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Noncausal/Causal Alternations and the Rise of Labiality in Ngwi (West-Coastal Bantu, B861)

BOSTOEN Koen & PACCHIAROTTI Sara*

0. Introduction

Inspired by pioneering research of Em. Prof. Nobuko Yoneda on noncausal/causal alternations in several Bantu languages, i.e., Herero [her] (R31) (Yoneda 2014a), Matengo [mgv] (N13) (Yoneda 2014b), and Swahili [swh] (G42) (Yoneda 2014c; 2022), this article offers a first description and historical analysis of such verb pairs in Ngwi [nlo] (B861) (a.k.a. Engwí, Ngwí, Ngul, Nguli, Ngoli, Kingoli), a West-Coastal Bantu language spoken in the Kwilu Province of the Democratic Republic of the Congo (Pacchiarotti *et al.* 2019). As in previous studies of the same language (Pacchiarotti and Bostoén 2021a, 2024; Pacchiarotti *et al.* 2021), our data come from the eastern variety of Ngwi (Boone 1973: 243-245; Maalu-Bungi *et al.* 2011: 18) spoken in Mangai (-4.02, 19.53), on the left bank of the Kasai River. Data for this paper were collected in Idiofa (-4.96, 19.59) (August-September 2019) and Kikwit (-5.04, 18.81) (August-September 2021) as part of the BantuFirst project. Our main consultant Mr. Frédéric Mbeam-Ojuu Empenge Itobola (°1971) grew up in Mangai, moved to Idiofa in 2011 and speaks Kongo Ya Leta, Lingala, and French besides Ngwi, his mother tongue. We also report here comparative data provided to us by the same consultant on the vehicular language Kongo Ya Leta (a.k.a. Kikongo Ya Leta, Kituba) spoken in the current Kwilu Province.

Following Creissels (forthcoming), in a noncausal/causal verb pair, “the event denoted by the noncausal member of the pair can be conceptualized as a sub-event of that denoted by the causal member, with the difference lying in the involvement vs. lack of involvement of an instigator/ controller”.¹ In this paper, we focus on a specific subset of noncausal/causal verb pairs, namely those whose noncausal member is a so-called inchoative verb, i.e., one which presents a situation, whether a change of state (e.g., melt) or ongoing (e.g., spin), as a spontaneous event without an external causing agent (Haspelmath 1993: 90-91). As in the World Atlas of Transitivity Pairs, to which Em. Prof. Nobuko Yoneda (2014a: -c) is the only contributor for Bantu, we start out from the same 31 inchoative/causative verb alternations used by Haspelmath (1993: 97, Table 92) to examine cross-linguistic variation in word formation patterns.

Languages vary considerably in how they mark causative/inchoative verb pairs. Haspelmath (1993: 90-92) distinguishes five formal types: two directed (or oriented), where either the inchoative or causative is derived from the other, and three non-directed (or unoriented), where neither is derived from the other.

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¹ As Creissels (forthcoming) rightfully points out, ‘noncausal’ and ‘causal’ are relative notions. For example, ‘show’ is causal in relation to ‘see’, but noncausal in relation to ‘make show’.

The directed alternations are either ‘causative’ (C) (causative derived from inchoative, e.g., Swahili *chek-esh-a* ‘make laugh’ < *chek-a* ‘laugh’) or ‘anticausative’ (A) (inchoative derived from causative, e.g., Swahili *vunj-ik-a* ‘break (intr.)’ < *vunj-a* ‘break (tr.)’). The non-directed alternations are either ‘equipollent’ (E) (both inchoative and causative originate in the same (possibly no longer existent) underived verb, e.g., Swahili *pas-uk-a* ‘split (intr.)’ vs. *pas-u-a* ‘split (tr.)’), ‘labile’ (L) (inchoative and causative verbs are identical, e.g., Swahili *anz-a* ‘begin (intr.)’ vs. *anz-a* ‘begin (tr.)’), or ‘suppletive’ (S) (inchoative and causative verbs are different and not derived from the same underived verb, e.g., Swahili *f-a* ‘die’ vs. *u-a* ‘kill’).

In this paper, we provide a descriptive, comparative, and historical account of Haspelmath’s 31 inchoative/causative verb alternations in Ngwi. In Section 1, we list the Ngwi translation equivalents of these verb pairs and categorize them according to Haspelmath’s five formal types. In Section 2, we compare Ngwi’s noncausal/causal alternation inventory with that of the region’s *lingua franca* Kongo Ya Leta, which is part of West-Coastal Bantu just like Ngwi, and with the three languages analyzed by Em. Prof. Nobuko Yoneda, i.e., Swahili and Matengo (Eastern Bantu) and Herero (South-Western Bantu). This comparison shows that Ngwi stands out in having a significantly higher share of labile verb pairs, while Matengo is exceptional in having considerably more equipollent alternations than all others. Kongo Ya Leta, Swahili, and Herero match in having the causative alternation as the prevalent type, which is probably the common Bantu pattern. In Section 3, we try to account historically for the significant rise of lability in Ngwi by arguing that it is largely due to the collapse of the inherited Proto-Bantu verbal derivation system. Conclusions and avenues for further research are in Section 4.

1. Descriptive account of Ngwi noncausal/causal alternations

Table 1 below presents the Ngwi translation equivalents of the 31 English inchoative/causative verb pairs in Haspelmath (1993: 97). Throughout Table 1, the noncausal verb appears to the left of the slash and the causal to the right. For space constraints, we only give two English translations when the alternation is not labile in English.

As can be seen in Table 1, several English alternations, i.e., ‘break (intr./tr.)’, ‘open (intr./tr.)’, ‘spread (intr./tr.)’, ‘sink (intr./tr.)’, ‘be destroyed/destroy’, ‘rock (intr./tr.)’, and ‘finish (intr./tr.)’, have more than one translational equivalent in Ngwi. Others turn out to be translated identically in Ngwi: *yây/yárá* ‘break (2b), split (intr.)/break (2b), split (tr.)’, *tfûŋ/tfûŋ* ‘close (6b), connect (17a) (intr.)/ close (6b), connect (17a) (tr.)’, and *wǎŋ/wǎŋ* ‘develop, improve (intr.)/develop, improve (tr.)’ are polysemic. Table 1 also contains two homonyms, i.e., *džǎB* ‘kill’ and *džǎB* ‘spread (intr.)’. Intransitive *fîr* ‘finish’ (22a-b) has two possible transitive equivalents, i.e. either *fîr* (labile alternation) (22a) or *fîrá* (causative alternation) (22b). In total, Table 1 counts 41 different noncausal/causal alternations: 18 labile (44%), 16 causative (39%), 3 equipollent (7,3%), 3 suppletive (7,3%), and 1 anticausative (2,4%).

