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6 **NEGATION IN BERBER: VARIATION, EVOLUTION, AND**
7 **TYOLOGY**

8
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10
11 **Abstract**

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

27
28 **Keywords:** negation, Berber, typology, diachrony, contact, the Jespersen Cycle

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39 1 Introduction

40

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

51 Moreover, we will attempt to single out the main processes that have led to the current
52 stages of standard negation in Berber – i.e. the negation of a main clause declarative
53 verbal predicate – while taking into account the role of the so-called Jespersen Cycle
54 (1917: 4), which in Berber has evolved from single to triple negation and back to single
55 negation.

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

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

63 However, we consider the motivation behind these cyclical changes to be of a
64 pragmatic kind rather than of a phonetic kind, the latter being proposed in the Jespersen
65 (1917: 4), where phonetic weakening is regarded as the triggering factor of the negative
66 diachronic changes. From a grammaticalisation perspective, which directly relates to
67 these cyclical negation patterns, it would be more reasonable to view the formal
68 modifications pertaining to negation as outcomes of content modifications, which would
69 relate to the pragmatic context, including strategies such as emphasis, contrast, and
70 presupposition. Our viewpoint is thus more in line with Meillet’s understanding (1912:
71 140) of the negative diachronic cycle, which is shared and discussed in detail in van der
72 Auwera (2009).

73 Consequently, the concept of the Jespersen Cycle (henceforth ‘JC’) is used here as a
74 negative cycle that is instigated by functional (semantic and pragmatic) “weakening” in
75 the course of its evolution, which may be combined with formal (phonetic and
76 morphological) weakening. In the Berber language family, five negation stages with their
77 respective bifurcations are found, and which make up what we call here the Extended JC
78 for Berber (section 3 and Table 2). The relative chronology of these stages will be
79 reconstructed on the basis of formal criteria (sections 3 and 4). Starting from stage II of

80 the JC, the Berber verb may or may not display a negative verb stem, which is coined in
81 the article as NEG3, because it follows NEG2 in the Berber negation diachrony, which
82 will be accounted for in section 4 of the article.

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

90 While the preverbal negator is obligatory in most Berber languages – with the
91 exception of some cases where only the postverbal is used (see Section 2.3.1 below),
92 NEG2, which usually follows the verb predicate, may be optional – as an intensifier – or
93 required, depending on the negation context. NEG2 may also be absent for discursive or
94 expressive purposes, or may be replaced by other elements (i.e. adverbs, indefinite
95 pronouns), which are considered to be semantically or pragmatically more adequate or
96 more emphatic, but these cases do not belong to standard negation and will therefore not
97 be dealt with here, although some cases of non-standard negation will be presented
98 whenever necessary for the discussion. Moreover, NEG2, which is generally derived from
99 an expression signifying ‘thing’, ‘something’, or ‘someone’ (e.g. *šra* ‘thing’), was
100 originally an element of intensification (emphasis) and still is to a different degree in
101 various Berber languages (see Table 1 in section 3.4 for a general overview of NEG2
102 instances). With time, the pan-Berber NEG2 has lost some of its marking strength and
103 therefore other forms were used to complete the postverbal negator function.² The
104 grammaticalisation of NEG2 has reached various stages and its precise functional roles
105 differ from one Berber language to the other.

106 As for the current Berber verbal system, it is fundamentally tripartite, with a basic
107 aspectual opposition between the perfective and the imperfective, and with the neutral
108 aorist, which stands for both modal and aspectual values. In many Berber languages, this

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 yuy* (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 zrix* (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 t-yənni* (anything NEG1 3MSG=say-PFV_{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).

109 tripartite system is limited to affirmatives; only perfectives and imperfectives are used in
110 the context of negation. Consequently, the Berber negation system can be considered to
111 be “asymmetric” and more precisely “paradigmatically asymmetric”, as defined by
112 Miestamo (2005: 7–10).

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

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

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

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

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

144

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.

145 2 Negation from a synchronic perspective

146

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

152 - **Type 1: NEG + V/V_{NEG}**; concerns the Berber languages that do not use postverbal
153 negators.

154 • Subtype 1a: NEG +V; does not include the negative verb stem.

155 • Subtype 1b: NEG +V_{NEG}; includes the negative verb stem.

156 - **Type 2: NEG + V/V_{NEG} + NEG**; concerns the Berber languages that do use both
157 preverbal and postverbal negators.

158 • Subtype 2a: NEG + V + NEG; does not include the negative verb stem.

159 • Subtype 2b: NEG + V_{NEG} + NEG; includes the negative verb stem.

160 - **Type 3: V/V_{NEG} + NEG**; concerns the Berber languages that do not use preverbal
161 negators.

162 • Subtype 3a: V + NEG; does not include the negative verb stem.

