

Tense and sentential negation: a typological perspective

Karen De Clercq

Ghent University/FWO

Abstract The association between sentential negation and tense has solid foundations in the literature. It has even been argued that sentential negative markers consist of a Tense feature (De Clercq 2018; De Clercq 2020). This paper adduces the first results from a typological study and data from Bambara in support of this claim. In addition, the Bambara data also point to the morphological realisation of present or default tense, to a hierarchy for tense and to a position for sentential negation in that hierarchy.

Keywords: Negation, TAM, Bambara, typology, nanosyntax

1 Introduction

It is a fairly common assumption in the generative literature that sentential negation is associated with tense.¹ This idea can be traced back to Zanuttini (1996) and was generally accepted in much subsequent work, taking the shape of a NegP that dominates TP (Zanuttini 1991; Haegeman 1995; Zanuttini 1997 and many others). This proposal is based on a careful consideration of the distribution and properties of different negative markers within one language, their position with respect to the hierarchy for adverbs proposed by Cinque (1999), the position with respect to tense morphemes and the scopal properties of sentential negative markers with respect to tensed predicates. In more recent work, De Clercq (2018); De Clercq (2020) did not only adopt the idea that sentential negation sits in a position associated with tense, but she also argued on the basis of syncretism patterns between scopally different negative markers that the internal featural structure of sentential negative markers is richer than previously assumed and that in addition to [Neg], a sentential negative marker also consists of a default tense feature (henceforth [T]). Even though the evidence from syncretisms indeed supports the idea of an

¹ I want to thank two anonymous reviewers for their useful comments and Guido Vanden Wyngaerd and Michal Starke for discussion of some of the issues raised in this paper. All errors are of course mine.

additional feature, very little direct support was provided for the fact that this additional feature is or needs to be [T]. The present paper will provide some support for this claim and will go beyond that, by showing that negative markers - from a cross-linguistic perspective - can not only interact with tense, but also with mood and aspect, the so-called TAM-domain, and that hence it is possible that negative markers spell out even more features of the TAM-domain than just a [T]-feature.

In the next section I will introduce the notion of TAM-conditioned negative allomorphy and the hypothesis that fed into the typological investigation. The results of the typological investigation will be presented in section 3. Finally in section 4 I will zoom in on Bambara to get more direct support for [T] inside a sentential negative marker.

2 Negation and TAM

In many languages around the world sentential negative markers remain constant, regardless of the Tense, Aspect, Mood or Modality (henceforth TAM) expressed on the predicate, as is the case in English for instance, illustrated in (1).

- (1)
- a. John is **not** playing.
 - b. John was **not** playing.
 - c. John has **not** played.
 - d. John would **not** play with you.
 - e. ...

However, unlike English there are languages in the world that show Allomorphy In Sentential Negative Markers conditioned by TAM (henceforth AINT), as mentioned by [Payne \(1985\)](#); [Dryer \(2011\)](#) and [Horn \(2001\)](#). [Horn \(2001:449\)](#) mentions that Classic Arabic made use of *maa* to express negation in the context of past tense and of *laa* to express negation in the context of nonpast, while [Payne \(1985:209\)](#) mentions that Maori uses *kiihai* in the context of completed aspect and *kaahore* for non-completed aspect. Most discussions of TAM-conditioned allomorphy are restricted to the domain of speech acts though, and more in particular to imperatives, as in [Sadock & Zwicky \(1985\)](#).

A thorough and systematic investigation of sentential negative markers from the perspective of AINT in general is lacking, but would be helpful to get a better understanding of the internal

structure of sentential negative markers, not in the least the question whether negative markers consist of a [T] feature, which is one of the research questions in this paper.