1. <i>bây/báyá</i> ‘wake up’	C	11. b. <i>fúè/fùèr</i> ‘sink’	C	22. a. <i>fír/fír</i> ‘finish’	L
2. a. <i>bíyè/bíyè</i> ‘break’	L	12. a. <i>sôñ/sôñ</i> ‘change’	L	b. <i>fír/fírá</i> ‘finish’	C
b. <i>yây/yárá</i> ‘break’	E	b. <i>sôñó/sôñó</i> ‘change’	L	c. <i>sûw/súká</i> ‘finish’	C
3. <i>yá tfiá/búó tfiá</i> ‘burn’		13. <i>kú(r)bá/kú(r)bá</i> ‘melt’	L	d. <i>tín/tíná</i> ‘finish’	C
4. <i>wá/dzǎw</i> ‘die/kill’	S	14. a. <i>môw/môwó</i> ‘(be)’	C	23. <i>tfim/tfimá</i> ‘turn’	C
5. a. <i>hâm/hâmá</i> ‘open’	S	b. <i>bvûr/bvúó</i> ‘destroy(ed)’	E	24. <i>bliñá/bliñá</i> ‘roll’	L
b. <i>dzà(r)bá/dzà(r)bá</i>	C	15. <i>dzím/dzímá</i> ‘get lost/lose’	C	25. <i>dzǎrmá/dzǎrmá</i>	L
6. a. <i>dzûβ/dzûβ</i> ‘close’	L	16. <i>wôñ/wôñó</i> ‘develop’	C	‘freeze’	
b. <i>tfûñ/tfûñ</i> ‘close’	L	17. a. <i>tfûñ/tfûñ</i> ‘connect’	L/	26. <i>nwîñ/nwîñá</i>	C
7. <i>báná/báná</i> ‘begin’	L	b. <i>tfûñá/tfûñá</i> ‘connect’	L	‘dissolve’	
8. <i>lwónó/lwónó</i> ‘learn/teach’	L	18. <i>bìyè/pfíyè</i> ‘boil’	S	27. <i>yúò/yúrá</i> ‘fill’	E
9. <i>dzîñ/dzîñ</i> ‘gather’	L	19. a. <i>nyûw/nyûwá</i> ‘rock’	C	28. <i>wôñ/wôñó</i> ‘improve’	C
10. a. <i>dzǎw/dzǎwá</i> ‘spread’	L	b. <i>lèàñ/lèàñ</i> ‘rock’	L	29. <i>yûm/yúmá</i> ‘dry’	C
b. <i>pèàñ/pèàñá</i> ‘spread’	C	20. <i>dzím/dzím</i> ‘go/put out’	L	30. <i>yây/yárá</i> ‘split’	E
11. a. <i>dzǎw/dzǎwá</i> ‘sink’	C	21. <i>yímá/yím</i> ‘rise/raise’	A	31. <i>yímá/yímá</i> ‘stop’	L

Table 1: Ngwi inchoative/causative verb alternations

1.1 Ngwi verb stem structures

Before we have a closer look at the formal aspects of Ngwi noncausal/causal alternations, it is important to provide some preliminary information on Ngwi verb forms (for a detailed account, see Pacchiarotti and Bostoen 2024). Ngwi has monomorphemic and multimorphemic verb stems. Monomorphemic verb stems are either monosyllabic or disyllabic. Monomorphemic monosyllabic stems come in two shapes: CVC, e.g., *fûm* ‘roast, wrap up in leaves’, or, in very few cases, CV, e.g., *wá* ‘die’. The onset of CVC can be complex, e.g., CG where G is a glide as in *lyâm* ‘prepare’. Monomorphemic disyllabic stems are always CV.VC and always include an /*ea*/ vowel sequence, e.g., *lè.ány* ‘want, love, desire’. Other stems are both multisyllabic and multimorphemic and come in the following structures: CV.CV, e.g., *mó.wó* ‘destroy’, CV.V, e.g., *kù.ó* ‘shave oneself, scrape’ and CV.V.CV, e.g., *mè.à.rá* ‘trample on’. Their onset can also be complex, i.e., CG as in *kyè.né* ‘make so. walk’ or CC as in *bró.má* ‘slip, stumble, go down’. Some have a coda as in CVC.CV, e.g., *tsúr.ñá* ‘get married’. We consider these stems as multimorphemic because their final vowel is replaced by an inflectional final vowel in certain conjugations. For instance, the stem *fû-é* ‘sing’ is composed of the bound root *fû* and the final vowel *-é*,² which is commutable with inflectional *-i* in some TAMP constructions, e.g., Continuous Present [áléfuí] ‘he is singing all the time’. The root *fû* by itself is synchronically nowhere attested.³

² The mid vowels undergo height harmony and are realized as [e] and [o] respectively if they are preceded by a high vowel, e.g., /fû-è/ > [fùè].

³ As we argue in Pacchiarotti & Bostoen (2024), the final vowel in CV stems such as *wá* ‘to die’ behaves

Table 2 compares the different verb stem shapes in our general Ngwi lexical database with those attested in the noncausal/causal alternations in Table 1.

<u>Lexicon</u>	<u>222</u>	<u>100%</u>	<u>Noncausal/causal</u>	<u>64</u>	<u>100%</u>
C(G)VC	106	47,7%	C(G/C)V.CV	29	45,3%
C(G/C)V.CV	55	24,8%	C(G)VC	23	35,9%
CV.V	29	13,1%	CV.V	4	6,3%
CVC.CV	10	4,5%	CVC.CV	3	4,5%
CV.VC	9	4,05%	CV.VC	2	4,7%
CV.VC.V	9	4,05%	CV	2	4,7%
CV	4	1,8%	CV.VC.V	1	1,6%

Table 2: Ngwi verb stem shapes

Globally, in Ngwi, C(G)VC is the most common verb stem form with almost half of all attestations. Moreover, more than half of all verb stems, i.e., C(G)VC and CV.VC (almost 52%), ends in a consonant. The prevalence of consonant-final stems is due to the regular diachronic phonological process of final vowel loss (Pacchiarotti and Bostoen 2021b: 452). Nonetheless, almost half of all verb stems still preserve a final vowel. In polysyllabic stems, this final vowel is not a reflex of the default Bantu final vowel but a relic of verb derivational morphology (cf. *infra*). Among the 64 different verb stems in the noncausal/causal verb pairs in Table 1, the most common shape is not C(G)VC but C(G/C)V.CV. The latter is significantly more recurrent among noncausal/causal alternations than in the general lexicon, i.e., almost double as frequent, while both C(G)VC and CV.V are significantly less common. Other types have similar proportions in both sets. The significant rise in the number of C(G/C)V.CV stems in noncausal/causal pairs suggests that relics of verbal derivation morphology are more common among such verbs than in the general lexicon.

1.2 Derivational morphology in Ngwi noncausal/causal verb pairs

Ngwi has little synchronically productive verbal derivational morphology. Nonetheless, it is evident from the data in Table 1 that stem-final vowels often function as derivational suffixes marking changes in valency with lexically specified verb stems. All directed alternations in Table 1 except one involve a correspondence between C(G)VC and C(G)V.CV stems. Out of the 16 different causative alternations,

differently with respect to all other stems ending in a vowel when it comes to combining with inflectional suffixes in melodic TAMP constructions. In these constructions, the citation form vowel of the CV stem is kept and coalesces with the tone-bearing unit of the inflectional vowel suffix to create two tone-bearing units able to host either a HL tone melody or a long H melody. In non-melodic TAMP constructions, the citation form vowel of CV stems is deleted and replaced by an inflectional vowel suffix. All verb stems ending in a vowel behave this way in non-melodic TAMP constructions.

15 have a consonant-final noncausal verb of the type C(G)VC and a vowel-final causal verb of the type C(G)V.CV. There is only one verb pair, i.e., *fiè/fièr* ‘sink’ (11b), where the causative derivation is marked by a consonant, i.e., *-r*, which is suffixed to the noncausal CV.V stem. In the other causative alternations, the derivational suffix is a final vowel: 13 times *-á* (1, 5a, 10a-b, 11a, 15, 19a, 22b-d, 23, 26, 29) and 2 times *-ó* (14a, 16=28). While final *-á* occurs with different preceding stem vowels, *-ó* only follows an identical first stem vowel. This vowel copy suggests a process of mid vowel harmony, which is common across Bantu with certain verbal derivational suffixes (Leitch 1996; Hyman 1999, 2019), also in West-Coastal Bantu (Goes and Bostoen 2019). If *-ó* were indeed the outcome of mid vowel harmony, it could well be an allomorph of *-á*. In any event, both *-á* and *-ó* are clearly valency-increasing in all causative alternations in Table 1 except for 11b.

