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The Development of Negative *'have'* Auxiliaries in the Bantu Languages of the Middle and Lower Zambezi

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Abstract

This paper studies the grammaticalization of possessive predicates into negative auxiliaries expressing main clause negation in the Bantu languages of the Middle and Lower Zambezi River region. Drawing on a convenience sample of languages from this linguistic area, the study identifies four distinct types of 'have' predicates that function as negative auxiliaries in a little-known pattern of asymmetric main clause negation in Bantu languages. Focusing on patterns of interlingual and intralingual variation, the paper considers the functional and conceptual homogeneity of the auxiliary constructions versus their formal heterogeneity, taking into account the sociolinguistic context of sustained language contact through migration, trade, and the movement of soldiers. The attested variation is moreover suggestive of a 'negative possessive cycle' highly reminiscent but still different from a better known 'negative existential cycle' which has been connected to long-standing contact situations among Bantu languages. The findings contribute to our understanding of negative auxiliary systems in Bantu, while at the same time offering insights into the mechanisms driving linguistic innovation in the region.

Keywords: defective verbs, light verbs, negation without negators, negative existentials

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1 Introduction

The grammaticalization of various formally divergent types of possessive predicates into auxiliaries expressing main clause negation occurs with striking frequency in the Bantu languages of the Middle and Lower Zambezi Valley. In this contact-rich region negative 'have' auxiliaries, as illustrated in (1) for Barwe, display considerable formal variation while maintaining consistent patterns of functional specialization.

(1) Barwe N45, Mozambique (Elicitation, Fieldnotes 2024)[1]
Dzuɾo, hatíná kugúrá mafígú.[2]

dzuɾo	ha-ti-na	ku-gur-a	ma-figu
yesterday	NEG-SP1PL-have	INF-buy-FV	NCP6-banana

'Yesterday, we didn't buy bananas.'

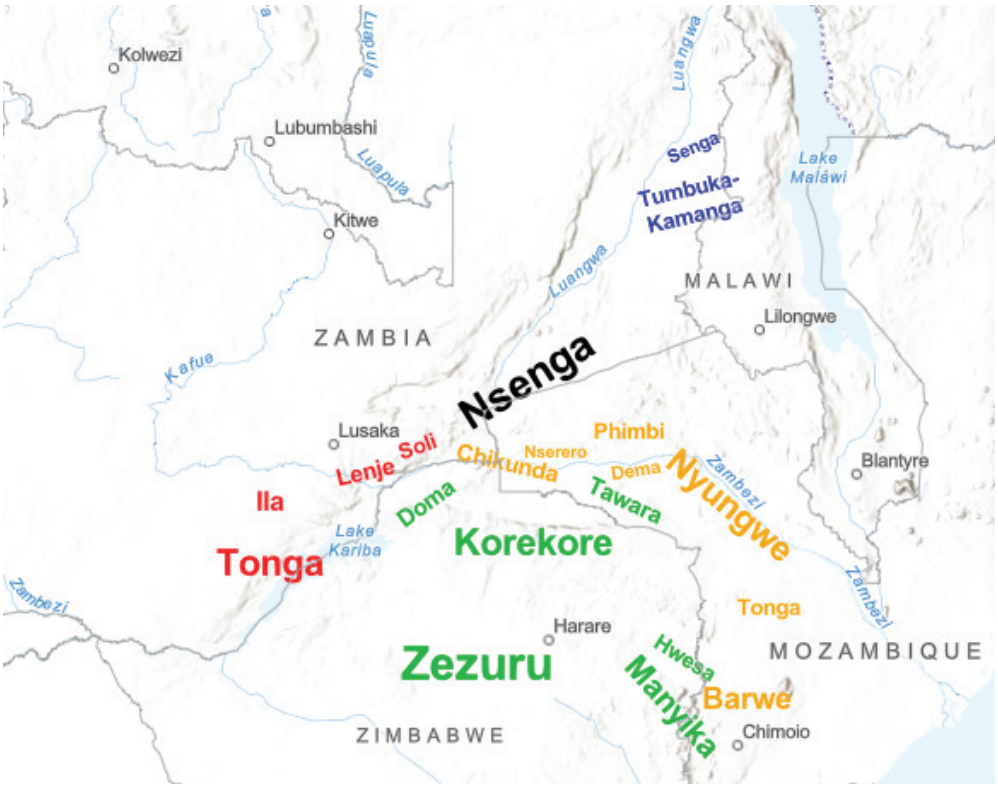
Derived from diverse negative predicative possession constructions, these auxiliaries have been reanalyzed and grammaticalized into main clause negators, typically marking the negative perfect(ive).[3] While negative constructions and auxiliary systems have received ample attention in Bantu linguistics, the development of possessive predicates into main clause negators has not yet been examined in a dedicated study. This paper addresses this gap through a comprehensive analysis of four distinct types of negative possessive predicates in the Bantu languages of the Middle and Lower Zambezi and adjacent areas. Map 1 displays the geographic locations of the languages in which a negative 'have' auxiliary is attested.[4]

Methodologically, the study adopts a cross-linguistic comparative approach, drawing on a diverse dataset which combines original fieldwork data with existing descriptions from the linguistic literature. Original linguistic data were collected through elicitation tasks, semi-structured interviews, and natural discourse recordings with native speakers of selected languages in the region. Secondary data were drawn from grammars and academic articles on the languages under study. Languages were chosen based on the availability of data and their relevance to the research questions.

By integrating synchronic description with historical-comparative analysis this study aims to:

i. systematically document and analyse the four types of negative 'have' auxiliaries in the Bantu languages of the Middle and Lower Zambezi, identifying their morphosyntactic properties, functional roles, and distribution across the language sample.
ii. give a typological framework for this type of asymmetric negation and see how its development (a) reflects a grammaticalization process displaying cyclical change (specifically a 'negative possessive cycle'); and (b) is driven by external sociolinguistic factors (e.g., language contact, migration, and trade).

[1] 'Fieldnotes' indicates data collected by one or several of the authors.
[2] We present the fieldwork examples as spoken, including surface tones, in the top line, followed by the segmented morphemes below. For examples taken from published works, we present the transcriptions as they are given by the author and respect the (recurrent) absence of tone marking.
[3] Throughout this paper we use perfect(ive) as a cover term for both perfect and perfective aspect. Their expression often involves the same morphosyntactic means in Bantu languages, the perfect(ive) suffix *-ile* being a notorious example (Crane and Fanego 2020, 45).
[4] A detailed description of the entire language sample is presented in the Appendix.



Map 1: Locations of the sampled languages (created with ArcGIS Online – Map Viewer)

The paper is organized as follows: Section 2 outlines the different types of affirmative and negative possessive predication attested in the sample and considers their distribution from a Bantu-wide perspective. Section 3 describes the four types of negative 'have' auxiliaries and their morphosyntactic properties, while Section 4 situates them within known patterns of negation in Bantu and within Miestamo's (2005) typology of asymmetric negation. Section 5 adopts a historical-comparative lens to trace the diachronic development of these auxiliaries, exploring the role of language contact and grammaticalization patterns. Finally, Section 6 summarizes the findings and their implications for studies of grammaticalization, negation, and possession in Bantu and beyond.

2 Predicative possession

Since 'have' auxiliaries are the principal feature of the negative constructions under study, this section starts out by investigating the expression of predicative possession in the languages of our sample. Creissels (2024) shows that two types of possessive constructions are widespread among Bantu languages, i.e., the 'Have Possessive' type and the 'Comit Possessive' type. In the Have Possessive type, the coding of the possessor and the possessee matches that of the agent and the patient in transitive predication, whereas in the Comit Possessive Type the possessee is introduced by a comitative ('with') marker. The Have Possessive Type is illustrated for Tonga (M64)[5] in (2). The 'have' predicate *jisí* is the perfect(ive) form of the verb *jata* 'catch, hold'

[5] The Guthrie classification codes adopted in this paper follow Maho's (2009) updated inventory, with the addition

(Collins 1962, 49). The Comit Possessive Type can also be illustrated with Tonga. In (3) the predicate is the copula *li* 'be' and the possessee is introduced by the comitative *a* 'with', which may apparently attach to either the copula or the possessee.[6]

(2) Tonga M64, Zambia (Carter 1974, 9, glossing added)
Héna mujisí cilyo?
hena mu-jisi ci-lyo
you.PL SP2PL-seize.PFV NCP7-food
'Do you have any food?'

(3) Tonga M64, Zambia (Carter 2002, 69, glossing added)
Wakali anguzu / Wakalaa nguzu
w-aka-li a-nguzu / wa-aka-li-a nguzu
SP1-PST-COP COM-NCP9.strength
'He was with/had strength.'

Predicative possession in many of the languages in our sample reflects a process referred to as 'have-drift' by Stassen (2009), by which possessive constructions of other types acquire characteristics of the Have Possessive type. In present tense contexts the copula is often (optionally) omitted and the comitative marker is inflected for person. In the absence of a copula, the comitative marker undergoes a categorical change from preposition/conjunction to predicate. However, it is a defective predicate at best, as it can often only take subject prefixes and negative morphology, but no other verbal morphology, such as object prefixes. The possessee can thus not be object marked on the comitative predicate, as opposed to 'have' predicates, which typically can take an object prefix indexing the possessee. Phimbi (N402) shows such optional omission of the copula in present tense contexts. In (4), the subject prefix attaches directly to the comitative predicate, which can only index the possessee through a referential enclitic (*=ko*). This morphosyntactic feature is inherited from its origin in a preposition/conjunction which can host referential enclitics, as seen in (5), where the comitative preposition is (still) preceded by the copula. In Malawian Tonga (N15) the copula is always omitted in present tense contexts. We consider (possibly) merged and shortened constructions, like the ones in (3) and (4), respectively, as belonging to the Comit Poss type.

(4) Phimbi N402, Mozambique (Elicitation, Fieldnotes 2024)
Pano tina kamú:tí kadĩ:kí komwe tiná:ko.
pano ti-na ka-mu-ti ka-dĩki ka-omwe ti-na=ko
here SP1PL-have NCP12-NCP3-tree NAP12-small PP12-REL SP1PL-have=REF.12
'Here we have the only small stick that we have.'

of new proposed codes for the previously non-inventoried varieties (N401, N402, N403, N404, N411, S101, and S102). See the Appendix for details.

[6] Note that without further phonological analysis it is unclear whether the comitative truly attaches to the copula, as suggested by Carter (2002, 69), or whether there is liaison between the copula and the following possessee introduced by the comitative. The fact that a merger between copula and comitative occurs recurrently in Bantu languages (Devos and Bernander 2022) adds some weight to Carter's analysis.

(5) Phimbi N402, Mozambique (Elicitation, Fieldnotes 2024)
Ndiri názo má:rí (…).
ndi-ɾi na=zo Ø-maɾi
SP1SG-COP COM=REF.10 NCP10-money
'I have money.'

(6) Tonga N15, Malawi (MacAlpine et al., n.d.)
Tose tindi ŵabali.
ti-ose ti-ndi ŵa-bali
SP1PL-all SP1PL-have NCP2-relative
'All of us have relatives.'

When looking at affirmative predicative possession in the Bantu languages of the Zambezi valley, in line with Creissels' (2024) cross-Bantu observations, we find that they overwhelmingly make use of the Comit Possessive type: 25 out of the 26 languages for which we have relevant data have the Comit Poss type, while only one Bantu Botatwe language[7] has the Have Poss type. Three other Bantu Botatwe languages have both types, as in Tonga (M64) (2)–(3). The 'have' predicates used in these Bantu Botatwe languages are perfect(ive)s of verbs expressing 'seize, grasp', as with *jisi* in (2) above. Another example comes from Ila (M63), where *kwete*, the perfect(ive) of *kwata* 'have, hold' (from *kʊ́at 'seize' (Bastin et al. 2002)), is used in affirmative predicative possession.

(7) Ila M63, Zambia (Smith 1907, 185, glossing added)
Ndikwete shidyo.
ndi-kwete shi-dyo
SP1SG-have.PFV NCP7-food
'I have food.'

Negative predicative possession shows non-dedicated construction types which combine standard negative marking with the two main affirmative types and two dedicated types involving either specialized negative morphology or intrinsically negative verbs. Negative predicative possession can be rendered by the Comit Poss type in combination with standard negation, as in (8). A related dedicated type replaces the comitative marker with a specialized negative enclitic which we assume to mean something like 'empty, without', as in (9). We refer to this type as the Enclitic Poss type. The specialized negative enclitic, which takes forms such as *=ɓe, =be, =vye, =ve*, and *=je*, is dedicated to negative possessive and existential constructions (for the latter see also Bernander et al. 2022, 21–22).

[7] The term Bantu Botatwe refers to a group of closely related languages, further divided into Eastern and Western Botatwe. Our sample includes languages from the eastern cluster which is composed of languages from Guthrie's Zone M60 languages (see Bostoen 2009).

(8) Nyanja N31a, Zambia (Lehmann 2002, 26, glossing added)
Simuli ndi ana.
si-mu-li ndi a-ana
NEG-SP2PL-COP COM NCP2-child
'You have no children.'

(9) Nyanja N31a, Zambia (Peace Corps 1995b, 11, glossing added)
Alibe nyumba
a-li=be ny-umba
SP1-COP=NEG NCP9-house
'S/he does not have a house.'

In one language, Sena (N44), the predicate is an invariable particle, i.e., *nkhaɓe*, which contains the specialized negative enclitic *=ɓe*. Since it is also used in existential constructions and might contain petrified locative morphology (*n* < class 18 locative prefix *mʊ-?) (Meeussen 1967; Grégoire 1975), we treat this type as the Exist Poss type from Creissels' typology (Creissels 2024).

(10) Sena N44, Mozambique (Elicitation, Fieldnotes 2025)
Ífe nkháɓé mazái makú:lu
ife nkhaɓe ma-zai ma-kulu
PRO1PL NEG.EX NCP6-egg NAP6-big
'We do not have big eggs.'