Before we can start a small-scale typological investigation into this domain we need to have a closer look at the different types of languages there are with respect to sentential negative markers.² A first type is the type that is represented by English in (1): a type that does not make use of TAM-conditioned negative allomorphs. A second type can be illustrated by a language like Bafut, a Niger-Congo language spoken in Cameroon, that makes use of different *suppletive* negative markers conditioned by declarative, (2), imperative, (3), or conditional mood, (4).³

- (2) a. *Bó tù'ù mə ŋkì.*
they carry PST_{imm} water
'They have just fetched water.'
- b. *Kāā bó sì ŋkì tū'ù.*
NEG they NEG water carry
'They have not fetched water.' (Chumbow & Tamanji 1994:215)
- (3) a. *Fá ŋkì wá.*
give water that
'Give that water.'
- b. *Tsùū ŋkì wá fá.*
NEG water that give
'Do not give that water.' (Chumbow & Tamanji 1994:225-226)
- (4) a. *Ngwín káló tú'ú ŋkì*
Ngwin F2 carry water
'Ngwin will fetch water (tomorrow).'
- b. *Mbá Ngwìn lōn túú ŋkì tú'ú*
If Ngwin F2 NEG water carry
'If Ngwin fails to fetch water..'

A third case that is worthwhile taking a closer look at is Bengali (Ramchand 2004:40-41). While present and past tenses are negated by means of *na*, (5-a), the perfective in Bengali,

² The glosses and abbreviations used in this paper are: AFF (affirmation), AINT (Allomorphy in Sentential Negative Markers conditioned by TAM), CLF (classifier), F2 (tomorrow future), FUT (future), NEG (sentential negation), NOM (nominative), PRF (perfective), PRS(present), PROG (progressive), PST (past), PST_{imm} (immediate past), SG (singular), TAM (Tense, Aspect, Mood/Modality).

³ There are tense conditioned allomorphs for negation as well in Bafut, but it goes beyond the confines of this paper to discuss this. I refer the reader to Chumbow & Tamanji (1994) for a detailed discussion of Bafut.

expressed as in (5-b), can only be negated by *ni*, (5-c), a form that is *partially identical* to *na* and hence partially suppletive, illustrating yet another type of TAM-conditioned allomorphy, that is similar to the second type in that it shows partial suppletion.

- (5) a. *Ami amṭa kha- cch- i na.*
 I.NOM mango.CLF eat- PROG/PRS- 1SG NEG
 ‘I am not eating the mango.’ [Bengali]
- b. *Ami amṭa khey- ch- i*
 I.NOM mango.CLF eat.PFV- PRS 1SG
 ‘I have eaten the mango.’
- c. *Ami amṭa kha- i ni*
 I.NOM mango.CLF eat 1SG NEG
 ‘I didn’t eat the mango.’

Interestingly, both in Bafut and Bengali there are not only changes in the form of the negative marker conditioned by TAM, but there are also changes in the TAM-marking conditioned by negation, a phenomenon studied by Miestamo (2005).⁴ In Bafut, in the immediate past (PST_{imm}), which is interpreted as a completed event, *mə* disappears under negation, as in (2)⁵, while in Bengali the perfective form *khey* changes back to the root form *kha* under the perfective negator *ni*.⁶ The interaction between the AINT on the one hand and the TAM-changes under negation strongly suggest that the features of sentential negative markers and the features related to TAM are somehow part of the same continuum. Even though the cases discussed here do not reflect on tense, the discussion of English, Bafut and Bengali is instructive to set up a typology of sentential negative markers, i.e. a hypothesis concerning the languages that we could expect to find in the languages of the world.

We hypothesize that there are 6 logical possibilities, illustrated in table 1. Languages that display *suppletive AINT* and TAM-changes under negation (TYPE 1A) or no TAM-changes under

⁴ This paper is restricted to a discussion of TAM-conditioned negative allomorphy and negation-conditioned TAM-allomorphy. However, the role of Φ -features on the shape of the negative marker and the role of negation on the shape of Φ should not be underestimated. The latter of the two is also discussed in Miestamo (2005).

⁵ It should be mentioned that in all negative clauses in Bafut, regardless of the mood involved, the position of the verb changes under negation. Even though this does not qualify as TAM-allomorphy, it is most definitely an alternation, i.e. asymmetry in Miestamo’s terms, conditioned by negation.

⁶ These allomorphic changes sometimes trigger changes in the interpretation of the tenses as well, as for instance in (5-c). I refer the reader to Ramchand (2004) for a more detailed discussion of the semantics of both negative markers.

negation (TYPE 2A); languages that have *partially identical AINT* and TAM-changes under negation (TYPE 2A) or no TAM-changes under negation (TYPE 2B); languages that do not have NEG allomorphy but that have TAM-changes under negation (TYPE 3) or no TAM-changes under negation (TYPE 4); languages that have a negative allomorph, but one that is not conditioned by TAM, and that show TAM-change (TYPE 5) or no TAM-change (TYPE 6).