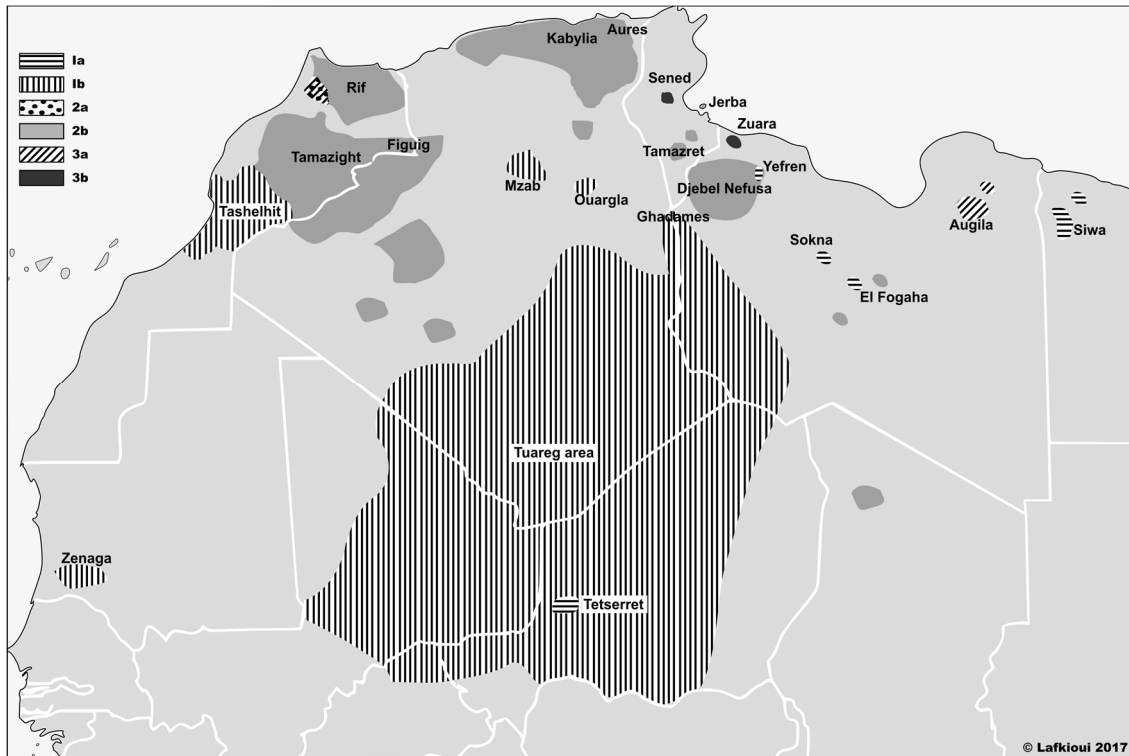
163 • Subtype 3b: V_{NEG} + NEG; includes the negative verb stem.

164

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

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

173



174

Figure 1. Overview of the synchronic standard negation types in Berber

175

176

2.1 Type 1: NEG + V/V_{NEG}

177

178

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.

179

180

181

182

2.1.1 Subtype 1a: NEG + V

183

184

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

185

186

187

188

189

190

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).

191 (1) *mak inəyy təmsi, la ntmata ssqi*
 192 when kill.PFV.3MSG fire.FSG NEG feel.PFV.1PL cold
 193 ‘When he extinguished the fire, we did not feel the cold.’
 194 (Leguil 1986: 35; Siwa Berber)

195

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

198

199 (2) *ěnk a tused*
 200 NEG IRR come.AOR.3FSG
 201 ‘She will not come.’
 202 (Paradisi 1963: 93; El Fogaha Berber)

203

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

207

208 (3) *nk a tkəmət*
 209 NEG IRR enter.AOR.2SG
 210 ‘Do not enter!’
 211 (Paradisi 1963: 115; El Fogaha Berber)

212

213 (4) *ěnk tmellâlt*
 214 NEG white.FSG
 215 ‘She is not white.’
 216 (Paradisi 1963: 115; El Fogaha Berber)

217

218 In the context of injunctions, (*ě*)*nk* can be replaced by the preverbal negator *bâk*, which
 219 is necessarily followed by a verbal form that takes the 2nd person of the aorist, singular
 220 (5a) or plural (5b).

221

222

223 (5) a. *bâk a túrā̄t*
 224 NEG IRR write.AOR.2SG
 225 ‘Don’t write!’
 226 (Paradisi 1963: 115; El Fogaha Berber)

227
 228 b. *bâk a temžerem!*
 229 NEG IRR harvest.AOR.2PL
 230 ‘Don’t harvest!’
 231 (Paradisi 1963: 115; El Fogaha Berber)

232
 233 A similar negator, which contains the unit *b* and which is used with the imperative-
 234 prohibitive, is *abû*; it is attested in the nearby oasis of Sokna (Sarnelli 1924: 22)⁶, where
 235 the preverbal negators (*i*)*ngi*, *enk*, and *enki* commonly occur in standard negation, as is
 236 displayed in (6) for (*i*)*ngi*.⁷

237
 238 (6) *zēmân ellân mār ingî isél dē lahl=énnes am nētta*
 239 once be.PVF.3MPL man NEG hear.PFV.3MSG and wife=3SG like 3MSG
 240 ‘Once upon a time, there was a man who could not hear (he was deaf) and his wife
 241 who was like him.’
 242 (Sarnelli 1924–25: 32; Sokna Berber)

243
 244 Other preverbal standard negators attested in Sokna are *yul*, *ul* and *lā*; e.g. sentence (7)
 245 is negated by means of the marker *la*, whereas (8) has *ul* for its negation.⁸
 246
 247

6 The negator *abû* appears in a sentence recorded by Richardson (1850): *abut inît sa* ‘don’t say so’. The vowels are hypothetical, since in the Arabic script one reads ‘*bt’nts*’. 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 yuğ-êt u la-bâ a iwôt* ‘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 yelli* ‘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).