(11) Sena N44, Mozambique (Elicitation, Fieldnotes 2025)
Nkaɓépó múntú anapikwaní:sa
nkhaɓe=po mu-ntu a-na-pi-kwanis-a
NEG.EX=LOC16 NCP1-person SP1-PRS-OP8-manage-FV
There is no one there who is able (to lift that).'

The negative Have Poss type involves the combination of standard negation and a 'have' predicate derived from a verb expressing 'seize, grasp', as in (12). We consider the construction in Bemba as non-dedicated because it involves standard negation, defined as the basic way(s) a language has to negate a declarative main clause (Miestamo 2005). However, it does show signs of specialization, as the 'have' predicate *kwete* is not used in affirmative predicative possession. This type of specialization is attested in other languages of the M40–M50[8] groups and in some Bantu Botatwe languages (see Table 1).

[8] The M40–M50 groups are primarily spoken in Zambia and neighbouring regions. Bemba (M42) is one of the country's seven recognized regional languages, and is primarily spoken in northeastern Zambia, being widely used in both rural and urban areas, especially in the Northern, Luapula, and Copperbelt provinces. Wisa (M51) (often referred to as Bisa) is spoken in northeastern Zambia, in Muchinga Province and in parts of Luapula Province, with smaller communities in southeastern Democratic Republic of Congo. Lamba (M54) is spoken mainly in Zambia's Copperbelt and in parts of the Democratic Republic of Congo (Haut-Katanga).

(12) Bemba M42, Zambia (Peace Corps 1995a, 40, glossing added)
Nshikwete impiva.
n-shi-kwete i-m-piva
SP1SG-NEG-have.PFV AUG-NCP9-money
'I have no money.'

The 'have' predicate may also be an intrinsically negative verb expressing 'not have, lack'. We refer to this dedicated type as the Have_{NEG} Poss type. Three such intrinsically negative verbs are attested in our language sample: *vul-a* (from *bʊ́d 'lack, be lacking, be lost' (Bastin et al. 2002)), *so-a* 'lack' (etymology unclear), and *(ny)in-a* 'have not, be without, be not'.[9]

(13) Soli M62, Zambia (van Eeden 1936, 37, glossing added)
Vavula vakaši
va-vul-a va-kasi
SP2-lack-FV NCP2-woman
'They have no wives'

(14) Sena N44, Mozambique (Torrend 1900, 165, glossing added)
Asoa mufti.
a-so-a m-futi
SP1-lack-FV NCP9-gun
'He has no gun.'

(15) Tonga M64, Zambia (Collins 1962, 63, glossing added)
Bantu banyina maanu.
ba-ntu ba-nyina ma-anu
NCP2-person SP2-not.have NCP6-intelligence
'People have no intelligence/sense.'

The negative 'have' verbs *nyin-a* in Tonga (M64) and *in-a* in Ila (M63) seem to be derived from a merger of *dɪ 'be' and *na 'with' (Bastin 2020, 49). How they became intrinsically negative is puzzling, however. One hypothesis is that the first part, rather than being a reflex of the copula *dɪ, is a petrified post-initial negative marker. Post-initial *i-* is attested in Bemba (M42), Wisa/Bisa (M51), and Lamba (M54). However, it is always used for the negation of subjunctive and related conjugations, never in negative predicative possession. Another hypothesis is that *(ny)in-a* is a negative verb like *vu-la* or *so-a*, whose etymology we do not know. However, the fact that *(ny)in-a* does not mean 'lack' or 'be lost' but rather 'have not', 'be not' does suggest an origin in a merger of *di and *na, even if the comitative marker has been replaced by or reduced to *a* 'with' in the languages in question. Bastin (2020, 49) notes that these merged forms in some languages of zone H have acquired the meaning 'be'. In the Western Botatwe language Totela (K41), *in-a* is polysemous between 'have' and 'be' (Crane 2011, 245–246; Devos and Bernander 2022, 600–601). In affirmative possessive constructions the comitative marker tends

[9] It should be noted that intrinsically negative 'have' verbs like *vula* occur in other languages in our sample as well (see also Bernander et al. 2023). However, they are only included here if they present the only way or the conventional way of expressing 'have' in unmarked present tense contexts.

to be added to disambiguate the two senses. However, the addition of the comitative marker is not required in negative possessive constructions. A similar pattern is attested in Tswana (S31), Southern Sotho (S33), and Lozi (K21), where *na* is polysemous between 'have' and 'be'. Again, affirmative possessive constructions require the insertion of an (innovated) comitative marker, whereas negative possessive constructions do not need extra marking (Creissels 2024, 208–209) (see also Fortune 1950 for similar observations). The examples below are from Southern Sotho (S33).

(16) Southern Sotho S33, South Africa (Doke and Mofokeng 1957, 309, glossing added)
Kēna lēngŏana.
ke-na le-ngo-ana
SP1SG-be COM-NCP1-child
'I have a child.'

(17) Southern Sotho S33, South Africa (Doke and Mofokeng 1957, 309, glossing added)
Hakēna ngŏana.
ha-ke-na ngo-ana
NEG-SP1SG-have NCP1-child
'I do not have any child.'

Pending further historical-comparative research, we suggest that such a pattern may have triggered reanalysis of *(ny)ina* or *na* as an intrinsically negative 'have' verb.

For negative predicative possession, the dedicated Enclitic Poss type is the most frequently attested in our sample: it occurs in 14 languages, in 11 of which it is the only strategy. The Comit Poss type occurs 11 times but mostly as an alternative to the Enclitic Poss type or the Have Poss type. The Have Poss type occurs seven times and the Have_{NEG} Poss type four times. The Exist Poss type occurs only once and is not represented in Table 1.

Table 1 summarizes the distribution of affirmative and negative predicative possession types in our sample.[10] The Comit, Enclitic, Have, and Have_{NEG} types correspond to the Type A, B, C and D auxiliaries respectively, as will be seen in Section 3. Languages tend to have more competing strategies in negative than affirmative predicative possession, which is suggestive of renewal and possibly cyclical change reminiscent of a negative existential cycle (NEC) (Croft 1991; Veselinova 2016; Veselinova and Hamari 2022; Bernander et al. 2022). Only five languages in Table 1 have only a non-dedicated (either Comit or Have) negative possessive strategy (Stage A in a NEC). Moreover, in Kunda (N411),[11] the non-dedicated Have Poss type shows signs of

[10] A dash (-) indicates that a certain type is not attested in the language in question, at least not in the available data. Strategies that belong to the same type but have different lexical input are separated by a semicolon (;). Strategies belonging to the same type but showing phonological variation are separated by an oblique stroke (/).
[11] N411 refers to 'Kunda of Mambwe district'. Kunda does not appear in Maho (2009), but is subsumed under N41 by Hammarström (2019). We propose a new Guthrie Code based on divergent features identified in Zemba's

specialization, as the 'have' auxiliary *kwete* is not used for affirmative possession. In the four languages which can use both non-dedicated strategies, the Have Poss Type typically shows similar signs of specialization. Four languages in Table 1 have both non-dedicated (Comit or Have) and dedicated (Enclitic or $Have_{NEG}$) negative possessive strategies, reminiscent of the transitional Stage A~B of a NEC, while 14 languages only have dedicated strategies (at least in present tense contexts), reminiscent of Stage B of a NEC. Bernander et al. (2022) show that Bantu dedicated negative existentials hardly ever expand into the domain of main clause negation (Stage C), and on the rare occasion that they do, language contact typically plays a crucial role. In Section 4, we describe how and to what extent both non-dedicated (Sections 4.1 and 4.3) and dedicated (Sections 4.2 and 4.4) negative possessive strategies expand to main clause negation in the Bantu languages of the Middle and Lower Zambezi.

Table 1: Affirmative and negative predicative possession types in Zambezi Bantu

Language	*Affirmative types*		*Negative types*			
	Comit	*Have*	*Comit (Type A)*	*Enclitic (Type B)*	*Have (Type C)*	*$Have_{NEG}$ (Type D)*
Bemba M42	**li+na; ba+na**	-	**li+na**	-	**kwete**	-
Wisa/Bisa M51	**li+na; wa+na**	-	**wa+na**	-	**kwete**	-
Lamba M54	**li+na**	-	**wa+na**	-	**kwete**	-
Lenje M61	**li+a**	**cité**	**li+a; ba+a**	-	**kwe; cité**	-
Soli M62	-	**kute**	-	**li-ya**	-	**vula**
Ila M63	**di/li+o; di/li**[12]	**kwete**	-	-	**kwete**	**ina; bula**
Tonga M64	**li+a/laa; ba+a**	**jisi**	-	-	**kwe; jisi**	**ina/ nyina**
Mlw. Tonga N15	**ndi**	-	-	**li-vi**	-	-
Tz. Nyanja N201	**li+ni**	-	-	**lí-je**	-	-
Tumbuka N21	**li+na**	-	-	**li-vye**	-	-
Senga N21d	**na**	-	-	**li-je**	-	-
Zam. Nyanja N31a	**li+ni**	-	**li+ndi**	**li-be**	-	-
Chewa N31b	**li+ndi**	-	-	**li-be**	-	-
Moz. Nyanja N31d	**ri+ndi**	-	**li+ndi**	**li-be**	-	-
Nserero N401	**na**	-	-	**ri-ɓe**	-	-

(2015) grammar sketch, and due to lexical similarity with Nsenga being estimated at 70% by Sawka et al. (2021, 36). Kunda (N411) is unrelated to and not to be confused with Chikunda (N42).

[12] Smith (1907, 184–185) notes that the omission of the comitative marker *o* is prevalent in relative clauses. Fowler (2000) does not mention the Comit Poss type as a possible equivalent for 'have', which might indicate that the Comit Poss type has become obsolete and has been replaced entirely by the Have Poss type.

Language	*Affirmative types*		*Negative types*			
	Comit	*Have*	*Comit (Type A)*	*Enclitic (Type B)*	*Have (Type C)*	*Have$_{NEG}$ (Type D)*
Phimbi N402	**na; ɾi+na**	-	-	**ɾi-ɓe**	-	-
Ɗema N403	**na**	-	-	**ɾi-ɓe**	-	-
Guro Tonga N404	**na**	-	-	**ɾi-ɓe**	-	-
Nsenga N41	**ri+na; na**	-	-	**li-ye**	-	-
Kunda N411	**li+na**	-	-	-	**kwete**	-
Chikunda N42	**ɾi+na; na**	-	-	**ɾi-ɓe; ɓe**	-	-
Nyungwe N43	**na**	-	-	**ɾi-ɓe**	-	-
Sena N44	**li+na; na**	-	-	-	-	**soa**
Barwe N45	**na**	-	**na; wa+na**	-	-	-
Doma S101	**na/ne**	-	**na**	-	-	-
Hwesa S102	**na**	-	**na; khaɾa+na**	-	-	-
Korekore S11	**na/ne**	-	**na**	-	-	-
Tawara S11	**na**	-	**na**	**ɾi-ɓe; ɓe**	-	-
Zezuru S12	**na/ne**	-	**na**	-	-	-
Manyika S13	**ne**	-	**ne**	-	-	-

3 Four types of 'have' predicates as negative auxiliaries

The four types of possessive predicates distinguished in Section 3 have extended uses as auxiliaries dedicated to the expression of specific categories of main clause negation. Importantly, the affirmative counterparts of these negative categories involve simplex verbal constructions, making the negative expressions structurally distinct and asymmetric. In the following subsections we look in more detail at the Comit Poss (Type A, Section 3.1), the Enclitic Poss (Type B, Section 3.2), the Have Poss (Type C, Section 3.3), and the Have$_{NEG}$ Poss (Type D, Section 3.4) possessive predicate types in our language sample and discuss their extended uses as negative auxiliaries in main clause negation. The question of whether these extended uses are suggestive of a 'negative possessive cycle', reminiscent of a NEC, will be addressed in Section 5.1.

3.1 Type A: The Comit Poss type for main clause negation

Type A involves a Comit Poss type predicate which, in combination with standard negative morphology and a main verb in the infinitive, serves to express a negative perfective. Crucially, it is only the short Comit Poss predicate, i.e., the comitative predicate *na* without a preceding 'be' verb, which has this extended use.

Type A is attested in the S10 Shona group, as well as in certain M60 Botatwe languages and in Barwe (N45), where the NEG-SP-*na* + INF construction serves as a negative TAM auxiliary, specifically encoding perfective aspect (18). The affirmative perfective, by contrast, is marked solely by the prefix *ɗa-* (19). Notably, *na* does not appear as an auxiliary in affirmative contexts, nor is the perfective marker *ɗa-* negated through standard prefixal negation.

(18) Barwe N45, Mozambique (Natural speech, Fieldnotes 2024)
Mai bzángú ndikhá:ɗa, handíná kubzikwaní:sa.
mai bzi-angu ndi-kha-ɗ-a ha-ndi-na ku-bzi-kwanis-a
but PP8-POSS.1SG SP1SG-PST.IPFV-want-FV NEG-SP1SG-have INF-OP8-manage-FV
'But mine that I wanted, I did not manage.' ('I did not manage to do what I wanted')

(19) Barwe N45, Mozambique (Natural speech, Fieldnotes 2024)
Ndiɗaɓarɪɣa paDú:nda.
ndi-ɗa-ɓaɾ-iɾ-ɣ-a pa-Dunda
SP1SG-PFV-give.birth-APPL-PASS-FV NCP16-Dunda
'I was born in Dunda.'

Such asymmetric negation is not categorical but rather restricted to specific TAM categories. In Barwe, for instance, the asymmetry observed in (18) and (19) contrasts with symmetric prefixal negation of the past imperfective (prefix *kha-*), illustrated in (20).