However, the only anticausative alternation (21) involves exactly the reverse pattern. Here, the noncausal verb, i.e., *yíma* ‘rise’, is the one with a final vowel, while its causal equivalent, i.e., *yím* ‘raise’, has shorter form ending in a consonant. The *-á* suffix in the anticausative alternation in (21) has a valency-decreasing function, albeit being (supra)segmentally homophonous with *-á* participating in causative, valence-increasing alternations. Note that *yíma* also figures in the labile pair for ‘stop’ (31). Both the noncausal and causal verb are vowel-final here, which makes the synchronic analysis of *-á* as a suffix problematic.

As a matter of fact, seven labile pairs (5b, 7, 13, 17b, 24, 25, 31) in total end in *á*, while two others in *ó* (8, 12b) (once again a copy of the first stem vowel), and one in *è* (2a). So more than half of all labile pairs (10 out of 18) involves vowel-final stems, while the eight others (6a-b, 9, 12a, 17a, 19, 20, 22) have a C(G)VC structure. Two labile pairs (12, 17) can occur both without and with a final vowel, i.e., *són/són* (12a) vs. *sónó/sónó* (12b) ‘change’ and *fiú/fiú* (17a) vs. *fiúá/fiúá* (17b) ‘connect’. Hence, not all stem-final vowels mark changes in valency in Ngwi. If final vowels in labile verbs were once suffixes, they can no longer be segmented as suffixes today.

In two of the three equipollent pairs (2b, 30, 27), the final G or V of the noncausal verb alternates with *rá* in the causal verb: *yáy* vs. *yará* ‘break, split’ (2b) and *yúò* vs. *yúrá* ‘fill’ (27). In the other one, the final C of the noncausal verb swaps with V in the causal verb: *bvúr* vs. *bvúó* ‘be destroy(ed)’ (14). No clear synchronic pattern emerges from these three equipollent verb pairs.

Finally, the three suppletive alternations in Table 1 involve evident lexical differences. The noun *fiá*, shared by the noncausal and causal verb for ‘burn’ in (3) means ‘fire’.

In sum, the two most prominent categories of noncausal/causal alternations in Ngwi are lability (44%) and causativization (39%). Together, they cover more than four fifths of all inchoative/ causative alternations studied here. Of the 34 different verb pairs in both categories, 25 (i.e., 73,5%) involve one or two verbs with a final vowel. Among causative alternations, this final vowel is analyzable as a valency-increasing causative suffix as it marks the causal verb and corresponds to zero in the noncausal counterparts. Among labile alternations, this final vowel does not commute and is thus not analyzable as a suffix, even if many other labile verbs in Table 1 miss a final vowel. As a final vowel, *-á* is also involved

in the only anticausative alternation in Table 1, where it appears on the noncausal verb and corresponds to zero in the causal verb. Based on these data, the morphological status of final vowels in Ngwi is erratic. In some verbs, *-á* can be parsed as a suffix, in others not. Where it is a suffix, it is most often valency-increasing, but it can also be valency-decreasing. This suggests that *-á* is the result of the historical merger of erstwhile distinct derivational suffixes which likely became petrified in earlier stages of the language. A historical-comparative analysis is thus indispensable to shed more light on the origins of Ngwi's present-day noncausal/causal alternations and to understand better which inherited Proto-Bantu suffixes eroded to residual final vowels.

1.3 Causative/applicative isomorphism in Ngwi

Before we proceed to our comparative and historical approach, however, it is crucial to highlight that verb-final vowels have not become entirely obsolete as derivational suffixes in Ngwi. As shown in (1) and (2), a vocalic suffix *-á* like the one recurrent in noncausal/causal alternations in Table 1 is productive with a closed set of lexical verbs in Ngwi as a valency-increasing applicative suffix introducing a supplementary object argument, which typically has the semantic role of recipient, such as *ó-* ‘you’ in (1b), or beneficiary, such as *N-* ‘me’ in (2b). While the verbs *pfûŋ* ‘write’ in (1a) and *tsâm* ‘dig’ in (2a) are transitive licensing a patient object, i.e., *òŋkèán* ‘letter’ in (1a) and *ìpûκ* ‘hole’ in (2a), their extended equivalents *pfûŋ-á* ‘write to’ in (1b) and *tsâm-á* ‘dig for’ (2b) are ditransitive.

(1) a. *ndàpfûŋ òŋkèán.*

Ñ-yà-pfûŋ_[H_ML_M] ò-ŋkèán
 SP_{1SG}-PROG-write 3-letter
 ‘I am writing a letter.’⁴

b. *ndòpfûŋà òŋkèán.*

Ñ-yà-ó-pfûŋ-á_[H_ML_M] ò-ŋkèán
 SP_{1SG}-PROG-OP_{2SG}-write-APPL 3-letter
 ‘I am writing you a letter.’

(2) a. *átítsám ìpûκ.*

á-tí-tsâm_[H_M] ì-pûκ
 SP₁-ANT-dig 5-hole
 ‘He has dug a hole.’

⁴ Following Pacchiarotti & Bostoen (2024), we note grammatical tone (a.k.a tone melodies/melodic tone) with [H_M] and [H_ML_M] respectively, where a capital subscript _M stands for ‘melodic’. In T(ense) A(spect) M(ood) P(olarity) constructions without the toneless inflectional *-i* suffix, [H_M] replaces the last tonal autosegment of the verb stem, while [H_ML_M] replaces the last two tonal autosegments. In melodic TAMP constructions where the verb stem is immediately followed by a toneless inflectional suffix, it is the stem shape which determines the involvement of the underlyingly toneless tone-bearing unit of the suffix in the linking of melodic tones.

- b. *àntíntsómá ìpûκ.*
 á-Ñ-tí-Ñ-tśâm-á[H_M] ì-pûκ
 SP₁-OP_{1SG}-ANT-OP_{1SG}-díg-APPL 5-hole
 ‘He has dug a hole for me.’

As shown in (3) and (4), this valency-increasing suffix *-á* is subject to the same process of mid vowel harmony as observed among noncausal/causal verbs in Table 1. Whenever the root has a back mid-vowel *ɔ*, such as *fɔ̃ŋ* ‘fold’ in (3a), or a front mid-vowel *ɛ*, such as *lyěŋ* ‘lick’ in (4a), valency-increasing *-á* shifts to *-ó*, i.e., *fɔ̃ŋ-ó* ‘fold for’ (3b), and *-é*, i.e., *lyěŋ-é* ‘lick for’ (4b), respectively. While the vowel copy allomorph of *-á* in (3b) introduces a beneficiary object in (3b), i.e., *sè-* ‘us’, it conveys a so-called possessor promotion construction in (4b) (see also Van de Velde 2020). The additional object *ò-* ‘her’ in (4b) is the possessor of the patient object *ílôŋ* ‘dish’. Instead of being introduced as an adnominal possessive of the possessed item, the possessor is promoted to a core object of the verb thanks to the valency-increasing verb suffix *-é*, the vowel copy allomorph of *-á*.

