

## **Resolving phonological variability in Bantu lexical reconstructions: the case of ‘to bake in ashes’**

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### **Abstract<sup>1</sup>**

The current number of Bantu lexical reconstructions is highly inflated due to our partial understanding of diachronic semantic and phonological changes. The online Bantu Lexical Reconstructions 3 (Bastin & Schadeberg 2003) database holds numerous homophonous reconstructions with related meanings as well as multiple synonymic reconstructions whose phonological shape is only minimally dissimilar. This phenomenon is also known as ‘osculance’ in Bantu studies (Guthrie 1967-1971). In this paper we argue that phonological variability in Bantu lexical reconstructions can often be resolved through a careful reanalysis of synonymic near-homophones. We demonstrate how the osculant quadruplet °-bũmb- / °-dũmb ɪ k- / °-bũmb ɪ k- / °-gũmb ɪ k- meaning ‘to bake in ashes’ can be reduced to one common Proto-Bantu form and evaluate what implications this has with respect to the history of this particular culinary technique in Bantu speech communities.

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## 1. Introduction

The historical reconstruction of the Bantu lexicon is a work in progress that has developed steadily throughout the last century (Bastin & Schadeberg 2003; Bourquin 1923, 1953; Coupez *et al.* 1998; Guthrie 1967-71; Homburger 1914, 1925; Meeussen 1969; Meinhof 1895, 1899; Meinhof & Van Warmelo 1932). For the time being, the most advanced result of this joint research is the online *Bantu Lexical Reconstructions* database (BLR3) edited by Bastin & Schadeberg (2003). BLR3 contains about 10,000 entries. This figure is drastically inflated for a number of reasons. One important factor is the poor understanding of semantic change (Schadeberg 2002). Semantic relationships have been established between phonologically identical, but at first sight seemingly homonymic proto-forms (Bostoen 2005:46-86; Schadeberg 2002). A closely related problem is the partial insight into regular sound correspondences between Bantu languages, which may explain why BLR3 holds numerous synonymic reconstructions with nearly identical forms. This phenomenon of homonymy and synonymy among lexical reconstructions is also known as 'osculance' in Bantu studies (Bostoen 2001; Guthrie 1967-71). Even if the term 'osculance' is limited to Bantu, the phenomenon itself is certainly not. It is widespread in linguistic reconstructions and common in many other language families in the world. See, for instance, Mallory & Adams (2006:116) on the problematically high number of homonyms in Proto-Indo-European reconstructions. This methodological difficulty, namely that reconstructions sometimes include minimally different forms and the same or similar meanings, or vice versa, is a particularly challenging problem for the historical linguist.

In certain cases, better insight into regular phonological or semantic evolutions may lead to the elimination of the assumed variability between lexical reconstructions. Such clusters turn out to be not osculant after all. The exposure of fake osculant clusters through more careful comparative research would thus allow a streamlining of BLR3. Moreover, if several Bantu reconstructions, which are semantically or phonologically slightly different and have a complementary geographic distribution, can be reduced to one common proto-form with one proto-meaning, the relative time-depth of this lexical item logically increases. Languages attesting a reflex of this lexical reconstruction can be assumed to have inherited it from a common ancestor. The more widespread the phonologically regular reflexes of a given lexical reconstruction are over different Bantu subgroups, the older this latest common ancestor may be assumed to be. Instead of being able to attribute each of the osculant reconstructions to a relatively recent and regional proto-language, such as Proto-East-Bantu or Proto-South-West-Bantu, it might be possible to assign a single reconstruction to Proto-Bantu. This is particularly important if one wishes to use this kind of lexical evidence to make claims about the cultural history of past Bantu speech communities within the scope of studies in linguistic palaeontology.

In other cases, however, the osculance between lexical reconstructions cannot be resolved through a more detailed study of the phonological and/or semantic evolutions involved. Such cases are usually indicative of a historical situation that is more complex than the reconstruction of a single form can account for (Botne 1991). If such variability does not result from internal sound change that was interrupted in progress, it can often be explained as the outcome of lexical diffusion across language or dialect boundaries (see, for instance, Labov 1981). It usually reveals lexical borrowing between closely related languages or dialects or other convergence phenomena, which in the distant past led to the introduction of words that did not undergo the regular sound changes of a given language. See, for example, Malkiel (1993) on the subject of ‘lexical doublets’ in the Romance languages. This is particularly the case when slightly divergent reconstructions cannot be reduced to a common proto-form through regular phonological and semantic correspondences, but are too close not to be interrelated historically, like the Proto-Bantu reconstruction  $*-b\grave{i}g\acute{a}$  ‘pot’ which has an osculant equivalent  $*-b\grave{i}j\acute{a}$  among the North-West Bantu languages (Bostoen 2005:200-9). It is obvious that such cases of early contact are equally significant for studies in linguistic palaeontology.

The history behind osculant reconstructions can only be revealed by subjecting specific cases to a detailed comparative study. In this paper, we will present such a case study. It concerns an osculant cluster upon which we stumbled as a result of our linguistic research on the history of culinary practice in Bantu-speaking Africa. When we screened BLR3 for extant cuisine-related reconstructions, we came across an osculant quadruplet meaning ‘to bake in ashes’:  $^{\circ}-b\grave{u}mb-$  (zones A and H),  $^{\circ}-d\grave{u}mb\iota k-$  (zones F, G, J, M, P and S),  $^{\circ}-b\grave{u}mb\iota k-$  (zone E) and  $^{\circ}-g\grave{u}mb\iota k-$  (zones D and J).<sup>2</sup> In BLR3,  $^{\circ}-d\grave{u}mb\iota k-$  is considered as the main reconstruction, while the others are seen as variations in form for which no regular sound correspondences are known. These reconstructions vary not only with respect to the initial consonant, but also in the presence or absence of the ‘impositive’ suffix  $-\iota k-$ . The osculance is thus not purely phonological, but also morphological. As far as the relative time-depth of this osculant cluster is concerned, none of these synonymic reconstructions has reflexes that are widespread enough for the proto-form to be reconstructed into Proto-Bantu. According to this state of affairs, there would be no lexical grounds to assume that the linguistic ancestors of the present-day Bantu-speakers were already familiar with this elementary cooking technique before they started to spread over most of central and southern Africa. However, an accurate comparative approach to this osculant quadruplet sheds new light on their historical relationship. We will argue that their osculance is false and that they can be reduced to one original proto-form, which Proto-Bantu itself inherited in all likelihood from an older ancestor

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2. Except when we cite other sources, we will systematically adopt the vowel system notation applied in BLR3 for lexical reconstructions:  $i \iota e a o u$ . The \* sign refers to proto-forms that have been reconstructed into Proto-Bantu, while the  $^{\circ}$  sign refers to those which cannot be reconstructed into Proto-Bantu, because their distribution is not widespread enough or because certain irregularities complicate their reconstruction. The geographic distribution according to Guthrie’s zones is given in brackets.

language. We will demonstrate how Bantu Spirantisation (BS) blurred the picture regarding the irregular initial consonant and why the presence of the suffix  $-ɪk-$  is the result of a morphological innovation that has significance for Bantu language history. In §2, we discuss the possibility of reconstructing a common proto-form and examine more closely the relationship between the irregular first consonant and Bantu Spirantisation. In §3, we discuss the time depth and diachronic semantic evolution of the simple verb root. In §4, we consider the time depth and diachronic semantic evolution of the extended verb root. In §5, more derived reconstructions are discussed which have so far never been linked with the osculant cluster ‘to bake in ashes’, but should be. The conclusions are presented in §6. All reflexes related to this osculant cluster are presented together with their original translation and bibliographic reference in an Appendix at the end of this paper. Throughout the text, we will cite only those reflexes which are necessary for our line of reasoning with a translation in English and without mentioning their source.

## 2. Reconstructing a single proto-form for ‘to bake in ashes’

### 2.1. Previous reconstructions

BLR3 is the cumulative result of earlier research in Bantu lexical reconstructions. Osculant clusters occurring in this database often originate from divergent reconstructions proposed by different scholars. Such is the case for the ‘to bake in ashes’ cluster. Only  $^{\circ}-bũmbɪk-$  was proposed by the Tervuren RMCA team itself. The  $^{\circ}-gũmbɪk-$  reconstruction is already found in Meeussen (1969) and goes back to Bourquin’s (1923:42)  $^{\circ}-\gammaũmbɪka$  ‘to cover with ashes, to bake in ashes’. Bourquin’s reconstruction is based on four reflexes, three of them having  $/v/$  and one having  $/dz/$  as initial consonant. Bourquin (1923:43) admits himself that it cannot be deduced with certainty from the examples given whether the verb stem really starts with  $\gammaũ$  or rather with  $vũ$ . He observes moreover the resemblance to the Fumu (B77b) verb  $-vuma$  meaning ‘to bake in ashes’ and missing the extension  $-ɪk-$ . Guthrie (1967-71 [vol. 3]:199) proposed the comparative series  $*-dũmbɪk-$  ‘to bake in ashes’ on the basis of eight reflexes, none of them starting with  $/d/$ , but all with a fricative or an affricate. He associates them with the partial series  $*-bũmb-$  uniting one Wide Bantu (Tiv) and two Narrow Bantu reflexes, one of them actually starting with  $/b/$ .

Leaving aside for the moment the extension  $-ɪk-$ , the different proposals only diverge on the first consonant, but are unanimous on the vowel and the second consonant of the verb root: the first degree back vowel followed by the voiced prenasalised bilabial stop. They also have in common the low tone, except for Bourquin (1923) who did not reconstruct tonality. The supplementary reflexes we collected corroborate these reconstructions. The first degree back vowel is confirmed by the reflexes from 7V languages which manifest without exception a high vowel. The Basaa (A43) reflex  $b̄òm$  ‘to roast, to grill’ has a second degree mid vowel, but it diachronically reflects a high vowel which underwent vowel

harmony with a final vowel that was subsequently lost (Janssens 1986:205-6). The original vowel can still be seen in the passive form *bùm* ‘to be roasted, to be grilled’, where the final vowel did not trigger vowel harmony. The final consonant cluster has predominantly been maintained; only a minority of languages regularly reduced it. In zones A and B, this generally happened in favour of the bilabial nasal. Languages from this area which manifest this sound shift in their verb for ‘to bake in ashes’ also manifest it in other common Bantu roots as can be seen in (1).

(1) Lefo (A15)	-jùm	‘smell, stink’	<	*-dùm-	(Hedinger 1987)
	n-gòm	‘porcupine’	<	°-gòmá	
Basaa (A43)	-àm	‘business’	<	*-gàmò	(Janssens 1986) <sup>3</sup>
Eton (A71)	-jém	‘to dance’	<	*-jím-	(Van de Velde 2006)
	-lám	‘to trap’	<	°-tám-	
Ewondo (A72a)	-yám	‘to cook’	<	°-dám-	(Tsala s.d.)
	m-bim	‘corpse’	<	*-bìmà	
Fumu (B77b)	-bima	‘to swell’	<	*-bím-	(Calloc’h 1911)
	-suma	‘to buy’	<	°-cým-	

In only a few languages, such as N-Sotho (S32) (-bùpega), the reduction of the final NC to C happened in favour of the oral stop that was moreover devoiced. This sound shift known as ‘nasal strengthening’ has been described for several southern Bantu languages such as Makua (P31), Koti (P311), and the S30-languages (including Lozi), and is also sporadically attested elsewhere in Bantu (Creissels 1999; Gowlett 1989; Ponielis 1973, Schadeberg 1999).

