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Negation in Berber: variation, evolution, and typology

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Abstract

Double and triple negation marking is an ancient and deep-rooted feature that is attested in almost the entire Berber-speaking area (North Africa and diaspora), regardless of the type of negators in use; i.e. discontinuous markers (preverbal and postverbal negators) and dedicated negative verb stem alternations. In this article, we deal with the main stages that have led to the present Berber negation patterns and we argue, from a typological viewpoint, that certain morphophonetic mechanisms are to be regarded as a hitherto overlooked source for new negators. Moreover, we present a number of motivations that account for the hypothesis that, in Berber, those languages with both a preverbal and a postverbal negator belong to a diachronic stage prior to the attested languages with a preverbal negator only. Consequently, the study demonstrates that the Jespersen Cycle is back to the beginning in certain Berber languages. In doing so, we also show that Berber is to be regarded as a substrate in the development of double negation in North African Arabic. In addition, the study accounts for the asymmetric nature of Berber negation, although some new developments towards more symmetrical negation configurations are also attested.

Keywords: negation, Berber, typology, diachrony, contact, the Jespersen Cycle

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1 Introduction

The morphosyntax of negation in Berber – a language family of the Afroasiatic phylum – is rich and complex, and appears to be the outcome of multiple processes that have taken place over different time-periods from prehistory to the present day. The most noteworthy trait of Berber negation is its "triple negation" marking, involving not only discontinuous negative markers (NEG1/NEG4 and NEG2) but also dedicated "negative verb stem alternations" (NEG3) — a feature that is attested in almost the entire Berber-speaking area (North Africa; Sahara, North, and Northwest Sahel included). We argue that these vocalic verb stem alternations (NEG3), and in particular the morphophonemic mechanisms behind them, are to be regarded as a source for the creation of new negators, which will be discussed in detail in section 4 of the study.

Moreover, we will attempt to single out the main processes that have led to the current stages of standard negation in Berber – i.e. the negation of a main clause declarative verbal predicate – while taking into account the role of the so-called Jespersen Cycle (1917: 4), which in Berber has evolved from single to triple negation and back to single negation.

A 'classical' Jespersen Cycle basically stands for the following three-fold diachronic transformation path of clausal negation marking, which includes various in-between and overlapping stages in Berber (see section 3):

- Stage I: one marker is a sole negator and is weakened in time (NEG1)
- Stage II: the weakened negator is strengthened by means of an element of a various nature, which is reanalysed as a new negator (NEG1 + NEG2).
- Stage III: the new reanalysed element becomes the sole negator (NEG2).

However, we consider the motivation behind these cyclical changes to be of a pragmatic kind rather than of a phonetic kind, the latter being proposed in Jespersen (1917: 4), where phonetic weakening is regarded as the triggering factor of the negative diachronic changes. From a grammaticalisation perspective, which directly relates to these cyclical negation patterns, it would be more reasonable to view the formal modifications pertaining to negation as outcomes of content modifications, which would relate to the pragmatic context, including strategies such as emphasis, contrast, and presupposition. Our viewpoint is thus more in line with Meillet's understanding (1912: 140) of the negative diachronic cycle, which is shared and discussed in detail in van der Auwera (2009).

Consequently, the concept of the Jespersen Cycle (henceforth 'JC') is used here as a negative cycle that is instigated by functional (semantic and pragmatic) "weakening" in the course of its evolution, which may be combined with formal (phonetic and morphological) weakening. In the Berber language family, five negation stages with their respective bifurcations are found, and which make up what we call here the Extended JC for Berber (section 3 and Table 2). The relative chronology of these stages will be reconstructed on the basis of formal criteria (sections 3 and 4). Starting from stage II of the JC, the Berber verb may or may not display a negative verb stem, which is coined in the article as NEG3, because it follows NEG2 in the Berber negation diachrony, which will be accounted for in section 4 of the article.

As for the discontinuous negators, the principal variant of NEG1 is most probably of Berber origin and is derived from **wər*, a grammaticalised verbal form composed of the negation element **w* or **u* and the verbal root **r* (modal auxiliary): **wər* = NEG = [NEG **w* or NEG **u* + V **r*].[1] The preverbal negators other than this variant appear to be innovations and are indicated in this study with NEG4. This latter negator is part of a negative cycle distinct from the Extended JC for Berber, which will be discussed in section 3.4.

While the preverbal negator is obligatory in most Berber languages – with the exception of some cases where only the postverbal is used (see section 2.3.1 below), NEG2, which usually follows the verb predicate, may be optional – as an intensifier – or required, depending on the negation context. NEG2 may also be absent for discursive or expressive purposes, or may be replaced by other elements (i.e. adverbs, indefinite pronouns), which are considered to be semantically or pragmatically more adequate or more emphatic, but these cases do not belong to standard negation and will therefore not be dealt with here, although some cases of non-standard negation will be presented whenever necessary for the discussion. Moreover, NEG2, which is generally derived from an expression signifying 'thing', 'something', or 'someone' (e.g. *šra* 'thing'), was originally an element of intensification (emphasis) and still is to a different degree in various Berber languages (see Table 1 in section 2.4 for a general overview of NEG2 instances). With time, the pan-Berber NEG2 has lost some of its marking strength and therefore other forms were used to complete the postverbal negator function.[2] The grammaticalisation of NEG2 has reached various stages and its precise functional roles differ from one Berber language to the other.

As for the current Berber verbal system, it is fundamentally tripartite, with a basic aspectual opposition between the perfective and the imperfective, and with the neutral aorist, which stands for both modal and aspectual values. In many Berber languages, this tripartite system is limited to affirmatives; only perfectives and imperfectives are used in the context of negation. Consequently, the Berber negation system can be considered to be “asymmetric” and more precisely “paradigmatically asymmetric”, as defined by Miestamo (2005: 7–10).

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[1] About the etymological origin of the discontinuous negator NEG1__ NEG2 in Berber, see e.g. Brugnatelli (2011), Chaker (1996), and Galand (1994). Note that NEG1 may also be rendered by amalgams containing the pan-Berber negator, like for instance in Western Rif Berber (Senhaja, Northwest Morocco), where forms like *u-la* and *u-ma* are attested. Berber elements which are not based on the pan-Berber *u*, like for instance *ak* from Ghadames Berber (Libya), are also sporadically used as preverbal negators.

[2] Among these forms, there are also quantifiers and negative polarity items (NPI), the diachrony of which is not within the scope of this paper. Some examples of the close connection between NPI and NEG2 are the following: in Tamazight of Zemmour (Central Morocco, Boumalk 1996), *ša wer yuɣ* (anything NEG1 buy-PFV-3MSG) 'He has not bought a thing', the NPI *ša* 'anything' is homophonous of and probably even the source of NEG2 ; the same goes for the following example of the same language, which contains even a pronoun referring to the NPI: *ša wer t ẓṛix* (anything NEG1 3MSG=see-PFV-1SG) 'I have not seen a thing'. Similar cases are found in other Berber languages, like in Rif Berber (North Morocco); e.g. *ša wa ṯ-yənni* (anything NEG1 3MSG=say-PFV$_{\text{NEG3}}$-3MSG) 'He has not said a thing' > 'It is not worth a thing what he has said'; more details about this phenomenon are given in Lafkioui (2013b).

Another typologically interesting feature attested in most Berber languages is the fronting of clitics triggered by preverbal negators — a phenomenon also observed with other particles as well as in relatives and in wh-interrogatives. Pronominal and ventive clitics precede the verbal head (but follow the negator), usually without changing their respective order, namely [indirect clitic + direct clitic + ventive clitic]. As this phenomenon is out of the scope of our article, we look at it here only in the context of the features examined.[3]

Additional typological features of the Berber languages are their primarily synthetic (inflection, derivation, and compounding) and inflecting nature. They also have in common a VSO basic word order, an obligatory encoding of the subject on the verb, the preposition-noun sequence, possessive suffixes and a mixed morphological plural formation (affixation and/or vocalic alternations). Apart from noun-verb oppositions, all other word class distinctions are not clear-cut in Berber. The Berber languages also provide evidence for one of the irrefutably typological linguistic characteristics of Africa; i.e. the marked-nominative (König 2006; Lafkioui forthcoming).

In the light of the features and viewpoints presented in this introduction, the present study will present synchronic, diachronic, and typological evidence that proves that:

- Berber possesses triple negation, with specific vocalic verb stem alternations as NEG3 and with the particular morphophonemic mechanisms involved as a new source type for the creation of negators.
- [NEG1 + V/V$_{\text{NEG3}}$ + NEG2] is a language stage of Berber origin and is prior to the currently attested [NEG1/NEG4 + V], which implies that the Jespersen Cycle is back at its starting point in certain Berber languages.
- Berber negation is significantly asymmetric, even though a new trend towards more symmetrical negation patterns can be found in certain languages.

The article is organised as follows. In section 2, the negation system of Berber is considered in detail by analysing its synchronic features and patterns. Section 3 addresses Berber’s negation system from a diachronic and typological perspective, with a special focus on discontinuous negation marking. Section 4 is dedicated to the negative verb stems and their connection with the origin of NEG3. The article ends with a number of historical and typological conclusions.[4]

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[3] Attempts to explain the origin of NEG1 by means of clitic placement are made in Prasse (1972: 244).

[4] The original transcription of the cited Berber examples is maintained, with minimal adjustments in order to enhance the examples’ intelligibility. We have also made certain modifications to Lanfry’s transcriptions, according to the author’s own phonetic suggestions (Lanfry 1968: xxxiv-xxxvi). All English glosses of the Berber examples are our own.

2 Negation from a synchronic perspective

Berber languages can be divided into three main negation types, which are divided into two subtypes, depending on the absence or presence of negative verb stems. Since this section deals with the synchronic typology of negation in Berber, indications about the respective diachrony of the negators involved (i.e. NEG1, NEG2, NEG3, NEG4) are not given here but are considered in the diachrony sections 3 and 4.