- (3) a. *Freddy àtífɔ̃ŋ òkɔ̃ŋ.*
 Freddy á-tí-fɔ̃ŋ[H_M] ò-kɔ̃ŋ
 Freddy SP₁-ANT-fold 3-rope
 ‘Freddy has folded the rope.’
- b. *Freddy àtisèfɔ̃ŋ ó òkɔ̃ŋ.*
 Freddy á-tí-sè-fɔ̃ŋ-à[H_M] ò-kɔ̃ŋ
 Freddy SP₁-ANT-OP_{1PL}-fold-APPL 3-rope
 ‘Freddy has folded the rope for us.’
- (4) a. *Mvá àtílyěŋ ílôŋ.*
 Ø-mvá á-tí-lyěŋ[H_M] í-lôŋ
 7_N-dog SP₁-ANT-lick 5-dish
 ‘The dog has licked the dish.’
- b. *Mvá àtòlyèré ílôŋ.*
 Ø-mvá á-tí-ò-lyěŋ-à[H_M] í-lôŋ
 7_N-dog SP₁-ANT-OP₁-lick-APPL 5-dish
 ‘The dog has licked the dish for her (i.e. he licked her dish).’

The functional properties of the vocalic derivational suffix in (1) to (4) are reminiscent of what Pacchiarotti (2020: 2) calls “Bantu Type B applicative constructions”, in which “the applicative morpheme expands the argument structure of the verb root by introducing an obligatorily present applied phrase expressing a semantic role which could have been syntactically expressed as an optional oblique”

(see also Pacchiarotti 2022: 314). We cannot go into details here, but the semantic roles of recipient, beneficiary, and possessor which feature in (1b) to (4b) as syntactic object arguments thanks to the valency-increasing vocalic suffix could also have been staged as an oblique introduced by the preposition *dʒwí lá* ‘for’ in (1b) to (3b), or, in the case of the possessor in (4b), as a possessive pronoun modifying the possession, i.e., *ílòŋ í ndé* ‘her dish’ (lit. ‘dish of her’). In this case, the underived verb without the valency-increasing vocalic suffix is used, as shown in (5), which is the underived equivalent of (2b) above.

- (5) *àtítśá:m ìpûŋ dʒwí lá mé.*
 á-tí-tsôŋ[HM] ì-pûŋ dʒwí_lá mé
 SP₁-ANT-dig 5-hole for me
 ‘He has dug a hole for me.’

Such Bantu Type B applicative constructions have also been reported in nearby Mbuun (B87), also a West-Coastal Bantu language. In Mbuun, the inherited Proto-Bantu applicative *-id underwent attrition to a final vowel in combination with the gemination of the preceding consonant, originating in the full assimilation of the suffixal consonant to the root final consonant of the root, e.g., *ka-kón* ‘to plant’ > *ka-kónne* ‘to plant-APPL’, *ka-sis* ‘to leave’ > *ka-sisse* ‘to leave-APPL’ (Bostoen and Mundeke 2011). Although Ngwi does not manifest consonant gemination as Mbuun, its valency-increasing vocalic suffix conveying Bantu Type B applicative constructions could equally well be a reflex of Proto-Bantu applicative *-id. The productivity of the final vowel suffix *-a* and its allomorphs undergoing mid-vowel harmony as valency-increasing applicative suffixes in Ngwi grammar ties in rather well with the fact that a homophonous suffix also prevails as a valency-increasing morpheme amongst the causative alternations in Table 1. All but one of the derived causative verbs end in this suffix.

As shown in (6) with *ŋàm-á* ‘open (tr.)’, these causal verbs derived from a noncausal underived verb do not only license a patient object (causee) undergoing the action performed by the agent subject (causer), as in (6b), but also an additional applied object typical of applicative verbs, as (6d-e). In (6a), the noncausal underived verb *ŋám* ‘open (intr.)’ has one argument, i.e., the patient subject *èpfûŋ* ‘door’. In (6b), this same patient is staged as the causee object of the derived causal verb *ŋàmá* ‘open (tr.)’, which takes itself an agent subject representing the causer, i.e., the 3SG subject prefix *á-* of class 1 (animate). An additional beneficiary, i.e., *ŋkúm* ‘chief’, features as an oblique argument of the causal verb *ŋàmá* ‘open (tr.)’ and is introduced by the preposition *dʒwí lá* ‘for’. In (6d), this same beneficiary is staged as an object of *ŋàmá* ‘open (tr.)’. The beneficiary object *ŋkúm* ‘chief’ is immediately post-verbal and precedes the patient object *èpfûŋ* ‘door’. The pronominalization of *ŋkúm* ‘chief’ as the 3SG object prefix *ò-* of class 1 in (6e) shows that it does have the syntactic status of object. Hence, the causal verb *ŋàmá* ‘open (tr.)’ in (6d-e) has a syntactic valency of three and can be considered ditransitive. The ungrammatical example in (6f) shows that *ŋàmá* ‘open (tr.)’ cannot be directly derived from the noncausal verb *ŋám* ‘open (intr.)’.

It can only be an additional reading of the causative form *ɲàmá* ‘open (tr.)’

- (6) a. *èpfũɛ ètɪɲám.*
 è-pfũɛ é-tí-ɲám[H_M]
 7-door SP₇-ANT-open_INTR.
 ‘The door has opened/is open.’
- b. *àtɪɲámá èpfũɛ.*
 á-tí-ɲámá[H_M] è-pfũɛ
 SP₁-ANT-open_TR. 7-door
 ‘She has opened the door.’
- c. *àtɪɲámá nèpfũɛ dʒwí là ɲkúm.*
 á-tí-ɲámá[H_M] è-pfũɛ dʒwí_là Ø-ɲkúm
 SP₁-ANT-open_TR. 7-door for 1_Ø-chief
 ‘She has opened the door for the chief.’
- d. *àtɪɲámá ɲkúm èpfũɛ.*
 á-tí-ɲámá[H_M] Ø-ɲkúm è-pfũɛ
 SP₁-ANT-open_TR._APPL 1_Ø-chief 7-door
 ‘She has opened the door for the chief.’
- e. *àtɔɲámá èpfũɛ.*
 á-tí-ò-ɲámá[H_M] è-pfũɛ
 SP₁-ANT-OP₁-open_TR._APPL 7-door
 ‘She has opened the door for him.’
- f. ***èpfũɛ ètɪɲámá ɲkúm .*
 è-pfũɛ é-tí-ɲám-á[H_M] Ø-ɲkúm
 7-door SP₇-ANT-open_INTR.-APPL 1_Ø-chief
 ‘The door has opened/is open for the chief.’

Similar causative/applicative verbs have also been reported in Mbuun, where this isomorphism has been accounted for as resulting from the phonemic merger of Proto-Bantu transitive separative *-*ud* and applicative *-*id* (Bostoen and Mundeke 2011). In the following sections, we examine whether in Ngwi the homophony between productive applicative *-á* and its allomorphs and several lexicalized suffixes recurrent among noncausal/causal alternations in Table 1, not only causative but also labile and anticausative, could be the outcome of similar phonemic mergers.

2. Comparative account of Ngwi noncausal/causal alternations

In this section, we briefly compare Ngwi noncausal/causal alternations with those of four other Bantu languages, i.e., Kongo Ya Leta, Swahili, Matengo, and Herero. We select Kongo Ya Leta, because it is the vehicular language of the Kwilu Province and spoken by our main Ngwi consultant. As Ngwi, it is part of West-Coastal Bantu. The other three are some of the few Bantu languages for which noncausal/causal alternations have been analyzed in detail thanks to the research of Em. Prof. Nobuko Yoneda. Although our comparative sample is somewhat arbitrary, it is largely enough to make our main point: Ngwi noncausal/causal alternations stand out regarding those already studied in Bantu languages in that labiality prevails.