248 (7) *lállā=s lā tēnāžžäm a tēssēmbi sēn*
 249 mother=3SG NEG can.PFV.3FSG IRR breastfeed.AOR.3FSG two
 250 ‘His mother could not breastfeed both.’
 251 (Sarnelli 1924: 34; Sokna Berber)

252
 253 (8) *ul issén*
 254 NEG know.PFV.3MSG
 255 ‘He does not know.’
 256 (Sarnelli 1924: 45; Sokna Berber)⁹

257
 258 As for Yefren Berber (Libya), like most of the 1a-type languages, it does not make use
 259 of the pan-Berber preverbal negator **wār/wəl*, at least not as a proclitic, but rather as part
 260 of a grammaticalised form, i.e. the adverbial expression *ulyuš* ‘still’ (10).¹⁰ The negator
 261 *mi* is usually employed instead (9), sometimes in combination with *ulyuš* (10). The
 262 proclitic *mi* is in complementary distribution with the allomorph *m*, which appears before
 263 a vowel (11).¹¹

264
 265 (9) *mi zriy=t*
 266 NEG see.PFV.1SG=3MSG
 267 ‘I have not seen him.’
 268 (Abuzakhar 2011; Yefren Berber)

269
 270 (10) *ulyuš mi rxun=awən*
 271 still NEG release.PFV.3MPL=2MPL
 272 ‘They have not released you yet.’
 273 (Abuzakhar 2011; Yefren Berber)

274
 275 (11) *utlayən yən m’ utlayən*
 276 speak.PFV.3MPL or NEG speak.AOR.3MPL
 277 ‘They speak or they do not speak.’
 278 (Abuzakhar 2011; Yefren Berber)

279
 280 In all 1a-type languages, the regular preverbal negator is different from the commonly
 281 used pan-Berber **wār/wəl*. As a matter of fact, most of these negators are innovated forms,

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 *ingī issén* with the negator *ingī* instead.

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-nney 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.

282 a point that we discuss in detail in section 3. Interestingly, the languages of this group
 283 also have in common that their preverbal negator does not trigger a position change of
 284 clitics (9–10), which is not usual practice in Berber.¹² The common configuration is
 285 exemplified in the sentence of Jerba Berber in (12), where the clitic *t-* is fronted because
 286 of the presence of the preverbal negator, while its canonical position would be postverbal.

- 287
 288 (12) *wə t=zriy š*
 289 NEG 3FSG=see.PFV.1SG NEG
 290 ‘I have not seen her.’
 291 (Brugnatelli, personal corpus; Jerba Berber)

292
 293 In contrast to (12), the examples from Siwa (13), from El Fogaha (14), and from Sokna
 294 (15), do not exhibit a position change of the postverbal clitics in the presence of the
 295 preverbal negator.

- 296
 297 (13) *wən l iεəžb=asən*
 298 what NEG please.PFV.PTCP=3MPL
 299 ‘what did not please them’
 300 (Leguil 1986: 32; Siwa Berber)

- 301
 302 (14) *nk essénây=t*
 303 NEG know.PFV.1SG=3MSG
 304 ‘I don’t know him.’
 305 (Paradisi 1963: 95; El Fogaha Berber)

- 306
 307 (15) *ingî yěnnâ=s i mâr udînak: éčč!*
 308 NEG say.PFV.3MSG=3SG to man DEICT eat.AOR.IMP.2SG
 309 ‘He did not say to that man: Eat!’
 310 (Sarnelli 1924: 34; Sokna Berber)

311
 312 Another Berber language where negation is usually expressed through a preverbal
 313 negator only is Tetsreret (Niger). Yet this language displays a residual use of the stem
 314 modification negator in the imperfective of certain verbs (16b), while in the perfective a
 315 difference in stress pattern is used to distinguish between positive (16c) and negative
 316 constructions (16d).

317
 318

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 (Lafkioui 2007: 128) of Northwest Morocco. For other Berber languages where this phenomenon is observed, see Brugnatelli (1993: 234–237).

- 319 (16) a. *iyəffəd*
 320 roth.IPFV-3MSG
 321 ‘It (milk) goes bad.’
 322 (Lux 2013: 321; Tetserret)
 323
- 324 b. *wər iyəffəd*
 325 NEG drink.IPFV_{NEG}-3MSG
 326 ‘It (milk) does not go bad.’
 327 (Lux 2013: 321; Tetserret)
 328
- 329 c. *iʼba*
 330 drink.PFV-3MSG
 331 ‘He drank.’
 332 (Lux 2013: 287; Tetserret)
 333
- 334 d. *wər iʼba*
 335 NEG drink.PFV-3MSG
 336 ‘He did not drink.’
 337 (Lux 2013: 287; Tetserret)
 338

339 This suprasegmental negation marker could be the final stage of a development towards
 340 a complete loss of the stem modification negator, which would make Tetserret resemble
 341 certain Tashelhiyt varieties (South Morocco) that are losing this kind of negator and hence
 342 are shifting from subtype 1b to 1a (see § 2.1.2).
 343

344 2.1.2 Subtype 1b: NEG+V_{NEG}

345
 346 The second subtype is mainly attested in Southern Berber, which comprises languages
 347 such as Zenaga (Mauritania), Tashelhiyt (South Morocco), Tuareg Berber (Sahara), and
 348 some oasis languages, like Berber of Mzab (Algeria), of Ouargla (Algeria) and of
 349 Ghadames (Libya). These languages use both a preverbal negator – usually the pan-
 350 Berber **wər/wəl* – and the negative verb stems, like in (17) from Tuareg Berber (Niger),
 351 for instance:

