather than prefixes. What sets apart most of Narrow Bantu, then, is a tendency for verbs to morphologise formerly independent relativisers.

This conclusion is relevant for the reconstruction of the typological profile of PB verb forms, especially the much debated issue of whether their pre-stem domain was rather synthetic or rather analytical, or whether it may have cyclically shifted between these typological profiles (Nurse 2007; Hyman 2011; Güldemann (2022 [this volume])). As has been pointed out by Hyman (2011) regarding Niger-Congo verb forms, there is evidence for both accretion and breakdown in their pre-stem domain and the main difficulty for reconstruction is to determine at which stage any given proto-language was. However, the dead-end nature of NPrel agreement in relative verb forms strikes me as an argument in favour of reconstructing a more analytical profile for the PB and Proto-Benue-Congo pre-stem domain. As pointed out in the previous sections, there is a clear path from type SBJ agreement to type NPrel agreement, but not for the inverse evolution. Therefore, if there had been a strong tendency for integrating agreeing relativisers (or any other preverbal syntactic material) into verb forms at a pre-PB stage, we would expect to find traces of NPrel(-SBJ) agreement in at least some branches of Benue-Congo and we would expect to find the contemporary variation in Bantu relative clause constructions to be compatible with the reconstruction in BGR. A possible hypothesis is that the emergence of a Pre-initial position in the verbal template is an innovation that took place at node 2 in the internal classification of Bantu proposed in Grollemund et al. (2015), i.e. excluding most of zone A. Indications for this hypothesis can be found in the near-absence of agreement of type NPrel-SBJ in relative verb forms in zone A (Nsuka-Nkutsi 1982: 217) and in the overall absence of Pre-initial negative markers in zone A (Kamba Muzenga 1981: 130–132). As for the latter, Kamba Muzenga (1981: 132) remarks "*L'emploi d'une postinitiale en zone A et dans une partie de la zone B peut s'expliquer sans doute par le fait que ces langues ont perdu l'usage de la préinitiale de la conjugaison* [The use of a Post-initial in zone A and parts of zone B could be explained by the fact that these languages have lost the use of a Pre-initial in conjugation – my translation]." However, unless clear indications for the loss of a Pre-initial position in zone A languages come up, the more likely hypothesis is that these languages have never developed one.

Finally, it would be interesting to apply this reasoning to other branches of Niger-Congo. The Atlantic languages, for instance, tend to have little morphological material prefixed to the verb root, versus a lot of suffixation. They also usually have type SBJ agreement on relative verb forms. An exception on both accounts is Bijogo, where categories such as negation, tense and phasal polarity are expressed by means of verbal prefixes. Interestingly, non-subject relative clauses are of the Luba-type in Bijogo. They have agreement of type NPrel-SBJ if the subject is of the first (19a) or second person or of class *o-*, and agreement of type NPrel elsewhere (Segerer 2002). Subject relatives have agreement of type NPrel, as can be seen in examples where the relativised NP is a pronoun of the first or second person (19b).

(19) Bijogo (Atlantic, Niger-Congo) (Segerer 2002: 179, 176)

a. *e-we i-na-rɔrak-ɔ*
E-goat E.IPFV-SM1SG-look_for-REL
'the goat I am looking for'

b. *amɔ ɔ-bajokam-mɔ*
you O.PFV-be_late-REL
'you (sg) who are late'

This appears to confirm the idea that there is a correlation between rich verbal morphology in the pre-stem domain and agreement of relative verbs with the relativised NP within Niger-Congo.

8 Conclusions

The reconstruction of Direct and Indirect relative clauses proposed in BGR (Meeussen 1967) is untenable, because there exists no scenario that could lead from that reconstruction to the current situation. The best reconstruction is one of a default situation in which relative verbs have the same agreement properties as non-relative verb forms. Despite their typological rarity and their wide distribution across Bantu, all contemporary attestations of constructions with agreement of types NPrel (Direct), NPrel-SBJ (Indirect) and previously undetected types such as NPrel-NPrel must be due to relatively recent parallel evolutions. However counterintuitive this conclusion may seem, it is not that unfamiliar for Bantuists. Consider, for instance, what Schadeberg had to say about Spirantisation:

> The languages which [have] undergone Spirantization, or both Spirantization and 7>5 [vowel shift], are not genetic subgroups or branches of Bantu. I think this is a safe statement to make, even if the details of the genetic subclassification of Bantu are, after many decades of research, still rather hazy. Historical-comparative studies of (presumably) genetic subgroups of Bantu, even small ones, again and again end up reconstructing a consonantal system prior to Spirantization and a seven-vowel system prior to 7>5. A commonly used argument is the observation that the precise results of Spirantization differ even between closely related languages. Even synchronic descriptions of languages which have undergone both changes sometimes posit the situation as found prior to these changes for the underlying representation in order to account for regular allomorphic alternations. An example is Louise Polak-Bynon's grammar of Shi (D.53). (Schadeberg 1994: 81)

The mechanism that has driven the many parallel local evolutions from type SBJ agreement to other agreement types can be clearly identified as the Bantu Relative Agreement (BRA) cycle. The next obvious question to be asked and answered is which grammatical change may have activated the BRA cycle itself in Bantu. My favourite hypothesis for answering that question is that function words in preverbal position started morphologising at some PB stage, presumably the common ancestor of the languages under node 2 in Grollemund et al.'s (2015) internal classification. Due to this innovation, formerly independent relativisers started having the potential of being integrated into relative verb forms as prefixes in a new Pre-initial position.