(20) Barwe N45, Mozambique (Elicitation, Fieldnotes 2024)
a. *Tikhagúrá mafígú (...).*
ti-kha-guɾ-a ma-figu
SP1PL-PST.IPFV-buy-FV NCP6-banana
'We were buying bananas (when you saw us).'
b. *Hatikhagúrá mafí:gu.*
ha-ti-kha-guɾ-a ma-figu
NEG-SP1PL-PST.IPFV-buy-FV NCP6-banana
'We were not buying bananas (when you saw us).'

An example of *na* co-occurring with standard negation – without additional TAM marking – and encoding the nondum ('not yet') meaning is provided in (21) for Ila (M63). Interestingly, Ila uses Have Poss or Have$_{NEG}$ Poss type predicates in possessive predication rather than the Comit Poss type. We return to this pattern in Section 5.2.

(21) Ila M63, Zambia (Smith 1907, 165)
Tatuna kubona.
ta-tu-na ku-bona
NEG-SP1PL-have INF-see
'We have not (yet) seen.'

In Zezuru (S12), the negative Comit Poss construction may further host the persistive aspectual marker *ci-*, yielding the phasal polarity concept 'no longer' (22). It may also occur in non-main clause negation, in which case it takes the post-initial negative marker *si-* (23). More unexpectedly, in Hwesa (S102), a Mozambican Shona variety, the future tense marker *za-* may also be incorporated into this construction (24). The ability to encode a range of negative TAM categories beyond the perfective suggests a robust expansion of the negative possessive into main clause negation in the Shona group.

(22) Zezuru S12, Zimbabwe (Fortune 1955, 330)
Handicina kutora.
ha-ndi-ci-na ku-tor-a
NEG-SP1SG-PERS-have INF-take-FV
'I no longer took.'

(23) Zezuru S12, Zimbabwe (Fortune 1955, 330)
Ndisina kutora.
ndi-si-na ku-tor-a
SP1SG-NEG-have INF-take-FV
'I who have not taken' / 'I not having taken.'

(24) Hwesa S102, Mozambique (Elicitation, Fieldnotes, 2025)
Hakuzá:ná: kuyí:tá: cinwá:nhu.
ha-ku-za-na ku-yit-a ci-nwanhu
NEG-SP17-FUT-have INF-do-FV NCP7-ceremony
'There will not be held any ceremony.'

Table 2 lists the languages in our sample which attest the Type A negative auxiliary construction and shows which TAM category it helps to express in the absence of further TAM marking on the auxiliary (i.e., either nondum or PST/PFV). The table further shows whether the language also uses the Comit Poss type for negative possessive predication and whether the language has other negative auxiliary types. It is interesting to note that Barwe, traditionally classified within the Sena cluster (see Doke 1931; Hammarström et al. 2025), is the only N40 language to exhibit Type A. With regard to this linguistic feature, Barwe demonstrates a close alignment with the Shona group.

Table 2: Distribution of the Comit Poss type for main clause negation

Language	*Comit Poss Type for negative possession?*	*Type A auxiliary*	*Other negative auxiliary types?*
Lenje M61	-	✓ (nondum)	✓ (Type C)
Soli M62	-	✓ (nondum)	✓ (Type D)
Ila M63	-	✓ (nondum)	✓ (Type C & D)
Barwe N45	✓	✓ (PFV)	-
Doma S101	✓	✓ (PST/PFV)	-
Hwesa S102	-	✓ (PST/PFV)	✓ (Type B)
Korekore S11	✓	✓ (PST/PFV)	-
Tawara S11	-	✓ (PST/PFV)	✓ (Type B)
Zezuru S12	✓	✓ (PST/PFV)	-
Manyika S13	✓	✓ (PST/PFV)	-

3.2 Type B: The Enclitic Poss type for main clause negation

Type B involves an Enclitic Poss type predicate which, in combination with a specialized negative enclitic and a main verb in the infinitive, serves to express a negative perfective. The pattern is conceptually identical to Type A but consists of different morphological material and is found mostly in languages from Guthrie's Zone N. The construction consists of a copulative element, typically a reflex of the Proto-Bantu copula *dı and a specialized negative enclitic, which occurs in several different forms, such as *=ɓe, =be, =vye, =ve,* and *=je*. The enclitic is specialized in the sense that it only occurs in negative possessive and existential constructions, including in the extended auxiliary use. It does not occur as the negator in other constructions in the languages in the sample. The distributional pattern is illustrated in examples (25)–(27) from Phimbi (N402). The negative possessive use of *dibe* – which we use as a common denominator for the Enclitic Poss type – is illustrated in (25); the auxiliary use is shown in (26); and lastly, the use of the standard negator *ɾini* is shown in an imperfective TAM category in (27):

(25) Phimbi N402, Mozambique (Elicitation, Fieldnotes 2024)
Niríɓe: má:ɾi.
ndi-ɾi=ɓe Ø-maɾi
SP1SG-COP=NEG NCP10-money
'I do not have money.'

(26) Phimbi N402, Mozambique (Elicitation, Fieldnotes 2024)
Ningadakhaɾa dzúro ndiɾíɓe kukuwó:na…
ni-ngada-khaɾ-a dzuro ndi-ɾi=ɓe ku-ku-on-a
SP1SG-CTFL-be-FV yesterday SP1SG-COP=NEG INF-OP2SG-see-FV
'If I had not seen you yesterday…' (lit. 'If I had been I did not see you.')

(27) Phimbi N402, Mozambique (Elicitation, Fieldnotes 2024)
Ticaguɾa ɾíní: mabaná:na.
ti-ca-guɾ-a ɾini ma-banana
SP1PL-IPFV-buy-FV NEG NCP6-banana
'We are not buying bananas.'

Functionally, Type B constructions are mostly used for the negation of the perfective, as illustrated in (26), which typically has present state readings with stative verbs, such as the Guro Tonga (N404) verbs *tokot-a* and *ibv-a* 'be(come) ripe/mature' in (28):

(28) Guro Tonga N404, Mozambique (Natural speech, Fieldnotes[13] 2025)
Mami yáwo yaɾíɓe kutokó:ta, yaɾíɓe kwí:bva.
ma-mi ya-wo ya-ɾi=ɓe ku-tokot-a ya-ɾi=ɓe ku-ibv-a
NCP6-marriage PP6-POSS.3PL SP6-COP=NEG INF-ripen-FV SP6-COP=NEG INF-ripen-FV
'Their marriages are not ripe, they are not mature.'

[13] All the Guro Tonga (N47) data comes from fieldwork conducted by Abílio Muilima together with Aron Zahran.

For past state readings, e.g., with the verb *net-a* 'be(come) tired' in Guro Tonga (N404), the past imperfective *kha-*[14] is added to perfective-resultative *ɗa-* in the affirmative (29a) and to *ɾiɓe* in the negative (29b). Standard negation with the post-verbal particle *ɾini* is not possible, again illustrating the formal asymmetry between perfective marking in the affirmative (*ɗa-*) and negative (*-ɾiɓe*).

(29) Guro Tonga N404, Mozambique (Elicitation, Fieldnotes 2024)

a. *Íyé: akhaɗané:tá (*ɾini) máciɓése*

iye	a-kha-ɗa-net-a	ma-ciɓese
PRO.3SG	SP1-PST-PFV-be(come).tired-FV	NCP6-morning

'S/he was tired this morning.' (lit. 's/he had tired.')

b. *Íyé akharíɓé kunétá ɾéró macíɓese.*

iye	a-kha-ɾi=ɓe	ku-net-a	ɾeɾo	ma-ciɓese
PRO.3SG	SP1-PST-COP=NEG	INF-be(come).tired-FV	today	NCP6-morning

'S/he was not tired this morning.' (lit. 'S/he had not tired.')

Beyond the canonical constructions with the copula **dɪ* and the negative enclitic in its varying forms, the Type B construction shows some variation that, from a diachronic perspective, can be interpreted as subsequent development. Leaving the diachronic analysis for later, we will simply describe the variation observed here.

First, the auxiliary constructions with *dibe* sometimes undergo univerbation and surface as contracted simplex forms. The infinitive marker on the lexical verb may be phonologically reduced or completely eroded, which results in contracted forms such as (30). When the erosion of the infinitive is further combined with the erosion of the copula,[15] very little morphological material is left from the original complex construction. In example (31) from Nserero (N401), it is synchronically possible to simply analyse *ɓe-* as a TAMP prefix encoding negative perfective (see Section 5.1).

(30) Nsenga N41 (Ranger 1928, 233, glossing added)

Mfumu iliyolawira.[16]

m-fumu	i-li=ye	ku-lawir-a
NCP9-chief	SP9-COP=NEG	INF-speak-FV

'The chief has not spoken.'

[14] In these complex forms, the imperfective semantics of *kha-* are overwritten by the perfective/resultative semantics of *ɗa-* / *-ɾiɓe*.

[15] This seems especially frequent in the N40 cluster when the final vowel of the subject prefix is the same as the copula, i.e., /ɾi/ → [i] / i __.

[16] On the surface, the infinitival prefix may be eroded, although the compound form is still synchronically available in all the sample languages. In the glossing, we indicate the full, uncontracted form unless the example is specifically meant to highlight the ongoing grammaticalization process (see examples (31), (43f), and (53), along with a more detailed discussion in Section 5.1).

(31) Nserero N401, Mozambique (Elicitation, Fieldnotes 2024)
Dzuɾo, tíɓeguɾe βibanana.
dzuɾo ti-ɓe-guɾ-e βi-banana
yesterday SP1PL-PFV.NEG-buy-EMPH NCP8-banana
'Yesterday, we didn't buy bananas.'

Secondly, *dibe* may occur with additional tense-aspect marking. This was already observed in (29), where past imperfective *kha-* was shown to render past state readings, while dynamic verbs get past perfective semantics. Another TAM marker that can be added to *dibe* in most languages of the N40 cluster is the persistive *ka-*, which is used to give the construction a nondum sense typically translatable as 'not yet', but sometimes also as 'never' or 'before'.

(32) Chikunda N42, Zambia (Elicitation, Fieldnotes 2024)
Nikaɾíɓé: kuguɾa mafí:gu
ni-ka-ɾi=ɓe ku-guɾ-a ma-figu
SP1SG-PERS-COP=NEG INF-buy-FV NCP6-bananas
'I have never bought bananas.'

(33) Nsenga N41, Mozambique (Elicitation, Fieldnotes 2024)
Tikaɾíyúúguɾa vikó:nde
ti-ka-ɾi=ye ku-guɾ-a vi-konde
SP1PL-PERS-COP=NEG INF-buy-FV NCP8-bananas
'We have not yet bought bananas.'

Thirdly, the negative enclitic is used with other copulative elements than *di. This is the case in Nsenga (N41) and in the Tumbuka-Kamanga (N21c) variety described by Young (1932b).[17] Most descriptions of Tumbuka (N21) (e.g., Turner 1952; Vail 1972; Kishindo and Lipenga 2005; Kiso 2012) do not mention the *dibe* construction as a TAM auxiliary, but Young (1932b) and also Nurse (2008a), who may have taken his data from Young, mention *lije*/*liv(y)e* as an alternative, more rare, negation strategy. Young (1932b, 138) writes that the *lije*/*liv(y)e* form means 'be without' and is "only found in the present indicative". The present tense readings might be an artefact of very literal translations of his examples,[18] e.g., (34), although, in other parts of his grammar, there are examples which are clearly used with more perfective-like TAM semantics, as in (35).

[17] The Tumbuka varieties described by Kiso (2012) and Vail (1972) are from the Mzimba, Chitipa, and Rumphi districts of Malawi. Turner's (1952) dictionary also appears to draw from Malawian Tumbuka, while Kishindo and Lipenga (2005) do not specify where their data is from. Young's (1932b) description, on the other hand, is said to represent the speech of the Tumbuka-Kamanga people, which he locates just east of the Luangwa River in modern Zambia, stretching towards, and across, the Malawian border (Young 1932b, 2; 1932a, 21–22).
[18] See Ranger (1928, 60), who explicitly interprets the literal and de facto meaning for Nsenga, e.g., with the verb 'come': "I-am-without coming, i.e. I have not come, or I did not come".

(34) Tumbuka-Kamanga N21c (Young 1932b, 138, glossing added)
Nilivye kuchikhumba icho wandipa.
ni-li=vye ku-chi-khumba-a icho u-a-ndi-p-a
SP1SG-COP=NEG INF-OP7-want-FV 7.DEM SP2SG-PFV-OP1SG-give-FV
'I am without desiring the thing which you have given me.'

(35) Tumbuka-Kamanga N21c (Young 1932b, 167, glossing added)
Chifikiro, ulije kwiza kandiwona.
chi-fikiro u-li=je ku-iz-a ka-ndi-won-a
NCP7-arrival SP2SG-COP=NEG INF-come-FV AM-OP1SG-see-FV
'Since arrival, you have not come to see me.'

Although we differ from Young in our analysis of the TAM value of the basic form, the fact remains that for other TAM readings in both Nsenga (N41) and Tumbuka-Kamanga (N21c), the negative enclitic *=je/=v(y)e* occurs with the copulative verbs *w-a* 'be' and/or *enze*[19] 'be.PST'. When the copulative element is not *li,* the TAM semantics frequently expand beyond the domain of the perfective, e.g., the past imperfective in (36), or the 'continuous future' in (37).

(36) Nsenga N41 (Ranger 1928, 84, glossing added)
Tumpwisi twenzeveumwe.
tu-mpwisi tu-enze=ve ku-mw-e
NCP13-child SP13-be.PST=NEG INF-drink-NEG
'The kids were not drinking.'

(37) Tumbuka-Kamanga N21c (Young 1932b, 167, glossing added)
Ndiŵengevye kuchikhumba.
ndi-ŵ-e-nge=vye ku-chi-khumba-a
SP1SG-be-FUT-IPFV=NEG INF-OP7-want-FV
'I will not want the thing.'