- Type 1: NEG + V/V_{NEG}; concerns the Berber languages that do not use postverbal negators.
  - Subtype 1a: NEG +V; does not include the negative verb stem.
  - Subtype 1b: NEG +V_{NEG}; includes the negative verb stem.
- Type 2: NEG + V/V_{NEG} + NEG; concerns the Berber languages that do use both preverbal and postverbal negators.
  - Subtype 2a: NEG + V + NEG; does not include the negative verb stem.
  - Subtype 2b: NEG + V_{NEG} + NEG; includes the negative verb stem.
- Type 3: V/V_{NEG} + NEG; concerns the Berber languages that do not use preverbal negators.
  - Subtype 3a: V + NEG; does not include the negative verb stem.
  - Subtype 3b: V_{NEG} + NEG; includes the negative verb stem.

Intermediate stages, wherein languages can mainly belong to one type but residually or innovatively also display features of another type, are also found in the Berber language family and will be discussed in the following sections.

The distribution over North Africa is represented in Figure 1 (see below). The most widespread negation pattern is type-2b (triple negation), in terms of spoken languages. Even though the Type-1b area (mainly the Sahara) is vast compared to the other North African areas, the number of Berber speaking people there is much lower than in the more northern zones, like in Kabylia (North Algeria) for instance.

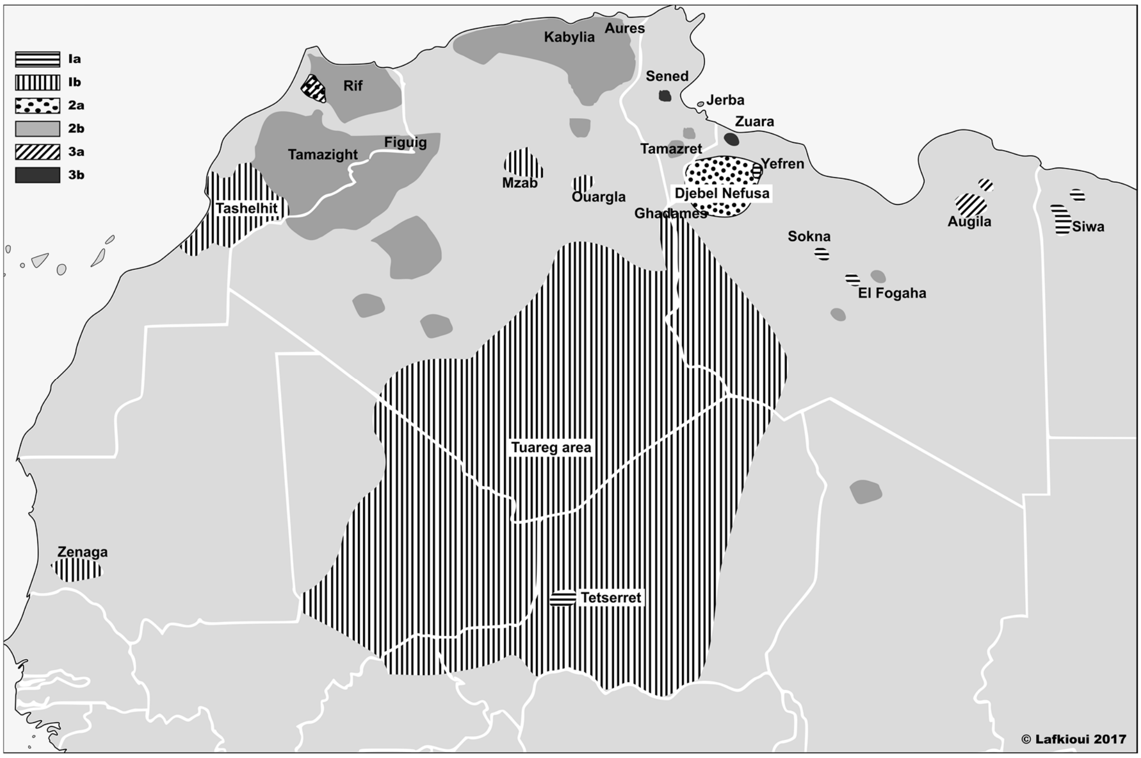
Ia
Ib
2a
2b
3a
3b
Kabylia
Aures
Rif
Sened
Jerba
Zuara
Tamazight
Figuig
Tamazret
Yefren
Mzab
Ouargla
Djebel Nefusa
Ghadames
Tashelhit
Augila
Siwa
Sokna
El Fogaha
Tuareg area
Zenaga
Tetserret
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Figure 1. Overview of the synchronic standard negation types in Berber

2.1 Type 1: NEG + V/V$_{\text{NEG}}$

This morphosyntactic type contains the Berber languages that do not use postverbal negators. It is divided into two sub-types according to the presence or absence of the negative verb stem.

2.1.1 Subtype 1a: NEG + V

The languages that belong to subtype 1a are certain Eastern languages, namely Berber of Siwa (Egypt), of Sokna and of El-Fogaha (Fezzan, Libya), and of Yefren (Tripolitania, Libya). The attested preverbal negators are diverse, in terms of both synchrony and diachrony, and usually do not trace back to the well-known ancient pan-Berber form **wər/wəl*. The following example of Siwa Berber (Egypt) with *la* as the preverbal negator illustrates this:[5]

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[5] Apart from the case of Siwa Berber, the negator *la* and its variants (e.g. *ula*) are also attested in other Berber languages, like in Rif Berber (Lafkioui 1996, 2007: 234–236), where it is used in both preverbal and postverbal position, and in certain Eastern Kabyle varieties, where it comes after the verb (Rabhi 1992: 143). On the origin of this particle, see Brugnatelli (2010).

(1)	*mak*	*inəɣɣ*	*təmsi,*	***la***	*ntmata*	*ssqi*
	when	kill.PFV.3MSG	fire.FSG	NEG	feel.PFV.1PL	cold

‘When he extinguished the fire, we did not feel the cold.’
(Leguil 1986: 35; Siwa Berber)

The same goes for El Fogaha Berber (Libya), where the negator *(ĕ)nk* is commonly attested, such as in the assertion in (2).

(2)	***ĕnk***	*a*	*tûsed*
	NEG	IRR	come.AOR.3FSG

‘She will not come.’
(Paradisi 1963: 93; El Fogaha Berber)

It is worth mentioning that this negator is also used in non-standard negation, such as in injunctions when it is followed by a verb in the aorist (3) and in negative constructions with noun phrase predicates (4).

(3)	***nk***	*a*	*tkẹmẹt*
	NEG	IRR	enter.AOR.2SG

‘Do not enter!’
(Paradisi 1963: 115; El Fogaha Berber)

(4)	***ĕnk***	*tmellâlt*
	NEG	white.FSG

‘She is not white.’
(Paradisi 1963: 115; El Fogaha Berber)

In the context of injunctions, *(ĕ)nk* can be replaced by the preverbal negator *bâk*, which is necessarily followed by a verbal form that takes the 2nd person of the aorist, singular (5a) or plural (5b).

(5)	a. ***bâk***	*a*	*túra̅ı̅t*
	NEG	IRR	write.AOR.2SG

‘Don’t write!’
(Paradisi 1963: 115; El Fogaha Berber)

	b. ***bâk***	*a*	*temžerem!*
	NEG	IRR	harvest.AOR.2PL

‘Don’t harvest!’
(Paradisi 1963: 115; El Fogaha Berber)

A similar negator, which contains the unit *b* and which is used with the imperative-prohibitive, is *abû*; it is attested in the nearby oasis of Sokna (Sarnelli 1924: 22)[6], where the preverbal negators *(i)ngi*, *enk*, and *enki* commonly occur in standard negation, as is displayed in (6) for *(i)ngi*.[7]

(6)	*zëmân*	*ellân*	*mār*	***ingî***	*isél*	*dĕ*	*lahl=énnes*	*am*	*nẹ́tta*
	once	be.PVF.3MPL	man	NEG	hear.PFV.3MSG	and	wife=3SG	like	3MSG

‘Once upon a time, there was a man who could not hear (he was deaf) and his wife who was like him.’

(Sarnelli 1924‑25: 32; Sokna Berber)

Other preverbal standard negators attested in Sokna are *yul*, *ul*, and *lā*; e.g. sentence (7) is negated by means of the marker *la*, whereas (8) has *ul* for its negation.[8]

(7)	*lállā=s*	***lā***	*tĕnă̂žžäm*	*a*	*tĕssẹ́mbi*	*sẹn*
	mother=3SG	NEG	can.PFV.3FSG	IRR	breastfeed.AOR.3FSG	two

‘His mother could not breastfeed both.’

(Sarnelli 1924: 34; Sokna Berber)

(8)	***ul***	*issén*
	NEG	know.PFV.3MSG

‘He does not know.’

(Sarnelli 1924: 45; Sokna Berber)[9]

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[6] The negator *abû* appears in a sentence recorded by Richardson (1850): *abut init sa* ‘don’t say so’. The vowels are hypothetical, since in the Arabic script one reads *ʾbtʾntsʾ*. The form *abut* would be an auxiliary verb with a plural marker *-t* of the imperative (see Souag 2015). There may be a link with the dialectal Arabic verb *(ma) ba* ‘will (not)’, if one takes into account the existence of certain constructions in El Fogaha Berber, like e.g. *mā bât atenn-âs* ‘she did not tell it to him’ (literally ‘she did not want to tell...’; NEG/want-PFV-3FSG/IRR-tell-AOR-3FSG=3MSG; Paradisi 1963: 93), *la-bâ a yuġ-ẹ́t u la-bâ a iwót* ‘neither did he take it nor did he strike’ (lit. ‘neither he wants to take it nor he wants to strike’, Paradisi 1963: 95; NEG=want-PFV-3MSG/IRR-take-AOR-3MSG=3MSG/and/NEG=want-PFV-3MSG/IRR-strike-AOR-3MSG). Likewise, in some other instances, Sokna Berber employs *yugi* ‘he refused’ as a negator (Sarnelli 1924: 40; note that it is erroneously spelt *ingi*, twice, on p. 35).

[7] It should be mentioned that the residual use of a negative stem was recorded by Sarnelli in the beginning of the 20th century, but just for certain grammatical persons of the verb ‘be (there)’; e.g. *yellâ* ‘there is’ vs. *ngi yellí* ‘there is not’, compared to the unchanged stem in (*engi*) *ellân* ‘there are (not)’ (Sarnelli 1924: 18).