The low tone reconstructed by Guthrie (1967-71) and Meeussen (1969) is not contradicted by the additional reflexes with tone notation which we collected. In those languages where the low tone of the proto-form is no longer attested, it concerns a regular change. The high tone observed in the Yaka (H31), Ganda (J15), Tembo (J531), Sanga (L35) and Ruund (L53) reflexes is confirmed by reflexes of other common Bantu roots, e.g. Yaka (H31) -dílá ‘to weep’ < \*-díd- (Ruttenberg s.d.:33), Ganda (J15) kù-vúbá ‘to fish’ < \*-dùb- (Snoxall 1967:324), Tembo (J531) -fúbà ‘to fish with a net’ < \*-dùb- (Kaji 1985:109), Sanga (L35) -vím- ‘to thatch with leaves and straw’ < °-bím- (Coupez 1976:V3) and Ruund (L53) -é:nd- ‘to walk about’ < \*-gènd- (Hoover 1975:E-1). In Lefo (A15), \*L usually gives L and \*H > H, but the rising tone of the -bùm reflex might indicate verbal derivation, which gives rise to contour tones, e.g. \*-jìkad- ‘stay, dwell’ > -dyê ‘to stay’, -dyě ‘to sit down’, \*-pít- ‘to pass’ > -píd ‘cause to pass’. Even if the meaning of -bùm, ‘to roast’, does not really suggest verbal derivation, similar Lefo verb roots carrying a rising tone also originate from a low tone root, e.g. yán ‘to buy’ < °-dând- (Hedinger 1987).

3. In Basaa (A43), the reduction rule \*mb > m in C2 position is not entirely consistent, and seems to be rarer in verbs than in nouns, e.g. -lám ‘to cook’ < \*-dám- (Janssens 1986:183).

## 2.2. The irregular initial consonant and Bantu Spirantisation (BS)

All authors reconstructed a voiced stop for the initial consonant of the osculant cluster ‘to bake in ashes’, but the place of articulation varies between bilabial, alveolar and velar. However, as mentioned above, only Guthrie’s \*b in \*-bũmb- is based on a direct reflex in a present-day Bantu language, i.e. -bũm in Bulu (A74). As can be seen in the Appendix, the number of reflexes attesting an initial /b/ is actually much higher. Several languages from zones A, B, C, J and S, such as Duala (A24), Geviya (B301), Ngombe (C41), Nande (J42) and Tswana (S31), attest this stop as a direct reflex of \*b. Not insignificantly, all of them are 7V languages. In Gikuyu (E51), another 7V language, the reflex -ũmbik- can also only go back to a root with initial \*b, since it is the only stop that was dropped intervocally, \*d and \*g resulting respectively in /r/ and /ɣ/. Consequently, °-bũmb- can definitely not be dropped from the osculant cluster. Can the reconstructions with initial \*d and \*g, then, be eliminated? Going by the direct reflexes of both stops, one would tend to answer this question affirmatively. Among the present-day verbs, we have not found one that begins with the direct reflex of \*d nor with a liquid like /r/ or /l/, which are its most common reflexes in Bantu. Only one verb attests a direct reflex of \*g as initial consonant, i.e. -gũmba in Lega (D25). This case is not only isolated, it is also ambiguous. In this 7V language, \*b corresponds with /b/ (2a), and \*g corresponds indeed most commonly with /g/. The latter may also correspond with /Ø/ or /k/, without a clear phonological conditioning, as can be seen in (2b). However, not one example of \*gu > /gu/ could be found. The sequence /gu/ seems to be rare in Lega, but besides the verb -gũmba ‘to roast’ at least one other instance of /gu/ can be associated with a \*bu initial reconstruction (2c). Another correspondence between \*b and Lega /g/, but not in front of the high back vowel, is given in (2d). Taking into account this ambiguity, the Lega reflex -gũmba alone is too shaky evidence to reconstruct \*-gũmb- ‘to bake in ashes’.

(2)	Lega (D25)a.	*-bũdã	‘rain’	>	m-bũlã	(Botne 1994)
		°-bũg-	‘to break’	>	ku-bũgã	
	b.	*-gũdũ	‘leg’	>	ko-gũlo	
		*-gũd-	‘to abstain’	>	ki-gũlwa	‘rejected wife’
		°-gũmb-	‘dig trench’	>	-ũmbã	
		°-gũdã	‘blood’	>	mi-kũlã	
	c.	°-bũmã	‘fruit’	>	ki-gũmã	
	d.	°-bũvk- / bũvk	‘to wake up’	>	-gũvka	

If there is so little direct evidence for the reconstruction of an initial \*g and \*d, what led Bourquin (1923), Meeussen (1969) and Guthrie (1967-71) to reconstruct \*-gũmbik- or \*-dũmbik-? It is clear that the sound shift commonly known as Bantu Spirantisation (BS) considerably obscured the reconstruction. BS is the common denominator for the effect that the PB high front and back vowel exert on preceding stops. It is precisely this high back vowel that is recurrent in all members of the osculant cluster ‘to bake in ashes’. BS concerns sound shifts that

are more complex than the simple ‘replacement of plosives through homorganic fricatives’ as spirantisation is defined outside Bantu (Bussmann 1996:450). Apart from a change in the mode of articulation, it also involves changes in the place of articulation. BS actually not only generates fricatives and affricates, but it also very often creates sibilants that are no longer homorganic with the original stop (Janson 2007; Schadeberg 1994-5). In cases where the stop is before the high back vowel \*u, the place of articulation is most stable for bilabial stops and least stable for velar stops. In the case of \*bu, BS mostly does not affect the place of articulation. This results in reflexes like /vu/ and /bvʋ/ or their devoiced equivalents /fʋ/ and /pfʋ/. The place of articulation, however, may also be affected, as in /ju/, /ɖu/ or /hu/. In the case of \*gu, BS never generates a velar sibilant. The outcome most often corresponds to that of \*bu. As regards \*du, finally, the situation is rather mixed: either the same reflexes as for \*bu or their coronal equivalents occur (for a more detailed discussion, see Janson 2007). Given these changes in the place of articulation, quite a lot of languages have merged the reflexes of \*bu and \*gu, and some have also given up the distinction with the reflexes of \*du. Consequently, it is no surprise that Bourquin (1923:42) questioned the initial consonant of his proto-form <sup>o</sup>-ɣũmbika. He based this reconstruction on reflexes from Nyoro (J11), Rundi (J62), Swahili (G42) and Xhosa (S41), four languages that lost the difference between \*bu, \*du and \*gu (Janson 2007).<sup>4</sup> The same is true for seven out of the eight reflexes on which Guthrie (1967-71) based his reconstruction \*-dũmbik-. In these seven languages, i.e. Nyoro (J11), Nkore (J13), Ganda (J15), Swahili (G42d), Bemba (M42) and Makonde (P23), the reflexes of \*b, \*d and \*g have fused before the high back vowel.<sup>5</sup> Thus none of these reflexes provides distinctive evidence for the reconstruction of the initial stop. Regarding the reflexes presented in the Appendix and not cited by any of the aforementioned authors, the merger of \*bu, \*du and \*gu, for instance, also happened in the languages presented in (3).

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4. Janson (2007) distinguishes between /vu/ as Rundi reflex of \*bu and \*gu on the one hand and /bvʋ/ as reflex of \*du on the other hand. This distinction is probably adopted from Guthrie (1967-71), but does not correspond to the language facts. Rundi does not have the voiced bilabial affricate, only the voiceless one (Meeussen 1959:9). The reflex of \*du is also /vu/.

5. Guthrie (1967-71) gives -bvũmbik- as Rundi reflex. The initial affricate reflects that in Rundi /v/ is often pronounced as what Meeussen (1959:11) calls the ‘mi-affriquée’ [ʋ<sup>b</sup>]. There is no phonemic distinction, however, between both sounds. Hence, Rodegem (1970:541) notes -vũmbika. Moreover, from a diachronic point of view, there is no distinction between reflexes of \*bu, \*du and \*gu. For some unknown reason, Guthrie systematically notes bvʋ for assumed reflexes of \*du, but vu for assumed reflexes of \*bu and \*gu. His Rundi source is not known.

- (3) \*bu/\*du/\*gu > /vu/: Digo (E73), Mwiini (G412), Kongo (H16),  
 Pende (L11), Xhosa (S41)  
 > /ju/: Kiga (J14), Nyambo (J21), Haya (J22)  
 > /pfu/: Hunde (J51)  
 > /fu/: Jita (J25), Tembo (J531), Nyakyusa (M31),  
 Bemba (M42), Lenje (M61)  
 > /hu/: Matengo (N13), Makonde (P23)<sup>6</sup>

Among Guthrie's reflexes of \**-dũmbik-*, only one is really distinctive with respect to place of articulation, i.e. the Sukuma (F21) reflex *-zũmbikh-*. The first consonant of this verb can only stem from \**d*, since \**b* and \**g* are not subject to BS in Sukuma (Batibo 2000). However, Guthrie (1967-71) does not mention his source and this form could not be traced in the existing literature on Sukuma either. It can be questioned whether this verb really exists in Sukuma.<sup>7</sup> This makes it rather unreliable as (the sole) evidence for the reconstruction of \**-dũmbik-*. Given the uncertainty about the source, lateral influences cannot be excluded in this case. A similar reflex is, for instance, attested in the neighbouring language Kerewe (J24): *-zuumbika* meaning, amongst others, 'to bake in ashes' (Odden & Hubbard 1994). In Kerewe, /*zu*/ is not only a regular reflex of \**du*, but also of \**bu*, as can be seen in (4). Guthrie's Sukuma reflex might thus be a Kerewe word mistakenly considered as Sukuma or a loanword.

- (4) Kerewe (J24) \**-bũdã* 'rain' > *en-zũla*  
 \**-bũ* 'ashes' > *í-zũ*  
 \**-bũt̃* 'white hair' > *en-zwĩ* (Odden s.d.:102-4)

Moreover, Guthrie's so-called Sukuma reflex is the only attestation whose initial sibilant consonant can only be reconstructed to \**d*, and not to \**b* or \**g*. Among the reflexes given in the Appendix, there are more verb stems whose initial sibilant consonant cannot stem from \**d*, but only from \**b* or \**g*, for instance, those presented in (5).

- (5) \*bu/\*gu > /vu/: Fumu (B77b) (\**du*>*dz*u), Shi (J53) (\**du*>*du*),  
 Lungu (M14) (\**du*>*z*u), Mwanga (M22) (\**du*>*z*u)

None of these reflexes can stem from a proto-form with initial \**d*, as was the case with the above-examined reflexes from 7V languages with an initial stop. On the strength of the same evidence from 7V languages, \**g* had already been dismissed as a possible initial consonant.

6. The voiceless fricatives /*f*/ and /*h*/ may not only reflect \**b*, \**d*, \**g* in front of the high back vowel, but also \**p*, \**t*, \**k*.

7. Herman Batibo (pers. comm.) and several fellow Sukuma speakers were not aware of this word and would rather use the verb *-koocha* to refer to roasting/baking something in hot ashes.