- 352 (17) a. *ittəl*
 353 roll.up.PFV.3MSG
 354 ‘He rolled up.’
 355
 356 b. *wər ittel*
 357 NEG roll.up.NPFV.3MSG
 358 ‘He did not roll up.’
 359 (Petites Sœurs 1974: 169; Tuareg Berber)
 360

361 However, negative stems are losing ground in some languages of this group, in particular
 362 in the Tashelhiyt area (South Morocco). The old written texts from this language account
 363 for the former existence of negative imperfective stem forms, which are nowadays lost.
 364 Even the negative perfective tends to be less frequently used in certain local Tashelhiyt
 365 varieties, where it may even disappear in certain contexts. In example (18b), stem vowel
 366 alternation after the preverbal negator is displayed, which is generally the case in
 367 Tashelhiyt, whereas in example (19) from the variety of Ida Outanane, the verb may also
 368 remain unmodified.

- 369
 370 (18) a. *thddn* *tmyart*
 371 calm.down.PFV.3FSG woman.FS.DS
 372 ‘The woman calmed down.’
 373 (Bensoukas 2009: 90; Tashelhiyt)
 374
 375 b. *ur thddin* *tmyart*
 376 NEG calm.down.PFV_{NEG}.3FSG woman.FS.DS
 377 ‘The woman did not calm down.’
 378 (Bensoukas 2009: 90; Tashelhiyt)
 379

- 380 (19) *ur thddn*
 381 NEG calm.down.PFV.3FSG
 382 ‘She did not calm down.’
 383 (Bensoukas 2009: 97; Tashelhiyt)
 384

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

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

392

393 (20) *ak d=yusi did=sən awadəm*
 394 NEG VENT=come.PFV_{NEG}.3MSG with=3MPL person
 395 ‘No one of them has come.’
 396 (Bossoutrot, n.d., notebook M, p. 15; Ghadames Berber)

397

398 (21) *ak d=tettis ula yiwt did=esnet*
 399 NEG VENT=come.IPFV_{NEG}.3FSG even one.FSG with=3FPL
 400 ‘No one of them (f.) will come.’
 401 (Bossoutrot, n.d., notebook M, p. 15; Ghadames Berber)¹⁴

402

403 (22) *ak da immākñāf*
 404 NEG IRR roast.PASS.AOR.3MSG
 405 ‘It will not be roasted (quite probably).’
 406 (Lanfry 1968: 320; Ghadames Berber)

407

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

410

411 (23) *ak kām=əkfeε ās hiyar did mādđen*
 412 NEG 2FSG=give.PFV.1SG but best with people
 413 *wāl kām=əkfeε ās n ənnāsb^u=nnām*
 414 NEG 2FSG=give.PFV.1SG but of kin=2FSG
 415 ‘I haven’t given you away (for marriage) but to the best of people; I haven’t given
 416 you but to your kin.’
 417 (Lanfry 1968: 163; Ghadames Berber)

418

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

422

423 (24) *ənnan=as əkf=anaε a nnəšš žid*
 424 say.PFV.3MPL=3SG give.IMP.2SG=1PL IRR eat.AOR.1PL when
 425 *wāl ufin eur=is əčču*
 426 NEG find.PFV.3MPL by=3SG food
 427 ‘They asked him “give us (something) to eat” when they did not find food with
 428 him.’ (Bossoutrot, n.d., notebook M9, p. 40; Ghadames Berber)

2.2 Type 2: NEG + V/V_{NEG} + NEG

430

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*.

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

436

437 2.2.1 Subtype 2a: NEG + V + NEG

438

439 In this subtype, the Berber languages do not take the negative verb stem after the
440 preverbal negator with respect to every verb aspect; i.e. perfective, imperfective, and
441 aorist. This is exceptional in Berber and up to now only attested in Western Rif Berber
442 (also called Senhaja; Northwest Morocco). In all other Berber languages, the presence of
443 a postverbal negator is usually associated with the presence of the negative stem in non-
444 emphatic contexts. Since this language area is under heavy influence of Moroccan Arabic,
445 which ignores negative verb stems, contact could account for this remarkable
446 phenomenon. An example of this type of construction is displayed in (25).

447

448 (25) *ud* *iffəy* *š*
449 NEG go.out.PFV.3SG NEG

450 ‘He did not go out.’

451 (Lafkioui 2007: 234; Rif Berber, Senhaja)

452

453 Frequently attested variants of the preverbal negator in this area are *ud*, *la*, *lah*, and *ula*.
454 The latter variant is probably the result of combining the negators *u* and *la*, an amalgam
455 which elsewhere in the Rif region usually stands for the second negator (i.e. NEG___*ula*),
456 meaning ‘nothing’. As for the postverbal negator, the common variants *š* and *šay* are
457 interchangeable in most contexts and differ in certain varieties as to the degree of
458 expressiveness only.

459

460 2.2.2 Subtype 2b: NEG + V_{NEG} + NEG

461

462 The Berber languages of this subtype do take the negative verb stem after NEG, though
463 not necessarily for all verb aspects. The contemporary Berber verbal system displays a
464 fundamental morphological opposition of perfective (PFV) versus negative perfective
465 (NPFV) for the negative aspects (Basset 1952; Cadi 1987: 59–65; Chaker 1989; Galand
466 1977; Lafkioui 2007: 174–191), as is shown in the verb phrases in (26) from Tamazight
467 (Middle Atlas, Morocco).