[8] No example of *yul* or of *abû* appears in Sarnelli’s texts (1924); they are merely listed in the glossary. The scanty documentation on this language does not permit a detailed analysis of its negators. In some notes by Richardson (1850), one finds discontinuous constructions, like e.g. *enk esnex ši* ‘I don’t know’, and even constructions with a postverbal negator only, such as *elix šra* ‘I have not’. Moreover, the most frequent negator in Richardson’s notes is written as *inki* (or *enki*?) instead of *ingi* (Souag 2015).

[9] This sentence is the emendation of Lyon’s (1821: 316) phrase ‘stupid = *williseen*’ by Sarnelli; the latter points out that, at the time of his investigation, the people of Sokna used the expression *ingî issén* with the negator *ingi* instead.

As for Yefren Berber (Libya), like most of the 1a-type languages, it does not make use of the pan-Berber preverbal negator **wər/wəl*, at least not as a proclitic, but rather as part of a grammaticalised form, i.e. the adverbial expression *ulyuš* ‘still’ (10).[10] The negator *mi* is usually employed instead (9), sometimes in combination with *ulyuš* (10). The proclitic *mi* is in complementary distribution with the allomorph *m*, which appears before a vowel (11).[11]

(9) ***mi*** *ẓriɣ=t*
NEG see.PFV.1SG=3MSG
‘I have not seen him.’
(Abuzakhar 2011; Yefren Berber)

(10) *ulyuš* ***mi*** *rxun=awən*
still NEG release.PFV.3MPL=2MPL
‘They have not released you yet.’
(Abuzakhar 2011; Yefren Berber)

(11) *utlayən* *ɣən* ***m’*** *utlayən*
speak.PFV.3MPL or NEG speak.AOR.3MPL
‘They speak or they do not speak.’
(Abuzakhar 2011; Yefren Berber)

In all 1a-type languages, the regular preverbal negator is different from the commonly used pan-Berber **wər/wəl*. As a matter of fact, most of these negators are innovated forms, a point that we discuss in detail in section 3. Interestingly, the languages of this group also have in common that their preverbal negator does not trigger a position change of clitics (9–10), which is not usual practice in Berber.[12] The common configuration is exemplified in the sentence of Jerba Berber in (12), where the clitic *t-* is fronted because of the presence of the preverbal negator, while its canonical position would be postverbal.

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[10] Concerning the verbal origin of this adverbial expression, see Brugnatelli (2011: 521–524, 2014b: 171).

[11] The enclitic negator *–š* is marginally attested here. As for the possible origin of Yefren’s *mi*, see Brugnatelli (2014a: 130). The Yefren examples from (9) to (11) come from the poem *Ass-u-nneɣ d knim mi tellim* ‘It’s our feast and you are not there’, which was composed by Fathi Salem Abuzakhar in January 2011 and which is diffused by the Internet in written form as well as in a recorded sound file.

[12] Some other Berber languages which do not systematically prompt a position change after the preverbal negator and which do not belong to the subtype 1a are, for instance, Tashawit (Lafkioui and Merolla 2002: 23–24), which is spoken in the Algerian Aures area, and western Tarifit (aka Senhaja Berber; Lafkioui 2007: 128) of Northwest Morocco. For other Berber languages where this phenomenon is observed, see Brugnatelli (1993: 234–237).

(12) ***wə*** *t=ẓriɣ* ***š***
NEG 3MSG=see.PFV.1SG NEG
‘I have not seen him.’
(Brugnatelli, personal corpus; Jerba Berber)

In contrast to (12), the examples from Siwa (13), from El Fogaha (14), and from Sokna (15), do not exhibit a position change of the postverbal clitics in the presence of the preverbal negator.

(13) *wən* ***l*** *iɛəžb=asən*
what NEG please.PFV.3MSG=3MPL
‘what did not please them’
(Leguil 1986: 32; Siwa Berber))

(14) ***nk*** *essę́nåɣ=t*
NEG know.PFV.1SG=3MSG
‘I don’t know him.’
(Paradisi 1963: 95; El Fogaha Berber)

(15) ***ingî*** *yĕnnâ=s* *i* *mâr* *udînak:* *éčč!*
NEG say.PFV.3MSG=3SG to man DEICT eat.AOR.IMP.2SG
‘He did not say to that man: Eat!’
(Sarnelli 1924: 34; Sokna Berber)

Another Berber language where negation is usually expressed through a preverbal negator only is Tetserret (Niger). Yet this language displays a residual use of the stem modification negator in the imperfective of certain verbs (16b), while in the perfective a difference in stress pattern is used to distinguish between positive (16c) and negative constructions (16d).

(16) a. *iɣaʃʃəd*
rot.IPFV-3MSG
‘It (milk) goes bad.’
(Lux 2013: 321; Tetserret)

b. ***wər*** *iɣəʃʃəd*
NEG rot.IPFV_{NEG}-3MSG
‘It (milk) does not go bad.’
(Lux 2013: 321; Tetserret)

c. *iˈʃba*
drink.PFV-3MSG
‘He drank.’
(Lux 2013: 287; Tetserret)

d. *wər ˈiʃba*
NEG drink.PFV-3MSG
‘He did not drink.’
(Lux 2013: 287; Tetserret)

This suprasegmental negation marker could be the final stage of a development towards a complete loss of the stem modification negator, which would make Tetserret resemble certain Tashelhiyt varieties (South Morocco) that are losing this kind of negator and hence are shifting from subtype 1b to 1a (see section 2.1.2).

2.1.2 Subtype 1b: NEG+V$_{\text{NEG}}$

The second subtype is mainly attested in Southern Berber, which comprises languages such as Zenaga (Mauritania), Tashelhiyt (South Morocco), Tuareg Berber (Sahara), and some oasis languages, like Berber of Mzab (Algeria), of Ouargla (Algeria), and of Ghadames (Libya). These languages use both a preverbal negator – usually the pan-Berber **wər/wəl* – and the negative verb stems, like in (17) from Tuareg Berber (Niger), for instance:

(17) a. *ittəl*
roll.up.PFV.3MSG
‘He rolled up.’

b. *wər ittel*
NEG roll.up.PFV$_{\text{NEG}}$.3MSG
‘He did not roll up.’
(Petites Sœurs 1974: 169; Tuareg Berber)

However, negative stems are losing ground in some languages of this group, in particular in the Tashelhiyt area (South Morocco). The old written texts from this language account for the former existence of negative imperfective stem forms, which are nowadays lost. Even the negative perfective tends to be less frequently used in certain local Tashelhiyt varieties, where it may even disappear in certain contexts. In example (18b), stem vowel alternation after the preverbal negator is displayed, which is generally the case in

Tashelhiyt, whereas in example (19) from the variety of Ida Outanane, the verb may also remain unmodified.

(18) a. *thddn* *tmɣart*
calm.down.PFV.3FSG woman.FS.DS
'The woman calmed down.'
(Bensoukas 2009: 90; Tashelhiyt)

b. ***ur*** *thddin* *tmɣart*
NEG calm.down.PFV$_{NEG}$.3FSG woman.FS.DS
'The woman did not calm down.'
(Bensoukas 2009: 90; Tashelhiyt)

(19) ***ur*** *thddn*
NEG calm.down.PFV.3FSG
'She did not calm down.'
(Bensoukas 2009: 97; Tashelhiyt)

Innovation phenomena pertaining to the preverbal negator, similar to the phenomena attested in the 1a subtype, are also observed in this group, and more precisely in Ghadames Berber (Libya), where the pan-Berber negator *wăl* is employed along with the innovated variants *ak, ad*, and *awas*.[13] The marker *ak* is the most common negator in Ghadames Berber and is employed in non-prohibitive main clauses only. It occurs with the negative perfective (20) or the negative imperfective (21), and to a lesser extent it also occurs with the aorist preceded by *da* (22) so as to render the future tense.

(20) ***ak*** *d=yusi* *did=sən* *awadəm*
NEG VENT=come.PFV$_{NEG}$.3MSG with=3MPL person
'No one of them has come.'
(Bossoutrot, n.d., notebook M, p. 15; Ghadames Berber)

(21) ***ak*** *d=tettis* *ula* *yiwt* *did=esnet*
NEG VENT=come.IPFV$_{NEG}$.3FSG even one.FSG with=3FPL
'No one of them (f.) will come.'
(Bossoutrot, n.d., notebook M, p. 15; Ghadames Berber)[14]

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[13] About the origin of *ak*, see Brugnatelli (2014b: 170).

[14] In the same notebook, one also finds the sentence *ak ittas-ed* 'he will not come' with a positive imperfective and without fronting of the ventive particle *-d*.

(22)	***ak***	*da*	*immăknăf*
	NEG	IRR	roast.PASS.AOR.3MSG

‘It will not be roasted (quite probably).’
(Lanfry 1968: 320; Ghadames Berber)

In a sequence of negative clauses, *ak* is generally used in the first clause and *wăl* in the subsequent ones, like in (23).

(23)	***ak***	*kăm=əkfeɛ*	*ās*	*ḫiyar*	*did*	*mădden*
	NEG	2FSG=give.PFV.1SG	but	best	with	people
	wăl	*kăm=əkfeɛ*	*ās*	*n*	*ənnăsb*^{u}*=nnăm*	
	NEG	2FSG=give.PFV.1SG	but	of	kin=2FSG	

‘I haven’t given you away (for marriage) but to the best of people; I haven’t given you but to your kin.’
(Lanfry 1968: 163; Ghadames Berber)

Apart from its complementary distribution with the innovated negator *ak* in sequential clauses (23), the ancient form *wăl* of Ghadames Berber also occurs in subordinated clauses (24) and in the negative imperative.

(24)	*ənnan=as*	*əkf=anaɛ*	*a*	*nnəšš*	*žid*
	say.PFV.3MPL=3SG	give.IMP.2SG=1PL	IRR	eat.AOR.1PL	when
	wăl	*ufin*	*ɛur=is*	*əčču*	
	NEG	find.PFV.3MPL	by=3SG	food	

‘They asked him “give us (something) to eat” when they did not find food with him.’ (Bossoutrot, n.d., notebook M9, p. 40; Ghadames Berber)

2.2 Type 2: NEG + V/V$_{\text{NEG}}$ + NEG

The majority of the Berber languages belong to this type, of which a small number make use of discontinuous negators only (subtype 2a); most languages of this group also employ a third negator (subtype 2b), which is rendered by means of specific vowel modifications of the verbal stem. Stem alternation in subtype 2b may however be absent in certain verbal forms depending on their aspectual and modal properties (see section 4).