### 2.3. Summary

The evidence is too weak to convincingly reconstruct  $^{\circ}\text{-gũmbũk-}$  and  $^{\circ}\text{-dũmbũk-}$ . The osculant cluster ‘to bake in ashes’ can therefore at this point be reduced to the root  $^{\circ}\text{-bũmb-}$  and the derived stem  $^{\circ}\text{-bũmbũk-}$ . The precise historical relationship between both verb forms, however, needs to be uncovered. According to regular Bantu verb morphology, it can safely be assumed that the latter is derived from the former, which usually implies a semantic change. The derivational suffix  $^{\circ}\text{-ũk-}$  is the so-called ‘impositive’, not to be confused with its homophonous equivalent, the ‘neuter’ (Meeussen 1969:92; Schadeberg 2003:74-5). Semantically, the function of this suffix has often been understood as expressing ‘direct causation’, but the more precise meaning would be ‘to put something into some position’ (Schadeberg 2003:74). Nevertheless,  $^{\circ}\text{-bũmb-}$  and  $^{\circ}\text{-bũmbũk-}$  have been reconstructed as synonyms. Hence, it needs to be examined whether they need to be reconstructed with the same time depth or whether  $^{\circ}\text{-bũmbũk-}$  is a more recent morphological innovation of  $^{\circ}\text{-bũmb-}$ . Furthermore, how they relate to each other from diachronic semantic perspective needs to be clarified.

Since this section dealt mainly with the initial consonant, a word needs to be said on the reconstruction  $^{\circ}\text{-tũmb-}$ , given in BLR3 with the meaning ‘burn, roast, boil’ (cf. Guthrie 1967-71, C.S. 1870-1871). Again tone and all segments except the initial consonant are shared, and there also is a certain semantic likeness. A historical relationship could therefore be supposed. Nevertheless, in most languages where both verbs are attested, even in those subject to BS, no phonological confusion between their reflexes is possible. Semantically speaking, the cooking techniques to which  $^{\circ}\text{-tũmb-}$  reflexes refer are generally clearly distinct from those covered by  $^{\circ}\text{-bũmb-}$  reflexes. Moreover, in contrast to  $^{\circ}\text{-bũmb-}$ ,  $^{\circ}\text{-tũmb-}$  originally did not belong to the semantic field of cooking. Cuisine-related meanings only turn up in certain languages and should be considered secondary. As we will explain below, the inverse is true for  $^{\circ}\text{-bũmb-}$ .

## 3. $^{\circ}\text{-bũmb-}$ : time depth and diachronic semantic evolution

### 3.1. Relative time depth

As can be seen in Map 1 in the Appendix, the simple verb root  $^{\circ}\text{-bũmb-}$ , leaving its meaning(s) aside for now, is widely scattered in Bantu. Reflexes are attested in zones A, B, C, D, G, H, J, K, L, M, N and S. It is represented in the majority of the major Bantu subgroups, i.e. North-West, Inner Congo Basin, West-Coastal, South-West and East-Bantu (Vansina 1995, Bastin *et al.* 1999). Provided that the different currently observed meanings of this verb can effectively be brought back to one original meaning, the form as such is highly eligible for reconstruction to Proto-Bantu.

### 3.2. Basic and related meanings

Regarding its diachronic semantic evolution, the meaning ‘to bake in ashes’ (Fr. ‘cuire dans/sous les cendres’) indeed seems to be a very common meaning. Several of the reflexes presented in the Appendix have been translated in this or a very similar way. Baking in ashes is a gentle cooking technique, whereby the ashes serve as a kind of buffer between the fire and the food (Cuypers 1970:88). The food can be introduced directly into the ashes, with or without peel. In the latter case the food is cleaned thoroughly before eating (Philippson 1984:169-70). Food baked in ashes may also be wrapped in leaves; see, for instance, the Kongo (H16) and Pende (L11) reflexes. According to Roulon-Doko (2001:223), this is one of the techniques to prepare food ‘en papillote’. In certain translations, as in Ewondo (A72), Fang (A75), Lega (D25) and Kongo (H16), the substance with which one bakes may vary slightly, for example, on hot coals, on embers or under a smouldering piece of firewood, but it actually involves more or less the same cooking technique (Fr. ‘cuire à/sur la braise’; ‘griller sur la braise’). In several languages, more general translations, such as ‘to grill, to roast’ (Fr. ‘griller, rôtir’) and ‘to braise’ (Fr. ‘braiser’; ‘cuire à l’étuvée/étouffée’), can be observed. The meaning ‘to grill, to roast’ is attested in, for instance, Lefo (A15), Basaa (A43), Ewondo (A72a), Fang (A75) and Ngombe (C41). The terms ‘to grill’ and ‘to roast’ are nearly synonymous and both imply cooking by means of a dry, high and direct heat. Grilling and roasting can be done in the ashes or on embers, but also over a fire. Grilled or roasted food is generally not covered and, as is the case if one bakes in ashes, no fat or oil is used. Definitions sometimes distinguish grilling from roasting according to the support on which the cooking takes place, but most authors use them interchangeably and Bantu languages do not necessarily distinguish between them either. Braising is much less common as a meaning among the °-bũmb- reflexes; see, for example, Fang (A75).<sup>8</sup> It is a culinary technique that is clearly distinct from roasting and grilling but still shares certain properties with baking in ashes, especially the low cooking temperature. Moreover, as is the case with certain products baked in ashes, braised food is generally covered, most often in a pot. On the other hand, it generally implies the addition of a liquid, which is not the case if one is baking in ashes, grills and roasts. Both roasting/grilling and braising thus share certain semantic properties with baking in ashes. Given that both cooking techniques have otherwise few characteristics in common, ‘to bake in ashes’ is the most plausible original meaning from which both can be derived. However, none of these cuisine-related meanings of °-bũmb- is exclusive. They often co-occur as translations of °-bũmb- reflexes in one and the same language. Moreover, they are so close to each other that the original meaning should rather be seen as a prototypical category with baking in ashes as its dominant core. Some of its less central instantiations may already have existed in the ancestor language, but may also

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8. The Eton (A71) reflex was also translated as ‘braiser’, but ‘cuire à la braise’ would actually be a more appropriate translation (Mark Van de Velde, pers. comm.).

have been lost and independently re-emerged at different points in time in different languages.

### 3.3. Meanings unrelated to culinary practice

Much less frequent are those meanings that have loosened or entirely lost the link with culinary practice. Some examples are given in (6). Some of the meanings below can be considered as peripheral instantiations of this semantic category with ‘to bake in ashes’ as its core meaning. Others, such as ‘to give generously’ in Bemba (M42), are in all likelihood historically unrelated. Through the merging effects of BS, originally distinct words may have become homonyms, but speakers or researchers do not necessarily identify them as such.

(6)	Basaa (A43)	ḥ ò m	‘to ruin’
	Mwiini (G412)	ku v u u m b a	‘to bury a fire with ashes so as to keep the coals from going out’
	Kongo (H16)	v ù m b a	‘to burn, to scorch, to cook badly’
	Sanga (L35)	-v ú m b-	‘to put in hot ashes’
	Ruund (L53)	-v ú : m b-	‘to darken with ashes’
	Luvale (K14)	-v ù m b a	‘become covered over, overgrown, littered over, hairy’
	Bemba (M42)	-f u m b-	‘to give generously; to set to, to put in, near, under; to be well cooked’
	Tumbuka (N21)	ku v u m b a	‘to cover over: particular use in mourning ( <i>chivumbi</i> ) when people go to stay at the house (cf. ‘prostrate with grief’)’
	Tswana (S31)	b u p a	‘cover’
	Xhosa (S41)	u k u t h i v ù m b è	‘insert and hide (something under kraal, manure, ashes, sand, thick grass, straw, etc); be hidden under (the soil, grass, etc.)’

In certain languages, such as Basaa and Kongo, these more deviant meanings co-occur with more central and cuisine-related meanings. In the other languages, they are the only attested meaning. The semantic link with the core meaning ‘to bake in ashes’ is direct, however, in Mwiini, Sanga, Luvale and even in Xhosa, i.e. putting something in or under the ashes (or a similar substance), not for cooking purposes, but to heat, hide or cover it. The more general meaning ‘to cover or to be covered’, as it occurs in Luvale, Tumbuka and Tswana, can in turn be easily derived from these more peripheral instantiations.<sup>9</sup>

9. This meaning ‘to cover’ evokes the reconstruction <sup>o</sup>-b ú m b- ‘to cover’ (Bourquin 1923; Meeussen 1969), which unlike <sup>o</sup>-b ù m b- ‘to bake in ashes’, has been reconstructed with a high tone. The low tone of the Luvale verb does not correspond to this high tone. In Tumbuka and Setswana, the notations do not give tonal information.

### 3.4. Summary

The verbal root *\*-bũmb-* is reconstructible into Proto-Bantu and its most likely primary meaning was ‘to bake in ashes’. However, closely related meanings may originally have co-occurred. We did not systematically look for cognate forms beyond Narrow Bantu, but Williamson & Shimizu (1968:174-7+296-7) present several phonologically similar verbs, meaning either ‘to bake in ashes’ or ‘to roast on coals’, from a wide variety of Benue-Congo languages (see last part of Table 1 in the Appendix). They associate the reflexes meaning ‘to bake in ashes’ with a ‘pseudo-root’ *-wom-*, while those meaning ‘to roast on coals’ are associated with ‘pseudo-root’ *-vum-*. Although regular sound correspondences need to be checked, it seems likely that both comparative series are not only historically related to each other but also to the Proto-Bantu root *\*-bũmb-* ‘to bake in ashes’. If they effectively shared a common origin, this would mean that the Proto-Bantu root was in its turn inherited from an earlier Benue-Congo ancestor.<sup>10</sup>

### 4. °-bũmbɪk-: time depth and diachronic semantic evolution

If the simple verb root *\*-bũmb-* can be reconstructed to Proto-Bantu with the meaning ‘to bake in ashes’, then what is its historical relationship to the derived verb stem °-bũmbɪk-, which was reconstructed with the same meaning? Do both have the same time depth and what is the precise semantic role of the derivational suffix?

#### 4.1. Relative time depth

The question of time depth is rather complicated. The impositive suffix has been reconstructed to Proto-Bantu. Present-day languages thus inherited it as part of the ancestral verbal derivational morphology. Even if the suffix is synchronically not very productive, it must have been more productive in the past. The lexicon of individual languages often contains several verbs carrying this extension and the most common of them have been reconstructed. BLR3 contains several verbal reconstructions which have this extension. Some belong like °-bũmbɪk- to the semantic field of cooking, e.g. °-tédɪk- ‘to cook, to boil, to put (a pot) on the fire’, °-jɪpɪk- ‘to cook, to boil’, °-jãmbɪk- ‘to cook, to boil’, °-jadɪk- ‘to boil’. If the impositive once belonged to the productive morphology of the Bantu languages, °-bũmbɪk- may have been derived from the simple verb root °-bũmb- independently in different languages and at different stages in Bantu language history. For this reason, the present geographical distribution of °-bũmbɪk- reflexes is rather unreliable as an indicator of time depth. Reflexes of °-bũmbɪk-

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10. A similar verb was equally observed in the Adamawa-Ubangi language Gbaya: *mum* ‘cuire dans la braise’ (Roulon-Doko 2001:223-4). If this word is really related and was not acquired through contact with neighbouring Bantu languages, it might indicate that the time depth of this verb even goes beyond Benue-Congo.

have been recorded in Guthrie's zones A, E, F, G, H, J, K, L, M, N, P, R and S. In terms of Bantu subgroups, it is attested in North-West, West-Coastal, South-West and East-Bantu (Vansina 1995, Bastin *et al.* 1999). If it was a simple verb root, one could convincingly infer from this widespread geographical distribution that the verb was suitable for reconstruction to Proto-Bantu. Due to the possibility of convergent derivation, such an assumption is less obvious for the derived verb stem  $^{\circ}\text{-bũmbũk-}$ . Nevertheless, the distribution of  $^{\circ}\text{-bũmbũk-}$  reflexes is not entirely insignificant from a historical point of view. As can be seen on Map 2 in the Appendix, the overall majority of  $^{\circ}\text{-bũmbũk-}$  reflexes occur in East-Bantu. This is essentially the mirror image of the distribution of the simple root  $\text{*-bũmb-}$ , which has more reflexes in western Bantu than in East-Bantu. This more or less complementary distribution is even more telling if one considers the meanings currently associated with  $^{\circ}\text{-bũmbũk-}$  reflexes and their distribution across the Bantu languages.