Table 1: Typology of sentential negative markers .

	TAM-change	No TAM-change
Suppletive AINT	TYPE 1A	TYPE 2A
Partially identical AINT	TYPE 1B	TYPE 2B
No NEG allomorphy	TYPE 3	TYPE 4
Other NEG allomorph	TYPE 5	TYPE 6

In the next section I will test this typology with logical options for NEG-TAM interactions against a sample of 50 languages to see whether the logically possible languages are also attested in our sample.

3 *Typological investigation*

The set of languages in table 2 are 50 languages discussed in Miestamo (2005). Miestamo (2005) investigated a typological sample of 297 languages for the asymmetries they display under negation. One of the main asymmetries that languages display is TAM-change. However, Miestamo did not focus in his discussion on the negative markers themselves, nor on the interaction between the negative markers and TAM-change. In what follows, I will scrutinize the first 50 languages in Miestamo's appendix for their negative markers and the interactions with tense/aspect-marking on the verb, i.e. I will check them against the typological hypothesis in table 1. It is clear that this way of sampling does not make the current sample typologically representative for the languages of the world and hence all correlations are tentative at this point and should be treated as first results in a bigger ongoing project. The phylum, genus and macroarea of the languages taken up in the sample are listed in the appendix and are based on Miestamo (2005). Important to mention is that the presented results focus on negative markers conditioned by tense and aspect and on tense and aspect changes under negation. Most mood and modality related categories, apart from irrealis, are not considered in the present count.

This is an immediate consequence of the fact that [Miestamo \(2005\)](#)'s investigation, which was the main source for this typological investigation, was only concerned with changes under negation in declarative main clauses and most mood-related changes are relevant in embedded domains. Future research will include more mood and modality related categories and hence lead to an update of the results and classification presented here. I will nevertheless refer to the changes under negation as TAM-changes, since sometimes there are changes with respect to irrealis mood under negation.

Table 2: Typological sample.

Abipón	Abkhaz	Achumawi	Acoma	Alamblak	Albanian	Ainu
Amele	Andoke	Apalai	Apurinã	Arabic(Egyptian)	Araona	Comanche
Arapesh	Armenian (East)	Asmat	Awa Pit	Aymara	Bafut	
Bagimi	Bambara	Barasano	Baré	Basque	Batak (Karo)	
Bawm	Beja	Bella Coola	Berber (Middle Atlas)	Birom	Boko	
Bororo	Brahui	Burarra	Burmese	Burushaski	Canamarí	
Candoshi	Canela-Krahô	Cantonese	Carib	Cayuvava	Chamorro	
Chehalis (Upper)	Chinantec (Lealao)	Chinook (Lower)	Chorote	Chukchi	Chumash	

The results of the investigation are numerically summarized in [table 3](#) and listed per type and language in [table 4](#). The reasoning behind the current classification is that if a language has at least one TAM-conditioned negative allomorph (AINT) in the language as a whole it belongs to TYPE 1A, 1B, 2A or 2B. If it also has at least one negation-conditioned TAM-change, it belongs to TYPE 1A or 1B. Only if there is no negation conditioned TAM-change at all, but at least one AINT, will the language be classified as TYPE 2A AND 2B. Languages that are categorized as Type 3 do not have any negative allomorphs at all, but they do have negation-conditioned TAM-allomorphs. Type 4 languages do not show any negative allomorphs nor any TAM-changes under negation in the language as a whole. Some languages belonging to TYPE 1A or 1B could be argued to belong to both types, since a language can have both fully suppletive and partially identical negative markers conditioned by other TAM-categories. The same is true for TYPE 2A and 2B.

What is striking in [table 3](#) is the strong correlation between the presence of AINT and some or other TAM-change under negation, i.e. while there are quite some instances in the sample of TYPE 1A and 1B languages, there are no TYPE 2A and 2B languages. For languages without negative allomorphs, i.e. TYPE 3 and 4, absence of negative allomorphs seems to correlate more often with absence of TAM-change, but the correlation is less radical. There are a couple of languages that have negative allomorphs that are not conditioned by TAM, i.e. TYPE 5 and TYPE 6. It seems that these negative allomorphs are either conditioned by ϕ -features (as is

most probably the case for Candoshi and Chorote) or by phonological conditions (Burushaski, Abipón). A more detailed investigation of TYPE 5 and 6 is required, but remains out of the scope of this paper.