2.2.1 Subtype 2a: NEG + V + NEG

In this subtype, the Berber languages do not take the negative verb stem after the preverbal negator with respect to every verb aspect; i.e. perfective, imperfective, and aorist. This is exceptional in Berber and up to now only attested in Western Rif Berber (also called Senhaja; Northwest Morocco) and in Nefusa Berber (Libya). In all other

Berber languages, the presence of a postverbal negator is usually associated with the presence of the negative stem in non-emphatic contexts. Since these language areas are under heavy influence of Arabic, which ignores negative verb stems, contact could account for this remarkable phenomenon. An example of this type of construction is displayed in (25a) for Western Rif Berber and (25b) for Nefusa Berber.

(25) a. ***ud*** *iffəɣ* *š*
NEG go.out.PFV.3SG NEG
'He did not go out.'
(Lafkioui 2007: 234; Rif Berber, Senhaja)

b. ***wəl*** *yəmlu* *š*
NEG say.PFV.3SG NEG
'He did not say.'
(Beguinot 1942: 64; Nefusa Berber)

As for Western Rif Berber (25a), frequently attested variants of the preverbal negator in this area are *ud*, *la*, *lah*, and *ula*. The latter variant is probably the result of combining the negators *u* and *la*, an amalgam which elsewhere in the Rif region usually stands for the second negator (i.e. NEG___ *ula*), meaning 'nothing'. As for the postverbal negator, the common variants *š* and *šay* are interchangeable in most contexts and differ in certain varieties as to the degree of expressiveness only. Concerning Nefusa Berber, it is worth mentioning that the postverbal negator may be omitted according to Beguinot's data (1942: 191).

2.2.2 Subtype 2b: NEG + V_{NEG} + NEG

The Berber languages of this subtype do take the negative verb stem after NEG, though not necessarily for all verb aspects. The contemporary Berber verbal system displays a fundamental morphological opposition of perfective (PFV) versus negative perfective (NPFV) for the negative aspects (Basset 1952; Cadi 1987: 59-65; Chaker 1989; Galand 1977; Lafkioui 2007: 174-191), as is shown in the verb phrases in (26) from Tamazight (Middle Atlas, Morocco).

(26) a. *innəḍ*
interlace.PFV.3MSG
'He is interlaced.'
(Lafkioui, personal corpus; Middle Atlas Berber)

b. ***ur*** *inniḍ* ***ša***
NEG interlace.PFV$_{NEG}$.3MSG NEG
'He is not interlaced.'
(Lafkioui, personal corpus; Middle Atlas Berber)

A number of Berber languages also have a morphologically marked negative imperfective (Lafkioui 2018). This is the case, for example, of Berber spoken in Figuig, in the Rif area, in Ghadames, in Jerba, in Tamazret, in Ouargla, in Mzab, and in the Tuareg areas. Given its similar marking and functional procedures in a wide range of Berber languages spread over the whole of North Africa, it is most likely that the negative imperfective is a remnant of a distinctive stem in the proto-Berber verbal system (Brugnatelli 2002; Chaker 1996: 18; Kossmann 1989; see section 4). The negative imperfective is generally marked by a dedicated stem vowel modification, that is, the full (unreduced) vowel *a* is changed into the vowel *i*: [*a* > *i*], like in (27) from Central Tarifit (North Morocco). But the vowel *a* is maintained in the negative imperfective when the corresponding *a* of the positive imperfective is preceded by the vowels *i* or *u*, like in (28) from the same language.

(27) a. *yəttaḏəf*
enter.IPFV.3MSG
'He enters/he is entering'

b. *wa* *yəttiḏəf* *ša*
NEG enter.IPFV$_{NEG}$.3MSG NEG
'He does not enter/he is not entering'
(Lafkioui, personal corpus; Central Rif Berber)

(28) a. *yətmunistyar=iṯ*
disturb.IPFV.3MSG=3MSG
'He disturbs him.'

b. *wa* *ṯ=yətmunistyar* *ša*
NEG 3MSG=disturb.IPFV.3MSG NEG
'He does/will not disturb him.'
(Lafkioui, personal corpus; Central Rif Berber)

Nevertheless, most of the Berber languages make use of the positive imperfective in both positive and negative configurations. In the light of these accounts and those dealt with in section 4., Berber offers counterevidence to the cross-linguistic claim that the perfective is less compatible with negation than the imperfective (Matthews 1990: 84; Schmid 1980: 39); this is in line with the findings of Miestamo and van der Auwera (2011).

2.3 Type 3: V/V_{NEG} + NEG

The type-3 languages are less widespread over North Africa and are limited to its fringes, as is displayed in Figure 1.

2.3.1 Subtype 3a: V + NEG

Negation constructions with only the postverbal negator are mainly observed in Eastern Berber languages, such as in Augila Berber in Libya (29).

(29) *akellîm iššen* ***ká*** *amakân*
servant know.PFV.3MSG NEG place
'The servant did not know the place.'
(Paradisi 1960a: 82; Augila Berber)

The marker *ká* negates verbs (29) as well as noun phrase predicates (30). Paradisi's (1960b) accounts show an optional but rather marginal use of the preverbal negator (*wur*, *ur*, *wul*, *ul*), which seems to pertain to questions, like e.g. in (31). The available data are however inconclusive; further investigation is needed.

(30) *wâya d aẓîṭ* ***ká,*** *wâya d amẹdẹn*
DEM.PROX PRDR donkey NEG DEM.PROX PRDR person
'This is not a donkey, this is a man.'
(Paradisi 1960a: 82; Augila Berber)

(31) ***ur*** *nâ=ka* ***ká?***
NEG tell.PFV.1SG=2MSG.RES NEG
'Didn't I tell you?'
(Paradisi 1960b: 170; Augila Berber)

On the other hand, cases of an optional omission of the preverbal negator are regularly attested in Western Rif Berber (Senhaja, Northwest Morocco), for which the examples in (32) account.

(32) a. *iffəɣ* ***š***
go.out. PFV.3MSG NEG
'He did not go out.'
(Lafkioui 2007: 234–235; Rif Berber, Senhaja)

b. ***ud*** *iffəɣ* *š*
NEG go.out.PFV.3MSG NEG
‘He did not go out.’
(Lafkioui 2007: 234–235; Rif Berber, Senhaja)

c. *ša* *iffəɣ* *š*
IRR go.out.AOR.3MSG NEG
‘He will not go out.’
(Lafkioui 2007: 234–235; Rif Berber, Senhaja)

Constructions with just the postverbal negator are generally compulsory when the verb is preceded by certain preverbs, such as *ša* (marker of future/irrealis), as is shown (32c).

2.3.2 Subtype 3b: V_{NEG} + NEG

Sened Berber in Tunisa makes use of both a postverbal negator and negative verb stems, such as in (33b).

(33) a. *inɣa*
kill.PFV.3MSG
‘He killed.’

b. *inɣi* *š*
kill.PFV$_{\text{NEG}}$.3MSG NEG
‘He did not kill.’
(Provotelle 1911: 147; Sened Berber)

The loss of the preverbal negator would have taken place in Sened Berber in relatively recent times, as this negator was formerly recorded by Basset (1890: 58, 103). Yet Provotelle (1911: 126) points out that he did not find the discontinuous negators *u*___ *š* and *ur*___ *š* in the area indicated by Basset.

In some languages of this group, such as Zuara Berber (Libya), the preverbal negator may be dropped freely, which is exemplified in (34b).

(34) a. *yəflá*
go.PFV.3MSG
‘He went.’

b. *yəflí* *š*
go.PFV$_{\text{NEG}}$.3MSG NEG
‘He did not go.
(Mitchell 2009: 100; Zuara Berber)

2.4 Overview of the synchronic standard negation types

In the light of the synchronic findings discussed in sections 2.1 to 2.3, Table 1 presents an overview of the synchronic “standard verbal sentential negation” types in a sample of Berber languages with their respective markers, including variants which may occur in free or conditioned alternation.

Table 1. Overview of the synchronic "standard verbal sentential negation" types in Berber with a sample of languages and their respective markers ([1]rare, [2]suprasegmental markers only, [3]relics of IPFV in old poems and expressions, [4]frequent but may be optional, [5]lack of postverbal negator in most of the Southern varieties).

	Language	Preverbal NEG	Postverbal NEG	Infixal NEG
TYPE 1	Siwa Berber	*la*, *l*	Ø	Ø
	Sokna Berber	*(i)ngi*, *ənk(i)*, *la*, *ul*	Ø	Ø
	El-Fogaha Berber	*nk*	Ø	Ø
	Yefren Berber	*mi*	Ø, *š*[1]	Ø
	Nefusa Berber	*wəl*	Ø	Ø
	Ouargla Berber	*u*, *ul*	Ø	PFV, IPFV
	Mzab Berber	*u*, *wəl*	Ø	PFV, IPFV
	Ghadames Berber	*ak*, *wăl*	Ø	PFV, IPFV
	Tuareg Berber	*wər*, *wăr*	Ø	PFV, IPFV
	Tetserret	*wər*	Ø	PFV[2], IPFV
	Tashelhiyt	*ur*	Ø	PFV[3]
	Zenaga Berber	*wär*	Ø	PFV, IPFV
TYPE 2	Nefusa Berber	*wəl*	*ši*, *š*	Ø
	Jerba Berber	*wə*, *wəl*	*š*	PFV, IPFV
	Aures Berber	*ud*, *u*, *la*, *lah*	*ša*	PFV, IPFV
	Kabyle	*wər*, *ur*	*ara*, *ani*	PFV[3]
	Figuig Berber	*ul*	*šay* [4]	PFV, IPFV
	Tamazight	*ur*	*ša*, *ka*, Ø[5]	PFV
	Eastern and Central Tarifit	*ur*, *u*, *war*, *wa*	*ša*, *š*, *šay*, *ši*, *šiy bu*	PFV, IPFV
	Western Tarifit (Senhaja)	*u*[4], *ud*[4], *la*[4], *ula*[4], *lah*[4]	*š*, *šay*	Ø
TYPE 3	Augila Berber	Ø, *(w)ur*[1], *(w)ul*[1]	*ka*, *k(i)ra*	Ø
	Western Tarifit (Senhaja)	Ø	*š*, *šay*	Ø
	Zuara Berber	Ø, *wə*[4]	*š*	PFV, IPFV
	Sened Berber	Ø	*š*	PFV

3 Negation from a diachronic and typological perspective

Certain similarities between the negative structures of contemporary North-African Arabic varieties and those of the Berber languages has prompted scholars to explore the question of the origin of discontinuous negators as a contact-induced phenomenon:

> "The fact that those varieties of Arabic and Berber which have reached stage II or III of JC are spoken in largely the same geographical area raises the question of whether the stage II construction was spread from one language to the other via contact, and, if so, which was the source and which the target language as far as this structure is concerned." (Lucas 2007: 401)

It is difficult to come to a clear-cut solution, given the lack of material from the earliest stages of spoken Arabic and Old Berber. For this reason, Lucas' suggestion that, in Berber, Stage II "developed under the influence of Arabic" (Lucas 2013: 402) is not conclusive (see also Lafkioui 2013a for a critical discussion of Lucas' hypothesis). The main reason put forward concerns the areal distribution, which he considers "consistent with a gradual spread westwards and southwards of the cycle in the local contact varieties of Arabic" (Lucas 2013: 413).