#### 4.2. Diachronic semantic evolution

If one glances through Table 2 in the Appendix, only few  $^{\circ}\text{-bũmbũk-}$  are found to overtly reflect the impositive meaning of the derivational suffix, i.e. 'to put something into some position'. Some of them are given as an example in (7).

(7)	Gikuyu (E51)	$\text{-umbũka}$	'hide by sticking into the ground, under a heap, among grass...'
	Swahili (G42)	$\text{-vumbũka}$	'to cover a fruit or a vegetable with sand, earth, straw or leaves in order to ripen it artificially or to conserve it'
	Nkore (J13)	$\text{-jũmbũk-}$	'to keep embers in ashes'
	Kerewe (J24)	$\text{-zũmbũka}$	'heat fruit to ripen; prepare wort for making beer' <sup>11</sup>
	Shi (J53)	$\text{-vũmbũka}$	'to put ashes on the fire to keep it going'
	Luvale (K14)	$\text{-vũmbũka}$	'cover over with earth, bury a thing in earth'
	N-Sotho (S32)	$\text{-bũpega}$	'cover with soil in order to ripen'

None of the examples above has a strictly culinary meaning, but they all share the basic meaning of putting something in ashes or in a substance similar to ashes, such as embers, earth, sand, leaves, grass, etc., very often in order to conserve, to ripen or to ferment it. These applications of the derived verb  $^{\circ}\text{-bũmbũk-}$  are probably close to its original meaning. If the basic verb  $\text{*-bũmb-}$  meant 'to bake in ashes', the agglutination of the impositive suffix  $\text{-ũk-}$  must have generated the meaning 'to put food in ashes to bake it'. This derived meaning subsequently underwent several shifts, often similar to those undergone by the meaning of the

11. The fermentation of wort, obtained through the mashing of cereals such as sorghum and millet, sometimes involves a stage whereby the cereal extracts are covered in ashes or an ash-like substance with the purpose of drying and sweetening them; see, for instance, Cuypers (1970:94) for a description of this among the Shi people of eastern DRC.

simple verb root. It has, for instance, been generalised to putting in other ash-like substances or to perform this action for purposes other than baking. In Pende (L11), for example, one of the few languages where both forms still co-occur, the meaning of the simple verb is close to its original culinary meaning, i.e. *-vumba* ‘to bake in leaves’, while the derived verb has maintained the impositive connotation, but lost its original association with baking and ashes, i.e. *-vumbiga* ‘to bury, to cover with soil’ (Gusimana 1972:216). In Tembo (J531), both forms also co-exist: *-fúmba* ‘to grill without peeling (bananas, manioc, etc.)’ and *-fúmbika* ‘to braise in leaves’ (Kaji 1985:116). The derived verb lost its impositive connotation here, but maintained its culinary association. It designates a technique close to the one to which the simple verb refers. This seems to be what happened in most languages attesting a  $^{\circ}$ -*bũmbik-* reflex, except that the non-derived verb was generally lost.

As can be observed in Table 2 in the Appendix, most  $^{\circ}$ -*bũmbik-* reflexes no longer manifest their derived impositive meaning, but rather a meaning that is similar to the original meaning of the non-derived verb. It refers to baking in ashes or to closely related cooking techniques like roasting/grilling and braising. In some languages, such as Gikuyu (E51) and Swahili (G42d), the reflex is polysemic, attesting both the derived impositive and the non-derived meanings. In most cases, however, the impositive (non-culinary) meaning was lost in favour of the basic culinary meaning. Hence, it is no surprise that most of these languages have lost the basic verb root. The latter was only maintained in those languages where it developed a somewhat specialised meaning, as in Tembo. Interestingly, as can be seen in Map 2 in the Appendix, all  $^{\circ}$ -*bũmbik-* reflexes meaning ‘to bake in ashes’ or with a closely related culinary meaning are exclusively East-Bantu. In contrast, as Map 1 shows, all *\*-bũmb-* with this sense are exclusively western Bantu. It can be inferred from this complementary distribution of the basic meaning ‘to bake in ashes’ that  $^{\circ}$ -*bũmbik-* replaced the verb from which it was derived as the most typical verb for this particular culinary technique in the latest common ancestor of the East-Bantu languages.<sup>12</sup>

#### 4.3. Summary

The derived verb root  $^{\circ}$ -*bũmbik-* has been predominantly recorded in East-Bantu languages, but it also occurs in several western Bantu subgroups. It is difficult, however, to reconstruct it with certainty to Proto-Bantu, because it may have been independently derived from *\*-bũmb-* at different points in time and in different languages. If it occurred in Proto-Bantu, it should be reconstructed with the derived meaning ‘to put food in ashes (or in an ash-like substance) in order to cook it’. This meaning subsequently developed more derived meanings, which deviate to varying extents from the original culinary association. One such development was the loss of the impositive connotation that occurred in the East-

12. In many East-Bantu languages, other verbs have subsequently replaced  $^{\circ}$ -*bũmbik-* to refer to this particular cooking technique. One of them is  $^{\circ}$ -*jòk-* ‘to roast, to burn’ whose diachronic semantic development needs to be examined more closely.

Bantu ancestor language through which  $^{\circ}\text{-bũmbɪk-}$  became the most typical term for this technique of baking in ashes. Consequently, the derived verb gradually excluded its verb of origin, except in those few East-Bantu languages where  $^{\circ}\text{-bũmb-}$  has developed another meaning. In any event, as regards the semantic value ‘to bake in ashes’,  $^{\circ}\text{-bũmbɪk-}$  should be seen as an innovation of  $^{\circ}\text{-bũmb-}$ . In BLR3, it should be considered as a reconstruction, which is derived from a basic etymon, rather than as a variation in form for which no regular sound correspondence is known.

### 5. More derived reconstructions

In BLR3,  $^{\circ}\text{-bũmb-}$ ,  $^{\circ}\text{-bũmbɪk-}$ ,  $^{\circ}\text{-dũmbɪk-}$  and  $^{\circ}\text{-gũmbɪk-}$  have been associated with each other as related reconstructions due to their identical meanings. The derived nominal reconstruction  $^{\circ}\text{-gũmbé}$  ‘cooked food sp.’ is joined to this verbal osculant cluster for the same reason. It can be questioned, however, whether this form really needs to be reconstructed. Conversely, BLR3 contains several derived reconstructions which have so far never been associated with the osculant cluster due to their dissimilarity in meaning, but which certainly should be if one takes into account the diachronic semantic evolution of  $^{\circ}\text{-bũmb-}$  and  $^{\circ}\text{-bũmbɪk-}$ , i.e.  $^{\circ}\text{-gũmbɔd-}$  ‘to uncover’,  $^{\circ}\text{-gũmbɔk-}$  ‘to be uncovered’,  $^{\circ}\text{-gũmbɔdɔk-}$  ‘to be uncovered’ and  $^{\circ}\text{-gũmbɔdi}$  ‘person who uncovers’.

#### 5.1. The nominal reconstruction $^{\circ}\text{-gũmbé}$

The nominal reconstruction  $^{\circ}\text{-gũmbé}$  has been based on the reflexes *mupfũmbe* ‘food baked without being peeled’ from Hunde (J51) and *múfúmbí* ‘piece of meat wrapped in leaves to braise’ from Tembo (J531), although the final vowels and tones do not match. Both languages have undergone a merger of  $^{\circ}\text{b}$ ,  $^{\circ}\text{d}$  and  $^{\circ}\text{g}$  in front of the high back vowel, so both nouns can be derived from  $^{\circ}\text{-bũmb-}$  instead of  $^{\circ}\text{-gũmb-}$ . As we have seen above, both the simple and derived verb are attested in Tembo with similar meanings. In Hunde, only the impositive verb has been recorded, also with a meaning close to the derived noun. Both derived nouns refer thus to the food that has undergone the process expressed by the verb. Such nominal derivations referring to food cooked in the way referred to by the verb have been noted in other Bantu languages. Some examples are given in (8) (see also Table 4 in the Appendix):

- |     |               |                  |   |
|-----|---------------|------------------|---|
| (8) | Duala (A24)   | <i>d i bũmbà</i> | ‘roasting, grilling, food that is roasted/grilled’                                    |
|     | Geviya (B301) | <i>mo-búmbà</i>  | ‘wrapped package of food’   |
|     | Kongo (H16)   | <i>vũmba</i>     | ‘dish which is wrapped in leaves and roasted’   |
|     | Yaka (H31)    | <i>-vúmbá</i>    | ‘kind of condiment (e.g. meat and peanuts)<br>wrapped in leaves and put in the ashes’ |

As one can see, the final vowel as well as the nominal prefix of these nominal derivations varies. Instead of assuming that they go back to a common proto-form,

it seems more likely to assume that they were independently derived from the same inherited verb. Hence, it is questionable whether a lexical reconstruction should be included in BLR3.

## 5.2. Reconstructions with the separative suffixes $*-v_k-$ / $*-v_d-$

The reconstructions  $^{\circ}\text{-g}\ddot{\text{u}}\text{mb}\text{v}_d\text{-}$  ‘to uncover’,  $^{\circ}\text{-g}\ddot{\text{u}}\text{mb}\text{v}_k\text{-}$  ‘to be uncovered’,  $^{\circ}\text{-g}\ddot{\text{u}}\text{mb}\text{v}_d\text{v}_k\text{-}$  ‘to be uncovered’ and  $^{\circ}\text{-g}\ddot{\text{u}}\text{mb}\text{v}_d\text{i}$  ‘person who uncovers’ all incorporate the transitive ‘separative’ suffix  $*-v_d-$  and/or its intransitive equivalent  $*-v_k-$  (Schadeberg 2003:77-8). It is well-known that the ‘separatives’  $*-v_k-$ / $*-v_d-$  form a kind of subsystem with the impositive  $*-v_k-$  and the ‘positional’  $*-am-$ , in the sense that these suffixes frequently commute with each other, while commutation with the extension-less radical is less frequent (Meeussen 1969:92; Schadeberg 2003:74). In this regard, a historical relationship between the above reconstructions and  $^{\circ}\text{-b}\ddot{\text{u}}\text{mb}\text{v}_k\text{-}$  (and  $*-b\ddot{\text{u}}\text{mb}-$ ) thus seems plausible, provided that they share the first consonant and that they can be related semantically.

Regarding the first consonant, no form with a direct reflex of  $*g$  has been found (nor of  $*d$ ), while a few direct reflexes of  $*b$  are attested, e.g. Ngombe (C43)  $\text{-b}\ddot{\text{u}}\text{mb}\text{o}\text{a}$  or N-Sotho (S32)  $\text{-b}\ddot{\text{u}}\text{p}\text{u}\text{l}\text{a}$ , which cannot be reconstructed to  $*d$  or  $*g$ . Moreover, in all languages where a reflex of  $*-b\ddot{\text{u}}\text{mb}-$  or  $^{\circ}\text{-b}\ddot{\text{u}}\text{mb}\text{v}_k\text{-}$  and one of the separative verbs occurs, both forms share the same initial vowel. It can therefore be safely assumed that the actual phonological shape of these separative reconstructions should be  $^{\circ}\text{-b}\ddot{\text{u}}\text{mb}\text{v}_d\text{-}$ ,  $^{\circ}\text{-b}\ddot{\text{u}}\text{mb}\text{v}_k\text{-}$ ,  $^{\circ}\text{-b}\ddot{\text{u}}\text{mb}\text{v}_d\text{v}_k\text{-}$  and  $^{\circ}\text{-b}\ddot{\text{u}}\text{mb}\text{v}_d\text{i}$ .