In terms of geographic distribution, the Type B auxiliary construction is centred around the Zambezi River moving downstream from the confluence area with the Luangwa River. The highest concentration of languages with the *dibe* construction are found in the N40 group, where it is widespread, except in Sena (N44) and Barwe (N45). In the rest of our sample, i.e., languages closer to Lake Malawi, such as Malawian Tonga (N15), most Tumbuka N21 doculects (see Turner 1952; Vail 1972; Kishindo and Lipenga 2005; Kiso 2012), Tanzanian Nyanja (N201) (see Ngonyani 2020), and the whole Chewa-Nyanja N31 cluster, the *dibe* construction typically only exists in negative existential and possessive constructions, not in the extended auxiliary use.[20] The negative perfective is thus marked with standard negation, e.g., prefixation

[19] This is probably a spirantized form of the auxiliary *-nga* 'be like', caused by the perfective suffix.

[20] We have collected our own field data on the Chewa and Nyanja varieties and we have consulted much of the rich literature that exists (e.g., Rebmann 1877; Riddel 1880; Atkins 1950; Missioários de Companhia de Jesus 1964; Harding 1966; Mchombo 1987, 2004; Peace Corps 1995b; Lehmann 2002; Kishindo and Lipenga 2003; Kiso 2012; Downing and Mtenje 2017). Only in one source (Watkins 1937, 136) have we been able to find the auxiliary construction with *dibe* mentioned. There is no convincing dialectal or chronological explanation for the attestation by Watkins. However, the phonology of a contracted simplex form suggests that it might be influence from

and final vowel *-e* in Chewa (N31), as in (39), whereas *dibe* is restricted to examples like (38). In Tumbuka Kamanga (N21c), from closer to the Luangwa River, as well as Senga (N21d), from a nearby area in Zambia, we do find *lije* as a negative perfective auxiliary (see Nkhata 2019, 105).

(38) Chewa N31, Malawi (Mchombo 1987, 17, glossing and translations added)
Tilibe chakudya.
ti-li=be cha-kudya
SP1PL-COP=NEG NCP7-food
'We have no food.'

(39) Chewa N31, Malawi (Mchombo 1987, 22)
Sanadye kanthu dzulo
si-a-na-dy-e ka-nthu dzulo
NEG-SP1-PFV-eat-NEG NCP12-thing yesterday
'S/he did not eat anything yesterday.'

Beyond Zone N, we also find the Type B auxiliary in the outliers of other groups such as Soli (M62), Tawara (S11), and Hwesa (S102), which all share borders and have long histories of contact with zone N languages. While considered members of the S10 Shona cluster, Tawara and Hwesa constitute border languages between the S10 and N40 clusters and speakers are thus highly multilingual and communicate with ease with both their N40 and their S10 neighbors. At least in the case of Hwesa, speakers mix freely between N40 and S10-like grammatical constructions, lexical items, and phonology. The negative 'have' auxiliaries are no exception, and speakers use either Type A or Type B auxiliaries with no change in meaning (40):

(40) Hwesa S102 (Elicitation, Fieldnotes 2025)
a. *Muká:dzí aríɓúúphíká nyamunsi.*
mu-kadzi a-ri-ɓe ku-phik-a nyamunsi
NCP1-woman SP1-be-NEG INF-cook-FV today
'The woman did not cook today.'
b. *Muká:dzi hánúúɓíka nási*
mu-kadzi ha-a-na ku-ɓik-a nasi
NCP1-woman NEG-SP1-have INF-cook-FV today
'The woman did not cook today.'

For a summary of the distribution of Type B *dibe*, see Table 3.

Nsenga (N41). Watkins (1937, 136) gives *Nilidjó tcitá* 'I have not done' as a contracted form of *ni-li-djé ku-tcit-á.* The erosion of /k/ and vowel coalescence resulting in a rounded, mid, back vowel is frequent in Nsenga (N41), both with *dibe* (see example (30)) and with other grammaticalized TAM markers, e.g., the present marker *o-* from *-a+ku-* (see Ranger 1928, 48). In Chewa, the same present marker is attested as the full *ku-*. While it is possible that the *dibe* auxiliary construction is used in certain Nyanja-Chewa varieties, other forms seem to be widely and strongly preferred.

Table 3: Distribution of the Enclitic Poss type for main clause negation

Language	*Enclitic Poss Type for negative possession?*	*Type B auxiliary*	*Other negative auxiliary type(s)?*
M62 Soli	✓	✓ (PFV)	✓ (Types A & D)
N15 Malawian Tonga	✓	-	-
N201 Tanzanian Nyanja	✓	-	-
N21c Tumbuka-Kamanga	✓	✓ (PFV/PST; FUT)	-
N21d Senga	✓	✓ (PFV)	-
N31 Chewa-Nyanja	✓	-	-
N401 Nserero	✓	✓ (PFV)	-
N402 Phimbi	✓	✓ (PFV)	-
N403 Dema	✓	✓ (PFV)	-
N404 Guro Tonga	✓	✓ (PFV)	-
N41 Nsenga	✓	✓ (PFV; PST.IPFV; FUT)	-
N42 Chikunda	✓	✓ (PFV)	-
N43 Nyungwe	✓	✓ (PFV)	-
S102 Hwesa	✓	✓ (PFV)	✓ (Type A)
S11 Tawara	✓	✓ (PFV)	✓ (Type A)

3.3 Type C: The Have Poss type for main clause negation

In Type C a Have Poss type predicate is used as an auxiliary followed by the main verb in the infinitive to express main clause negation, either negative past resembling the negative perfectives of Types A and B, or a more deviant negative future. The negative possessive auxiliary in type C is *kwe*, most probably a shortened form of *kwete*, the perfect(ive) stem of *kwata* 'hold, have', i.e., from *kʊ́at 'seize' (Bastin et al. 2002). It combines with the negative marker *ta-*, which occurs pre-initially in main clauses and post-initially in relative clauses. No other TAM prefixes are included.

Type C is a minor pattern, attested only in two Bantu Botatwe languages, i.e., Lenje (M61) and Tonga (M64). The use of *kwe/kwete* in (negative) possessive constructions is more widely attested in several M40/M50/M60 languages. In Ila (M63), *kwete* seems to be largely restricted to affirmative possessive constructions, as in (41a), while negative possession instead makes use of intrinsically negative verbs like *in-a* 'not have' or *bul-a* 'lack', as in (41b) (see also Section 3.4). In Bemba (M42), Bisa/Wisa (M51), and Lamba (M54), *kwete* may occur in negative possessive constructions, alongside an alternative strategy combining the verb 'to be' with the comitative particle *na*, as seen in (42) for Lamba (Madan 1906, 72; Schoeffer 1907, 60).

Here too, *kwete* is marked with the pre-initial negative prefix *ta-*. However, in none of these languages is *kwete* used as an auxiliary for the expression of main clause negation, at least as far as the available data allow us to conclude.[21]

(41) Ila M63 (Smith 1907, 185)
a. *Ndikwete shidyo.*
ndi-kwete shi-dyo
SP1SG-have NCP7-food
'I have food.'
b. *Ndabula shidyo.*
ndi-a-bul-a shi-dyo
SP1SG-PFV-lack-FV NCP7-food
'I have no food.'

(42) Lamba M54 (Doke 1938, 328)
a. *Tawakwete mano.*
ta-wa-kwete ma-no
NEG-SP2-have NCP6-sense
'They have no sense.'
b. *Nsingawa nembusi.*
nsi-nga-w-a ne-m-busi
NEG.SP1SG-NONDUM-be-FV COM-NCP9-goat
'I have not yet got any goats.'

In Lenje (M61), just as in Lamba, *kwee* is used to express negative possession (43a).[22] Unlike in M40/M50 languages, however, *kwee* in Lenje also functions as an auxiliary. When followed by the main verb in the infinitive, it expresses a negative past as in (43d), whose simplex affirmative counterparts may express either remote (43b) or immediate past (43c). The auxiliary *kwee* + infinitive is also used in past relative tenses, as in (43e). In main clause negation, the auxiliary takes the pre-initial negative marker *ta-* as in (43d), whereas it takes the post-initial *ta-* in relative clauses, as in (43e). Erosion and merger of the auxiliary and the infinitival prefix leads to univerbation, yielding a simplex form, as in (43f) (see Section 5.1).

(43) Lenje M61 (Kagaya 1987, 23, 36; Madan 1908, 51, 39–40)
a. ta-tu-kwe
NEG-SP1PL-have
'we do not have'
b. tw-a-ká-bunjik-à
SP1PL-PST-REM-gather-FV
'we gathered' (remote past)

[21] It should be noted that handwritten notes in Smith's (1907) Ila grammar give alternatives/corrections for some negative forms which do include *kwe*. The forms with *kwe* express either a negative future or a negative past.
[22] This use of *kwe(e)* is only reported by Madan (1908, 51). Kagaya mentions the Type A pattern and a pattern involving the verb *cita* 'do', either on its own or preceded by the copula *li* 'be'.

c. tw-a-búnjík-à
SP1PL-PST-gather-FV
'we gathered' (immediate past)

d. tá-tú-kwée kú-bunjik-à
NEG-SP1PL-have INF-gather-FV
'we did not gather' (remote/immediate past)

e. ba-sankwa bá-tá-kwée ku-ya ku-Lusaka cíilò
NCP2-man REL2-NEG-have INF-go NCP17-Lusaka yesterday
'men who did not go to Lusaka yesterday'

f. tatukwe kulima / tatukolima
ta-tu-kwe ku-lim-a / ta-tu-ko-lim-a
NEG-SP1PL-have INF-cultivate-FV / NEG-SP1PL-PFV.NEG-cultivate-FV
'we did not cultivate'

Tonga (M64) shows the same usage of *kwe* for both negative possession (44a) and main clause negation. Unlike Lenje (M61), however, the tense specifications are unexpected, both in comparison to Lenje and with the other types more generally. Instead of expressing a negative perfective or past tense, the auxiliary *kwe* in Tonga is used to express negative future. The auxiliary combines with the pre-initial negative marker *ta-* but does not take any additional TAM markers, as seen in (44b).

(44) Tonga M64 (Carter 1974, 9)

a. *Pé, tatukwé cilyo pé.*
pé ta-tu-kwé ci-lyo pé
no NEG-SP1PL-have NCP7-food no
'No, we do not have any food.'

b. *Pé, tacikwé kukonzyeka pé.*
pé ta-ci-kwé ku-konzyek-a pé
no NEG-SP7-have INF-be.possible-FV no
'No, it will not be possible.'

The future reading in the absence of any additional TAM marking is surprising. Maybe the persistence of the lexical semantics of *kwata* 'hold' plays a role here. Ila (M63), where the use of *kwete* in predicative possession is restricted to affirmative possessive constructions and either *bula* or *ina* is used in the negative counterparts, has a homophonous auxiliary *kwe,* which combines with standard negation to express non-volition, as in (45). Volition is a common source meaning for future auxiliaries, but further research is needed to ascertain whether an intermediate volitive meaning triggered the use of *kwe* as a future auxiliary in Tonga (M64).

(45) Ila M63 (Fowler 2000, 325)
Tatukwe kusinka maanda.
ta-tu-kwe ku-sink-a ma-anda
NEG-SP1PL-want INF-caulk-FV NCP6-wall
'We do not want to caulk the walls.'

Table 4 lists the languages with predicative possession of the Have Poss type and indicates whether or not they have extended uses as negative auxiliaries in main clauses.

Table 4: Distribution of the Have Poss type for main clause negation

Language	*Have Poss type for negative possession?*	*Type C auxiliary*	*Other negative auxiliary type(s)?*
Bemba M42	*kwete*	-	-
Bisa/Wisa M51	*kwete*	-	✓
Lamba M54	*kwete*	-	-
Lenje M61	*kwee*	✓ (PST)	✓ (Type A)
Ila M63	*kwete*	-	✓ (Type A, Type D)
Tonga M64	*kwe*	✓ (FUT)	-

3.4 Type D: The HAVE$_{NEG}$ Poss type for main clause negation

In Type D the predicator attested in predicative possession of the Have$_{NEG}$ Poss type is used as an auxiliary followed by the main verb in the infinitive to express main clause negation. Intrinsically negative verbs are known to be used for the expression of negation in Bantu languages. However, according to Bernander et al. (2023), which is a cross-linguistic study of Bantu negative verbs, they only rarely develop into standard main clause negators but are devoted rather to expressing specific functions either as an alternative to or in complementary distribution with standard negation. This is certainly the case in Soli (M62), where the auxiliary *vul-a* 'lack' may be used as an alternative to standard negation with pre-initial *ka-* to express a negative past. This is illustrated in (46). The past tense reading is not solely an effect of the auxiliary construction but is co-expressed by the TAM prefix *a-*.

(46) Soli M62 (van Eeden 1936, 37, 23)

a. u-vul-a ma-no
SP2SG-lack-FV NCP6-cleverness
'You are not clever.'

b. nda-vul-a ku-y-a=ko
SP1SG.PST-lack-FV INF-go-FV=LOC17
'I did not go there.'

c. ka-nda-von-a
NEG-SP1PL.PST-see-FV
'I did not see.'

In Ila (M63) the intrinsic negative auxiliary *ina* is more widely distributed in main clause negation. The auxiliary, which is marked solely for subject, expresses a negative perfect(ive) meaning (47b) as an alternative to a simplex form with the standard negative pre-initial marker *ta-* in combination with the perfect(ive) final (47c).

(47) Ila M63 (Fowler 2000, 207, 167)
a. n-ina tu-lyo
SP1SG-not.have NCP13-food
'I do not have food.'
b. mu-ntu u-ina ku-bon-a
NCP1-person SP1-not.have INF-see-FV
'The person has not seen.'
c. ta-tu-bwene
NEG-SP1PL-see.PFV
'We have not seen.'