2.1 Noncausal/causal alternations in Kongo Ya Leta

We start with a short description of noncausal/causal alternations in Kongo Ya Leta, because such analysis is not available yet. Table 3 below presents the Kongo Ya Leta translation equivalents of the 31 English inchoative/causative verb pairs in Haspelmath (1993: 97) in the same way as for Ngwi in Table 1.

Also in Kongo Ya Leta, and largely the same as in Ngwi (Table 1), several English alternations have more than one translation equivalent in Ngwi: ‘open (intr./tr.)’, ‘spread (intr./tr.)’, ‘sink (intr./tr.)’, and ‘be destroyed/destroy’. The opposite is also true; different English alternations turn out to be translated identically in Kongo Ya Leta: *telema/telemisa* ‘wake up (intr.), rise, stop (intr.)/wake up (tr.), rise, stop (tr.)’, *pasuka/pasula* ‘break, split (intr.)/break, split (tr.)’, *mia/misa* ‘melt, dissolve (intr.)/ melt, dissolve (tr.)’, and *baluka/balula* ‘change, turn, roll (intr.)/change, turn, roll (tr.)’. The translation equivalents of ‘develop’ and ‘freeze’ share the same verb pair *kuma/kumisa* ‘become/make become’, which is combined with *mbote* ‘good’ and *ngolo* ‘firmness’ respectively (cf. Swartenbroeckx 1973). The noncausal verb *kangama* is the translational equivalent of both ‘close (intr.)’ and ‘connect’, but has two different causal counterparts, i.e., *kanga* ‘close (tr.)’ and *kangisa* ‘connect (tr.)’ respectively. Taking into account the case of full homonymy and synonymy discussed above, Table 3 contains in total 28 different noncausal/causal alternations: 12 causative (42,9%), 6 equipollent (21,5%), 5 anticausative (17,8%), 3 labile (10,7%), and 2 suppletive (7,1%). Unlike in Ngwi, all types of noncausal/causal alternations in Kongo Ya Leta involve derivational suffixes that are clearly distinct but also easily linkable to Proto-Bantu reconstructions (cf. Schadeberg and Bostoen 2019).

All causative alternations in Table 3 but one, i.e., (27), involve *-is*, the reflex of long causative Proto-Bantu suffix **-ic* (Bostoen and Guérois 2022). Causal *fulusa* ‘fill (tr.)’ is historically derived from noncausal *fuluka* ‘fill (intr.)’ with the short causative Proto-Bantu suffix **-i* via the following chain of sound shifts: a) *fuluk-i-a* > b) *fulukya* > c) *fulusya* > d) *fulusa*. After having undergone glide formation in front of the final vowel (a > b), causative *-y* triggers the spirantization of the preceding stop (b > c)

and then undergoes so-called ‘Y-absorption’ (c > d) (Bastin 1986; Hyman 2003; Bostoen 2008). In line with the analysis of Haspelmath (1993) for Swahili, Dom *et al.* (2022b) analyze noncausal/causal alternations whose causal is historically derived from the noncausal through the reflex of Proto-Bantu causative *-i as being of the equipollent correspondence type, because the derivational relation would no longer be morphologically transparent. However, as we deal first and foremost with a historical process of word formation which is still synchronically identifiable beyond any reasonable doubt, we side here with Yoneda (2022) who considers similar pairs in Swahili as belonging to the causative correspondence type.⁵

1. <i>telema/telemisa</i> ‘wake up’	C	11. a. <i>zinda/zindisa</i> ‘sink’	C	21. <i>telema/telemisa</i>	C
2. <i>pasuka/pasula</i> ‘break’	E	b. <i>kota/kotisa</i> ‘sink’	C	‘rise/raise’	
3. <i>yokama/yoka</i> ‘burn’	A	12. <i>baluka/balula</i> ‘change’	E	22. <i>mana/manisa</i> ‘finish’	C
4. <i>fwa/fwa</i> ‘die/kill’	L	13. <i>mia/misa</i> ‘melt’	C	23. <i>baluka/balula</i> ‘turn’	E
5. a. <i>kanguka/kangula</i> ‘open’	E	14. a. <i>bwa/bwisa</i> ‘(be) de-	C	24. <i>baluka/balula</i> ‘roll’	E
b. <i>zibuka/zubula</i> ‘open’	E	b. <i>bukama/buka</i> stroy(ed)’	A	25. <i>kuma/kumisa ngolo</i>	C
6. <i>kangama/kanga</i> ‘close’	A	15. <i>vila/vidisa</i> ‘get lost/lose’	C	‘freeze’	
7. <i>yantika/banda</i> ‘begin’	S	16. <i>kuma/kumisa mbote</i>	C	26. <i>mia/misa</i> ‘dissolve’	C
8. <i>longuka/longa</i> ‘learn/teach’	A	‘develop’		27. <i>fuluka/fulusa</i> ‘fill’	C
9. <i>vanda kimvuka/sangisa</i>	S	17. <i>kangama/kangisa</i>	E	28. <i>bonga/bongisa</i>	C
‘gather’		‘connect’		‘improve’	
10. a. <i>yalumuka/yalumuna</i>	E	18. <i>toka/tokisa</i> ‘boil’	C	29. <i>yuma/yumisa</i> ‘dry’	C
b. <i>mwang(is)ama/</i>	A	19. <i>tekita/tekita</i> ‘rock’	L	30. <i>pasuka/pasula</i> ‘split’	E
<i>mwang(is)a</i> ‘spread’		20. <i>zimpa/zimpa</i> ‘go/put out’	L	31. <i>telema/telemisa</i> ‘stop’	C

Table 3: Kongo Ya Leta inchoative/causative verb alternations

As for the verb pairs in Table 3 which we consider equipollent, all but one, i.e. (17), involve an alternation between the reflex of the Proto-Bantu intransitive separative *-ok in the noncausal, i.e., *-uk*, and its transitive equivalent *-od, i.e., *-ul*, which undergoes nasal harmony to *-un* following a preceding nasal, as in (10). The only odd equipollent pair, i.e. (17), has a reflex of Proto-Bantu positional (stative) *-am for the noncausal and of causative *-ic for the causal.

⁵ Sebastian Dom (pers. comm.) points out that we are inconsistent in considering Ngwi labile verbs originating in initially equipollent verb pairs as synchronically ‘labile’ and not ‘equipollent’, while we refute a similar synchrony-based reanalysis as ‘equipollent’ for Eastern Bantu causal verbs derived with the spirantization triggering Proto-Bantu causative *-i. We see his point but consider the situation in Ngwi to be fundamentally different. While the historical causative derivation is still generally recognizable today in Eastern Bantu languages, this is not the case for the original equipollency of certain labile verbs in Ngwi. Moreover, not all Ngwi labile verbs ending in a vowel originate in equipollency (see Table 5 below).

In all anticausative alternations in Table 3, a causal underived verb corresponds with a noncausal verb including a reflex of *-am, except for (8), where the noncausal incorporates the reflex of *-ok.