468

469

470 (26) a. *innəḍ*
 471 Interlace.PFV.3MSG
 472 'He is interlaced.'
 473 (Lafkioui, personal corpus; Middle Atlas Berber)

474
 475 b. *ur inniḍ ša*
 476 NEG interlace.PFV_{NEG}.3MSG NEG
 477 'He is not interlaced.'
 478 (Lafkioui, personal corpus; Middle Atlas Berber)

479
 480 A number of Berber languages also have a morphologically marked negative imperfective
 481 (NIPFV; Lafkioui 2018). This is the case, for example, of Berber spoken in Figuig, in the
 482 Rif area, in Ghadames, in Jerba, in Tamazret, in Ouargla, in Mzab, and in the Tuareg areas.
 483 Given its similar marking and functional procedures in a wide range of Berber languages
 484 spread over the whole of North Africa, it is most likely that the negative imperfective is
 485 a remnant of a distinctive stem in the proto-Berber verbal system (Brugnatelli 2002;
 486 Chaker 1996: 18; Kossmann 1989; see section 4). The negative imperfective is generally
 487 marked by a dedicated stem vowel modification, that is, the full (unreduced) vowel *a* is
 488 changed into the vowel *i*: [*a* > *i*], like in (27) from Central Tarifit (North Morocco). But
 489 the vowel *a* is maintained in the negative imperfective when the corresponding *a* of the
 490 positive imperfective is preceded by the vowels *i* or *u*, like in (28) from the same language.

491
 492 (27) a. *yəttadəf*
 493 enter.IPFV.3MSG
 494 'He enters/he is entering'
 495
 496 b. *wa yəttidəf ša*
 497 NEG enter.IPFV_{NEG}.3MSG NEG
 498 'He does not enter/he is not entering'
 499 (Lafkioui, personal corpus; Central Rif Berber)

500
 501 (28) a. *yətmunistyar=iṭ*
 502 disturb.IPFV.3MSG=3MSG
 503 'He disturbs him.'
 504
 505 b. *wa ṭ=yətmunistyar ša*
 506 NEG 3MSG=disturb.IPFV.3MSG NEG
 507 'He does/will not disturb him.'
 508 (Lafkioui, personal corpus; Central Rif Berber)

509
 510

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

516

517 2.3 Type 3: V/V_{NEG} + NEG

518

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

521

522 2.3.1 Subtype 3a: V + NEG

523

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

526

527 (29) *akellim iššen ká amakân*
 528 servant know.PFV.3MSG NEG place
 529 ‘The servant did not know the place.’
 530 (Paradisi 1960a: 82; Augila Berber)

531

532 The marker *ká* negates verbs (29) as well as noun phrase predicates (30). Paradisi’s
 533 (1960b) accounts show an optional but rather marginal use of the preverbal negator (*wur*,
 534 *ur*, *wul*, *ul*), which seems to pertain to questions, like e.g. in (31). The available data are
 535 however inconclusive; further investigation is needed.

536

537 (30) *wâya d azîţ ká, wâya d amédeŋ*
 538 DEM.PROX PRDR donkey NEG DEM.PROX PRDR person
 539 ‘This is not a donkey, this is a man.’
 540 (Paradisi 1960a: 82; Augila Berber)

541

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

546

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

550

551

- 592 (34) a. *yəflá*
 593 go.PFV.3MSG
 594 ‘He went.’
 595
 596 b. *yəfli* *š*
 597 go.PFV_{NEG}.3MSG NEG
 598 ‘He did not go.’
 599 (Mitchell 2009: 100; Zuara Berber)

600

601 2.4 Overview of the synchronic standard negation types

602

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

607

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

608

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

609

610 3 Negation from a diachronic and typological perspective

611

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

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

620

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

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

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

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

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

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

663
 664 Other motivations that account for the evolution of [NEG1 + V/V_{NEG3} + NEG2] >
 665 [NEG1 + V] in Berber, especially in those languages that innovated NEG1, concern
 666 economy, the NEG-first principle, and semantic bleaching, and are discussed in what
 667 follows.

668 3.1 Economy

669
 670 As economy is already part of a standard JC, a double or threefold marking of negation
 671 is redundant and one can expect that standard negation tends to drop one of the markers.
 672 Berber provides abundant evidence for this principle. For instance, in Tashelhiyt (South
 673 Morocco), where negation is marked by [NEG1 + V_{NEG3}], the aspectual opposition of
 674 positive versus negative stem is undergoing neutralisation in favour of positive forms, as
 675 in (35).
 676

- 677
 678 (35) a. *ur ifti*
 679 NEG1 go.away.PFV_{NEG3}.3MSG
 680 ‘He has not gone.’
 681
 682 b. *ur ifta*
 683 NEG1 go.away.PFV.3MSG
 684 ‘He has not gone.’
 685 (El Mountassir 2003: 11; Tashelhiyt)

686
 687 Economy here operates at the paradigmatic level, wherein the negative perfective has lost
 688 its markedness in favour of the unmarked perfective, hence simplifying the complexity
 689 of the verbal inflectional system of Tashelhiyt Berber.