Table 3: Typology of sentential negative markers .

	TAM-change	No TAM-change
Suppletive AINT	TYPE 1A: 7	TYPE 2A: 0
Partially identical AINT	TYPE 1B: 9	TYPE 2B: 0
No NEG allomorphy	TYPE 3: 9	TYPE 4: 21
Other NEG allomorphy	TYPE 5: 0	TYPE 6: 4

Even though the picture in table 3 could well be skewed by the relatively small set of languages considered for this discussion, it turns out that not all logically possible types are attested in the current sample. Type 2a and 2b and Type 5 are not attested. If this is confirmed by further research and by a more balanced typological sample, then these results may lay bare a new language universal about the interaction of allomorphy between negation and TAM.

The most intriguing results of the typological investigation for the present paper are on the one hand what we see left of the vertical line in table 4, i.e. the fact that all languages in the sample with AINT also show TAM-changes under negation, and on the other hand what we see right of the vertical line, i.e. that the absence of AINT does not imply an absence of TAM-change under negation, i.e. the existence of TYPE 3.

Table 4: Typological sample: division per types.

TYPE 1A	TYPE 1B	TYPE 3	TYPE 4	TYPE 5	TYPE 6
Alamblak	Amele	Abkhaz	Achumawi	Burushaski	Abipón
Bukiyip	Egyp Arabic	E. Armenian	Acoma	Candoshi	Chorote
Albanian	Awa Pit	Aymara	Ainu		
Bambara	Bafut	Bagirmi	Andoke		
Bafut	Bororo	Berber	Apalai		
Beja	Brahui	Boko	Apurina		
Chukchi	Cantonese	Burrara	Araona		
	Upper Chehalis	Burmese	Asmat		
	Chinantec (Lealao)	Comanche	Barasano		
			Baré		
			Basque		
			Batak		
			Bawm		
			Bella Coola		
			Birom		
			Canela-Krahô		
			Carib		
			Cayuvava		
			Chamorro		
			Chumash		
			Chinook Lower		
TYPE 2A	TYPE 2B				
-	-				

In the next section we will interpret these results and zoom in on Bambara to shed more light on the initial question this paper started out with: is there an empirical reason to argue that sentential negative markers may consist of a [T] feature?

4 Towards an analysis

4.1 Interpreting the typological data

The data from our typological survey in section 3 point to the fact that when the form of the sentential negative marker in a language changes due to TAM this brings about changes in the TAM-domain as well. Crucially, when nothing changes in the form of the sentential negative marker due to TAM, the TAM-domain can nevertheless still be affected due to the mere presence of the sentential negative marker, i.e. the pattern displayed by TYPE 3. This pattern is important since this suggests that the mere presence of a sentential negative marker activates the TAM domain in a non-trivial way and could provide support for the hypothesis that there is a [T]-feature inside negative markers. As mentioned before, more data are required to confirm these results and to test their significance with respect to the languages of the world.

If we assume that language variation boils down to differences in the structural size of lexical items (Starke 2011; Caha et al. 2019; Vanden Wyngaerd et al. 2020), i.e. the number of features that lexical items spell out according to the Nanosyntactic spellout principles (Starke 2009; Caha 2009; Baunaz et al. 2018)⁷, then the variation we get to see in the languages of the world with respect to AINT and the TAM-change under negation could be regarded as a trade-off between features spelled out by markers pertaining to the TAM-domain and features inherently spelled out by negative markers. Table 5 illustrates this idea informally.

The first row provides a set of arbitrary abstract features. In the following rows it is hypothetically and informally illustrated how the relevant markers (predicates, negative markers, TAM-markers) can spell out different sets of features (A, B, C, D) depending on the language one is dealing with. The table shows that there can be gaps for TAM-related categories and negation (row 2 and 3): both categories can be optional and can therefore be absent in certain configurations; furthermore the table shows that all morphemes can grow or shrink featurally, depending on the language we are dealing with: the predicate (row 4); the negative marker (row 5 and 6) or a TAM-morpheme (row 7). I added ϕ (person, gender, number) to this table as well, but I will remain agnostic about it for now, even though interactions between ϕ , negation and the TAM-domain have been observed (Miestamo 2005 and see section 3).