Of the remaining labile and suppletive alternations in Table 3, only noncausal *yantika* ‘begin (intr.)’ (7) and causal *sangisa* ‘gather (tr.)’ (9) include clearly identifiable reflexes of Proto-Bantu suffixes, i.e., neuter or impositive *-ik⁶ and causative *-ic respectively.

2.2 Cross-Bantu variation in noncausal/causal alternations

As can be seen in Table 4, Kongo Ya Leta differs from Ngwi in that its noncausal/causal alternations rely on diverse and easily distinguishable inherited Proto-Bantu verbal derivational suffixes, but also in correspondence type frequency. As shown in Table 4, while Ngwi and Kongo Ya Leta have similar proportions of causative alternations, this alternation is the most prevalent correspondence type in Kongo Ya Leta but not in Ngwi. In Ngwi, the labile correspondence type outnumbers the causative. What is more, Kongo Ya Leta’s second correspondence type, i.e., equipollency, is insignificant in Ngwi, as are anticausative and suppletive correspondence types. In Kongo Ya Leta, it is rather labile and suppletive verbs which are few, while the anticausativity is the third correspondence type with only a slightly lower frequency than equipollency.

Branch	Language	#pairs	C	A	E	L	S
West-Coastal	Ngwi	41	39%	2,4%	7,3%	44%	7,3%
	Kongo Ya Leta	28	42,9%	17,8%	21,5%	10,7%	7,1%
South-Western	Herero	35	42,9%	17,1%	28,6%	5,7%	5,7%
Eastern	Swahili	31	58,1%	25,8%	9,7%	3,2%	3,2%
	Matengo	32	15,6%	9,4%	62,5%	3,1%	9,4%

Table 4: Noncausal/causal correspondence types across Bantu languages (C= causative; A=anticausative; E=equipollent; L=labile; S=suppletive)

If we now add the South-Western and Eastern Bantu languages studied by Em. Prof. Nobuko Yoneda to the comparison, it turns out that Ngwi stands out in Bantu more generally with its prominent lability. As shown in Table 4, in Herero, Swahili, and Matengo, labile verbs are even more insignificant than in Kongo Ya Leta. Herero and Swahili also match with Kongo Ya Leta in having causativity as the prevalent correspondence type. In Swahili, causative alternations are even significantly higher than in all other Bantu languages in Table 4. This corresponds to a proportionally significant drop in equipollent verb

⁶ Two homophonous *-ik have been reconstructed to Proto-Bantu, one neuter, aka ‘quasi-middle’ according to Dom *et al.* (2016, 2018), and one impositive (Schadeberg and Bostoen 2019). As the first is valency-decreasing, it is the most likely candidate for noncausal *yantika* ‘begin (intr.)’. However, it could as be a case of deponency (Good 2007), whereby *yantika* was originally causal and thus formed with transitivizing impositive *-ik* but underwent a noncausal reanalysis.

pairs. Swahili and Ngwi are the only languages with very low equipollency rates. In Matengo, which stands out with its high degree of equipollency, we see a reverse proportionality in comparison to Swahili: a much higher rate in equipollent verb pairs corresponds there to a considerably lower frequency of causative alternations as well as a drop in anticausativity. Matengo is the only language in Table 4 to have such a low degree of causativity, and it approaches Ngwi in its low number of anticausative verb pairs. In sum, Ngwi and Matengo stand out in Table 4 in having respectively labiality and equipollency, and not causativity, as most frequent correspondence type.

If we have a look at the morphology involved, Ngwi stands out also for being the only language to have lost recognizable inherited Proto-Bantu derivational suffixes. We cannot go into details here for space constraints, but if we examine more closely the morphology of the verb pairs available in Yoneda (2014b), Matengo's oddity in terms of equipollency turns out to rely on common Bantu suffixes. Out of twenty equipollent verb pairs, fifteen include the regular reflexes of the intransitive separative *-ok (noncausal) and the transitive separative *-od (causal), while five have a noncausal verb with a reflex of neuter *-ik corresponding to a causal verb with a reflex of either applicative *-id (3 instances), causative *-ic (1 instance), or reciprocal *-an (1 case of deponency). The other correspondence types also involve well-established morphology: four of five causative alternations involved short causative *-i with the remarkable effect of spirantization leading to Ø (Dom *et al.* 2022b) due to which the derived form seems morphologically simpler than that of the underived verb (e.g., *hɔb-a* 'get lost' > *hɔ-a* 'lose', *bel-a* 'boil (intr.)' > *be-a* 'boil (tr.)') and one causative alternation involves the reflex of PB impositive *-ik; two of the three anticausative alternations involve the reflexive prefix and one seems to be deponent as it includes transitive separative *-od but is used intransitively.

In Swahili (Yoneda 2014c, 2022), the overall majority of causative alternations involve the no longer productive reflex of the Proto-Bantu short causative *-i (cf. *supra*) and a minority is built on the still productive reflex of the Proto-Bantu long causative *-ic. All anticausative alternations are derived with the reflex of Proto-Bantu neuter *-ik and reflexes of Proto-Bantu separative *-ok/*-od (intr./tr.) prevail among the relic equipollent alternations.

In Herero (Yoneda 2014a), all causative alternations are based on the reflex of Proto-Bantu *-ic without any traces of Proto-Bantu short causative *-i and all equipollent alternations but one are based on the reflexes of Proto-Bantu separative *-ok/*-od (intr./tr.), while the other equipollent alternation is based on the reflexes of passive*-ibo and causative *-ic. Anticausative alternations rely on reflexes of Proto-Bantu neuter *-ik and passive*-o, and on the reflexive prefix.

In sum, in all Bantu languages in Table 4 except Ngwi, variations in correspondence type frequencies occur among alternations which capitalize on derivational verb suffixes, i.e., causative, anticausative and equipollent. Although these languages vary with respect to inherited verb morphology on which they rely on the most to express noncausal/causal alternations, all make use of reflexes of the same Proto-Bantu verbal derivation suffixes. Proto-Bantu causative *-i and *-ic are the most common among causative alternations, neuter *-ik and positional (stative) *-am among anticausative alternations, and separative

-ok/-od (intr./tr.) among equipollent alternations. The loss of formal difference between those derivational suffixes due to phonological attrition thus seem to have played a decisive factor in the exceptionally high degree of lability in Ngwi, especially if one reckons that most labile verb stems include a final vowel reminiscent of erstwhile distinctive verbal derivation morphology. For example, in the case of separative *-ok/*-od, which is the most recurrent suffixes among equipollent pairs in the other Bantu languages in Table 4, nothing but consonant loss would have led to homophony between the noncausal and the causal verb and thus lability.

3. Historical account of Ngwi noncausal/causal alternations

In this section, we go in search of possible etymons for the Ngwi noncausal/causal alternations in Table 1. We address them in order of frequency per correspondence type and only list those which can possibly be linked to a proto-form. Those followed by BLR plus a number between parentheses originate in the Bantu Lexical Reconstructions 3 (BLR3) database of Bastin *et al.* (2002); the number is the unique index code which each reconstruction has in that online database. Proto-forms followed by (KLC) are tentative reconstructions absent from BLR3 but possible to propose based on available evidence from the Kikongo Language Cluster (KLC), a major low-level subgroup of West-Coastal Bantu which is best documented and conservative in terms of Proto-Bantu verbal derivation morphology, at least form-wise.