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

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

696

697 3.2 The NEG-first principle

698

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

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

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

719

720 (36) *zēmân ellân mār ingî isél dē lahl=énnes am nētta*
 721 once be.PVF.3MPL man NEG1 hear.PFV.3MSG and wife=3SG like 3MSG
 722 ‘Once upon a time, there was a man who could not hear (he was deaf) and his wife
 723 who was like him.’
 724 (Sarnelli 1924–25: 32; Sokna Berber)

725

726 (37) *wargey ad əqqälāy ayiwān*
 727 NEG1 IRR return.AOR.1SG encampment
 728 ‘It will not be (the case) that I return to the camp.’
 729 (Prasse 2003: 832; Tuareg Berber)

730

731 The negator (*i*)ngi in (36) probably relates to *wargi/wargey* in Tuareg Berber, which orig-
 732 inates from the frozen phrase *wer igi* ‘it is not...’ (pan-Berber negator + negative form of

733 the verb *igu* ‘do, be’, i.e. NEG1 + V_{NEG3}; Prasse 1972: 245) and which usually negates
 734 noun phrase predicates and nominalised constructions, as in (37). In this regard, Sokna’s
 735 (*i*)*ngi* (as in 36) would be related to the former participial construction *(*wər*) *ngi*, which
 736 corresponds to a cleft sentence signifying ‘it-is-not-that...’ and which goes with a positive
 737 verb stem. This kind of construction can be viewed as a stage of the so-called “negative
 738 existential cycle”, which is “a diachronic cycle in which distinct negative existential
 739 markers arise, and are subsequently used to indicate verbal negation, displacing the orig-
 740 inal verbal negator” (Croft 1991: 13). It proves that there are Berber languages where the
 741 use of negative existential markers is Extended to standard negation (type C of Croft’s
 742 Cycle), contrary to what is stated in Veselinova (2016: 147, 150, 159), who limits the
 743 Berber negation typology to type A, which has “no distinction between verbal and exist-
 744 ential negation” (p. 159), to type A-B, where “a distinction exists, but the negative exist-
 745 ential is restricted to the present tense” (p. 159), and to type B, in which “verbal and
 746 existential predications are negated by well delimited strategies” (p. 159). These different
 747 existential negation types are beyond the scope of the article, which focuses on declarative
 748 verbal negation.

749

750 3.3 Semantic bleaching

751

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

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

763

764 (38) a. *ur* *iddi* *uryaz*
 765 NEG1 go.PFV_{NEG3.3MSG} man
 766 ‘The man didn’t go’

767

768 b. *ur* *iddi* *ša*
 769 NEG1 go.PFV_{NEG3.3MSG} NEG2
 770 ‘He didn’t go’

771 (Penchoen 1973: 60; Tamazight)

772

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

776

777 3.4 Discussion

778

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

791

792 The following Table 2 gives an overview of the different negation stages which the
 793 Berber languages have probably gone through and which we consider to be extensions of
 794 the Jespersen Cycle. Note that stages 0 to 2 are reconstructed and therefore not attested,
 795 which in the corresponding synchronic typology column is indicated by blanks. Stages 4,
 796 4', and 4'' are developed out of stage 3, whereas stage 5 stems from stages 4 and 4'', and
 797 stage 5' from 4'.

798

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

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

800

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

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

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

811
812 It is also worth highlighting that, apart from the Extended JC in Table 2, the Berber
813 language family also possesses a negative cycle which has NEG4 in its final stage. This
814 latter negator is distinct from the proto-Berber negator **wər* and is mostly innovated by
815 means of grammaticalisation of Berber material of various kinds, including existentials,
816 such as the negator *(i)ngi* (< **(wər) ngi* ‘it-is-not-that...’ < **wer igi* ‘it is not...’), discussed
817 in section 3.2. (examples 36–37). This particular preverbal single negation construction
818 with *(i)ngi* also testifies to the expansion of existential negation marking upon standard
819 negation (type C of Croft’s Cycle; Croft 1991:6). As a matter of fact, existential negators
820 such as *(i)ngi* have been fully grammaticalised and function as new standard negators in
821 Berber, which means that they have been subject to the following diachronic
822 developments:

823
824 (39) [NEG-standard = NEG-existential] > [NEG-standard ≠ NEG.EX-existential] >
825 [NEG.EX-standard = NEG.EX-existential] > [NEG-standard = NEG-existential]
826

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

833
834 Regarding stages 4’ and 5’ of the Extended Berber JC and the particular NEG4 stage
835 of the other Berber negative cycle, there is the phenomenon in which NEG2 is dropped
836 in standard negation so as to mark emphasis. This phenomenon is typologically
837 uncommon, as the expression of emphatic negation, which is a universal feature, is
838 generally conveyed by including certain (negative) elements, like adverbs and particles,
839 rather than by deleting them (Kiparsky and Condoravdi 2006: 7). This strategy of NEG2-
840 dropping may have played a role in the development of the preverbal negatives of stages
841 4’ and 5’ of the Berber JC and of the stage with NEG4, as will be shown in what follows.