Acknowledgements

This work is partially supported by a public grant overseen by the French National Research Agency (ANR) as part of the program "Investissements d'Avenir" (reference: ANR-10-LABX-0083). It contributes to the IdEx Université de Paris – ANR-18-IDEX-0001. I wish to thank Sara Pacchiarotti, Rozenn Guérois, Koen Bostoen, Dmitry Idiatov and two anonymous reviewers for their generous comments.

Abbreviations

In what follows the starred forms are terms for positions in Meeussen's morphological template of the Bantu verb; those marked by a degree sign are names of paradigms of agreement markers:

1, 2, 3, E, O …	noun classes	INT	intensive
1SG, 2PL …	first and second person singular/plural markers	IPFV	imperfective
		L	low tone
		LOC	locative
		NP	Noun Phrase
APPL	applicative	NPr	nominal prefix
AUG	augment	NPrel	relativised NP
BGR	Bantu Grammatical Reconstructions	OPr	object prefix
		PB	Proto-Bantu
		PFV	perfective
BRA	Bantu Relative Agreement	PL	plural
		postFV	Post-final*
CAUS	causative	postIN	Post-initial*
CJ	conjoint	PPr	pronominal prefix°
cl.	class	preIN	Pre-initial*
DEM	demonstrative	PRO	pronoun
PRE	numeral prefix	REL	relative / relativiser
EXT	extension*	RPr	relative prefix°
FO	formative*	RPST	remote past
FV	final (vowel)*	SBJ	subject
H	high tone	SM	subject marker
H1D	first high tone deletion	TNS	tense
		V	vowel
IF	infix*	VPr	verbal prefix°
IN	initial*		

References

Blanchon, Jean A. 1980. La relativisation. In François Nsuka-Nkutsi (ed.), *Eléments de description du punu* (Linguistique et sémiologie. Travaux du centre de recherches linguistiques et sémiologiques de Lyon), 115–128. Lyon: Université Lyon II.

de Blois, Kornelis Frans. 1970. The augment in the Bantu languages. *Africana Linguistica* 4. 85–165.

Grégoire, Claire & Baudouin Janssens. 1999. L'augment en bantou du nord-ouest. In Jean-Marie Hombert & Larry M. Hyman (eds.), *Bantu historical linguistics: Theoretical and empirical perspectives* (CSLI Lecture Notes 99), 413–429. Stanford, CA: Center for the Study of Language & Information.

Grollemund, Rebecca, Simon Branford, Koen Bostoen, Andrew Meade, Chris Venditti & Mark Pagel. 2015. Bantu expansion shows that habitat alters the route and pace of human dispersals. *Proceedings of the National Academy of Sciences of the United States of America* 112(43). 13296–13301.

Guérois, Rozenn & Denis Creissels. 2020. The relative verb forms of Cuwabo (Bantu P34) as contextually oriented participles. *Linguistics* 58(2). 463–491.

Güldemann, Tom. 2022. Predicate structure and argument indexing in early Bantu. In Koen Bostoen, Gilles-Maurice de Schryver, Rozenn Guérois & Sara Pacchiarotti (eds.), *On reconstructing Proto-Bantu grammar*, 387–421. Berlin: Language Science Press. DOI: 10.5281/zenodo.7575831.

Hamlaoui, Fatima. 2022. On subject inversion in Proto-Bantu relative clauses. In Koen Bostoen, Gilles-Maurice de Schryver, Rozenn Guérois & Sara Pacchiarotti (eds.), *On reconstructing Proto-Bantu grammar*, 495–535. Berlin: Language Science Press. DOI: 10.5281/zenodo.7575837.

Harries, Lyndon. 1950. *A grammar of Mwera, a Bantu language of the eastern zone, spoken in the south-eastern area of Tanganyika Territory* (Bantu Grammatical Archives 1). Johannesburg: Witwatersrand University Press.

Hendery, Rachel. 2012. *Relative clauses in time and space. A case study in the methods of diachronic typology* (Typological Studies in Language 101). Amsterdam: John Benjamins.

Hyman, Larry M. 1981. *Noni grammatical structure: With special reference to verb morphology* (Southern California Occasional Papers in Linguistics 9). Los Angeles, CA: Department of Linguistics, University of Southern California.

Hyman, Larry M. 2011. The Macro-Sudan Belt and Niger-Congo reconstruction. *Language Dynamics and Change* 1(1). 3–49.