Semantically speaking, the reconstructed meaning ‘to (be) uncover(ed)’ can indeed be considered as the opposite of the meanings that reflexes of  $^{\circ}\text{-b}\ddot{\text{u}}\text{mb}\text{v}_k\text{-}$  frequently adopt, such as ‘to bury in earth’ or ‘to put/hide in/under’. However, as Schadeberg (2003:77-8) points out, the suffixes  $*-v_d-$  and  $*-v_k-$  do not always generate a ‘reversive’ meaning, but may also generate an ‘intensive’ or ‘repetitive’ meaning, or even quite a different semantic value. In the languages where they co-occur, the reflex of  $*-b\ddot{\text{u}}\text{mb}-$  and/or  $^{\circ}\text{-b}\ddot{\text{u}}\text{mb}\text{v}_k\text{-}$  and that of the separatives generally constitutes a closely related semantic cluster, but each of the derivations may have developed independent meanings which can no longer be straightforwardly derived from the meaning of the other derived forms. This can be seen in the examples in (9).

- |     |              |   |  |
|-----|--------------|---|--|
| (9) | Ngombe (C41) | $\text{-b}\ddot{\text{u}}\text{mb}\text{a}$                 | ‘to roast’   |
|     |              | $\text{-b}\ddot{\text{u}}\text{mb}\text{o}\text{a}$         | ‘to take off the fire’                                     |
|     | Nyoro (J11)  | $\text{-j}\ddot{\text{u}}\text{mb}\text{i}\text{k}\text{a}$ | ‘to bank up a fire, bake in the ashes’                     |
|     |              | $\text{-j}\ddot{\text{u}}\text{mb}\text{u}\text{r}\text{a}$ | ‘to move, withdraw from ashes; take out quickly, forcibly’ |

Ganda (J15)	–vúmbika	‘to put/cook under ashes or embers; hide’
	–vúmbula	‘to discover, find; take from under ashes or embers’
	–vúmbuka	‘to turn up, be clear; be found’
Luvale (K14)	–vùmba	‘to become covered over, overgrown, littered over, hairy’
	–vùmbika	‘to cover over with earth, bury a thing in’
	–vùmbula	‘to unearth, uncover from earth’
	–vùmbuka	‘to become unearthed, fall, as tree, roots becoming unearthed’
Pende (L11)	–vumba	‘to bake in leaves’
	–vumbiga	‘to bury, to cover with earth’
	–vumbula	‘to unbury, to unearth, to uproot’
	–vumbuga	‘to be unburied, to be unearthed’
N-Sotho (S32)	–bùpega	‘to cover with soil in order to ripen’
	–bùpula	‘to reap monkey-nuts or jugo-beans’
	–bùpula	‘to reveal what is bupega-ed’
	–bùpologa	‘to get revealed (what is bupega-ed)’

Some of the separative verbs in (9), as in Nyoro and Ganda, still bear a clear link to the culinary technique of baking in ashes; see also the Ntandu (H16g) and Bemba (M42) reflexes in Table 3 in the Appendix. These meanings are only found with the transitive verbs. Most reflexes, however, no longer belong to the culinary domain and have often developed meanings that are far removed from the original meaning. Several refer to the taking away of objects from the earth, such as in the Luvale, Pende and N-Sotho examples above. Earth can be seen as an ash-like substance and in this way associated with the original meaning of *\*-bùmb-/°-bùmbika-*. In other languages, the meaning has been generalised to uncovering or to discovering (what was hidden or not), no longer implying the presence of earth, as the examples in (10).

(10)	Gikuyu (E51)	–umbuka	‘emerge, come to the surface (of water)’
	Sumbwa (F23)	–vumbula	‘to discover something hidden’
	Swahili (G42)	–vumbua	‘to discover a roof, a house; to find something hidden’
	Nkore (J13)	–jùmbur-	‘to discover; to invent’
	Jita (J25)	–fùmbura	‘to undo, uncover’
	Rwanda (J61)	–vùmbur-	‘to discover, to find what is hidden or missing; to invent; to make rise the sediment of sorghum beer during fermentation’
	Tumbuka (N21)	–vumbula	‘to uncover’

It is also in this context that the reflexes of the nominal derivation *°-gùmbidi* ‘person who uncovers’ need to be seen. Some examples are given in (11).

- |                  |           |   |
|------------------|-----------|---|
| (11) Ganda (J15) | mùvumbuzi | ‘discoverer’  |
| N-Sotho (S32)    | sebùpùdî  | ‘expert reaper of monkey-nuts/jugo-beans; instrument for reaping monkey-nuts’ |

It is only a small semantic shift from the discovering of material objects that are hidden to the discovering of immaterial concepts as ideas and secrets. The examples in (12) have adopted this meaning.

- |                   |                |  |
|-------------------|----------------|--|
| (12) Gikuyu (E51) | -umbũka        | ‘to become known; leak out (a secret)’                                     |
|                   | -umbũra        | ‘confess, make confession, announce, declare, give away a secret, divulge’ |
| Jita (J25)        | -fũmbura       | ‘to guess a riddle’  |
| Tumbuka (N21)     | -vumbula       | ‘to reveal’  |
|                   | uvumbuzi       | ‘revelation’   |
| N-Sotho (S32)     | -bùpula magôlê | ‘to reveal a secret’   |

The Tumbuka nominal reflex above is clearly a derivation of the verb in (12). Since this meaning is quite different from ‘person who uncovers’ and considering the few reflexes, it is most likely that the <sup>o</sup>-gũmbũdî reflexes are independent derivations for which no lexical reconstruction should be included in BLR3.

A closely related specialised meaning, as can be seen in the examples in (13), is the idea of bringing an animal (or a person) out of hiding. This meaning is conveyed by the transitive verb, while the intransitive rather refers to the reaction of the animal, which can be waking up, dashing out (of the hole), flying up, stampeding and/or even attacking suddenly.

- |                 |            |  |
|-----------------|------------|--|
| (13) Digo (E73) | -vumbulusa | ‘to disturb a resting animal’  |
|                 | -vumbuluka | ‘to wake up’   |
| Sumbwa (F23)    | -vumbũla   | ‘to rouse the game’  |
|                 | -vumbũla   | ‘to leave hastily, to attack suddenly by surprise’                             |
| Nyoro (J11)     | -jumbuka   | ‘to dash out; rush out (of a hole, etc.)’                                      |
|                 | -jumbura   | ‘to start prey from its lair’  |
| Kiga (J14)      | -jumbuka   | ‘to dash out’  |
| Rwanda (J61)    | -vũmbuk-   | ‘to leave hastily; to be roused (game)’  |
|                 | -vũmbur-   | ‘to rouse game; to cause a reaction in an organism; to provoke, anger someone’ |
| Xhosa (S41)     | -vumbúlũlã | ‘bring (a person or animal) out of hiding’                                     |
| Zulu (S42)      | -vumbuka   | ‘spring open, fly open; spring up, appear suddenly’                            |
|                 | -vumbula   | ‘to stampede, cause to rush in a crowd’  |
|                 | -vumbulula | ‘to stampede, cause to rush or rise up in a cloud’                             |

The meaning ‘to wake up’ of the Digo example above or closely related meanings such as ‘to resurrect’ are also observed in other languages without a link to the rousing of animals, both with the transitive and intransitive, as shown in (14).

(14) Kongo (H16)	–vũmbuk a	‘to wake up; to stand up, arise, emerge; to be lifted up; to relax’
	–vũmbu l a	‘to raise (up), to lift up, to erect, to set upright’
Yaka (H31)	–vúúmbúk á	‘to wake up; to stand up, to wake up; to stand up, to resurrect’
	–vúúmbú l á	‘to wake up, to raise (up), to lift up, to erect, to make resurrect’
Ganda (J15)	–vúmbuk a	‘to rise; get up’
Ruund (L53)	–vú:mbúk–	‘to be resurrected’
	–vú:mbú l–	‘to renew, to resurrect’

It is true that meanings, such as ‘to wake up’, ‘to rouse animals’, ‘to discover, to invent’ or ‘to reveal’, seem difficult to associate with the basic meaning ‘to bake in ashes’ (\*-bũmb-) or ‘to put food in the ashes to bake it’ (°-bũmbuk-), especially if one considers each of them individually. Nevertheless, some of them co-occur in one language with meanings that are closer to the basic meanings of \*-bũmb- and °-bũmbuk-. Moreover, if one approaches them in a more global manner, it is possible to see a kind of family resemblance structure. The semantic structure of these verbs takes the form of a radial set of clustered and overlapping readings that gradually move away from the original core meaning (Geeraerts 1997). A similar analysis has been proposed for the Bantu verb \*-bũmb- ‘to fashion in clay’ (Bostoen 2005:46-86). Each of the individual meanings conveyed by the reflexes of °-bũmbud-, °-bũmbuk- and °-bũmbuduk- can be related to at least one other individual meaning and brought back through a series of intermediary steps to an original semantic value suggesting polysemy, not homonymy. This basic meaning is something like ‘to take (food) out of the ashes’ (transitive) and ‘to be taken out of the ashes (of food)’ (intransitive). ‘To uncover’ and ‘to be uncovered’, which are currently proposed as basic meanings in BLR3, should then rather be seen as derived meanings which are close to the original core meaning. As already mentioned above, due to the merging effects of BS, it cannot be excluded that some of the verbs that we consider here to be reflexes with peripheral meanings are actually homophones which go back to a historically distinct verb.

As regards time depth, the same problem arises as for the impositive verb. Given that the separative suffixes have also been reconstructed into Proto-Bantu and were transmitted as part of the ancestral verbal derivational morphology, independent convergent derivations cannot be excluded. The geographical distribution of the verbs as such is not necessarily significant from a historical point of view. The distribution of their different meanings is not pertinent either, since it is well known that the more peripheral derived meanings discussed above can easily emerge and vanish again repeatedly and independently at different

times and in different languages, a phenomenon called ‘semantic polygenesis’ (Geeraerts 1997). Nevertheless, Map 3 in the Appendix shows that the separative verbs mainly occur in the eastern part of the Bantu area, which indicates that they constitute a subset with impositive verb  $^{\circ}\text{-bũmbɪk-}$  rather than with the basic verb  $^{\circ}\text{-bũmb-}$ .

### 5.3. Summary

The verb  $^{\circ}\text{-bũmb-}$  ‘to bake in ashes’ is at the origin of several nouns that refer to food cooked in this or a similar way. The variable morphological structure of these nouns indicates that they have been derived independently at different points in time and in different languages and do not go back to a single common proto-form. Consequently, the reconstruction  $^{\circ}\text{-gũmbé}$  ‘cooked food sp.’, which should actually be  $^{\circ}\text{-bũmbé}$ , can be dropped from BLR3. Conversely, the reconstructions  $^{\circ}\text{-gũmbɔd-}$ ,  $^{\circ}\text{-gũmbɔk-}$ ,  $^{\circ}\text{-gũmbɔdɔk-}$  and  $^{\circ}\text{-gũmbɔdi}$  also figure in BLR3, but have never been associated with the osculant cluster in question, because of their assumed semantic unrelatedness. However, these separative verbs are semantically related to forms reconstructed with the meaning ‘to bake in ashes’. The variety of meanings their reflexes manifest in current-day Bantu languages can be derived from original meanings like ‘to take (food) out of the ashes’ (transitive) and ‘to be taken out of the ashes (of food)’ (intransitive). Consequently, these separative reconstructions can definitely be considered as derivations of  $^{\circ}\text{-bũmb-}$  and as belonging to the same derivational subsystem  $^{\circ}\text{-bũmbɪk-}$ . They should be reconstructed with an initial  $^{\circ}\text{-b}$  and linked with  $^{\circ}\text{-bũmb-}$  in BLR3.