Table 5 below presents possible historical origins for most labile alternations in Table 1, the most frequent noncausal/causal correspondence type in Ngwi. Those between (a) and (g) originate in an underived verb, which matches with the fact that most of these labile verbs have a CVC structure and thus miss a final vowel. The only exceptions are *tʃúŋá* (d) and *bíyè* (g). Labile *tʃúŋá* is a variant of labile *tʃúŋ* without a final vowel and possibly a reflex of *túŋ ‘tie up’ followed by a derivational suffix, see e.g. *túŋod ‘untie’ (BLR 3132), probably not related due its reversive meaning. The final vowel of *bíyè* is probably not the reflex of a derivational suffix but the remnant of the common Bantu stem-final vowel suffixed to the root *bú*. In a handful of lexical items in Ngwi an epenthetic [y] separates a sequence of [u] and [e] (Pacchiarotti and Bostoen 2024). In (a) to (c), the lability seems to be based on a generalization from the noncausal (although *dím (b) possibly was labile from the start as further research may point out), while the opposite is true for those in (d) to (g) where the source verb seems to be causal. The final vowel of the labile verbs in the second section of Table 5 (h-l) does seem to originate in a historical derivational suffix: separative *-ok/*-od in (h-i), extensive *-ad/impositive *-ik in (j), neuter *-ik in (k) extended to the causal, and repetitive *-ang in (l), whose vowel underwent harmony with the root vowel. The consonant cluster at the beginning of *blíŋá* is due to the omission of the historical stem-initial vowel, which is pronounced super short in some forms to the point that it can be even dropped (Pacchiarotti and Bostoen 2024). Its final vowel probably reflects a derivational morpheme suffixed to *bíding.

a. <i>dzúβ/dzúβ</i>	‘close’	< *dib ‘shut; shut eyes (intr.)’ (BLR 1021)
b. <i>dzîm/dzîm</i>	‘go/put out’	< *dîm ‘be extinguished; extinguish; get lost’ (BLR 1046)
c. <i>fîr/fîr</i>	‘finish’	< *cîd ‘be finished’ (BLR 604)
d. <i>tfûŋ/tfûŋ ~ tfûŋá/ tfûŋá</i>	‘connect’	< *túŋ ‘tie up’ (BLR 3131)
e. <i>tfûŋ/tfûŋ</i>	‘close’	< *túŋ ‘tie up’ (BLR 3131)
f. <i>dzîŋ/dzîŋ</i>	‘gather’	< *dîŋ ‘surround’ (BLR 1065)?
g. <i>búyè/búyè</i>	‘break’	< *búg ‘break snap (tr.)’ (BLR 372)?
h. <i>dzà(r)bá/dzà(r)bá</i>	‘open’	< *dibok ‘open’ (KLC)/*dibod ‘unstop, open’ (BLR 5628)
i. <i>lwónó/lwónó</i>	‘learn/teach’	< *dòngok ‘learn’ (KLC)/ *dòngod ‘teach (KLC), cf. dòng ‘teach’ (BLR 1124)
j. <i>yímá/yímá</i>	‘stop’	< *jímá ‘stand; stop (intr.)’ (BLR 3354)/*jímik ‘put up, erect, stop (tr.)’ (BLR 5497)
k. <i>báná/báná</i>	‘begin’	< *bándik ‘begin (intr.)’ (KLC), cf. *bánd ‘begin (tr.)’ (BLR 88)
l. <i>blíŋá/blíŋá</i>	‘roll’	< cf. *bíding ‘turn (tr.)’ (BLR 5754/65), *bíding ‘turn, round off’

Table 5: Possible historical origins of Ngwi labile alternations

Table 6 below provides possible historical origins for several causative alternations in Table 1. For all causative alternations in Table 6 except (h-i), the synchronically underived noncausal verb stem corresponds to a reconstructed verb stem that is also underived and noncausal. In (h), both the noncausal underived stem and the derived causal stem correspond to a reconstructed underived and derived stem respectively, but the underived stem is presumably reconstructed as causal due to the specification “tr.” (transitive). Either *pànj ‘scatter’ shifted from transitive to intransitive in Ngwi or the transitivity of the proto-verb needs closer examination. In (i), there is no corresponding reconstructed noncausal underived

a. <i>fîr/fîrà</i>	‘finish’	< *cîd ‘be finished’ (BLR 604)
b. <i>báy/báyá</i>	‘wake up’	< *bíik ‘stand up, wake up’ (BLR 5844)
c. <i>dzǎβ/dzǎká</i>	‘sink’	< *dik ‘be deep; sink; set (sun)’ (BLR 1043)
d. <i>wǎŋ/wǎŋó</i>	‘develop, improve’	< *bong ‘develop, improve (intr.)’ (KLC)/ *bongic ‘develop, improve (tr.)’ (KLC)
e. <i>yúm/yúmá</i>	‘dry’	< *jóm ‘be dry’ (BLR 3616)/*jómic ‘dry’ (KLC)
f. <i>súβ/súká</i>	‘finish’	< *cúg ‘be finished, come to an end’ (BLR 759)/*cúgid (KLC)
g. <i>dzîm/dzímá</i>	‘get lost/lose’	< *dîm ‘get lost’ (BLR 1046), *dímíd ‘get lost’ (BLR 1049)
h. <i>pèájŋ/pèájá</i>	‘spread’	< *pànj ‘scatter (tr.)’ (BLR 2392)/*pànjod ‘scatter (tr.)’ (BLR 8604)
i. <i>mǎβ/mǎkó</i>	‘(be) destroy(ed)’	< *mókod ‘break sp.’ (BLR 7381)

Table 6: Possible historical origins of Ngwi causative alternations

verb stem, but the derived causal verb does have a reconstructed counterpart derived with transitive separative *-od. The extended causal verbs in (a-c) miss a corresponding reconstruction, but those in (d-g) show that causative final -á and its allomorphs in Ngwi may not only correspond to transitive separative *-od, but also to causative *-ic (d-e) and applicative *-id (f-g). Note, however, that the applicative in the proto-form *dímid ‘get lost’ (g) turns out to be deponent given its noncausal semantics. The reflexes of *cúgid in the KLC can also be noncausal at odds with the usually valency-increasing capacities of the applicative, e.g., Yombe (H16c) *sukila* ‘stop (intr.)’ (Biyoko Mabua 2017: 291).

Table 7 below provides possible historical origins for the remaining alternations in Table 1, i.e., equipollent (a-c), anticausative (d), and suppletive (e-g). Of the equipollent alternations, only the first two (a-b) possibly go back to an original equipollency, but it is hard to firmly establish whether the Ngwi forms originate in the proposed reconstructions. As for (c), maybe none of the verbs goes back to the reconstruction provided as there is not only a difference in meaning, but the same proto-form was already offered as a possible etymon for *bíyè/bíyè* ‘break’ in Table 5. The derived noncausal verb stem in Ngwi’s only anticausative alternation (d) seems to correspond to a reconstructed noncausal verb stem derived with intransitive separative *-ok. The underived causal verb stem also corresponds to an underived reconstructed stem, though one which is noncausal. Either it shifted from noncausal to causal in Ngwi or the transitivity of the proto-verb needs closer examination. Finally, for the suppletive alternations, only the noncausal verb stems have a possible reconstructed etymon, one that was originally also noncausal and underived. Despite its synchronic CVC shape, *dʒǎʒ* ‘kill’ likely originates in a derived verb stem.