842
843

844 (40) *win yərran iman=is d ət̪taləb, ur yəyri*
 845 who put.PFV.PTCP self=3MSG PRDR doctor NEG1 read.PFV_{NEG3}.3MSG
 846 ‘The one who pretended to be a doctor and could not even read.’
 847 (Ben Sedira 1887: 188; Kabyle Berber)

848

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

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

854

855 (41) a. *tawTuf̥t ur t̥=nyiy*
 856 ant.FSG NEG1 3FS=kill.PFV.1SG
 857 ‘I was incapable to kill even an ant’

858

859 b. *tawTuf̥t ur t̥=nyiy ara*
 860 ant.FSG NEG1 3FS=kill.PFV.1SG NEG2
 861 ‘The ant, I did not kill it’

862 (Mettouchi 2001: 218; Kabyle Berber)

863

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

872

873 (42) *ay yəf aydi ur itətt̪ ara aḵsum n wuʃʃən*
 874 what on dog NEG1 eat.IPFV.3MSG NEG2 meat of jackal.MSG.DS
 875 ‘The reason why the dog does not eat jackal meat.’

876 (Mouliéras 1893–1895: 247, title of the tale; Kabyle Berber)

877

878 (43) *a nmaəhaḍ nək id=ək : win yufan wayəḍ,*
 879 IRR make.a.pact.AOR.1PL 1SG with=2MSG who find.PFV.PTCP other.MSG
 880 *ur t̥=ičči*

881 NEG1 3MSG=eat.PFV_{NEG3}.3MSG

882 ‘Let us make a pact: the one who finds the other will not eat him.’

883 (Mouliéras 1893–1895: 247, in the body of the text; Kabyle Berber)

884

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

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

893

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

897

898 b. *w yár=i š matt(a) a k=úšəy*
 899 NEG1 by=1SG NEG2 what IRR 2MSG=give. AOR.1SG
 900 ‘I have nothing to give you’
 901 (Mitchell 2009: 105; Zuara Berber)

902

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

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

912

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

920 It is also worth mentioning that Miestamo’s analysis and classification of Tamazight
 921 Berber (Central Morocco) as A/Fin/NegVerb is questionable in different respects, the
 922 main ones being: 1) the pan-Berber negator *ur* has no element of finiteness in itself, and
 923 hence cannot be regarded as a FE (finite element), and 2) the negative verb does not lose
 924 any property of finiteness while negated and keeps most of the morphosemantic features
 925 of the positive verb (i.e. markers of subject and TAM) as well as the potential of governing

926 a direct object. The only apparent loss concerned here is the distinction between the
927 unmarked stem (the aorist) and the marked stem (the imperfective), which makes it a case
928 of paradigmatic asymmetry.

929 A final typologically important result of our research is that there are Berber languages
930 which have undergone a shift from asymmetric to symmetric standard negation for certain
931 verb aspects. Indeed, in quite a number of Berber languages, the negation of the
932 imperfective constructions has become entirely symmetric (Lafkioui 2018), which means
933 that these negatives are distinct from their affirmative counterparts by the presence of
934 overt negators only. Moreover, in certain Berber languages, such as Tashelhiyt (South
935 Morocco), for instance, even the negative perfective has been affected by a neutralisation
936 of its opposition with the positive perfective in certain local varieties, which implies that
937 symmetric negation is expanding all upon the negation system of this language.
938

939 In the next section, we will examine in detail the origin of NEG3 (i.e. negative verb
940 stem alternations) and will argue that the dedicated morphophonetic mechanisms behind
941 its creation are a vital source for generating new negators.
942

943 **4 On the origin of NEG3**

944

945 The existence of negative verb stems in almost all Berber languages could be viewed in
946 itself as a pan-Berber strategy of double-marking the negation, as noted by Lafkioui
947 (2013a), in accordance with Schmitt-Brandt (1979: 235). The fact that such forms
948 probably derived from elements placed towards the right end of the verbal complex, under
949 the influence of a postverbal negative element, strengthens the hypothesis that Berber
950 achieved Stage II of the Jespersen Cycle in very ancient times, earlier than any contact
951 with Arabic, and for which evidence will be provided in what follows.

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

958
959 (45) a. *mazal yettes*
960 still sleep.PFV.3MSG
961 “He is still sleeping”
962

963 b. *mazal yettis*
964 still sleep.PFV_{NEG3}.3MSG
965 “He is not yet sleeping”
966 (Dallet 1982: 530; Kabyle Berber)

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

973

974	(46)	AOR	IPFV	NIPFV	
975		<i>fsd</i>	<i>tfsad</i>	<i>tfsid</i>	‘to corrupt’
976		<i>ḍr</i>	<i>ṭtar</i>	<i>ṭtir</i>	‘to fall’
977		<i>af</i>	<i>ttafa</i>	<i>ttifi</i>	‘to find’
978		<i>kkas</i>	<i>tkasa</i>	<i>tkisi</i>	‘to inherit’

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

980

981	(47)	AOR	IPFV	NIPFV	
982		<i>ban</i>	<i>tban</i>	<i>tbin</i>	‘to come into view’
983		<i>ttudəggər</i>	<i>ttudəggar</i>	<i>ttudəggir</i>	‘to be pushed, shoved’

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

986

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

- 989 1) Vowel fronting (*a* > *e/i* and *ǎ* > *ə/e*)
 990 2) Shortening of the first vowel
 991 3) Lengthening of the last vowel

992

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

999

1000	(48)	PFV	NPFV	IPFV	NIPFV	
1001		<i>ikrās</i>	<i>ikres</i>	<i>ikârrās</i>	<i>ikərrəs</i>	‘to knot’
1002		<i>ilsa</i>	<i>ilse</i>	<i>ilâss</i>	<i>iləss</i>	‘to wear’
1003		<i>ibbərāg</i>	=	<i>itâbărâg</i>	<i>itəbəriḡ</i>	‘to show off’