## 6. Conclusions

Osculance in Bantu lexical reconstructions is a challenging problem for historical linguists. If an osculant cluster is authentic, it may be symptomatic of a historical linguistic reality that cannot be understood in terms of regular sound correspondences and inherited vocabulary that is transmitted from one generation to the other through regular language divergence. However, many osculant clusters in BLR3 are only seemingly osculant. They can be put down to our partial comprehension of phonological, morphological and semantic changes in Bantu language history. This type of osculant cluster should be eliminated to deflate the number of reconstructions in BLR2. Detailed historical-comparative studies of specific cases, such as the osculant quadruplet ‘to bake in ashes’ dealt with in this paper, are needed to unmask such instances of fake osculance.

A better understanding of the phonological changes involved in Bantu Spirantisation makes it clear that the only sound that can be convincingly reconstructed as initial consonant of this osculant cluster is  $^{\circ}\text{-b}$ . The reconstructions  $^{\circ}\text{-dũmbɪk-}$  and  $^{\circ}\text{-gũmbɪk-}$  have been based either on unreliable reflexes (i.e. the  $^{\circ}\text{-zũmbɪka}$  reflex in Sukuma) or on reflexes that could not reveal the place of articulation of the original initial consonant due to the merger of  $^{\circ}\text{-b}$ ,  $^{\circ}\text{-d}$  and  $^{\circ}\text{-g}$  caused by BS in many languages. Both reconstructions can actually be

labelled as ‘refused’ in BLR3. Thanks to this exclusion of \*d and \*g as potential initial consonants, all reflexes of this false osculant cluster can be assumed to go back to one single proto-form. The geographic distribution of its reflexes allows the reconstruction of the verb \*-bũmb- ‘to bake in ashes’ to Proto-Bantu. It was possibly joined by its impositive derivation °-bũmbɪk- meaning ‘to put food in the ashes to cook’, although the possibility of independent convergent derivation makes it difficult to reconstruct this derived verb to Proto-Bantu with any certainty. It seems likely, however, that the derived verb stem °-bũmbɪk- lost its impositive connotation in the latest common ancestor of the East-Bantu languages and replaced its verb of origin as the most common term for baking in ashes or closely related cooking techniques.

The existence of phonologically similar verbs with similar meanings in related Benue-Congo languages suggests that \*-bũmb- ‘to bake in ashes’ goes beyond Narrow-Bantu and that Proto-Bantu retained it from a Benue-Congo ancestor language. In terms of cultural history, this indicates that Bantu speech communities were not only familiar with this particular culinary technique before Bantu languages started to spread over central and southern Africa, but also that they already practiced it before they settled in the Cameroonian Grassfields, the region generally held to be the Bantu homeland.

Finally, a detailed diachronic semantic approach of \*-bũmb- and °-bũmbɪk- has shown that they can be linked with several existing lexical reconstructions which seem at first sight to be semantically unrelated, i.e. °-gũmbɔd-, °-gũmbɔk-, °-gũmbɔdɔk- and °-gũmbɔdi. All these separative forms should be reconstructed with an initial \*b. The wide variety of meanings which their reflexes currently manifest take the form of a family resemblance structure which can be brought back through several intermediate steps to an original meaning like ‘to take (food) out of the ashes’ (transitive) and ‘to be taken out of the ashes (of food)’ (intransitive).

In sum, the osculant quadruplet ‘to bake in ashes’ can be replaced in BLR3 by a main reconstruction \*-bũmb- ‘to bake in ashes’ with its derived reconstructions °-bũmbɪk-, °-bũmbɔd-, °-bũmbɔk-, °-bũmbɔdɔk- and °-bũmbɔdi, which all originally reflected more or less the canonical derived meaning engendered by their derivational suffix.

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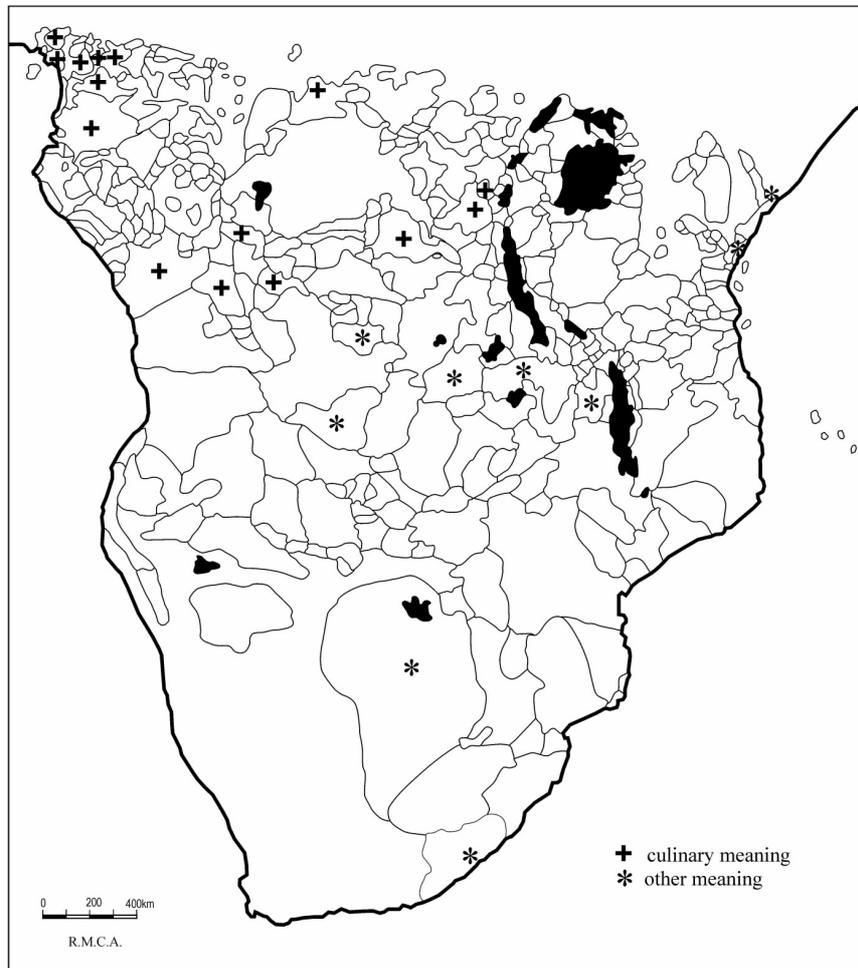
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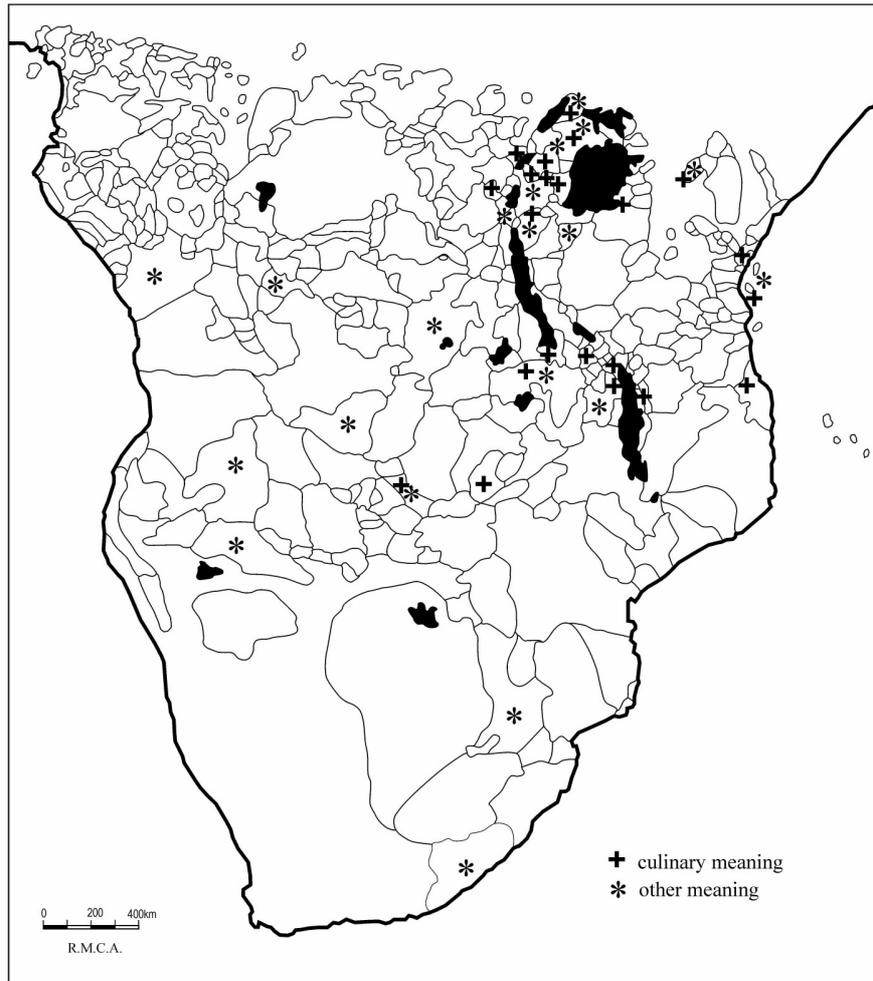
**Résumé**

Notre connaissance très partielle des changements sémantiques et phonologiques diachroniques entraîne une inflation de formes dans le lexique du proto-bantou. La banque de données en ligne *Reconstructions lexicales bantoues 3* (Bastin & Schadeberg 2003) contient de nombreuses reconstructions homophones dont les sémantismes peuvent être reliés l'un à l'autre ainsi que de multiples reconstructions dont les formes phonologiques ne se distinguent que de manière minimale. Ce phénomène est également connu sous le nom de 'osculance' en bantouistique (Guthrie 1967-1971). La variabilité phonologique observée dans les reconstructions lexicales bantoues peut souvent être réduite par une réanalyse minutieuse de reconstructions synonymiques presque homophones. Dans cet article, nous le démontrons à partir du quadruplet osculant °-bũmb-/°-dũmbɪk-/°-bũmbɪk-/°-gũmbɪk- signifiant 'cuire dans les cendres', qui peut être réduit à une forme proto-bantoue unique, et nous en évaluons les implications par rapport à l'histoire de cette technique culinaire dans les communautés bantouphones.