⁷ Nanosyntactic spellout is rigidly cyclic and phrasal, i.e. after every step of Merge syntax tries to spell out.

Table 5: Lexicalisation table.

	A	B	C	D	E
1.	PRED(-)	TAM	Neg-m	TAM	ϕ
2.	PRED(-)		Neg-m	TAM	ϕ
3.	PRED(-)	TAM		TAM	ϕ
4.	PRED(-)		Neg-m	TAM	ϕ
5.	PRED(-)	TAM	Neg-m		ϕ
6.	PRED(-)	Neg-m			ϕ
7.	PRED(-)	TAM		Neg-m	ϕ

What table 5 does not show is which types in table 4 correlate with which row. In order to pinpoint that, we need to do more typological research, understand better what the abstract features in the toprow stand for and how many features each morpheme can consist of, i.e. know the precise functional sequence (FSEQ) of these morphemes. It is the aim of the bigger project behind this paper to investigate this, but for now the aim is to focus solely on the internal structure of the sentential negative morpheme (Neg-m in table 5) and more in particular on whether it makes sense to argue for a default [T]-feature.

The typological investigation in section 3 already suggested that the presence of a negative marker can bring about allomorphy in the TAM-domain, regardless whether the negative marker has an allomorph or not that is conditioned by TAM. However, what was not made explicit is what the role is of present tense. When we referred to AINT up until now, the allomorphs conditioned by tense are never conditioned by present tense. The main reason for this is that the standard negator, which is by definition not represented as an AINT, is the negator we find in the context of the present tense indicative. If the informal trade-off of features between TAM-markers and AINT is on the right track, then it could very well be the case that standard negators, which typically appear in the context of present tense spell out a (default) tense feature. This would also explain why present tense is very often morphologically zero coded (Bybee et al. 1994). However, this hypothesis also presumes that we expect to see present or default tense morphologically realised in at least some languages in the world, possibly also contained within the negative marker.

It seems that there is such a language in the small sample discussed in this paper. Bambara does not only provide support to the idea that present tense can be morphologically realized, but also to the idea that it can be part of the feature composition of negative markers. In addition, Bambara also sheds light on the hierarchy of tense features. In section 4.2 we discuss the data from Bambara.

4.2 Negative markers and tense: support from Bambara

Bambara is a Niger-Congo language spoken in Mali.⁸ The present tense marker *bE* becomes *tE* in a negative sentence, cf. (6). It thus seems as if *b-* is replaced by the negative element *t-*. The same is true in the present progressive, where progressive aspect is additionally marked by means of *ka*, (7).

- (6) a. *Sanu bE baara kE*
 Sanu PRS work do
 ‘Sanu works.’
- b. *Sanu tE baara kE*
 Sanu PRS.NEG work do
 ‘Sanu does not work.’ (Ermisch 2013:2)
- (7) a. *N bE ka liburu kalan.*
 1SG PRS PROG book read
 ‘I am reading the book.’
- b. *N tE ka liburu kalan.*
 1SG PRS.NEG PROG book read
 ‘I am not reading the book.’ (Ermisch 2013:3)

⁸ Bambara is grouped with Type 1a and should thus have a fully suppletive AINT. This is indeed the case. To negate an affirmative sentence with a transitive predicate expressing perfective aspect, as in (i-a) the *fully suppletive* negative marker *ma* is used, (i-b).

- (i) a. *Birama ye liburu kalan.*
 Birama PRF book read
 ‘Birama has read the book.’
- b. *Birama ma liburu kalan.*
 Birama PRF.NEG book read
 ‘Birama has not read the book.’

Due to a lack of space it is not possible to discuss perfective tense with intransitive predicates and past perfect tense. However, the negator remains the same (cf. (Ermisch 2013)).

Based on these data we can safely say that negation sits higher in the functional sequence than progressive aspect. However, it is less clear whether negation sits higher than the morpheme that gives rise to present tense. One could argue that the data in (6) suggest that present tense consists of two features, as illustrated in table 6. However, under this approach one would assume there is an independent morpheme, *E*, in Bambara, that can be spelled out separately. Since this is not the case, it seems more likely that *bE* is (phrasally) spelled out by the feature responsible for the expression of present tense/default tense, represented here by PRES and illustrated in table 7.⁹ Under this assumption *tE* is the phrasal spellout of that same PRES and NEG. However, it is not possible to decide whether NEG sits below or above PRES on the basis of the data in (6)-(7). I will assume that it sits above PRES for now, as in the table in 7.¹⁰

Table 6: Bambara: present tense 1.