However, the areal distribution of the variants, which shows a huge homogeneous core area with triple negation, surrounded by smaller and heterogeneous peripheral areas with single preverbal negation, contradicts Lucas' claim and clearly points to the opposite reading, that is, in terms of the loss of a redundant feature (i.e. NEG2) in peripheral areas (see Figure 1 above). Indeed, this geolinguistic diffusion of Berber negation patterns also structurally matches other instances of a loss of a redundant feature in the peripherally located languages, such as, for instance, the noun state opposition. Both the easternmost Siwa Berber and the westernmost Zenaga Berber no longer possess state opposition in nouns, but this alone does not justify the straightforward assumption that this is an innovation they never shared with the other Berber languages. As a matter of fact, toponomical relics account for a former noun state opposition in those languages which are devoid of it nowadays (Brugnatelli 1987b).

Furthermore, the presence of NEG2 in Ancient Ibāḍī Berber (tracing back to 11th-16th century), in both the more archaic form *-šra* and the phonetically reduced one *-š* (Brugnatelli 2014b), is consistent with viewing it as an ancient construction that is disappearing, rather than as a lately developed innovation.

Another important counter-argument to Lucas's claim is that those languages which nowadays only use the preverbal negator (those belonging to the type-1a and one variety of the type-1b) have at least innovated their preverbal negators – termed here as NEG4 – with respect to the ancient pan-Berber negator **wər/wəl*. This makes it difficult to regard these languages as "conservative" – as suggested by Lucas (2013: 411) – and to corroborate in this way the assumption that the use of a preverbal negation pattern is an archaic feature.

Moreover, the data provided by Diem (2014) clearly show that Arabic negation has developed double-marking starting from the 11th century onwards, and hence much later then its first contacts with Berber in the 7th century. Consequently, it is problematic to assume that Berber has developed double negation marking on such a large scale by contact with Arabic, given that it probably goes back to very ancient stages of Berber. On the contrary, it is more reasonable to regard Berber as a substrate in the development of double negation in North African Arabic.

The influence of Arabic can be seen rather as a stimulus to preserve NEG2 in the Berber languages in which it had become similar to the Arabic equivalent *-š(i)* (and variants), while most of the languages where NEG2 did not undergo a palatalisation of the ancient Berber velar **k* (e.g. Berber **kra* > *šra*/*ša*/*š*, with *š* occurring in both Berber and Arabic) have lost it (Brugnatelli 1987a: 58, Galand 1994).

Other motivations that account for the evolution of [NEG1 + V/V_{NEG3} + NEG2] > [NEG1 + V] in Berber, especially in those languages that innovated NEG1, concern economy, the NEG-first principle, and semantic bleaching, and are discussed in what follows.

3.1 Economy

As economy is already part of a standard JC, a double or threefold marking of negation is redundant and one can expect that standard negation tends to drop one of the markers. Berber provides abundant evidence for this principle. For instance, in Tashelhiyt (South Morocco), where negation is marked by [NEG1 + V_{NEG3}], the aspectual opposition of positive versus negative stem is undergoing neutralisation in favour of positive forms, as in (35).

(35) a. ***ur*** *ifti*
NEG1 go.away.PFV$_{\text{NEG3}}$.3MSG
'He has not gone.'

b. ***ur*** *ifta*
NEG1 go.away.PFV.3MSG
'He has not gone.'
(El Mountassir 2003: 11; Tashelhiyt)

Economy here operates at the paradigmatic level, wherein the negative perfective has lost its markedness in favour of the unmarked perfective, hence simplifying the complexity of the verbal inflectional system of Tashelhiyt Berber.

In the Berber languages, economy may entail the loss of one or two of the three negators: the loss of NEG2 leads to type-1, that of NEG1 leads to type-3, and that of

NEG3 leads to subtypes 1a, 2a, and 3a (see Table 1 above). The Berber languages are thus evolving towards simpler negation systems, which is in line with the general typological tendency to favour simplicity by means of single exponence mechanisms (van der Auwera and Krasnoukhova Forthcoming).

3.2 The NEG-first principle

The so-called NEG-first principle traces back to Jespersen (1917: 5) and has been corroborated by several studies, such as Dahl (2010: 23), who sums up as follows what has been observed in the languages of the world in this regard : “Thus, judging from the figures in Dryer (1988), negators are placed either directly before or directly after the verb in 80–90 percent of all cases, and in both VO and OV languages, syntactic negators overwhelmingly precede verbs, the ratio between preverbal and postverbal placement being something like 3:1 in a hypothetical ideal sample.”

Accordingly, even if the best known examples of the Jespersen Cycle, like French negation, usually start from a stage with preverbal negators and lead up to a postverbal negation construction, one can expect that the NEG-first principle counteracts the outcome in some way. As a matter of fact, English, another language which underwent the Jespersen Cycle, is about to come back to a stage with [NEG1 + V], since the “new” negator *don’t* / *doesn’t* currently precedes the verb (Anderwald 2002: 151-170). As is well known, this new form in English is the result of a transformation of stage [V + NEG2] into [AUX-NEG2 + V] by means of a generalization of the latter construction with the auxiliary preceding the main uninflected verb. This case of diachrony in English negation clearly shows how the NEG-first principle comes into effect.

Some of the Berber innovated negators of the [NEG4 + V] type could be regarded as the outcome of similar periphrastic constructions, as in the cases illustrated in (36) and (37), the former being a reproduction of example (6) from section 2.1.1.

(36)	*zëmân*	*ellân*	*mār*	***ingî***	*isél*	*dĕ*	*lahl=énnes*	*am*	*nẹ́tta*
	once	be.PVF.3MPL	man	NEG1	hear.PFV.3MSG	and	wife=3SG	like	3MSG

‘Once upon a time, there was a man who could not hear (he was deaf) and his wife who was like him.’
(Sarnelli 1924–25: 32; Sokna Berber)

(37)	***wərgeɣ***	*ad*	*əqqəlăɣ*	*aɣiwăn*
	NEG1	IRR	return.AOR.1SG	encampment

‘It will not be (the case) that I return to the camp.’
(Prasse 2003: 832; Tuareg Berber)

The negator *(i)ngi* in (36) probably relates to *wərgi/wərgeɣ* in Tuareg Berber, which originates from the frozen phrase *wer igi* ‘it is not...’ (pan-Berber negator + negative form of the verb *igu* 'do, be', i.e. NEG1 + $\mathrm{V}_{\mathrm{NEG3}}$; Prasse 1972: 245) and which usually negates noun phrase predicates and nominalised constructions, as in (37). In this regard, Sokna's *(i)ngi* (as in 36) would be related to the former participial construction *(*wər*) *ngi*, which corresponds to a cleft sentence signifying 'it-is-not-that…' and which goes with a positive verb stem. This kind of construction can be viewed as a stage of the so- called "negative existential cycle", which is "a diachronic cycle in which distinct negative existential markers arise, and are subsequently used to indicate verbal negation, displacing the original verbal negator" (Croft 1991: 13). It proves that there are Berber languages where the use of negative existential markers is extended to standard negation (type C of Croft's Cycle), contrary to what is stated in Veselinova (2016: 147, 150, 159), who limits the Berber negation typology to type A, which has "no distinction between verbal and existential negation" (p. 159), to type A-B, where "a distinction exists, but the negative existential is restricted to the present tense" (p. 159), and to type B, in which "verbal and existential predications are negated by well delimited strategies" (p. 159). These different existential negation types are beyond the scope of the article, which focuses on declarative verbal negation.

3.3 Semantic bleaching

A final option that may explain dropping NEG2 has to do with the generalization and bleaching of formerly "emphatic" negation forms. Double negation marking that once may have come into being because of the discursive need for "emphatic" expressions by adding a NEG2 negator may have become a means for expressing standard negation due to semantic bleaching, as is understood by Meillet (1912), which is echoed in van der Auwera (2009). Berber provides abundant evidence for this principle (see all negation types having NEG2 in section 2).

Other cases involving semantic bleaching concern the tendency in certain Berber languages to drop NEG2 when the verb predicate is not positioned at the end of the sentence, like in (38a) from Tamazight (Central Morocco), whereas in a sentence-final position, like in (38b), NEG2 is usually kept when it conveys standard negation.

(38) a. *ur* *iddi* *uryaz*
NEG1 go.PFV$_{\mathrm{NEG3}}$.3MSG man
'The man didn't go.'

b. *ur* *iddi* *ša*
NEG1 go.PFV$_{\mathrm{NEG3}}$.3MSG NEG2
'He didn't go.'
(Penchoen 1973: 60; Tamazight)

These cases account for the grammaticalisation – hence semantic bleaching – of NEG2 into a kind of dummy placeholder in standard negation, when occurring at the end of the sentence (38b), where it does not convey any extra discursive meaning.