However, the role of *ina* in standard negation does not stop here, as it is also used to express negative past tenses, a negative past imperfective, and also a future tense. In contrast to the negative perfect(ive), these complex tenses do not have an alternative simplex form. The TAM markers that distinguish these complex tenses from the perfect(ive) one are attached to the main verb rather than to the auxiliary. In one past tense, as well as in the future tense, the auxiliary is followed by a finite verb form rather than by the infinitive.[23]

(48) Ila M63, Zambia (Smith 1907, 167, 168, 172)
a. tw-ina u-ku-bon-a
SP1SG-not.have NCP17-INF-see-FV
'We were not seeing.'
b. tw-ina u-ka-bon-a
SP1SG-not.have INF-PST-see-FV
'We did not see.'
c. tw-ina ni tw-aka-bon-a
SP1SG-not.have WHEN SP1PL-REM.PST-see-FV
'We did not see.'
d. tw-ina ni tu-ka-bon-a
SP1SG-not.have WHEN SP1PL-FUT-see-FV
'We shall not see.'

Table 5 lists the languages with predicative possession of the Have$_{NEG}$ Poss type and indicates whether or not they have extended uses as negative auxiliaries in main clauses.

[23] The main verb is introduced by what seems to be the subjunction *ni* (Smith 1907, 447; see also Nurse (2008a), who lists it as one of the pre-initial formatives in Ila). We are not sure what its function is in this particular construction.

Table 5: Distribution of the $Have_{NEG}$ Poss for main clause negation

Language	*$Have_{NEG}$ Poss type for negative possession?*	*Type D*	*Other negative auxiliary type(s)?*
Soli M62	*vula*	✓ (PST)	Type A
Ila M63	*ina* *bula*	✓ (PRS/PERF, PST IPFV, PST, FUT) -	Type A
Tonga M64	*nyina*	-	Type C
Sena N44	*soa*	-	-

4 Typological considerations

Predicates used in predicative possession are not common sources of dedicated negative auxiliaries in Bantu main clause negation. Comitative *na* is rather known to be a source item for narrative, progressive/imperfective, future, past, and 'not yet' TA prefixes (Nurse 2008b, 240). Only the 'not yet' or nondum prefix is dedicated to negation. Veselinova and Devos (2021), in their study of nondum expressions in the Bantu domain, assume that *na-*, attested in 13 Eastern Bantu languages in their sample, was initially used in combination with standard negation to express a negative perfect/recent past meaning in more or less symmetric negation. The 'not yet' reading was then the result of the conventionalization of a negative inference. The authors furthermore suggest that subsequent changes in the TAMP system and the replacement of affirmative *na-* with other morphemes might have given rise to dedicated 'not yet' markers without a correlative in the affirmative domain, as seen in, for example, Zaramo (G33) and Shangaji (P312), where *na-* expressing negative perfect/'not yet' does not correlate with an affirmative perfect.

(49) Zaramo G33 (Nurse 2008a)
a. tu-gul-ile
SP1SG-buy-PFV
'We have bought.'
b. ha-tu-na-gul-a
NEG-SP1PL-PFV-buy-FV
'We have not bought (yet).'

(50) Shangaji P312 (Veselinova and Devos 2021, 478)
Si-náá-c-e nkaása ki-c-i ŋgíisi
NEG.SP1SG-NONDUM-eat-FV NCP9.tortoise SP1SG-eat-PFV NCP9.squid
'I have not eaten tortoise yet. I have eaten squid.'

The resulting asymmetry had already been noted by Nurse and Hinnebusch (1993) and also by Wald (1981), who confirms that in many of these Eastern Bantu languages the use of *na-* has "further deteriorated (through replacement by other markers) so that it is restricted to the negative perfect", a label he uses to refer to 'not yet/before' (Wald 1981, 143). The 'have' predicates involved in asymmetric negation patterns in the Zambezi Bantu languages could shed further

light on these asymmetric nondums. Maybe, rather than evolving into asymmetric negative markers, they may have been asymmetric from the outset. Cross-linguistically, asymmetric negation, where the main verb is less finite in the negative than in the affirmative construction, is not unexpected. Miestamo (2005, 73–96) pays ample attention to asymmetries pertaining to finiteness distinguishing several subtypes. His A(symmetry)/Fin(ite)/Neg(ative)-F(inite) E(lement) subtype, where the negative marker attaches to the finite element (i.e., the auxiliary) of the construction, is reminiscent of our A, B, and C types. Our Type D can be subsumed under his A(symmetry)/Fin(ite)/Neg(ative)Verb subtype, where the finite element of the construction is a negative verb and the main or lexical verb loses its finiteness. Our data also show shifts between the two types. In Nserero (N401) the loss of the 'be' copula turns the negative enclitic into an inherently negative predicative element. Although the negative construction in (31) (Section 3.2) clearly derives from a Type B construction, it is synchronically a Type D one. Similarly, the Type D negative 'have' verb *ina* in Ila (M63) seems to have derived from a Type A construction through reanalysis as an inherently negative verb and loss of negative morphology.

Miestamo (2005) evokes stativity of negation as a general functional motivation for asymmetric negation pertaining to finiteness. Both the loss of finiteness of the main verb and the stativity of the auxiliary (the 'have' predicates in our sample) iconically reflect the stativity of negation. The use of 'have' predicates as auxiliaries for the expression of main clause negation is thus not unexpected from a typological perspective. However, the question remains as to why they are, at least initially, restricted to the expression of negative perfectives. In Section 5, we address this question and suggest a grammaticalization pathway from predicative possession to the negative auxiliary being involved in the expression of main clause perfectives.

5 Historical-comparative analysis

5.1 Functional expansion and grammaticalization

As already implied in Sections 3 and 4, the use of negative possessive predicates for main clause negation can be understood as the result of a grammaticalization pathway from negative possession to main clause negative perfectives, possibly reminiscent of at least some stages of what, in the literature, is known as a 'negative existential cycle' (NEC).

A 'bridging context' is considered the key step of semantic change in a grammaticalization pathway (see Heine 2002). It arises when a new inferred meaning becomes available in addition to the original meaning. In the grammaticalization of negative 'have' auxiliaries, the bridging context arises when the negative possessive predicate, which in its source construction takes nominal complements (51), starts to take nominalized verbs as its complements (52). This context is ambiguous: while (52) literally expresses a present 'lack of falling', it naturally implies a prior 'non-occurrence of fall(ing)'. In other words, event negation is inferred from the current lack of its supposed result. Although the possessive interpretation is pragmatically more strained, perhaps especially with inanimate subjects such as 'the tree' in (52), it is still compositionally available as a literal interpretation. Nonetheless, the pragmatically more plausible inference becomes conventionalized as the default interpretation.

(51) Guro Tonga N404, Mozambique (Elicitation, Fieldnotes 2025)
Múti uríɓé masámba.
mu-ti u-ɾi=ɓe ma-samba
NCP3-tree SP3-COP=NEG NCP6-leaf
'The tree is without leaves.' (i.e., 'The tree does not have any leaves')

(52) Guro Tonga N404, Mozambique (Elicitation, Fieldnotes 2025)
Múti uríɓé kú:g͡ɓa.
mu-ti u-ri=ɓe ku-gw-a
NCP3-tree SP3-COP=NEG NCP15-fall-FV
'The tree is without falling.' (i.e., 'The tree has not fallen')

Following Heine (2002), the subsequent 'switching context' occurs when the original interpretation is not just dispreferred but becomes entirely unavailable. In the case of the negative 'have' auxiliaries, the switching context can be identified as the stage when formal grammaticalization processes start to operate. As illustrated in Section 3, different types of complex negative 'have' constructions display morpho-phonological reduction and phrasal univerbation in Lehmann's (2020) sense, i.e., the coalescence of a formerly syntagmatic string into a single grammatical word. This is attested for types A, B, and C, which may all surface as simplex forms such as *hánupezesa* < *hánakupezesa* (53); *tíɓegure* < *tiriɓe kugure* (31); and *tatukolima* < *tatukwe kulima* (43f). The erosion of the infinitival marker is not a regular connected speech effect but reflects a reduction process specifically associated with the grammaticalization of these auxiliaries. The contracted outcomes are best analysed as simplex verb forms with grammaticalized TAMP prefixes rather than as auxiliary constructions, as reflected in the glossing in (31), (43f), and (53) (even though the full complex auxiliary forms are synchronically available). Consequently, the univerbation marks the point where the possessive semantics are no longer compositionally recoverable and the TAMP interpretation has been fully grammaticalized along the V > AUX > TAMP path.

(53) Barwe N45, Mozambique (Natural speech, Fieldnotes 2024)
Máe hánupezesa shkó:la.
Ø-mae ha-a-nu-pezes-a Ø-shkola
NCP1a-mother NEG-SP1-NEG.PFV-finish-FV NCP9-school
'(His/her) mother did not finish school.'

When negative possessive predicates grammaticalize into negative auxiliaries for the expression of main clause negation, they typically start out by expressing negative perfectives. This can be deduced from the fact that the majority of these negative auxiliaries express negative perfectives when occurring without additional TAM morphology and it is in line with the semantic inference discussed in relation to example (52), which can be assumed to be strongly available especially in the initial stages of the grammaticalization process. The nondum or 'not yet' sense attested in some languages can be interpreted as a side effect of the grammaticalization process. Newly grammaticalized verb constructions tend to be pragmatically stronger than equivalent older expressions (Bybee et al. 1994). They are thus well fitted to carry the 'not yet' meaning, which Hyman and Watters (1984) refer to as inherently focused. In most languages the usage range of the negative auxiliaries derived from possessive predicates seems to remain restricted to the expression of negative perfectives. This could suggest that grammaticalization has happened relatively recently. It might also be an effect of the defective nature of the (shortened) Comit Poss and the Enclitic Poss type predicates, especially. In Nyanja (N31d), a language which has not developed the negative auxiliary use, the Enclitic Poss type predicate can only occur in present and perfect(ive) (54) TAM contexts, whereas other TAM categories like the future (55) must be expressed through a periphrastic Comit Poss construction. The Have_{NEG}

Poss predicate *ina* in Ila (M63), plausibly derived from a Comit Poss type predicate, retained its defective nature as a negative auxiliary. Additional TAM marking occurs on the main verb rather than on the auxiliary, as seen in (48) in Section 3.4.

(54) Nyanja N31d, Mozambique (Missioários de Companhia de Jesus 1964, 99)
Analibe nyumba.
a-na-li=be n-yumba
SP1-PFV-COP=NEG NCP9/10-house
'S/he did not have a house.'

(55) Nyanja N31d, Mozambique (Missioários de Companhia de Jesus 1964, 99)
Sindidzakhala ndi
si-ndi-dza-khal-a ndi
NEG-SP1SG-FUT-be-FV COM
'I will not have.'

Last but not least, the grammaticalization of negative possessive predicates into negative auxiliaries shows signs of cyclical change reminiscent of a NEC. In Section 3, we have shown that the Bantu languages of the Middle and Lower Zambezi River have non-dedicated negative possessive predicates (Comit Poss and Have Poss types) as well as dedicated ones (Enclitic Poss and Have$_{NEG}$ Poss types), and their distribution is comparable with Stages A, A~B, and B of a NEC. Moreover, in Section 4 we have shown that all negative possessive predicate types, whether dedicated or not, have extended uses as negative auxiliaries in main clause negation, Stage C in a NEC. The data from Ila (M63) are even suggestive of a full cycle. Ila has a negative auxiliary of the Comit Poss type (TypeA). However, it does not use Comit Poss type predicates in predicative possession but rather Have Poss and Have$_{NEG}$ Poss types. This suggests true cyclical change, whereby the usage range of an erstwhile negative possessive predicate of the Comit Poss type is expanded into main clause negation, after which the original negative possessive use becomes obsolete and is replaced by new strategies. The fact that negative possessive constructions show evidence of cyclical change typically associated with negative existential constructions should not come as a surprise, given the strong conceptual and formal connection between the two construction types. Bernander et al. (2022) suggest that further stages of the NEC in Bantu languages seem to occur only when intense language contact is involved. In the following sections we discuss this Zambezi 'negative possessive cycle' in the light of contact.

5.2 Spread of negative auxiliaries in different Eastern Bantu subgroups

The innovation of negative 'have' auxiliaries is attested in at least four different subgroups within Eastern Bantu: Bantu Botatwe, Sabi[24], the Sena-Nyanja cluster, and Southern Bantu. More detailed information on each language is available in the Appendix, but an overview of the relevant subgroups is shown in the tree diagram in Figure 1. The tree is generated using previous basic vocabulary-based phylogenetic studies (Bastin et al. 1999; Grollemund et al. 2015; Koile et al. 2022) with the addition of names of subgroups and additional languages from Hammarström et al. (2025) and recent fieldwork by the authors of this paper. At the highest

[24] The Sabi languages are a group of Bantu languages classified within Guthrie's zones M40 (Bemba group), M50 (Lala-Bisa-Lamba group), and Nsenga N41. The Sabi languages are spoken in Zambia, with its easternmost member, Nsenga, stretching into Mozambique.

level (below "Eastern Bantu"), our tree only shows the relevant four subgroups where the innovation has been attested; for a fuller picture of other Eastern Bantu subgroups, the reader is referred to the full phylogenetic studies. At the lower levels, only the relevant subgroups are fully expanded with individual languages. The languages with attested negative 'have' auxiliaries are marked in blue.

The partial spread of negative 'have' auxiliaries into relatively distant genealogical subgroups, in geographically adjacent areas, together with the typological and cross-Bantu unusualness of this innovation, strongly suggest that these auxiliary constructions have spread through language contact. Secondly, occasionally occurring archaic negative prefixal forms, e.g., *ha-* in Guro Tonga (N404), fully preserved in sister languages such as Barwe (N45) and some Sena (N44) varieties (*nkha-*), suggests that the innovation is rather recent in terms of relative chronology (i.e., in the case of N40, it must have happened after the divergence of modern languages such as Barwe, Sena, and Tonga).