(NEG)	PRS1	PRS2
	b	E
t	E	

Table 7: Bambara: present tense 2.

(NEG)	PRS
be	
te	

It thus seems that Bambara provides morphological support for the morphological realisation of present tense and the idea that sentential negative markers spell out a tense feature in addition to a NEG feature. However, Bambara's morphology has more to offer, both with respect to the FSEQ of tense and with respect to the position of negation in that FSEQ.

⁹ It is not the aim of this paper to discern the right featural properties of present, past or future tense nor to discuss the semantics of tense or the relationship between grammatical tense and semantic tense. The tense-related featural labels used in this paper are placeholders for whatever features responsible for the expression of present tense, past or future tense.

¹⁰ It has been argued by Dumestre (2003); Ermisch (2013) that *be* should be glossed PRES.AFF. However, there is no more reason to gloss 'be' as AFF, than there would be to gloss English *is* that way. Moreover, there is a focus particle in Bambara, *dé* (Prokhorov 2014), that is dedicated to functions similar to emphatic *do* in English. It seems to me that this particle would be a better candidate to be glossed AFF.

The past tense morpheme in Bambara is *tun bE*, which literally contains the present tense marker *bE*. The negative past form, *tun tE*, thus shows that the negative past tense consists of the marker used in the negated present tense. It thus seems fair to say that the marker used in the present tense is some sort of default tense marker, which can be part of the morphological make-up of other tenses.

- (8) a. *N tun bE liburu kalan.*
 1SG PAST PRES book read
 ‘I was reading the book.’ / ‘I used to read the book.’
- b. *N tun tE liburu kalan.*
 1SG PAST PRES.NEG book read
 ‘I was not reading the book.’ (Ermisch 2013:4)

Assuming, as we mentioned before, that the feature NEG sits above PRES, Bambara gives us the following hierarchy.

- (9) (PROG) < PRS < NEG < PST

To get a more complete picture we also need information on future tense. Near future tense in Bambara is expressed as in (10), while distant future tense is expressed as in (11). Especially the distant future tense is informative, since it shows that the present or default tense marker is present in the future tense. The negative marker TE, which as we said consists of present tense, is present in both distant and near future tenses. The examples are from Ermisch (2013), but I modified the glosses in accordance with the analysis in this paper.

- (10) a. *Birama na mobili ko.*
 Birama FUT car wash
 ‘Birama is going to wash the car.’
- b. *Birama te- na mobili ko.*
 Birama PRS.NEG- FUT car wash
 ‘Birama will not wash the car.’
- (11) a. *Muso be-na den sOrO.*
 Muso PRES.NEG-FUT baby have
 ‘The woman will have a baby.’
- b. *Muso te- na den sOrO.*
 Muso PRES.NEG- FUT baby have

‘The woman will not have a baby.’

Assuming the mirror principle (Baker 1985), the Bambara future tense data indicate that future tense *na* sits hierarchically higher than negation and present tense. Moreover, the fact that the past tense marker is a free morpheme in a negative context, while the future tense marker *na* is a bound morpheme under negation, leads us to propose that *na* is closer to the present tense than the free morpheme *tun*. This gives us an order for Past, Future and Present tense.

The order for tense, negation and progressive aspect in Bambara is visualized by means of the lexicalisation table 8: the shorthand for the tense features and the negation is in the top row, while the fact that some morphemes span several cells captures nanosyntactic phrasal spellout in an informal way.

Table 8: Bambara.

PST	FUT	NEG	PRS
			be
		te	
tun			be
tun		te	
	na		be
	na	te	

At this point - and under the assumption of Chomsky (2001:2)’s Uniformity Principle - we have actually completed the mission of this paper, i.e. we provided support from Bambara and from a typological investigation for the idea that sentential negative markers may consist of a [T]-feature.