3.4 Discussion

In most of the Berber languages, NEG2 goes together with NEG3 (triple negation), i.e. ancient negative stem markers. Certain languages no longer display this complex triple negation system and have come back to a double or even a single negator. This is motivated by a number of parameters, among which economy, the NEG-first principle, and semantic bleaching. The economy principle constantly pushes the system to have as little redundancy as possible. This principle, combined with the NEG-first principle, which pulls negators to the sentence-initial position, ideally ends up with just a preverbal negator and hence back to Stage I of the JC. But there are also cases in Berber in which all the negation force is accumulated in NEG2 (sustained by accentuation), while NEG1 undergoes phonetic weakening (disaccentuation) before its complete disappearance (Stage III of the JC), which matches the economy principle but not the NEG-first principle, though.

The following Table 2 gives an overview of the different negation stages which the Berber languages have probably gone through and which we consider to be extensions of the Jespersen Cycle. Note that stages 0 to 2 are reconstructed and therefore not attested, which in the corresponding synchronic typology column is indicated by blanks. Stages 4, 4’, and 4’’ are developed out of stage 3, whereas stage 5 stems from stages 4 and 4’’, and stage 5’ from 4’.

Table 2. The Extended Jespersen Cycle for Berber (sample sentence: ‘He did not plough.’)

Stage	Pattern	Example	Type
0	NEG-AUX + V	**w* + **r yəkrəz*	---
1	NEG1 + V	**wər yəkrəz*	---
2	NEG1 + V + NEG2	**wər yəkrəz *kira*	---
3	NEG1 + VNEG3 + NEG2	*wər yəkriz kra/ša*	2b
4	NEG1 + V + NEG2	*wər yəkrəz kra/ša*	2a
4’	NEG1 + VNEG3	*wər yəkriz*	1b
4’’	VNEG3 + NEG2	*yəkriz kra/ša*	3b
5	V + NEG2	*yəkrəz kra/ša*	3a
5’	NEG1 + V	*wər yəkrəz*	1a

For the sake of intelligibility, the in-between stages – including the stages with optional negators, such as e.g. NEG1 + V + (NEG2) – are not displayed in Table 2. It should also be mentioned that not all Berber languages have necessarily undergone the stages of this

Berber JC. Moreover, the morphosyntactic and semantic traits of the negators involved may have altered from one stage to another.

The negation stages in Table 2 may also overlap in one and the same language, which is the case, for instance, in Rif Berber (North, Northeast, and Northwest Morocco), which accounts for the predominant stage three negation (triple negation) as well as for the exceptional stages 4 (double negation) and 5 (single postverbal negation), which are merely attested in the western part of this language continuum (Senhaja Berber).

It is also worth highlighting that, apart from the Extended JC in Table 2, the Berber language family also possesses a negative cycle which has NEG4 in its final stage. This latter negator is distinct from the proto-Berber negator **wər* and is mostly innovated by means of grammaticalisation of Berber material of various kinds, including existentials, such as the negator *(i)ngi* (< *(*wər*) *ngi* 'it-is-not-that…' < **wer igi* 'it is not...'), discussed in section 3.2 (examples 36–37). This particular preverbal single negation construction with *(i)ngi* also testifies to the expansion of existential negation marking upon standard negation (type C of Croft's Cycle; Croft 1991:6). As a matter of fact, existential negators such as *(i)ngi* have been fully grammaticalised and function as new standard negators in Berber, which means that they have been subject to the following diachronic developments:

(39) [NEG-standard = NEG-existential] > [NEG-standard ≠ NEG.EX-existential] >
[NEG.EX-standard = NEG.EX-existential] > [NEG-standard = NEG-existential]

Accordingly, Berber provides accounts for the remarkable phenomenon of an intricate and continuously innovating cyclical system, made up of (at least) a JC and an existential negation cycle. This kind of complex negation system questions certain reductive concepts and categorisations regarding the typology and dynamics of negation (i.e. the concept of weakening, the separation of the JC from other negative cycles) and may call for adjustments and redefinitions, as is argued in van der Auwera et al. (Forthcoming).

Regarding stages 4' and 5' of the Extended Berber JC and the particular NEG4 stage of the other Berber negative cycle, there is the phenomenon in which NEG2 is dropped in standard negation so as to mark emphasis. This phenomenon is typologically uncommon, as the expression of emphatic negation, which is a universal feature, is generally conveyed by including certain (negative) elements, like adverbs and particles, rather than by deleting them (Kiparsky and Condoravdi 2006: 7). This strategy of NEG2-dropping may have played a role in the development of the preverbal negatives of stages 4' and 5' of the Berber JC and of the stage with NEG4, as will be shown in what follows.

(40)

win	*yərran*	*iman=is*	*d*	*əṭṭaləb,*	***ur***	*yəɣri*
who	put.PFV.PTCP	self=3MSG	PRDR	doctor	NEG1	read.PFV$_{NEG3}$.3MSG

‘The one who pretended to be a doctor and could not even read.’
(Ben Sedira 1887: 188; Kabyle Berber)

In this example, it is the absence of NEG2 that allows for an emphatic reading of the negative utterance, expressed in English by means of ‘not even’, whereas its non-emphatic counterpart would also have the postverbal negator *ara*.

Another example from Kabyle which clearly displays the difference produced by the presence versus absence of NEG2 is given in (41).

(41) a.

tawṬufṭ	***ur***	*ţ=nɣiɣ*
ant.FSG	NEG1	3FS=kill.PFV.1SG

‘I was incapable to kill even an ant.’

b.

tawṬufṭ	***ur***	*ţ=nɣiɣ*	***ara***
ant.FSG	NEG1	3FS=kill.PFV.1SG	NEG2

‘The ant, I did not kill it.’
(Mettouchi 2001: 218; Kabyle Berber)

In (41a), the negation is absolute and implies that the speaker excludes the possibility of killing anything, even an ant, in the past or in the future, while in (41b) the negation is limited to one event and does not exclude the possibility that in the past or in the future other ants could have been or will be killed. Mettouchi (2001) explains this difference in terms of “prototypical” (without *ara*) vs “specific” (with *ara*) negation, which may be the case in the context at hand, but it is not a general rule. In fact, the semantic implications of dropping NEG2 are more complex in Kabyle and in Berber in general, as is displayed in (42) and (43) from Kabyle, extracted from the tales of Auguste Mouliéras (1893–1895).

(42)

ay	*ɣəf*	*ayḏi*	***ur***	*itəţţ*	***ara***	*aḵsum*	*n*	*wuššən*
what	on	dog	NEG1	eat.IPFV.3MSG	NEG2	meat	of	jackal.MSG.DS

‘The reason why the dog does not eat jackal meat.’
(Mouliéras 1893–1895: 247, title of the tale; Kabyle Berber)

(43)

a	*nmaɛhaḏ*	*nək*	*id=əḵ :*	*win*	*yufan*	*wayəḍ,*
IRR	make.a.pact.AOR.1PL	1SG	with=2MSG	who	find.PFV.PTCP	other.MSG
ur	*ṯ=ičči*					
NEG1	3MSG=eat.PFV$_{NEG3}$.3MSG					

‘Let us make a pact: the one who finds the other will not eat him.’
(Mouliéras 1893–1895: 247, in the body of the text; Kabyle Berber)

Compared to (41), these examples present an inverted distribution: sentence (42), which contains NEG2, refers to something “prototypical” (any dog, any jackal), while sentence (43), which lacks NEG2, is very “specific” (the actual participants). Consequently, it is not the opposition of prototypical versus specific that is implied here but rather the degree of “emphasis” put on the negation.

The same phenomenon is also observed in other Berber languages, like in Zuara (Libya), to which (44) testifies. The comment “more emphatic” following the translation is given by Mitchell himself.

(44) a. ***w*** *ɣə́r=i* *matt(a)* *a* *k=úšəɣ*
NEG1 by=1SG what IRR 2MSG=give. AOR.1SG
‘I have nothing to give you.’ (more emphatic)

b. ***w*** *ɣər=**í*** ***š*** *matt(a)* *a* *k=úšəɣ*
NEG1 by=1SG NEG2 what IRR 2MSG=give. AOR.1SG
‘I have nothing to give you.’
(Mitchell 2009: 105; Zuara Berber)

Again the examples prove that dropping NEG2 is a strategy of marking emphatic negation in various Berber languages.

In the light of these findings, NEG2-dropping, which conveys emphatic negation in those Berber languages where standard negatives contain NEG2, may be regarded as a competing pragmatic strategy that caused a complete deletion of NEG2 in the languages of stages 4’ and 5’ of the Extended Berber JC and of the stage with NEG4. Standard negation in stage 5’ would have been brought back to the starting point of the Berber JC, with only the preverbal negator as the overt negator, as a consequence of the bleached value of NEG2-dropping as an emphatic marker.

Apart from these cyclical diachronic developments of the negation system in the Berber languages, this study also provided some other typologically significant outcomes, such as the fact that Berber is profoundly and variously “asymmetric” (as understood by Miestamo 2005: 7–10), especially when it comes to its paradigmatic structures. Although it is not our intention here to systematically verify Miestamo’s cross-linguistic typology by means of the Berber data, which would be out of the scope of the article, our findings point to the A/Cat/TAM type as the predominant negation type in Berber.

It is also worth mentioning that Miestamo’s analysis and classification of Tamazight Berber (Central Morocco) as A/Fin/NegVerb is questionable in different respects, the main ones being: 1) the pan-Berber negator *ur* has no element of finiteness in itself, and hence cannot be regarded as a FE (finite element), and 2) the negative verb does not lose any property of finiteness while negated and keeps most of the morphosemantic features of the positive verb (i.e. markers of subject and TAM) as well as the potential of governing a direct object. The only apparent loss concerned here is the distinction between the unmarked stem (the aorist) and the marked stem (the imperfective), which makes it a case of paradigmatic asymmetry.

A final typologically important result of our research is that there are Berber languages which have undergone a shift from asymmetric to symmetric standard negation for certain verb aspects. Indeed, in quite a number of Berber languages, the negation of the imperfective constructions has become entirely symmetric (Lafkioui 2018), which means that these negatives are distinct from their affirmative counterparts by the presence of overt negators only. Moreover, in certain Berber languages, such as Tashelhiyt (South Morocco), for instance, even the negative perfective has been affected by a neutralisation of its opposition with the positive perfective in certain local varieties, which implies that symmetric negation is expanding all upon the negation system of this language.