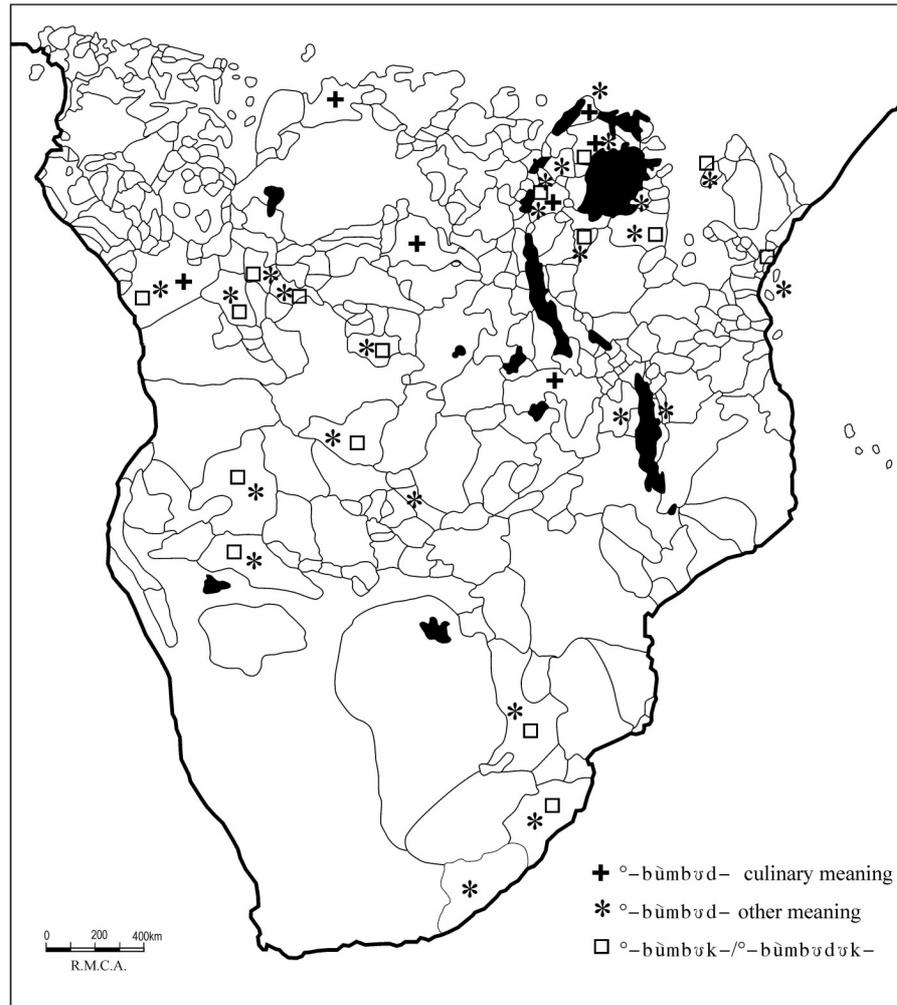
## Appendix



Map 1: Geographic distribution of *\*-bũmb-* reflexes and their meanings.



Map 2: Geographic distribution of \*-bũmbũk- reflexes and their meanings.



Map 3: Geographic distribution of separative reflexes and their meanings.

Table 1: Reflexes of \*-bũmb- ‘to bake in ashes’.

A15	Lefo	7V	-bũm	‘rôtir (au feu)’	Hedinger 1987:254
A24	Duala	7V	-bũmb à	‘in heisser Asche backen, rösten’	Ittman & Kähler-Meyer 1976:77
				(tr) ‘rôtir, griller’	Helmlinger 1972:63
A43	Basaa	7V	-b òm	‘rôtir, griller, ruiner’	Lemb & de Gastines 1973:52
A71	Eton	7V	-b ùm	‘braiser’	Van de Velde 2006:367
A72a	Ewondo	7V	-b ùm	‘brasiller. Faire cuire sur la braise.’ – fon: brasiller un épis de maïs’	Tsala s.d.:115
				‘rösten, backen’; mabum fóni ich röste Mais; mabum m’banéla ich backe Brot	Heepe 1926:32
A74	Bulu	7V	-b ùm-	‘bake in ashes’	Guthrie 1970:199
A75	Fang	7V	-bmum/b ùm	‘faire griller, faire rôtir dans la cendre ou sur les braises’; mettre de la viande ou du poisson dans une feuille avec sel, piment, oseille ... Puis on met ce nnam sur les braises’	Galley 1964:478
				‘rôtir, cuire à l’étouffée’	Ondo-Mebiame 1992:754
B77b	Fumu	5V	-v uma	‘cuire dans la cendre’	Calloc’h 1911:174
B85F	Nsong	7V	-f úmb-	‘cuire dans les cendres emballées dans des feuilles’	Koni Muluwa 2006:85
C41	Ngombe	7V	-bũmb à	‘roosteren; griller’	Rood 1958:44
C71	Tetela	7V	-f umb á	‘rôtir, griller (dans les cendres / braises, à la broche); cuire le pain (°dímpa)’	Hagendorens 1975:98, Hagendorens (& Labaere) 1984:64, 131, 263
D25	Lega	7V	-g ùmba	‘roast’ (wrapped in leaves placed in hot coals)	Botne 1994:68

13. Since BS is not regular in this context in Tetela, this verb is in all likelihood a loanword.

E73	Digo	5V	-v umb a	'to play'	Mwalonya <i>et al.</i> 2004:192
G412	Mwiini	5V	-v uumb a	'bury a fire with ashes so as to keep the coals from going out'	Kisseberth & Abasheikh 2004:486
H16	Kongo	5V	-v ùmb a	'brûler, roussir, ne pas bien cuire, rôtir en' 'plaçant p.ex. du poisson à terre et un tison allumé par-dessus; cuire enveloppé dans une feuille (p.ex. une banane au lieu de la mettre dans une marmite); brûler, rôtir dans une feuille (des insectes qui se mangent ou des poissons qui sont mous, à demi-pourris avec des épices); ~ nguba : mettre des arachides non pelées dans la cendre pour les y rôtir; ~ nsafu (O) mettre du nsafu avec du poivre dans une feuille'	Laman 1936:1026-1027
H31	Yaka	5V	-v ú úmb á	'griller dans les cendres, préparer un "vuumba" sous les cendres'	Ruttenberg s.d.:97
J531	Tembo	5V	-f úmb-	'griller sans peler' (bananes, manioc, etc.)'	Kaji 1985:116
K14	Luvale	5V	-v ùmb a	'become covered over, overgrown, littered over, hairy'	Horton 1953:385
L11	Pende	5V	-v umb a	'cuire dans des feuilles'	Gusimana 1972:216
L35	Sanga	5V	-v úmb-	'mettre dans la cendre chaude, fourrer dans la cendre chaude'	Coupez 1976:V11, 17
L53	Ruund	5V	-v ú:mb-	'to darken with ashes'	Hoover 1975:V-1
M42	Bemba	5V	-f umb-	'to give generously; to set to, to put in, near, under; to be well cooked'	The White Fathers 1954:171
N21	Tumbuka	5V	k u v umb a	'to cover over: particular use in mourning (chivumbi) when people go to stay at the house (cf. 'prostrate with grief')'	Turner 1952:153
S31	Tswana	7V	b u p a	'cover'	Brown 1980:39
Tivoid	Tiv		ùmb è	'bake in ashes'	Williamson & Shimizu 1968:175
Cross-River	Andoni		r ù ŋ	'bake in ashes'	Williamson & Shimizu 1968:175

Cross-River	Annang	bùm	'bake in ashes; roast on coals'	Williamson & Shimizu 1968:175+294
Cross-River	Akpet	bûŋ	'bake in ashes'	Williamson & Shimizu 1968:296
Bantoid	Bafut	fùmó	'bake in ashes'	Williamson & Shimizu 1968:174
Bantoid	Lamnso	f ðm+k ì -bv ð	'bake in ashes'	Williamson & Shimizu 1968:174
Bantoid	Mandankwe	f ð ðm ð	'bake in ashes'	Williamson & Shimizu 1968:174
Bantoid	Wimbum	f á -ñ -d ʒ í b + 'bv á	'bake in ashes'	Williamson & Shimizu 1968:174
Plateau	Eggon	o v om - o t u ŋ	'bake in ashes; roast on coals'	Williamson & Shimizu 1968:177+297
Plateau	Lungu	ù - v ú m	'roast on coals'	Williamson & Shimizu 1968:297
Plateau	Yeskwa	v um	'roast on coals'	Williamson & Shimizu 1968:297
Benue- Congo	Koro	g ó h ú m ò	'roast on coals'	Williamson & Shimizu 1968:297

Table 2: Reflexes of the impositive derivation  $^{\circ}$ -bũmbĩk- ‘to put in the ashes to bake’.

E51	Gikuyu	7V	-ũmbĩkĩ	‘stick (potatoes, yams, bananas...) into hot ashes to bake; hide by sticking into the ground, under a heap, among grass, etc.’	Benson 1964:543
E73	Digo	5V	-vũmbĩkĩ	‘to roast (e.g. a tuber) under hot ashes’	Mwalonya <i>et al.</i> 2004:192
F21	Sukuma	7V	-zũmbĩkĩh-	‘bake in ashes’	Guthrie 1970:199
F23	Sumbwa	7V	-vũmbĩkĩ	‘renverser, mettre sens dessus dessous, ~ mu l un o t a mettre dans la braise’	Capus 1901:142
G42d	Swahili	5V	-vũmbĩkĩ	‘enterrer dans le sable, dans la terre, dans la paille, sous des feuilles, etc., un fruit ou un légume, soit pour l’y faire mûrir artificiellement, soit pour le conserver, ou encore y enfoncer (ficher) un objet quelconque pour le cacher; mettre sous la cendre chaude, après avoir étouffé le feu, un légume, un fruit, etc., pour le faire cuire ou pour en achever la cuisson; cuire qqch. entre qqs feuilles sous de la cendre chaude; mettre en cellier pour les faire germer des cocos mûrs destinés à être plantés; déposer (semer) des graines dans la terre sèche en attendant la pluie, -v. mbegu, on dit mieux -vũmbĩkĩ; couvrir d’une vannette ungo une portion de pâte pour la laisser fermenter; couvrir de sable chaud une plaie dont on veut hâter la cicatrisation, moyen employé par les circoncis qui, au sortir du dyambo une semaine après l’opération, vont tous les jours pendant 7 jours dans un endroit sablonneux surchauffé par le soleil’	Sacleux 1941:1003
H16	Kongo	5V	-vũmbĩkĩ	(S) ‘plier, courber, pencher, incliner qqch qui est dressé; (O) faire pencher, baisser, incliner (ce qui est trop haut); tranquilliser’	Laman 1936:1027
J11	Nyoro	5V	-jũmbĩkĩ	(tr) ‘bank up a fire, bake in the ashes’	Davis 1952:55
J13	Nkore	5V	-jũ:mbĩkĩ-	‘to cook in ashes; to keep embers in ashes’	Kaji 2004:319-320, Taylor 1998:60

J14	Kiga	5V	-jùm b i k a	'bake in the ashes'	Taylor 1998:60
J15	Ganda	5V	-vùm b i k a	'put under ashes or embers; hide'	Snoxall 1967:325
				'put under the ashes or embers; hide; cook under ashes'	Mulira & Ndawula 1952:112, 142
J21	Nyambo	5V	-jùm b i k a	'bake in ashes'	Rugemalira 1993
J22	Haya	5V	-jùm b i k a	'to cook in ashes'	Kaji 2000:275
J24	Kerewe	5V	-zùùm b i k a	'prepare a wort; bake in ashes (rare)'	Odden & Hubbard 1994
				'heat fruit to ripen; prepare a wort for making beer'	Odden s.d.:103
J25	Jita	5V	-f ù: m b i k a	'bake in ashes'	Downing 1996:229
				'to turn over'	Kagaya 2005:65
J42	Nande	7V	-hùm b i k-	'cuire dans des feuilles sur les braises'	Kavutirwaki 1978:48
J51	Hunde	5V	-p f ù m b i k a	'cuire à l'étouffée dans une feuille'	Kaji 1992:112
J52	Havu	5V	-vùm b i k-	'cuire, griller dans les cendres'	Aramazani 1985:343
J53	Shi	5V	-vùùm b i k a	'rôtir sous la cendre; couvrir (le feu)'	Anonym s.d.:278
				'cuire sous cendres chaudes'	Cuypers 1970:88
				'mettre cendres sur feu pour le conserver'	Polak-Bynon 1978:77
J531	Tembo	5V	-f ù m b í k á	'cuire à l'étouffée dans les feuilles'	Kaji 1985:116
J61	Rwanda	5V	-vùùm b i k-	I. A: (tr) 'couvrir le feu avec de la cendre ou y introduire qqch qui ne se consume pas rapidement pour que le feu ne s'éteigne pas'. B. (intr) 'pleuvoir...' II. 'courir à toutes jambes'	Coupez <i>et al.</i> 2005:2748
J62	Rundi	5V	-v u m b i k a	'conserver le feu la nuit, couvrir le feu; faire couvrir sous la cendre; se chauffer près du feu; cuire sous la cendre'	Rodegem 1970:541
K12	Ngangela	5V	-v u m b í k a	'bury' (rubbish, bad person)	Pearson 1970:385
K14	Luvale	5V	-v ù m b i k a	'cover over with earth, bury a thing in earth'	Horton 1953:385