5 Conclusion

This paper set out to provide support for the a well-established claim in the literature that sentential negative markers are associated with tense and more radically, that there is [T] feature inside sentential negative markers (De Clercq 2018; 2020). First, the paper discussed data from a small-scale typological investigation that showed that the presence of TAM-allomorphy under negation does not necessarily coincide with TAM-conditioned negative allomorphy, while

the presence of TAM-conditioned negative allomorphy always correlates with TAM-allomorphy under negation in the current sample. Crucially, the study also showed that the mere presence of a standard negator may impact TAM-marking, providing strong support to the idea that negation interacts with the TAM domain in non-trivial ways. Finally, the investigation suggests that some logically possible types of languages may not exist in the languages of the world. More research is required to confirm this. Second, we speculated on the role of the standard negator with respect to present tense. We suggested that if we were to assume that there is a default tense feature inside standard negative markers, this could explain why present tense is so often zero coded and why standard negators typically appear in the context of present tense. Third, we discussed Bambara, whose morphology does not only tell us more about the FSEQ for tense and negation, but it crucially also shows that a sentential negative marker indeed may consist of a default/present tense feature.

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A Appendix**Table 9:** Sample.

language	phylum	genus	macroarea
Abipón	Mataco-Guaicuru	Guaicuruan	South America
Abkhaz	Caucasian	Northwest Caucasian	Eurasia
Achumawi	Hokan	Palaihnihan	North America
Acoma	Keresan	Keresan	North America
Alamblak	Sepik-Ramu	Sepik	Australia/New Guinea
Albanian	indo-European	Albanian	Eurasia
Ainu	Ainu	Ainu	Eurasia
Amele	Trans-New-Guinea	Madang	New Guinea
Andoke	Andoke	Andoke	South America
Apalaí	Carib	Carib	South America
Apurinā	Maipuran	Maipuran	South America
Arabic(Egyptian)	Afro-Asiatic	Semitic	Africa
Araona	Tacanan	Tacanan	South America
Arapesh	Torricelli	Torricelli	Australia /New Guinea
Armenian (East)	indo-European	Armenian	Eurasia
Asmat	Trans-New-Guinea	Central& South New Guinea	Australia/New Guinea
		Kutubuan	
Awa Pit	Barbacoan	Barbacoan	South America
Aymara	Aymaran	Aymara	South America
Bafut	Niger-Congo	Bantoid	Africa
Bagirmi	Nilo-Saharan	Bongo-Bagirmi	Africa
Bambara	Niger-Congo	Western Mande	Africa
Barasano	Tucanoan	Tucanoan	South America
Baré	Maipuran	Maipuran	South America
Basque	Basque	Basque	Eurasia
Batak (Karo)	Austronesian	Batak	Southeast Asia/Oceania
Bawm	Sino-Tibetan	Kuki-Chin-Naga	Southeast Asia/Oceania
Beja	Afro-Asiatic	Northern Cushitic	Africa
Bella Coola	Salishan	Bella Coola	North America

Table 10: Sample.

language	phylum	genus	macroarea
Berber (Middle Atlas)	Afro-Asiatic	Berber	Africa
Birom	Niger-Congo	Platoid	Africa
Boko	Niger-Congo	Eastern Mande	Africa
Bororo	Macro-Ge	Bororoan	South America
Brahui	Dravidian	Northwest Dravidian	Eurasia
Burarra	Australian	Burarran	Australia/New Guinea
Burmese	Sino-Tibetan	Burmese	Eurasia
Burushaski	Burushaski	Burushaski	Eurasia
Canamarí	Katukinan	Katukinan	South America
Candoshi	Candoshi	Candoshi	South America
Canela-Krahô	Macro-Ge	Ge- Kaingang	South America
Cantonese	Sino-Tibetan	Sinitic	Southeast Asia/Oceania
Carib	Carib	Carib	South America
Cayuvava	Cayuvava	Cajuvava	South America
Chamorro	Austronesian	Chamorro	Southeast Asia/Oceania
Chehalis (Upper)	Salishan	Tsamosan	North America
Chinantec (Lealao)	Oto-Manguean	Chinantecan	North America
Chinook (Lower)	Penutian	Chinookan	North America
Chorote	Guaicuru	Mataco	South America
Chukchi	Chukotko-Kamchatkan	Chukotko-Kamchatkan	Eurasia
Chumash	Chumash	Chumash	North America
Comanche	Uto-Aztecan	Numic	North America