In the next section, we will examine in detail the origin of NEG3 (i.e. negative verb stem alternations) and will argue that the dedicated morphophonetic mechanisms behind its creation are a vital source for generating new negators.

4 On the origin of NEG3

The existence of negative verb stems in almost all Berber languages could be viewed in itself as a pan-Berber strategy of double-marking the negation, as noted by Lafkioui (2013a), in accordance with Schmitt-Brandt (1979: 235). The fact that such forms probably derived from elements placed towards the right end of the verbal complex, under the influence of a postverbal negative element, strengthens the hypothesis that Berber achieved Stage II of the Jespersen Cycle in very ancient times, earlier than any contact with Arabic, and for which evidence will be provided in what follows.

A decisive argument in favour of a very early twofold negator stage across the whole Berber area derives, in our opinion, from the wide diffusion of negative stems in the verbal systems. Negative stems are seldom used alone without negation particles or adverbs, yet their negative value is indisputable and in some (rare) cases they may be the only device to convey negation, as is displayed in next examples from Kabyle (North Algeria):

(45) a. *mazal* *yeṭṭes*
still sleep.PFV.3MSG
“He is still sleeping”

b. *mazal* *yeṭṭis*
still sleep.PFV$_{\text{NEG3}}$.3MSG
“He is not yet sleeping”
(Dallet 1982: 530; Kabyle Berber)

The most widespread form is the negative perfective, which appears in nearly all the Berber languages, while the negative imperfective is less generalized but nonetheless scattered across the whole area and should probably also be considered a common form. This is further confirmed by the fact that the negative imperfective is attested in ancient texts, even in areas in which it is not currently in use, as in Old Tashelhiyt (46) – which is of the 1b type – and in old poems and riddles from Kabyle (47), which is of the 2b type:

(46)	AOR	IPFV	NIPFV	
	fsd	*ttfsad*	*ttfsid*	‘to corrupt’
	ḍr	*ṭṭar*	*ṭṭir*	‘to fall’
	af	*ttafa*	*ttifi*	‘to find’
	kkas	*ttkasa*	*ttkisi*	‘to inherit’

(Mḥmmd Awzal, 18th century; van den Boogert 1997: 270; Old Tashelhiyt)

(47)	AOR	IPFV	NIPFV	
	ban	*ttban*	*ttbin*	‘to come into view’
	ttudəggər	*ttudəggar*	*ttudəggir*	‘to be pushed, shoved’

(Old poems and traditional riddles; Brugnatelli 2002: 166; 2006: 69; Kabyle Berber)

Both perfective and imperfective stems undergo similar modifications in the negative form. These changes can be summarised as follows:

1) Vowel fronting (*a* > *e*/*i* and *ă* > *ə*/*e*)
2) Shortening of the first vowel
3) Lengthening of the last vowel

In general, shortening and lengthening of the vowels is detected in Tuareg Berber only, since the other Berber languages usually do not distinguish between short and long vowels (except Rif Berber). In the latter languages, negative forms often take a full vowel *i* instead of Ø or schwa of the positive counterparts.[15] Vowel fronting is thus a general rule and affects the negative stems in all languages, as is shown in next examples from Tuareg Berber (48), and from Jerba Berber (49):

(48)	PFV	NPFV	IPFV	NIPFV	
	ikrăs	*ikres*	*ikârrăs*	*ikərrəs*	‘to knot’
	ilsa	*ilse*	*ilâss*	*iləss*	‘to wear’
	ibbərăg	=	*itâbărâg*	*itəbərig*	‘to show off’

(Brugnatelli 2002; Tuareg Berber)

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[15] On the vowel changes of the negative perfective and of the resultative in Tuareg Berber, see Brugnatelli (2005: 376–378).

(49)	PFV	NPFV	IPFV	NIPFV	
	yəẓwa	*yəẓwi*	*iẓugga*	*yəẓuggi*	‘to go down’
	yəbbəs	*yəbbis*	*yətbəssa*	*yətbəssi*	‘to be switched off’
	yəwəṯ	=	*yəččaṯ*	*yəččiṯ*	‘to strike’

(Brugnatelli 2002; Jerba Berber)

From a diachronic perspective, these forms are explained as the result of phonotactic changes involving the final part of the stem under the influence of a suffixed negative particle. The left-to-right stress shift would account for the shortening of the initial vowels and the lengthening of the final ones as well as for the fronting of the final vowels as a consequence of umlaut, assuming that the original particle contained front vowels (palatalisation).

An interesting parallel comes from the Arabic dialects of Egypt (Dakhla Oasis), in which negative verbal forms have arisen from positive ones, displaying a vocalic difference most likely provoked by “consonant clustering and heavy syllable formation” (Woidich 1995–97), due to the affixation of NEG2, as is shown in the Egyptian Arabic examples in (50).

(50) a. Western dialects:
iʾgoːm > ***ma**-tiʾgaːm-**š***
‘Speak Cairene!’ > ‘Do not speak Cairene!’

b. Central dialects:
siʾaːn > ***ma**-siʾin-**š*** / ***ma**-siʾeːn-**š***
‘He asked’ > ‘He did not ask’
(Woidich 1995–97: 15; Egyptian Arabic)

It should be noted that stem vowel alternations in negation constructions usually affect verbs only. Noun phrase predicates, on the other hand, are negated by means of markers preceding the predicate when attributive values are conveyed, such as in the negation structures from Central Rif Berber (North Morocco) in (51).

(51) a. *d* *ašəmrar*
PRDR white
‘It is white.’

b. ***urid*** *ašəmrar*
NEG1.PRDR white
‘It is not white.’

c. ***uǧi*** *d* *ašəmrar*
NEG1 PRDR white
‘It is not white.’

d. ****ur*** *d* *ašəmrar* ***ša***
NEG1 PRDR white NEG2
‘It is not white.’
(Lafkioui, personal corpus; Rif Berber)

Configurations with a double negation marker like in (51d) are ungrammatical. On the other hand, vowel modification may appear in certain negative quasi-verb constructions when existential values are expressed. Such predicates are particular in that they generally behave like verbs, and are therefore called “quasi-verbs” (Lafkioui 1999: part II, 2011: 43–55). Among these quasi-verb constructions, those with a preposition as a predicate may undergo stem vowel alternations in certain languages when they are negated by means of NEG1__ NEG2 and when they signify ‘to have’, as in (52) extracted from a 19th century religious poem from Jerba (Tunisia). This remarkable phenomenon is of relevance to our discussion about the origin of NEG3, because it shows that the same triggering mechanism behind negative stem alternations in verbs has been at work in these quasi-verbal (prepositional) constructions; i.e. the postposition of a negator has triggered the same phonetic change (> *i*) with the same function of negation marking.

(52) a. *ɣər=s*
by=3SG
‘He has.’

b. ***wə*** *ɣr=**is*** ***š***
NEG1 by=3SG NEG2
‘He has not.’
(Brugnatelli 2014b: 179; Jerba Berber)

The full vowel *i* in the negative (52b), developed under the influence of the enclitic negator, probably results either from the retention of an ancient vocalism, which is reduced in unstressed position, or from the former presence of anterior sounds in NEG2. In any case, the most noticeable outcome is the position change of the accent triggered by the apposition of NEG2, which is exemplified in example (53) from Zuara (Libya), which retakes example (44).

(53) a. *w* *ɣə́r=i* *matt(a)* *a* *k=úšəɣ*
NEG1 by=1SG what IRR 2MSG=give. AOR.1SG
‘I have nothing to give you.’ (more emphatic)

b. ***w*** *yər=í* ***š*** *matt(a)* *a* *k=úšəɣ*
NEG1 by=1SG NEG2 what IRR 2MSG=give. AOR.1SG
‘I have nothing to give you.’
(Mitchell 2009: 105; Zuara Berber)

In spite of the strong evidence in favour of a morphophonetic origin of the negative verb stems, some scholars still share the idea of Picard (1957) according to which the negative perfective represents a sort of “intensive” form of the perfective (“prétérit intensif”). In the same line of thought, Chaker (1996: 18) stated that it was “a former intensive form which must have been used in environments strongly characterised by modality: negative statements (prohibition), wishes, unreal hypotheses, etc” [our translation]. But the empirical data contradict this view. As pointed out by Brugnatelli (2002: 171), the negative perfective is absent when modality is heavily involved, such as in wishes (optative) and oaths, for which Berber uses [*a* **wər/wəl* + aorist] and [*ma* (or equivalents) + positive perfective], respectively, without NEG2, as is exemplified in (54) from Rif Berber (Senhaja), where negation is marked by the conditioned variant *ma* ___ *Ø* or its free variants like *ka* ___ *Ø*.

(54) a. *wəḷḷah* ***ma*** *skurksəɣ!*
by God NEG1 lie.PFV.1SG
‘By God, I did not lie!’

b. *wəḷḷah* ***ka*** *skurksəɣ!*
by God NEG1 lie.PFV.1SG
‘By God, I did not lie!’
(Lafkioui 2007: 234; Rif Berber, Senhaja)

This kind of constructions are counterfactual conditionals, in which the negative clause forms the protasis with the conjunction “if” as the negator, while the apodosis, which conveys a meaning like e.g. “may I be damned”, is implied.

The counterfactual conditional is the only context in which the negative perfective may occur outside a negation configuration. Therefore, it is not surprising that some of these constructions are introduced by amalgamated connectives containing the negative particle **wər/wəl*, such as the Tashelhiyt form *m-ur* (‘if’, ‘when’), and possibly also the Kabyle form *lemmer* (‘if’, ‘when’). The use of negative forms of the verb in counterfactual conditionals is a phenomenon parallel to what is recorded in Ungarinjin (Australian language), where the irrealis of the verb appears to stem from a former negative form (Miestamo 2005: 225).

The most important phonetic change in the negative stems thus concerns palatalisation, which generally entails the presence of a front vowel. We find similar phenomena in many other languages of the world, such as the Old Irish genitive _maicc_ (from _macc_ 'son'), in which a final _-i_, still preserved in Ogamic _maqqi_, has completely disappeared, leaving only a phonetic vestige in the palatalisation of the final consonant (Szemerényi 1980: 169). Another fitting case is the well-known phenomenon of umlaut in German, in which final vowels undergo fronting under the influence of _i_-endings that have disappeared.