a. <i>yâ/yará</i>	‘break, split’	< *játuk ‘be split’ (BLR 3244)/ *játod ‘split, separate, open’ (BLR 3243)
b. <i>yúò/yúrá</i>	‘fill’	< *jijad ‘be full’ (BLR 3429) ~ *jijod ‘become full’ (BLR 3430)?/*jijodi ‘fill up’ (BLR 6203)?
c. <i>bvîr/bvíó</i>	‘be destroy(ed)’	< *búg ‘break, snap (tr.)’ (BLR 372)?
d. <i>yímá/yîm</i>	‘rise/raise’	< *jímok ‘rise up; start’ (BLR 3358)/ *jím ‘stand, stop (intr.)’ (BLR 3353)
e. <i>yá tîá/búó tîá</i>	‘burn’	< *pí ‘be burnt; be hot; be cooked; be ripe; be red’ (BLR 2491)
f. <i>wá/dʒǎʒ</i>	‘die/kill’	< *kú ‘die’ (BLR 2089)/*dibag ‘kill’ (BLR 4794)
g. <i>bíyè/pfíyè</i>	‘boil’	< *bíd ‘be cooked; boil’ (BLR 181)

Table 7: Possible historical origins of Ngwi anticausative, equipollent or suppletive alternations

4. Conclusions

Ngwi stands out within Bantu in having lability as the prevalent correspondence type among noncausal/causal alternations. This is not only the case in comparison to the West-Coastal, South-Western, and Eastern Bantu languages discussed in this paper, but also in other Bantu languages whose

noncausal/causal alternations have been the subject of dedicated studies (Dom *et al.* 2022a, b; Laine *et al.* 2022; Yoneda 2022). In Bantu languages studied so far, causativity usually is the most recurrent correspondence type, certainly if one analyzes causal verbs historically derived with the short causative *-i triggering spirantization as causative (Yoneda 2022) instead of equipollent (Haspelmath 1993) (Dom *et al.* 2022b). Causative alternations also prevail in several other African languages, such as Kambaata (Cushitic) (Treis 2022), Muher (Semitic) (Meyer 2022), Amharic (Semitic), Sandawe (unclassified, formerly Khoisan), Mandinka (Mande), and Afar (Cushitic) (Creissels 2022).

So far, no other Bantu languages have been described with labile verbs as the most prominent correspondence type among noncausal/causal alternations. Lability is also not very common elsewhere in sub-Saharan African languages. In a sample of thirty languages, Creissels (2022: 3) identifies ten languages in which lability – which he calls ‘ambitransitivity’ – prevails among “pairs whose noncausal member is a monovalent verb referring to a process (not a state) typically undergone by concrete inanimate entities and easily conceived as occurring without the involvement of a clearly identified external instigator meeting the definition of a prototypical agent”, more specifically break (intr./tr.), burn (intr./tr.), close (intr./tr.), dry (intr./tr.), go out/put out (fire), increase (intr./tr.), melt (intr./tr.), move (intr./tr.), open (intr./tr.), split (intr./tr.), spoil (intr./tr.), spread (intr./tr.), turn upside down (intr./tr.). These ten languages are Emai (Benue-Congo), Sar (Central Sudanic), Jamsay (Dogon), Minyanka (Gur), Baule (Kwa), Fon (Kwa), Bambara (Mande), Kakabe (Mande), Mano (Mande) and Gbaya (Ubangi). Nonetheless, when considering other types of noncausal/causal alternations, only three languages persist as showing a strong prevalence of lability, i.e., Baule (Kwa) (22 out of 29 or 75,9 %), Bambara (Mande) (19 out of 29 or 65,1 %), and Minyanka (Gur) (18 out of 29 or 62,1 %). With 18 out of 41 noncausal/causal alternations being labile (i.e., 44%), the proportion of lability in Ngwi is considerably lower than in these three West-African languages, but labile verbs are certainly also attested among pairs whose noncausal verb does not prototypically have an inanimate subject, e.g., ‘begin (intr./tr.)’, ‘learn/teach’, and ‘gather (intr./tr.)’.

Given the rareness of lability in other Bantu languages, its prevalence in Ngwi is most likely an innovation from a diachronic point of view. The rise of lability in Ngwi seems to be mainly caused by the substantial collapse of the inherited verbal derivation system. Due to phonological attrition in stem-final position, the reflexes of different Proto-Bantu derivation suffixes, on which causative, anticausative and equipollent alternations are based in other Bantu languages, became indistinguishable in earlier stages of Ngwi. The only relic of causative *-ic, applicative *-id, transitive separative *-od, intransitive separative *-ok, and neuter/impositive *-ik is a homophonous final vowel -á and its allomorphs undergoing mid-vowel harmony. This phonemic merger of erstwhile distinct suffixes mainly induced the decline of equipollent (7,3%) and anticausative (2,4%) alternations, which are significantly less frequent in Ngwi than in other Bantu languages. It had much less impact on causativity as a correspondence type, whose frequency (39%) is still comparable to that of other Bantu languages even if it is no longer the most prominent one due to the significant increase of lability.

The correlation between reduced morphological complexity and increased preference for lability in Ngwi ties in with the cross-linguistic observation of Nichols *et al.* (2004) that morphological simplicity favors lability (see also Creissels 2022). This is probably also why lability in Ngwi is not only observed amongst formerly equipollent pairs whose verbal derivation suffixes have become indistinct, but also among underived noncausal and causal verb stems and erstwhile noncausal derived verb stems. As the only relatively productive use of final *-á* and its allomorphs is valency-increasing, i.e., applicative, this suffix is mainly associated with transitivized verbs having an agent subject. This association with transitivity matches better with causal verbs than noncausal verbs, especially because causal verb stems ending *-á* or its allomorphs can be ditransitive and license applied objects. This applicative/causative syncretism probably also explains why causativity as a correspondence type survived much better than other correspondence types relying on inherited Proto-Bantu morphology.

Apart from labile verbs originating in the phonemic merger of erstwhile formally distinct equipollent verbs, other labile verbs are not the direct outcome of phonological attrition. They originate in either noncausal or causal verbs that lost their etymological transitivity value. This is observed with historically underived noncausal verbs that acquired a causal reading, e.g. *dib ‘shut; shut eyes (intr.)’ > *dzúβ* ‘close (intr./tr.)’, or underived causal verbs that became also used as noncausal, e.g., *túng ‘tie up (tr.)’ > *tfúŋ* ‘close (intr./tr.)’. This loss of the original transitivity value also happened with historically derived noncausal verbs, e.g., *bándik ‘begin (intr.)’ > *báná* ‘begin (intr./tr.)’.

Although Ngwi stands out within Bantu as a language prone to lability, it is to be expected that more research will lead to the identification of more Bantu languages with a similar pattern, especially if one focusses on other languages in the northwest of the Bantu domain which underwent significant phonological attrition and an accompanying erosion of their verbal derivation system. Future historical-comparative research should also point out whether the starting point for this evolution towards more lability was an ancestral system in which causativization prevailed as a correspondence type, as is the case in most studied Bantu languages today, or rather one in which equipollency ruled, as observed solely by Em. Prof. Yoneda Nobuka for the Eastern Bantu language Matengo. The question is whether Matengo is an innovative or a conservative language in terms of noncausal/causal alternations. In the first case, it would have innovated just like Ngwi but in a different direction, i.e., from more causativization towards more equipollency (Matengo) vs. from more causativization towards more lability (Ngwi). In the second case, Matengo best reflects the point of departure from which Ngwi on the one hand and Kongo Ya Leta, Swahili, and Herero (and many other Bantu languages) on the other hand started to change, i.e., from more equipollency towards more lability (Ngwi) vs. from more equipollency towards more causativization (the others). More research will show whether equipollency or causativization initially ruled as correspondence type in the Bantu language family.

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