Idiatov, Dmitry. 2022. Diachronic typology and the reconstruction of non-selective interrogative pronominals in Proto-Bantu. In Koen Bostoen, Gilles-Maurice de Schryver, Rozenn Guérois & Sara Pacchiarotti (eds.), *On reconstructing Proto-Bantu grammar*, 667–737. Berlin: Language Science Press. DOI: 10.5281/zenodo.7575843.

Kamba Muzenga, Jean-Georges. 1981. *Les formes verbales négatives dans les langues bantoues* (Annales – Série in-8° – Sciences humaines 106). Tervuren: Royal Museum for Central Africa.

Kamba Muzenga, Jean-Georges. 2003. *Substitutifs et possessifs en bantou* (Société d'études linguistiques et anthropologiques de France 401). Louvain: Peeters.

Kawasha, Boniface. 2008. Relative clauses and subject inversion in Chokwe, Kaonde, Lunda and Luvale. *Africana Linguistica* 14. 37–61.

Meeussen, Achiel Emiel. 1967. Bantu grammatical reconstructions. *Africana Linguistica* 3. 79–121.

Meeussen, Achiel Emiel. 1971. Relative clauses in Bantu. *Studies in African Linguistics Supplement* 2. 3–10.

Nsuka-Nkutsi, François. 1982. *Les structures fondamentales du relatif dans les langues bantoues* (Annales – Série in-8° – Sciences humaines 107). Tervuren: Royal Museum for Central Africa.

Nurse, Derek. 2007. Did the Proto-Bantu verb have a synthetic or an analytic structure? In Nancy C. Kula & Lutz Marten (eds.), *Bantu in Bloomsbury: Special issue on Bantu linguistics* (SOAS Working Papers in Linguistics 15), 239–256. London: Department of Linguistics, School of Oriental & African Studies.

Polak-Bynon, Louise. 1975. *A Shi grammar: Surface structures and generative phonology of a Bantu language* (Annals – Series in-8° – Human Sciences 86). Tervuren: Royal Museum for Central Africa.

Sanderson, Meredith. 1922. *A Yao grammar*. 2nd revised edition. London: Society for Promoting Christian Knowledge.

Schadeberg, Thilo C. 1994. Spirantization and the 7-to-5 vowel merger in Bantu. *Belgian Journal of Linguistics* 9. 73–84.

Segerer, Guillaume. 2002. *La langue bijogo de Bubaque (Guinée Bissau)* (Afrique et Langage 3). Louvain: Peeters.

Stappers, Leo. 1973. *Esquisse de la langue mituku* (Annales – Série in-8° – Sciences humaines 80). Tervuren: Royal Museum for Central Africa.

Tamanji, Pius N. 2009. *A descriptive grammar of Bafut – a Grassfields Bantu language of Cameroon* (Grammatical Analyses of African Languages 35). Cologne: Rüdiger Köppe.

Taylor, Charles. 1985. *Nkore-Kiga* (Croom Helm Descriptive Grammars). London: Croom Helm.

van Coillie, Gustaaf. 1948. Korte Mbagani-spraakkunst: De taal van de "Babindji" in Kasayi (Deel 1). *Kongo-Overzee* 14(5). 257–279.

Van de Velde, Mark. 2005. The order of noun and demonstrative in Bantu. In Koen Bostoen & Jacky Maniacky (eds.), *Studies in African comparative linguistics, with special focus on Bantu and Mande. Essays in honour of Yvonne Bastin and Claire Grégoire* (Collection Sciences Humaines 169), 425–441. Tervuren: Royal Museum for Central Africa.

Van de Velde, Mark. 2019. Nominal morphology and syntax. In Mark Van de Velde, Koen Bostoen, Derek Nurse & Gérard Philippson (eds.), *The Bantu languages*, 2nd edn. (Routledge Language Family Series), 237–269. Milton Park, Abingdon: Routledge.

Van de Velde, Mark. 2021. The Bantu relative agreement cycle. *Linguistics, An Interdisciplinary Journal of the Language Sciences* 59(4). 981–1015.

Van de Velde, Mark. 2022. The AMAR mechanism: Nominal expressions in the Bantu languages are shaped by apposition and reintegration. *Linguistics, An Interdisciplinary Journal of the Language Sciences* 60(3). 899–931.

Van de Velde, Mark. Forthcoming. Adnominal possession. In Lutz Marten, Nancy C. Kula, Jochen Zeller & Ellen Hurst (eds.), *The Oxford guide to the Bantu languages* (Oxford Guides to the World's Languages 2). Oxford: Oxford University Press.

Van de Velde, Mark & Odette Ambouroue. 2017. The origin and use of a relative clause construction that targets objects in Orungu (Bantu, Gabon). *Studies in Language, International Journal sponsored by the Foundation "Foundations of Language"* 41(3). 615–637.

Wilson, Janet Evelyn. 1996. *A phonological grammar of Kuche*. Arlington, TX: University of Texas at Arlington. (MA thesis).