L11	Pende	5V	-vumbiga	'enterrer, couvrir avec de la terre'	Gusimana 1972:216
L33	Kiluba	5V	-vumbika	'pêcher à la nasse, au panier; aussi : fourrer, cacher dans qqe chose'	Van Avermaet & Mbuya 1954:801
L62	Nkoya	5V	-vũmbika	'to bake in ashes, to bury sth'	Yukawa 1987b:11, 21, 64
M14	Lungu	5V	-vũmbika	'to bake in ashes'	Kagaya 1987b:67
M22	Mwanga	5V	-vumbika	'bake in ashes'	Labroussi 1999:347
M31	Nyakyusa	7V	-fumbika mmo to	'roast'	Nurse & Philippon 1975
M42	Bemba	5V	-fumbika	'to place or hide in or under; to bake in embers': fumbike fyumbu, 'to bake sweet potatoes in embers, fumbike nkonde mu nunda, to bake bananas in embers'	The White Fathers 1954:172
M61	Lenje	5V	-fũmbika	'to bake in ashes'	Kagaya 1987a:59
N13	Matengo	7V	-hũmbika	'to bake in ashes'	Yoneda 2006:15, 114
N21	Tumbuka	5V	-vumbika	'to turn over, or cover over; to cover over in the fire, to roast'	Turner 1952:153, 248
P23	Makonde	5V	-humbik-	'bake in ashes'	Guthrie 1970:199
R22	Ndonga	5V	-fumbika	'bury'	Tirronen 1986:39
S32	N-Sotho	7V	-bùpega	'cover with soil in order to ripen'	Ziervogel & Mokgokong 1975:138
S41	Xhosa	5V	-vũmbèkà	'slip' (an object into or under something to hide it)	Pahl 1989:520

Table 3: Reflexes of the separative derivations  $^{\circ}$ -bũmbɔd-,  $^{\circ}$ -bũmbɔk-,  $^{\circ}$ -bũmbɔdɔk-.

C41	Ngombe	7V	-bũmbɔa	‘van het vuur nemen; retirer du feu’	Rood 1958:44
C71	Tetela	7V	-fumbólǎ	(rév. fumbá) ‘retirer, enlever’: ...	Hagendorens 1975:98
E51	Gikuyu	7V	-umbɔra	‘confess, make confession, announce, declare, give away a secret, divulge’	Benson 1964:544
			-umbũka	1. ‘become known; leak out (of a secret)’ 2. ‘emerge, come to the surface (of water)’	
E73	Digo	5V	-vumbuluka	‘to wake up’	Mwalonya et al. 2004:192
			-vumbulusa	‘to disturb a resting animal’	
F21	Sukuma	7V	-fumbul-	‘disclose, expose sth kept secret or hidden’	Richardson & Mann 1966:28
			-βumbuk-	‘come suddenly out of hiding’	Richardson & Mann 1966:22
F23	Sumbwa	7V	-vumbɔla	‘débusquer, faire lever le gibier, découvrir une chose très cachée’	Capus 1901:142
			-vumbɔla	‘voler au secours’	Capus 1901:142
			-vumbɔka	‘partir précipitamment, attaquer subitement, par surprise, coup de main’	
G42d	Swahili	5V	-vumbua	‘découvrir un toit, une case’; a. ‘découvrir, faire la découverte (de), trouver ce qui se cache, ce qui est caché, ce qui est rare, nouveau, précieux ou perdu...’	Sacleux 1941:1003-1004
H16	Kongo	5V	-vũmbula	‘dresser, ériger, mettre debout, droit, redresser (ce qui est courbé, couché, gisant); mettre sur son séant, asseoir, soulever (une partie du corps)...’	Laman 1936:1027
			-vũmbuka	‘se lever, s’éveiller; se dresser, surgir, émerger; ê; dressé, levé (de la position couchée); se détendre; s’asseoir, se mettre sur son séant; ê. relevé, érigé, debout, s’en aller’	

H16g	Ntandu	5V	-vuumbu l-	'retirer des cendres'	Daeleman 1983:395
H31	Yaka	5V	-vúúmbú l á	'redresser, lever, réveiller, faire ressusciter, reprendre (une vieille palabre)'	Ruttenberg s.d.:97
			-vúúmbúk á	'se lever, se redresser, se réveiller, ressusciter'	
H41	Mbala	5V	-vúumbu l a	'arracher, déterrer, réveiller'	Mudindaambi 1981:985
			-vúumbuga	'être arraché, déterré (des objets), se réveiller'	
J11	Nyoro	5V	-jumbur a	(tr) 'start prey from its lair; move, withdraw from ashes; take out quickly, forcibly; ~ mu enda bear premature child'	Davis 1952:55
			-jumbuka	(intr) 'dash out; rush out (of a hole, etc.)'	
J13	Nkore	5V	-jù:mbur-	'to discover; to invent'	Kaji 2004:351, Taylor 1998:60
J14	Kiga	5V	-jùmbur a	'discover'	Taylor 1998:60
			-jùmbuka	'dash out'	
J15	Ganda	5V	-vúumbu l a	(tr) 1. 'discover; find' 2. 'take from under ashes or embers'	Snoxall 1967:326
			-vúmbuka	(i)1. 'turn up; be clear' 2. 'be found' 3. 'rise; get up'	
J25	Jita	5V	-fù:mbur a	'to guess a riddle'	Downing 1996:235
				'to undo, uncover'	Kagaya 2005:65
J61	Rwanda	5V	-vùùmbur-	A. (tr) 'retirer du feu' B. (tr) 'lever le gibier, dépister' C. (tr) 'découvrir, trouver ce qui était caché ou manquant' D. (tr) 'faire voler de la poussière ou une matière analogue' E. (tr) 'en parlant de la bière de sorgho en fermentation, faire monter de la lie à la surface' F (tr) 'provoquer une réaction dans un organisme' G. (tr) 'inventer' H. (tr) 'en parlant d'un bébé, déféquer normalement après avoir été constipé pendant longtemps' J. (tr) 'provoquer qqn, le mettre en colère, le pousser à bout'	Coupez <i>et al.</i> 2005:2749
			-vùùmbuk-	(intr) A. 'sortir précipitamment de; être levé, en parlant du gibier' B. 'grandir vite'	

K12	Ngangela	5V	-vumbula -vumbuka	'disinter, dig up; buy in large quantities' 'erupt, break out (as eruption of disease); come out from under cover; come loose (dirt floor); spring up (as plants)'	Pearson 1970:386
K14	Luvale	5V	-vũmbula -vũmbuka	'unearth or ; uncover from earth' 'become unearthed, or fall, as tree, roots becoming unearthed'	Horton 1953:385 Gusimana 1972:217
L11	Pende	5V	-vumbula -vumbuga	vt. 'déterrer, déraciner, exhumer' vi. 'se déterrer, se déraciner'	
L53	Ruund	5V	-vú:mbú l-  -vú:mbúk-	(tr) 1. 'to dig something up, to take out of he ground'; 2. 'to clear the ground'; 3. 'to renew, to resurrect' (intr) 'to come out of the ground, to arise, to be resurrected'	Hoover 1975:V-1
L62	Nkoya	5V	kuvũmbula	'to dig out'	Yukawa 1987b:64
M42	Bemba	5V	-fumbul-	'remove from embers'	Mann 1980:21
N13	Matengo	7V	-hũmbula	'to pick up, to get what sb. has lost'	Yoneda 2006:114
N21	Tumbuka	5V	-vumbula	'to uncover, to reveal'	Turner 1952:153
R22	Ndonga	5V	-fumvula -fumvuka mo	'dig out sth. that was buried' 'sth that was buried comes out of the ground'	Tirronen 1986:39
S32	N-Sotho	7V	-bũpula -bũpulla -bũpulo ga	'reap monkey-nuts or jugo-beans' 'reveal what is bupega-ed; ~ // reveal a secret' (intr) 'get revealed (what is bupega-ed)'	Ziervogel & Mokgokong 1975:139
S41	Xhosa	5V	-vumbú l ù l à	1. 'unearth, bring to light (something hidden), turn up to the surface...' . 2. 'turn (things) upside down in one's search for something hidden' 3. 'dig, break or turn up (the ground)' 4. 'bring (a person or animal) out of hiding...'	Pahl 1989:521

S42	Zulu	5V	vumbu1a	(tr) 1. 'come upon easily, obtain easily, pick up' 2. Doke & Vilakazi 1948:842
			vumbu1u1a	'stampede, cause to rush in a crowd' 3. 'unearth'
				(rev. tr) 1. 'stampede, cause to rush or rise up in a cloud' 2. 'unhatch, strip off thatch' 3. 'unearth, uncover' 4. 'administer medicine to a woman to induce further child-bearing'
			vumbuka	(intr) 'spring open, fly open; spring up, appear suddenly'

Table 4: Nominal derivations of \*-bũmb-

A24	Duala	7V	d i bũmbà	(5/6) (de bumba) 'le rôtissage, le grillage; qch. de rôti, de grillé' (5/6) Gebackenes, Geröstetes, Zwieback	Helmlinger 1972:91 Ittmann & Kähler-Meyer 1976:105
A43	Basaa	7V	ṁb umá	'ruine, destruction'	Lemb & de Gastines 1973:291
B301	Geviya	7V	mo-bũmbà	'botte (de feuilles); paquet enroulé (d'aliments, etc.)'	Van der Veen & Bodinga-bwa-Bodinga 2002:87
H16	Kongo	5V	ma-vũmba	(6) 'nom de cours d'eau, de montagne = poisson rôti dans une feuille'	Laman 1936:510
			mu-vũmba	(3?) 'repliement simple le long d'une feuille pour y mettre, y préserver de la viande; il est tabou pour Mavunza'	Laman 1936:629
			vũmba	(5/6) 'mets que l'on fait rôtir entouré d'une feuille; fruit (du nsafu); (O) oignon'	Laman 1936:1027
H31	Yaka	5V	-vũmbá	(5) 'esp. de condiment (ex. viande et arachides) qu'on emballe dans une feuille et qu'on met sous les cendres'	Ruttenberg s.d.:177
J51	Hunde	5V	mupfũmbe	(3/4) 'aliment cuit sans être pelé'	Kaji 1992:112
J531	Tembo	5V	múfũmbí	(3/4) 'morceau de viande enveloppé dans des feuilles pour cuire à l'étouffée'	Kaji 1985:116
S41	Xhosa	5V	uku t h i vũmbè	'insert and hide (something under kraal manure, ashes, sand, thick grass, straw, etc.); be hidden under (the soil, grass, etc.)'	Pahl 1989:520