This does not mean however that all attested forms of NEG2 are necessarily cognates of the unidentified oldest pan-Berber marker which triggered the phonetic change. Yet this particular phonetic change, which is shared by all Berber languages, entails the existence of a postverbal negator. Even if the phonetic evidence points to the former existence of a front vowel, it is seldom attested as such in the NEG2 markers related to _*k^{y}ăra ~ (h)ăra(t)_ 'thing'. The vowel _i_ of _kira_ in Augila (Libya) could come from _a_, as this phonetic correspondence is well known in Berber, like e.g. in _imin_ (Augila) vs. _aman_ (pan-Berber) for 'water'. But the related form _šîra_ 'thing' in El-Fogaha (Libya), where the development _i_ < _a_ is absent, indicates that the front vowel is indeed the original one. Moreover, the palatal stop _*k^y_, reconstructed by Kossmann (2013: 332) for _*k^{y}ăra_ instead of the velar _*k_, confirms the previous existence of a front sound in the first syllable of this word. In any case, given that the vocalic modifications of the verbal stems are archaic, while the lexical items used as NEG2 are still easily recognizable, one cannot rule out the possibility that these items were added in more recent times to an earlier NEG2 which has completely disappeared. Indeed, changes affecting NEG2 are visible in various Berber languages, such as in Central Rif Berber (North Morocco), where the most widespread Berber negators are replaced by the marker _bu/ḇu_ in specific grammatical contexts (Lafkioui 2013a, 2013b).

Other accounts that support our hypothesis of the ancient NEG2's postposition as the formal trigger of NEG3's creation in Berber come from the behaviour of verbs with a post-radical vowel alternation _a/i_ in the perfective; the vowel _i_, which is characteristic of the negative stem, corresponds to the vowel pattern of the first two grammatical persons of the matching positive stem. The origin of the vowel alternation in these verbs has been variously explained. A most plausible theory is that of Vycichl (1952: 75, 79), who relates these alternations to the presence vs. absence of a subsequent consonant. The vowel _i_ is typical of the 1st and 2nd person singular, where it is always followed by a consonant, originally a plosive. On the other hand, the vowel _a_ (and sometimes also _u_) always goes with the 3rd singular and 1st plural, where it is in absolute final position. The examples in (55) from Kabyle Berber illustrate this hypothesis for the perfective of the verb 'to wear':

(55)		Positive			Negative		
	1S	_əlsiɣ_	<	_*lsayC_	_əlsiɣ_	<	_*lsayC_
	2S	_təlsiḍ_	<	_*tlsayC_	_təlsiḍ_	<	_*tlsayC_
	3S	_yəlsa_	<	_*ylsay #_	_yəlsi_	<	_*ylsay (C-...)_
	1P	_nəlsa_	<	_*nlsay #_	_nəlsi_	<	_*nlsay (C-...)_

(Reconstruction based on Vycichl 1952: 75-79; Kabyle Berber)

A similar development, wherein one and the same vowel brings forth different outcomes according to the phonetic context, took place in other Berber languages as well, when the verb is followed by a clitic, like for instance in Nefusa Berber (Libya) in (56), where the final *û* comes from *a* (56a) and the internal *é* comes from *i* (< **ay*, 56b).

(56)	a.	*yenġû*	‘he killed’
	b.	*yenġé=šek*	‘he killed you (m.)’
		yenġé=šem	‘he killed you (f.)’
		yenġé=t	‘he killed him’
		yenġé=ttet	‘he killed her’

(Beguinot 1942: 106; Nefusa Berber)[16]

All these examples clearly account for our hypothesis that the verbal vowel alternation *a*/*i* results from the sequence **ay* when occurring in absolute final position or before a consonant, which can be part of e.g. a postposed negation marker (55) or of a pronoun (56).

Another case of vocalic change with a functional value triggered by the postposition of an element is attested in Berber of Zuara (Libya), where interrogative sentences show interesting phenomena not only in terms of intonation but also in terms of concatenative and non-concatenative morphology. As Mitchell (2007: 25–26) pointed out, declarative sentences “may often be ‘rendered’ interrogative by the addition of a sentence-affix -*a*, which entails the accentuation of the syllable preceding it”. However, in some ‘exclamation-question sentences’, the affix is replaced by a vocalic change of the last word: “the short vowel *ə* is replaced by a long *a*, with the simultaneous omission of the interrogative sentence-suffix -*a*.” From a diachronic perspective, this is another umlaut case with internal vowel lowering related to the loss of the final vowel –*a* (57).

(57) a.

yədwə́l=ak	*axəmməm=ik*	*n*	*qə́bəl*
came.back.PFV.3MSG=2MSG	cogitation=2MSG	of	before

‘Your earlier way of thinking has come back to you.’ (declarative)

b.

yədwəl=ák	*axəmməm=ik*	*n*	*qəbə́l*	*a ?*
came.back.PFV.3MSG=2MSG	cogitation=2MSG	of	before	QUEST

‘Has your earlier way of thinking come back to you?’ (question 1)

c.

yədwəl=ák	*axəmməm=ik*	*n*	*qə́bal ?*
came.back.PFV.3MSG=2MSG	cogitation=2MSG	of	before

‘Has your earlier way of thinking come back to you?’ (question 2)
(Mitchell 2007: 26; Zuara Berber)

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[16] Another case of vocalic change when a pronominal suffix is added comes from Nefusa Berber (Libya): *ggellīɣ-âm* ‘I swear to you’ instead of **ggellaɣ-âm* (Beguinot 1942: 190).

When the last word of the question is a verb, its vocalic pattern changes (58–59); it is generally the vowel of the final syllable which is affected (58b–59b).

(58) a. *yəssə́n*
know.PFV.3MSG
‘He knows.’

b. *ṃáṃṃu yəssán?*
who know.PFV.3MSG
‘Who knows?’

(59) a. *yəkmə́l*
complete.PFV.3MSG
‘He (was) completed.’

b. *i mátta yəkmál?*
to what complete.PFV.3MSG
‘What’s all this about?’
(Mitchell 2007: 26; Zuara Berber)

Given that this phonetic change concerns all final words of an (exclamation-)question sentence, not just verbs but any grammatical unit, one cannot yet label such verbal forms as specific “question forms”, but they are a good example of how Berber negative stems could have come into being. In this case, the last step of a full grammaticalisation is not yet completed.

Our investigation of the origin of NEG3 has shown that the presence of a postverbal negator (NEG2) in Berber is most probably ancient and at the basis of the origin of dedicated negative verb stems (NEG3), which are marked by specific vowel patterns resulting from certain phonetic phenomena like accentuation and umlaut. Since these negation constructions with NEG3 are widespread all over North Africa, it is reasonable to regard them as tracing back to the same ancient stage of Berber’s language history. Therefore, the hypothesis that considers the origin of double negation [NEG1 – V/$\mathrm{V}_{\mathrm{NEG3}}$ - NEG2] in Berber as a result of contact with Arabic is questionable, all the more because double negation in Arabic would have come into being when a two or three-fold negation system was already firmly established in Berber.

The influence of Arabic on Berber negation is rather that of an incentive to preserve NEG2 in those languages where the Berber variants became analogous to the Arabic variants by means of a palatalisation of the Berber velar **k* (e.g. Berber **k(i)ra* > *šra*/*ša*/*š*, with *š* occurring in both Berber and Arabic). These palatalising languages belong to a vast Berber-speaking area extending from the centre of North Africa, whereas the Berber languages spoken in its fringes (e.g. Mauritania, Libya, Siwa, Sahara), which generally drop NEG2, do not have palatalisation of **k*.

5 Conclusion

The present study has demonstrated from a synchronic, diachronic, and typological perspective that Berber possesses an ancient and deeply rooted triple negation, NEG3 being dedicated stem vowel alternations, engendered by specific morphophonemic mechanisms, which are argued to form a typologically new source for the creation of negators.

Furthermore, the study has shown that the language stage [NEG1 + V/V$_{\text{NEG3}}$ + NEG2] is probably of Berber origin and therefore precedes the presently attested [NEG1/NEG4 + V]. In doing so, we have proven that the Jespersen Cycle has returned back to its starting point in certain Berber languages, for which we discussed three main parameters: economy, the NEG-first principle, and semantic bleaching. In the same line of thought, we have also provided accounts that point to Berber as a substrate in the development of double negation in North African Arabic.

From a typological perspective, Berber, with its widespread use of two concatenative negators (NEG1/NEG4, NEG2) combined with a third, non-concatenative negator (NEG3), can be considered one of the few languages in the world which possess a "triple negation" system, a feature also pointed out in some other languages belonging to different phyla, such as in Lewo (Malayo-Polynesian language spoken in Vanuatu), in Brabantian Dutch and in Bantu (van der Auwera et al. 2013). With respect to the origin of the negative stems (NEG3), it is reasonable to regard the discussed morphophonetic mechanisms (including palatalisation) triggered by the presence of a postverbal negator as an essential source for new negators, beyond those already known, like, for instance, a word expressing minimal value (e.g. French *pas* 'not even a step'), a negative word (e.g. English *not*, which originally meant 'nothing'), an emphatic element (e.g. French *du tout* or English *at all*), a particle of negative answer (e.g. Brazilian Portuguese *não*), a repetition of the first negator (e.g. Brabantian *nie*), locative and possessive pronouns (Bantu), among others (e.g. Devos and van der Auwera 2013, van der Auwera 2010).

Finally, evidence for the strongly asymmetric nature of Berber negation was given in this study, even though a new trend towards more symmetrical negation patterns is also found in certain Berber languages.

Abbreviations

1	first person
2	second person
3	third person
A	aspect(ual)
ACC	accusative
AOR	aorist
AUX	auxiliary
DEICT	deictic
DEM	demonstrative
PRO.DIR	direct object pronoun
DS	dependent state
EXT.NEG	existential negation/negator
F	feminine
IMP	imperative
IPFV	imperfective
IRR	irrealis
M	masculine
NEG	negation, negator
NIPFV	negative imperfective
NPFV	negative perfective
PFV	perfective
PL	plural
PRDR	predicator
PROX	proximal
PRSM	personal marker
PTCP	participle
PTCPM	participle marker
RES	resultative
S	subject
SG	singular
VENT	ventive

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