In the following section, we present some historical-linguistic contact dynamics of the Middle and Lower Zambezi which we believe are responsible for the spread of negative auxiliaries.

5.3 Migration, trade, and soldiers: Historical contact dynamics and directionality of the spread

The spread of negative 'have' auxiliaries as an areal feature in the Zambezi must be understood in the context of centuries of intense contact where social and linguistic identities have often been flexible and subject to change (see, e.g., Lancaster 1974; Newitt 2022). In this section we draw on historical and ethnographic literature to identify the social dynamics most likely to be responsible for this areal diffusion.

While there is little doubt that these auxiliary constructions have spread through contact, the directionality of the spread remains somewhat speculative. However, the combination of historical accounts and linguistic data suggests that the innovation originated with the Shona-speaking peoples on the Zimbabwean plateau, and spread down into the Middle and Lower Zambezi valleys. Ethnically diverse migratory groups of soldiers, mercenaries, elephant hunters, and traders such as the Chikunda and the Ngoni may then have played an important part in disbursing these linguistic innovations into more distant areas.

As noted in Section 3.2, the Type B construction *dibe* is particularly widespread in the N40 group of languages, spoken in the Lower Zambezi valley. North of the river valley in this area, we find Chewa-Nyanja speaking communities, whereas the Zimbabwean Plateau south of the valley is inhabited by Shona peoples. In the ethnographic literature, the peoples of the valley, e.g., Chikunda, Nyungwe, Guro Tonga, Dema, and Barwe, are believed to have originated as a mixture of primarily Chewa-Nyanja related groups, coming from the north, and Shona groups, coming from the south (see Tew 1950, 31; Dias 1965, 15; Rosário 1989, 25; Isaacman and Peterson 2003; Isaacman and Isaacman 2004, 331; Maia 2015, 147, among others). Linguistically, these communities, together with Sena, form the rather coherent group of N40 languages, which is close in both lexicon and grammar to N30. Typically, more Shona-like linguistic features are prevalent as we move closer to the Zimbabwean Plateau. As described by Beach (1980, 155), linguistic frontiers have fluctuated in this area as Shona-speaking peoples from the plateau moved into non-Shona-speaking areas, where they were often gradually absorbed into these valley communities. This back and forth of Shona and non-Shona peoples between the plateau and the valley has been going on for the better part of the last millennium. Recalling that *dibe* as a negative possessive construction is widespread in the Chewa-Nyanja group but its extension to a TAM auxiliary is not, we are led to believe that the auxiliary

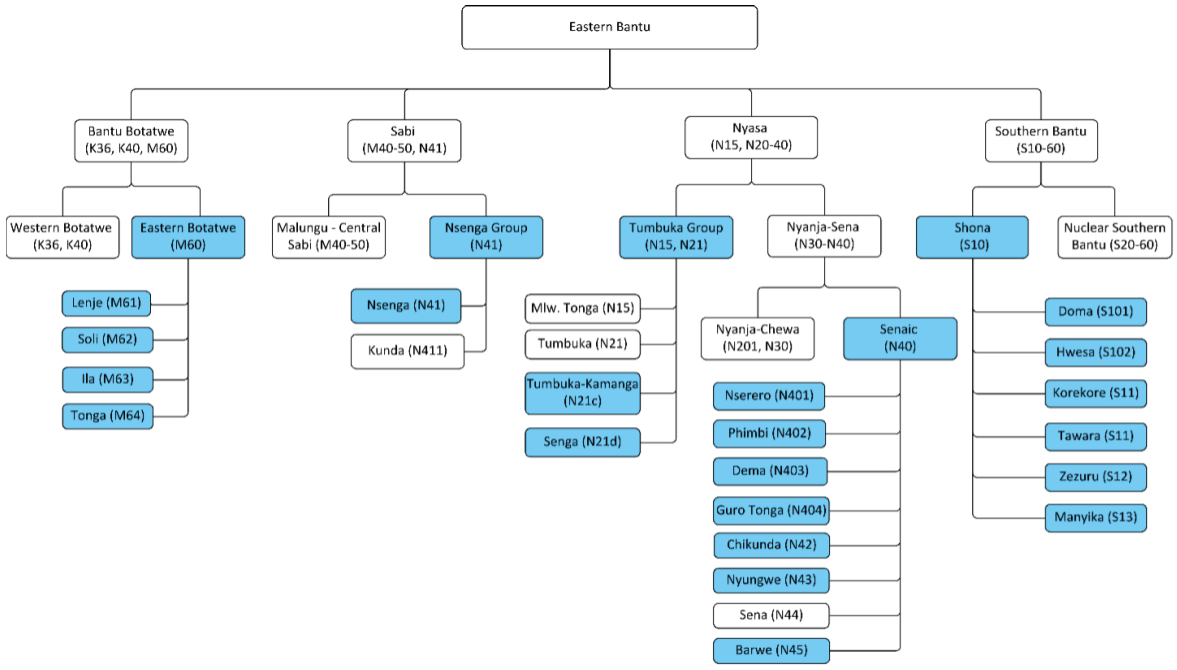


Figure 1: Genealogical tree of sampled languages
(based on Bastin et al. 1999; Grollemund et al. 2015; Koile et al. 2022)

influence in the N40 group appears to have driven a Shona-like functional expansion from negative possessive to negative perfective auxiliary, using local N40 Sena-Nyanja morphological material.

The occurrence of *dibe* in the Sabi outlier Nsenga (N41) and the Botatwe outlier Soli (M62), but not in the remainder of these groups, points towards Chikunda (N42) influence. When bands of Chikunda[25] soldiers, hunters, and traders moved from Tete in Mozambique up to the Zambezi-Luangwa confluence area, they had long and intense contacts with the Soli and the Nsenga (see Isaacman and Isaacman 2004; Alikuleti 2021). Beyond trade, Isaacman and Isaacman (2004) describe, on the one hand, how Nsenga and Soli speakers were integrated into Chikunda groups through slave raids, exogamous marriages between Chikunda men and Nsenga women,[26] and also through the recruitment of Nsenga and Soli men as carriers of ivory and gold on the caravans going back to Tete (Isaacman and Isaacman 2004, 205; Langworthy 1972, 98). On the other hand, integration often happened in the opposite direction, as many Chikunda settled

[25] The Chikunda identity is believed to have originated as an ethnically mixed group of slave-soldiers of the Portuguese *prazo* owners in central Mozambique. The Chikunda also operated as hunters, porters, mercenaries, and tax collectors. The majority of these people are said to have originated from the Chewa-Nyanja-related peoples north of the Zambezi, mixed with Shona groups from the south and valley populations such as the Tonga, along with other enslaved peoples from more removed areas (see mainly Isaacman and Isaacman 2004).

[26] The role of Nsenga-Chikunda women is particularly interesting here; Alikuleti (2021, 24), writes that there was a lot of back and forth between the ethnic identities and affiliations of these women since the Chikunda identity was initially so male-dominated. The 'women of Chikunda' often partially or temporarily integrated into their new communities but maintained strong affiliations to their original ethno-linguistic communities.

among local communities by forging marriage alliances and acquiring land rights in exchange for military protection and/or tributary payments (see Isaacman 2000; Alikuleti 2021, 132).

In the case of Tumbuka-Kamanga (N21c) and Senga (N21d), further north, the occurrence of negative 'have' auxiliaries is most likely due to contact with Nsenga (N41). We have previously noted that negative 'have' auxiliaries have not been attested in most Tumbuka varieties, only in the Tumbuka-Kamanga (N21c) variety described by Young (1932c), spoken around the Upper Luangwa Valley, where the same construction is also used by the neighbouring and closely related Senga.[27] The Senga (N21d) data is unfortunately too scarce, but in Nsenga (N41) and Tumbuka-Kamanga (N21c), the form and function of the *dibe* constructions are very similar in ways that are not shared with other languages in our sample.[28] This suggests that this particular Tumbuka variety has been directly influenced by Nsenga. Contact between Senga and Tumbuka-Kamanga communities are is known, but the extension of the contact between these communities and Nsenga is not as well documented, although see Miracle (1962) for an account of some trade relations.

One historical factor that seems to have contributed extensively to the influx of Nsenga speakers into the Upper Luangwa Valley is the famous Ngoni migrations. When Zwangendaba's Ngoni army moved north from modern-day South Africa, they efficiently swelled their ranks with the integration of conquered peoples along the way. When crossing the Zambezi in 1835, recruits and captives from Shona populations had, according to Omer-Cooper (1978, 65), already become a "significant element" in the Ngoni composite group. The incorporated peoples referred to as 'Shona' here included both Kalanga and various groups from the Mutapa State in the Zambezi valley (see Young 1933, 11–12; Omer-Cooper 1978, 65–68). These valley people can only be assumed to have included groups from the linguistic border areas of S11 and N40, such as Tawara, Korekore, and Tonga clans (see Beach 1980, 114–15; Bourdillon 1987, 10; Lancaster 1977 for more details on the population of the Mutapa State). After crossing the Zambezi, the Ngoni subdued the Nsenga and settled in their territory for as long as six years before they continued marching north (Fraser 1914, 28). At this point they had, by all accounts, considerably increased their numbers through the integration of a large number of Nsenga (Elmslie 1899, 22; Omer-Cooper 1978, 67; Langworthy 1972, 85–86; Fraser 1914, 28). After another decade of migrations and conquests, the now ethnically diverse and multilingual group of Ngoni defeated the Kamanga, settled on the Nkamanga Plateau, and subjugated many Tumbuka, Kamanga, and Senga people in the area (Omer-Cooper 1978, 80; Lane-Poole 1949, 25–26, 31; Young 1933, 11). When conquering Kamanga, the original Nguni nucleus, that had started out as around 2000 people in Natal, had, according to Langworthy (1972, 90) long become vastly outnumbered by the thousands of people from different cultures and languages who had been integrated along the way. When the Ngoni composite group in Kamanga eventually shifted to the Tumbuka-Kamanga (N21c) tongue, it seems reasonable to assume substrate influence from Nsenga and other groups that constituted a significant portion of the group.

Beyond the Zambezi-Luangwa confluence area, the impact of the Chikunda was felt further into the Middle Zambezi, reaching as far west as Kafue and Kariba in Bantu Botatwe land. Initial trading, hunting, and raiding activities of the Chikunda were followed by the establishment of

[27] Aspects of Senga history and their relationship to Nsenga is debated. The Senga are often treated as unrelated to Nsenga and rather as a Bisa offshoot that settled among, subdued, and linguistically assimilated to the Tumbuka through intermarriage between the male-dominated Senga, who arrived through migration, and women from the local Tumbuka population (see Lane-Poole 1949; Chondoka 2007; Chondoka and Bota 2015; Ohannessian and Kashoki 1978, 13), although see Miracle (1962, 1963) for a contrastive view.

[28] E.g., various forms of the negator *vye, ve, je* occurring on various copulative elements; see Section 3.2 for details.

prazos and more permanent settlements, eventually leading to the integration of Chikunda into Botatwe populations (and vice versa[29]) such as the Soli, the Lenje, and the Gwembe Tonga during the 18th and 19th centuries (Alikuleti 2021, 102–104; de Luna 2008, 288, 309–310; Isaacman and Isaacman 2004, 180, 211; Matthews 1981; Lancaster 1974). While the influx of Chikunda might have contributed to the presence of negative 'have' auxiliaries in the Botatwe languages, the deep, long-lasting direct contact with the speakers of Shona languages coming from the Zimbabwean Plateau is likely to have been the strongest influence. The Type B construction *dibe*, used in Chikunda (N42),[30] has only been attested in Soli (M62) from the Botatwe group. The Type A construction, on the other hand, found in all the Shona varieties examined, has been attested in most members of the Botatwe group that make use of negative 'have' auxiliaries, i.e., Lenje (M61), Soli (M62), and Ila (M63). The Shona contact with the Botatwe groups in the Middle Zambezi dates back several centuries, e.g., through the Ingombe Ilede trading centre that arose on the Urungwe Plateau in the Middle Zambezi sometime around the 14th or 15th century (Lancaster and Pohorilenko 1977; Beach 1980, 48; de Luna 2008, 142–143), and through territorial gains made by the Shona people on the south banks of the Middle Zambezi into the land of Botatwe groups (Beach 1980, 22). With pressure coming from both the south, e.g., via Rozvi (c. 1660–1866) and Ndebele (c. 1840–1893) conquests, and from the east through Portuguese expansions led by Chikunda armies, marginalized Shona-speaking peoples continued to be pushed into the Middle Zambezi Valley and onto the Zambian highlands north of the river. The Shona people in the valley, variously referred to as Goba or lowland Korekore, often sought to improve their social status and opportunities by socially and linguistically integrating into the local Botatwe communities, especially Tonga (Lancaster 1974; Ohannessian and Kashoki 1978, 14–15; Roberts 1979, 92).

In sum, the spread of negative 'have' auxiliaries in the Lower and Middle Zambezi must be understood against the backdrop of centuries of mobility, intermarriage, trade, warfare, and shifting sociopolitical alliances and identities. The linguistic data, combined with the sociolinguistic landscape, suggest a south-to-north trajectory of diffusion, beginning with Shona-speaking populations on the Zimbabwean Plateau and extending into the N40 languages of the Lower Zambezi Valley through language shift and substrate influence. The spread into Botatwe and Sabi outliers may have occurred in parallel or in multiple waves, reflecting the complex and overlapping contact histories in the region. The diffusion into varieties along the Luangwa River, especially Tumbuka-Kamanga (N21c) and Senga (N21d), appears to have been a subsequent development, mediated by Nsenga and peoples from the Lower Zambezi Valley who were incorporated into the Ngoni ranks as they moved northwards. Viewed as a whole, these

[29] Vice versa refers to periods in which the Botatwe and Shona populations in the Middle Zambezi, opportunistically and temporarily manipulated their ethnic identities to become Chikunda in order to enjoy certain social advantages, as described by Matthews (1981, 36).

[30] It is important to note that the Chikunda who were active in the Kafue and Kariba areas might not have spoken exactly the same language as the modern day Chikunda (N42); their variety might have been closer to the northern Shona varieties. Besides the general presence of Shona ranks in the Chikunda groups, Lancaster (1974) writes that certain loosely affiliated Shona peoples in the Middle Zambezi, such as the Nyai and Goba, were sometimes referred to interchangeably with the Chikunda label. In his view, "all the alleged Tonga, Chikunda, and Goba of the confluence zone [Kafue and Zambezi] have in fact long comprised a single social and cultural field, intermarrying, living together, crossing the rivers, and moving freely throughout the area. They have shared much the same history, *speak the same Shona dialect in their villages*, and share the same social structure" (Lancaster 1974, 711, emphasis added).

historical dynamics and linguistic patterns point to an areal spread triggered by contact, multilingualism, and language shift rather than inheritance or multiple independent innovations.

6 Conclusions

In this study, we have examined the emergence and distribution of negative 'have' auxiliaries in the Bantu languages of the Middle and Lower Zambezi River. We have identified four structural types (A–D) (described in Sections 2 and 3) that all originate in predicative possession but extend into auxiliary use. There is a great diversity in the morphological make-up of the types, with two of them being dedicated negative types whereas the other types are formed by applying negative marking to affirmative possessive constructions. Despite the variety in form, the four types are functionally identical in their semantic expansion from possessive (stative) negation to event negation; as discussed from a grammaticalization perspective in Section 5.1, the majority of the negative 'have' auxiliaries render negative perfective readings in their unmarked base form, which has given rise to two interesting types of formal asymmetry: i) there is a perfective-imperfective split in which standard negation in the perfective domain is marked through auxiliaries, whereas imperfective TAM categories are marked through other formal means (e.g., prefixation or particles); and ii) perfective TAM categories are marked through dedicated TAM prefixes in the affirmative, but through auxiliaries in the negative.

As event negation becomes further grammaticalized, the 'have' auxiliaries may, through analogy, acquire an increased functional range through additional TAM marking. In doing so, they are no longer dedicated to the perfective domain. We have further shown that these developments are not isolated, but form part of a broader pattern of cyclical renewal reminiscent of a negative existential cycle (NEC). Several languages of the region display both non-dedicated and dedicated negative possessive predicates, corresponding to transitional NEC stages, and the extension of these predicates into main clause negation reflects further developments along the cycle.

While we have shown that these construction types are widespread around the Middle and Lower Zambezi, we note in Section 4 that the development of possessive predicates into dedicated negative auxiliaries for main clause negation is rare across Bantu and from a wider typological perspective, where there is a preference for 'do' and 'be' verbs in this role. The rarity of 'have' predicates as TAM auxiliaries highlights the Zambezian pattern as a regional exception. Given that the languages in our sample belong to different genealogical Bantu subgroups, we take these facts together as evidence for a contact-induced spread, involving calquing and structural borrowing across the region. The study then contributes to areal linguistics by exploring how contact-induced changes have influenced the spread and diversification of these auxiliaries. In Section 5.3, we discuss some of the deeply interconnected contact histories and transformative social dynamics that have characterized the region for the latter half of the last millennium.

More broadly, the negative 'have' auxiliaries and the parallels drawn to the NEC contribute to our understanding of the cyclical change and renewal of negative possessive constructions and their grammaticalization into main clause negators. The distribution of negative 'have' auxiliaries in the Zambezi area exemplifies how morphosyntactic innovation emerges not only through internal pathways of change, but also through multilingualism and language shift resulting from social processes of mobility, trade, and warfare.

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Abbreviations

1, 2, 3…etc.	Noun class 1, 2, 3… etc.
1a	Noun class 1a
1, 2, 3PL	1st, 2nd, 3rd person plural
1, 2, 3SG	1st, 2nd, 3rd person singular
AUG	Augment
AM	Associated motion
APPL	Applicative
CAUS	Causative
COM	Comitative
COP	Copula
CTFL	Counterfactual marker
DEM	Demonstrative
EMPH	Emphatic
EX	Existential
FUT	Future
FV	Final vowel
INF	Infinitive
IPFV	Imperfective
LOC	Locative
NAP	Nominal agreement prefix
NEG	Negation
NONDUM	Nondum
NCP	Noun class prefix
OP	Object prefix
PASS	Passive
PERS	Persistive
PFV	Perfect(ive)
POSS	Possessive
PP	Pronominal prefix
PRO	Pronoun
REL	Relative
REM	Remote
SP	Subject prefix

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Appendix: Language sample

The Middle and Lower Zambezi region hosts an intricate cluster of Bantu languages, and the valley itself constitutes a transition zone between different Eastern and Southern Bantu subgroups. For the study of negative auxiliaries we have considered a main sample that encompasses representatives of several different genealogical groupings, here referred to as Botatwe, Sabi, Nyasa, and Shona (see Section 5.2 in the main text for the genealogical relations represented as a tree diagram).

In this Appendix, we provide the sources consulted for each language, and we situate the languages geographically and genealogically. Among them, Dema, Doma, Guro Tonga, Hwesa, Kunda, Nserero, and Phimbi[1] are not part of the Maho's (2009) updated version of Guthrie's (1967) classification system. Based on existing principles on new code assignments stipulated in Maho (2001, 46), we suggest new Guthrie codes for each of these lects respecting the following two principles:

1. "If the addition is a language close to an already-classified language, then add a third digit to the language code of that latter language."

   e.g., the code N411 for Kunda means that it is a language which is close to the already-classified language Nsenga (N41)

2. "If the addition is a language with uncertain affiliation or lies close to several languages, then add a third digit to the group code."

   e.g., the code N404 for Guro Tonga means that it is a language which lies close to several languages of the N40 group (e.g., N43, N44, and N45).

Botatwe group (M60)

'Botatwe' is the label often given to Guthrie's zone M60 (the Lenje-Tonga group), together with some closely related K40 (Subia, Totela) varieties. The genealogical coherence of this group has been established by authors such as Ahmed (1996), Bostoen (2007, 2009) and de Luna (2008, 2010). Geographically, the Botatwe languages are spoken primarily in south-central Africa, with a concentration in Zambia (especially the Copperbelt, Luapula, and Southern Provinces), northern Zimbabwe and Botswana, and the Caprivi in Namibia.

In this study, we focus on four languages of the Greater Eastern Botatwe subgroup, namely Lenje (M61), Ila (M62), Soli (M63), and Tonga (M64). Each of them is briefly introduced below.

M61 Lenje

Lenje is spoken to the north of Lusaka, especially in the Chibombo District of Zambia's Central Province, with pockets in the surrounding Lukanga Swamps. It is smaller in speaker numbers than its Botatwe relatives Tonga and Ila but has been studied since the early 20th century (see

[1] Phimbi is assumed to be under Nsenga (N41) by Maho (2009) and under Nyungwe (N43) by Hammarström (2019). Based on preliminary analysis of our field data, Phimbi shows stronger affinities to Nyungwe and the rest of the Senaic group (N42-N45), rather than to Nsenga. Nevertheless, certain features in Phimbi are attested in Nsenga and/or Chewa-Nyanja (N31), but not in Nyungwe. Since Phimbi shows closest affinities to several languages in the N40 group, we have added a thir digit to the group code, i.e., N402.

Madan 1908). Besides Madan (1908), we have also consulted the works of Kagaya (1987) and Chitebeta (2007).

M62 Soli

Soli is spoken mainly in the Lusaka area and adjacent parts of Central Province. It is closely related to Lenje (Chitebeta 2019). Historically, the Soli were among the earliest inhabitants of the Lusaka Plateau. As the easternmost language of the Botatwe group, Soli has been heavily influenced by contact with neighbouring groups to the east and by urban multilingualism (de Luna 2010). The main reference work for our paper is van Eeden (1936).

M63 Ila

Ila is closely related to Tonga but distinct in its own right (see, e.g., Hambizi's (2023) comparative study of Tonga and Ila). It is spoken mainly in Zambia's Central Province, especially in Namwala District and surrounding areas along the Kafue River. It shares significant grammatical and lexical similarities with Tonga but retains its own identity and dialects, which include Sala and Lundwe. We have consulted the works of Smith (1907), Fowler (2000), and Nurse (2019).

M64 Tonga

Tonga is the largest and most widely spoken Botatwe language, with several million speakers concentrated in Zambia's Southern Province and extending into parts of Central and Lusaka Provinces. Tonga has a strong sociolinguistic presence in Zambia: it is used in education, media, and literature, making it one of the country's important regional languages. The analysis in this paper is based on the works of Collins (1962) and Carter (1974, 2002).

Sabi group (M40-50 + N41)

The Sabi group of languages is a well attested genealogical subgroup within Eastern Bantu (see Ahmed 1996; Bastin et al. 1999; Grollemund et al. 2015; Koile et al. 2022; Hammarström et al. 2025). The Sabi languages are mainly spoken in Zambia, with the outlier Nsenga (N41) stretching into neighbouring Mozambique. Historically, the Sabi peoples originate from the Luba-Lunda Empires of the Upper Congo basin (see Ahmed 1996). Details about the Sabi languages included in our sample are given below.

M42 Bemba

Bemba (M42) is one of Zambia's official languages, with many L1 and L2 speakers in the country. The highest concentrations of speakers are found in the Northern, Luapula, and Copperbelt Provinces (Kula and Marten 2008, 19). Bemba being the most well documented of the Sabi languages, we have been able to consult several sources (e.g., van Sambeek 1955; Sims 1959; Sharman 1963; Kasonde 2009; Nurse 2019).

M51 Bisa/Wisa

Bisa (Wisa) is spoken in northeastern Zambia, in Muchinga Provinceand parts of Luapula Province, with smaller communities in southeastern Democratic Republic of Congo (see Madan 1906, 3). Bisa has often been grouped with the neighbouring Lala lect (Maho 2009), reflecting a history of dialect continua in that region. Our reference work is Madan (1906).

M54 Lamba

Lamba is spoken mainly in Zambia's Copperbelt, Central, and Northwestern Provinces, and parts of southeastern Democratic Republic of Congo (Haut-Katanga). It is closely related to Lala-Bisa M51/2 (see Hammarström et al. 2025). Our data comes from the works of Doke (1933, 1938).

N41 Nsenga (incl. Kunda N411)

Nsenga is spoken primarily in Zambia and Mozambique, where it is geographically situated on the central plateau that demarcates the watershed between the Zambezi and Luangwa river basins. The language's territorial extent also encompasses the region surrounding Kachebere (Mchinji) Mountain in western Malawi. Genetically, the language is part of the Sabi[2] subgroup (M40–M50), but with considerable influence from the Nyanja-Sena group (N30–N40). Our analysis is based on field data from Zumbo, Mozambique, together with several published sources (e.g., Madan 1905; Ranger 1928; Miti 2001, 2004; Simango 2006), as well as Zemba (2015) for the closely related language referred to as Kunda (N411). Kunda does not appear in Maho's (2009) updated Guthrie code classification but is subsumed under N41 by Hammarström (2019). We propose a new Guthrie code based on divergent features identified in Zemba's (2015) grammar sketch and due to lexical similarity with Nsenga being estimated at around 70% by both Banda et al., (2013, 37-38) and Sawka et al. (2021, 36). Kunda (N411) is unrelated to and not to be confused with Chikunda (N42) (cf. Banda et al., 2013, 37).

Nyasa group (N15, N20–40)

The languages referred to here as Nyasa are spoken mainly in Malawi, eastern Zambia, and central Mozambique. The Nyanja (N201, N30) and Sena (N40) clusters constitute two closely related sister groups while the position of the Tumbuka-Tonga-Senga (N15, N21) cluster could be more distant and is in need of proper assessment. While its position as a sister branch to the Nyanja-Sena node is somewhat doubtful, most phylogenetic studies (e.g., Bastin et al. 1999; Grollemund et al. 2015; Koile et al. 2022) support this wider Nyasa group.

N21 Tumbuka group (incl. N15 Tonga, N21c Tumbuka-Kamanga, N21d Senga)

Tumbuka dominates large parts of northern Malawi and eastern Zambia. In this study we focus particularly on Tumbuka-Kamanga (N21c) as represented in Young (1932), spoken in the upper Luangwa Valley, a tributary river to the Zambezi. Senga (N21d), also spoken in the Luangwa Valley, in the Chama District of Muchinga Province (Zambia), is represented with data from Nkhata (2019). This variety is sometimes treated as a Tumbuka dialect, but its status is debated. The Senga are said to have originated from a Bisa offshoot composed mainly of migrating men who settled among the Tumbuka, married Tumbuka women, and quickly assimilated linguistically (see Section 5.3 in the paper). Sawka et al. (2021) report that Senga is generally perceived as Tumbuka-like but with heavy Bemba admixture. However, in their linguistic survey report, they argue that its 71% lexical similarity with Tumbuka justifies considering it a distinct language. As for Bemba lexical influence, its similarity is estimated at 46%, while the similarity with Bisa is 43%. For Tumbuka we have consulted the following works: Elmslie (1891); Young (1932); Vail (1972); Kishindo and Lipenga (2005); Kiso (2012). For the closely related

[2] Ahmed (1996, 40) estimates a split from the rest of the Sabi group some 1100–1300 years ago. In the 18th century, Nsenga communities were ruled by Undi's Chewa Kingdom. In the 19th century, they were subjugated by the Ngoni, and for centuries they have been in contact with the Chikunda.

Malawian Tonga N15 we have consulted what little material is available (e.g., Turner 1952; Mkochi 2024; MacAlpine et al., n.d.).

Nyanja group (N201, N30)

Tanzanian Nyanja (N201) (sometimes referred to as *Mwera*[3]) *i*s a Tanzanian offshoot of the larger Nyanja continuum. The language is spoken in Mbamba Bay and our reference work is Ngonyani's (2020) grammatical sketch. Tanzanian Nyanja is the most deviant of the documented Nyanja varieties (see Ngonyani 2020, 5; Hammarström et al. 2025), which is reflected in the Guthrie code N201, whereas the rest of the Nyanja varieties are all subsumed under N31.

Chewa N31c is the largest language of Malawi and one of the key legacies of the Maravi Confederacy. From its settlement in present-day Malawi in the 16th century, its spread was tied to missionary work (Kula and Marten 2008, 5) and political expansion (Juwayeyi 2020), and it has become a lingua franca across much of Malawi, the Eastern Province of Zambia, and Mozambique (Tete Province), where it is most often referred to as Nyanja. Genealogically, Chewa-Nyanja occupies a central place among Guthrie's (1967) zone N languages. In this paper we have novel field data from Nyanja (Zambia, N31a), and we have consulted a wide range of available publications on both Zambian (N31a), Malawian (N31c), and Mozambican (N31d) Chewa-Nyanja (the consulted works include Rebmann 1877; Riddel 1880; Watkins 1937; Atkins 1950; Missioários de Companhia de Jesus 1964; Harding 1966; Mchombo 1987, 2004; Peace Corps 1995; Lehmann 2002; Kishindo and Lipenga 2003; Kiso 2012; Downing and Mtenje 2017).

Sena group

The Sena group (sometimes Senaic) is a cluster of closely related languages (N42-N46[4]) spoken on both sides of the Zambezi River in central Mozambique, stretching from the confluence area with the Luangwa River down to the coast. A smaller number of speakers of Senaic varieties are found in neighbouring countries, e.g., Chikunda (N42) in Zambia and Zimbabwe, and Nyungwe (N43) and Sena (N441) in Malawi. Details about the varieties included in our sample are given below.

N401 Nserero

Nserero is spoken in the small villages of Chankoma, Chiwonga, Ntondo, and Ntunda, on the eastern fringe of Zumbo, along the Zambezi River. Our data comes from the latter two villages. Nserero is undocumented in major surveys. It is described by its speakers as a mix of Chikunda and Nsenga; in our preliminary analysis, similarities to both languages are observable. Geographically, the closest languages are Chikunda (N42) and Nsenga (N41) with Korekore (S11) being spoken further south across the Zambezi river. Nserero shows affinities with several languages in the N40 group, and is thus given the code N401.

N402 Phimbi

Maho (2009) places Phimbi as a Nsenga dialect under N41, while Hammarström (2019) classifies it as a Nyungwe dialect (N43). More recently, Hammarström et al. (2025) recognize it as

[3] See for example Maho (2009), Hammarström (2019), and Hammarström et al. (2025). We prefer the label (Tanzanian) Nyanja, since this is the ethnonym used by the speakers themselves (Ngonyani 2020, 1) and it avoids confusion with the Rufiji-Ruvuma language commonly referred to as Mwera (P22).
[4] We have no data on Podzo (N46)

a Senaic language on the same level as Nyungwe, Barwe, and Sena. Local speakers describe Phimbi as a mixture of Chewa and Nsenga, though affinities to Nyungwe are evident. Although more research is needed, our preliminary analysis suggests that Phimbi is most closely affiliated to the N40 group, hence it is given the code N402. The data in our paper come from fieldwork in the town of Fingoe in Tete Province, Mozambique.

N403 Ɗema

Ɗema people live in the high-mountainous regions around Songo (Tete, Mozambique), where our fieldwork data comes from. Johnston (1891, 390) refers to them as "a Nyanja people", which Tew (1950, 32) reiterates based on their geographical position (see also Great Britain 1920, 114–115). As far as our initial fieldwork analysis can tell, the Ɗema lect is part of the Senaic cluster, possibly closest to Nyungwe, although it is difficult to say wether it is closer to Nyungwe than to e.g., Chikunda or Guro Tonga. It is important not to confuse this Senaic Ɗema with the Shonic Ɗoma (see below). With its internal classification within the N40 group not being entirely clear, we assign it the referential code N403.

N404 Guro Tonga

Guro Tonga is spoken in the village of Guro (Manica Province, Mozambique) and its surroundings. The language is previously undocumented apart from a short wordlist by Posselt (1929), who referred to the population as "Tonga of the Ruenya Valley" (Posselt 1929, 88). The ethnonym Tonga has been in use in the Lower Zambezi Valley since at least the first half of the 16th century, although the people it referred to were not necessarily always a homogeneous linguistic unit (see Beach 1980, 158). Guro Tonga is clearly distinct from other languages referred to as Tonga, e.g., the Tonga (M64) from the Middle Zambezi described above; Malawian Tonga[5] (N15); and the southern Bantu language GiTonga or Tonga of Inhambane (S62) from southern Mozambique, which is not included in our sample. The anthropologist Tew (1950) does not consider the Guro Tonga to be part of the Maravi peoples, but rather to be Shona immigrants from south of the Zambezi. Similar claims were also made by Bleek (1936, 10), but based on our fieldwork data we can confidently say that Guro Tonga shows its strongest affinities with languages from the N40 cluster, namely Nyungwe, Barwe, and Sena. Hence, we propose the new Guthrie code N404. The affinities of Guro Tonga with the Senaic group were recognized by Doke (1931a, 4), and also by Ngunga and Osvaldo (2012, 120) and Alfândega (2013), who both treat it as a Sena variety, whereas Ngunga (2014, 53) lists Tonga as a Nyungwe variety. A few speakers are found across the Zimbabwean border in the district of Mudzi[6] (Hachipola 1998), but the language there is said to be highly threatened due to Shona prevalence. Our data come from fieldwork conducted in the towns of Guro and Mungari.

N42 Chikunda

Chikunda, historically linked to enslaved military communities protecting the *prazos* of the Portuguese Crown during colonial times, spread along the Zambezi as a language of mixed populations. Today, it is spoken in a small area at the confluence between the Zambezi and

[5] Malawian Tonga (N15), also referred to as Lakeside Tonga (see Mphande 2014; Chondoka and Bota 2015), is spoken along the northern lakeshore of Malawi. Historically, Tonga speakers were among the early communities established along Lake Malawi, interacting extensively with Tumbuka and Chewa populations (Van Velsen 1964).
[6] Hence Hachipola's (1998) label 'Tonga of Mudzi'.

the Luangwa Rivers, which corresponds to the border between Mozambique, Zambia, and Zimbabwe. Historically, Chikunda is believed to have been an ethnic admixture of different groups from around the Zambezi, such as Sena, Barwe, Tonga, Lomwe, Chuwabo, Chewa (Isaacman and Peterson 2003, 269), due to its mercenary origins. Linguistically, however, Chikunda is closely related to the languages from the N40 cluster. The data in our paper comes from fieldwork conducted in Bawa and Zumbo (Mozambique), Luangwa (Zambia), and Kanyemba (Zimbabwe).

N43 Nyungwe

Nyungwe is spoken in north-central Mozambique, around the city of Tete, and has long been considered a key Senaic (N40) language. Its role as a regional lingua franca has exposed it to considerable contact with Chewa/Nyanja, Sena, and certain Shona varieties. Anthropological sources portray Nyungwe as a product of "ethnic intermixtures and creolisations" (Marizane 2016, 146), including Nyungwe-speaking people, consisting of "layers of exogenous others over a core of the people who spoke chiNyungwe at Tete town and its environs" (Marizane 2016, 146). The study suggests that groups such as Afro-Portuguese or Afro-Asian traders or settlers also became part of the identity of the Nyungwe people by aligning themselves with the Nyungwe language rather than with Portuguese. The reference works consulted in this paper are Courtois (1900), van der Mohl (1904), Torrend (1907), and Martins (1991).

N44 Sena (including Malawi Sena N441)

Sena (N44) is one of the dominant Zambezi Valley languages, spoken primarily in central Mozambique, especially in Sofala Province (along the Zambezi River), and extending into Tete, Manica, and Zambézia. Malawi Sena (N441) is a northern extension of Sena, spoken mainly in the Lower Shire Valley of Malawi, particularly in Nsanje and Chikwawa Districts.
Both areas are part of the Zambezi–Shire river system, historically a key axis of trade, migration, and state-building. This geographic corridor explains much of the Sena's historical importance. The Sena region became a frontier zone of interaction between the Maravi Confederacy (Chewa/Nyanja-speaking groups expanding from Malawi), Shona/Mutapa groups from south of the Zambezi, Portuguese prazos (land grants) along the Zambezi, and later Afro-Portuguese and Afro-Goan trading communities (Newitt 2022). This long history of multi-ethnic contact gave Sena its role as a lingua franca of the Zambezi Valley.
For both Mozambican and Malawian Sena we rely on field data collected on several occasions (2021, 2022, 2024, 2025), as well as published material (see Anderson 1897; van der Mohl 1904; Moreira 1924; Heins 2001; Kishindo and Lipenga 2007; Kiso 2012).

N45 Barwe

Barwe is usually grouped within the Sena cluster (Doke 1931a; cf. Hammarström et al. 2025), although it is claimed to be a Shona variety by Mangoya (2012, referencing Chebanne 2008). Other sources in the fields of social anthropology and history (Junod 1936, 297–311; Bleek 1936, 10; Maia 2015) describe Barwe as Shona, which might be an oversimplification based on the ruling Shona elite of the Barwe Kingdom. Although Barwe was a Shona polity or vassal state associated with Great Zimbabwe and the Mutapa Empire, a large proportion of its population were Lower Zambezi Valley (Guro) Tonga (Beach 1980; Van Dokkum 2020). Through our first fieldwork data from Catandica we are able to identify Barwe as more N40-like while

still straddling the boundary between N40 and S10 and thus exhibiting certain grammatical features more associated with the latter. Historical migrations, intermarriage, and shifting political boundaries probably account for such ambigouties.

S10 Shona group (Shonic cluster)

Shona is a major Bantu language group primarily spoken in Zimbabwe, where it holds official status alongside Ndebele and English, as well as in parts of Mozambique, Zambia, and Botswana. As a linguistic group, Shona comprises several closely related varieties, including Zezuru, Karanga, Manyika, Ndau, and Korekore, which are generally mutually intelligible (Doke 1931b). Historically, Shona traces its roots to the migration and settlement of Bantu-speaking peoples in southern Africa around 2,000 years ago, with the Shona specifically associated with the rise of the Great Zimbabwe civilization (11th–15th centuries), a powerful pre-colonial state known for its monumental stone architecture and extensive trade networks (Beach 1980; Pikirayi 2001; Huffman 2007). Genealogically, Shona is a Southern Bantu group, an early offshoot from the rest of Southern Bantu (S20–S60) (Bastin et al. 1999; Grollemund et al. 2015; Koile et al. 2022; Gunnink et al. 2025). The Shona varieties examined are described below.

S101 Ɗoma

Ɗoma, spoken in the villages of Mariga and Chiramba (Kanyemba, Zimbabwe), is a Shonic language with no previous Guthrie code. The data in our paper come from the fieldwork conducted in Mariga (approx. coordinates: -15.726595, 30.385938). Both Hammarström (2019) and Hammarström et al. (2025) list an ISO code (dmx) under "unclassified Shona". While this code refers to Ɗoma, the name given in both sources is "Ɗema". This is very likely to be a confusion with the Senaic Ɗema of Cahora Bassa described above. The internal classification of Ɗoma within the Shona group needs further study, but the geographical location and basic vocabulary suggest a close affiliation to the Northern Korekore group.

S102 Hwesa

Hwesa is a liminal Shonic variety with no previous Guthrie code. Doke (1931a) categorized it as a Senaic language, whereas Borland (1970) identifies it as Shona. Its distribution in eastern Zimbabwe and across the Mozambican border aligns it geographically with other liminal varieties of the Shonic-Senaic clusters. The data in our paper come from Hwesa spoken in the Mozambican villages of Nyamtomgwe (-17.475397, 32.979521) and Kawiri (-17.440609, 33.007801) near the Zimbabwean border, with Borland's (1970) work serving as an additional reference. While certain Senaic features are observable, early analysis of phonology, lexicon and grammar suggests stronger affinities with the Shonic cluster.

S11 Korekore

Korekore is the name given to the cluster of varieties constituting 'Northern Shona' (Doke 1931a, 8). This group contains several varieties, including Korekore proper, which is the largest

Korekore variety, spoken mainly in Darwin, Lomagundi, and Mrewa Districts (Doke 1931a, 9). The data used in our paper is fieldwork data from the Darwin District.

S11 Tawara

Tawara is part of Northen Shona group (Korekore; see above) but is heavily influenced by languages from the Lower Zambezi Valley such as a Nyungwe (N43) (Doke 1931a, 8–9). It thus represents another transitional zone between Shonaic and Senaic languages, typical of the area between the Lower Zambezi and the Zimbabwean Plateau. The data in our paper come from fieldwork conducted in Estima, a small predominantly Nyungwe-speaking city in Tete Province, Mozambique, with Tawara speakers originally from Mague. Following Maho (2009), Tawara is subsumed under the Guthire/Maho code for Korekore (S11).

S12 Zezuru

The Zezuru are a major subgroup of the Shona people, primarily inhabiting the central and northern regions of Zimbabwe, particularly Mashonaland. The Zezuru language is one of the most prominent varieties of the Shona linguistic group and serves as the foundation (along with Karanga) for Standard Shona, the official written and educational form of the language in Zimbabwe (Doke 1931b). We have used Fortune (1955) as our reference work for Zezuru.

S13 Manyika

Manyika is a group of Shona varieties spoken in Manicaland Province in central-eastern Zimbabwe and in Manica Province in central-eastern Mozambique (Doke 1931a; Borland 1970). The preliminary sources consulted for Manyika in this paper are Buck (1911), Stevick (1959), and Stevick and Machiwana (1960). Some additional notes are found in Fortune (1955).

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