1004 (Brugnatelli 2002; Tuareg Berber)

1005

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

1006	(49)	PFV	NPFV	IPFV	NIPFV	
1007		<i>yəzwa</i>	<i>yəzwi</i>	<i>izugga</i>	<i>yəzuggi</i>	‘to go down’
1008		<i>yəbbəs</i>	<i>yəbbis</i>	<i>yətbəssa</i>	<i>yətbəssi</i>	‘to be switched off’
1009		<i>yəwəʔ</i>	=	<i>yəččaʔ</i>	<i>yəččiʔ</i>	‘to strike’
1010		(Brugnatelli 2002; Jerba Berber)				

1011

1012 From a diachronic perspective, these forms are explained as the result of phonotactic
 1013 changes involving the final part of the stem under the influence of a suffixed negative
 1014 particle. The left-to-right stress shift would account for the shortening of the initial vowels
 1015 and the lengthening of the final ones as well as for the fronting of the final vowels as a
 1016 consequence of umlaut, assuming that the original particle contained front vowels
 1017 (palatalisation).

1018 An interesting parallel comes from the Arabic dialects of Egypt (Dakhla Oasis), in
 1019 which negative verbal forms have arisen from positive ones, displaying a vocalic
 1020 difference most likely provoked by “consonant clustering and heavy syllable formation”
 1021 (Woidich 1995–97), due to the affixation of NEG2, as is shown in the Egyptian Arabic
 1022 examples in (50).

1023

1024 (50) a. Western dialects:
 1025 *iʔo:m* > *ma-tiʔa:m-š*
 1026 ‘Speak Cairene!’ > ‘Do not speak Cairene!’

1027

1028 b. Central dialects:
 1029 *siʔa:n* > *ma-siʔin-š* / *ma-siʔe:n-š*
 1030 ‘He asked’ > ‘He did not ask’
 1031 (Woidich 1995–97: 15; Egyptian Arabic)

1032

1033 It should be noted that stem vowel alternations in negation constructions usually affect
 1034 verbs only. Noun phrase predicates, on the other hand, are negated by means of markers
 1035 preceding the predicate when attributive values are conveyed, such as in the negation
 1036 structures from Central Rif Berber (North Morocco) in (51).

1037

1038 (51) a. *d* *ašəmrar*
 1039 PRDR white
 1040 ‘It is white.’

1041

1042 b. *urid* *ašəmrar*
 1043 NEG1.PRDR white
 1044 ‘It is not white.’

1045

1046

- 1047 c. *uǧi* *d* *ašəmrar*
 1048 NEG1 PRDR white
 1049 ‘It is not white.’
 1050
 1051 d. **ur* *d* *ašəmrar* *ša*
 1052 NEG1 PRDR white NEG2
 1053 ‘It is not white.’
 1054 (Lafkioui, personal corpus; Rif Berber)
 1055

1056 Configurations with a double negation marker like in (51d) are ungrammatical. On the
 1057 other hand, vowel modification may appear in certain negative quasi-verb constructions
 1058 when existential values are expressed. Such predicates are particular in that they generally
 1059 behave like verbs, and are therefore called “quasi-verbs” (Lafkioui 1999: part II, 2011:
 1060 43–55). Among these quasi-verb constructions, those with a preposition as a predicate
 1061 may undergo stem vowel alternations in certain languages when they are negated by
 1062 means of NEG1__NEG2 and when they signify ‘to have’, as in (52) extracted from a 19th
 1063 century religious poem from Jerba (Tunisia). This remarkable phenomenon is of
 1064 relevance to our discussion about the origin of NEG3, because it shows that the same
 1065 triggering mechanism behind negative stem alternations in verbs has been at work in these
 1066 quasi-verbal (prepositional) constructions; i.e. the postposition of a negator has triggered
 1067 the same phonetic change (> *i*) with the same function of negation marking.
 1068

- 1069 (52) a. *ɣər=s*
 1070 by=3SG
 1071 ‘He has.’
 1072
 1073 b. *wə* *ɣr=is* *š*
 1074 NEG1 by=3SG NEG2
 1075 ‘He has not.’
 1076 (Brugnatelli 2014b: 179; Jerba Berber)
 1077

1078 The full vowel *i* in the negative (52b), developed under the influence of the enclitic
 1079 negator, probably results either from the retention of an ancient vocalism, which is
 1080 reduced in unstressed position, or from the former presence of anterior sounds in NEG2.
 1081 In any case, the most noticeable outcome is the position change of the accent triggered
 1082 by the apposition of NEG2, which is exemplified in example (53) from Zuara (Libya),
 1083 which retakes example (44).
 1084

- 1085 (53) a. *w* *ɣər=i* *matt(a)* *a* *k=úšəɣ*
 1086 NEG1 by=1SG what IRR 2MSG=give. AOR.1SG
 1087 ‘I have nothing to give you’ (more emphatic)

1088 b. *w* *ɣər=i* *š* *matt(a)* *a* *k=úšəy*
 1089 NEG1 by=1SG NEG2 what IRR 2MSG=give. AOR.1SG
 1090 ‘I have nothing to give you’
 1091 (Mitchell 2009: 105; Zuara Berber)

1092
 1093 In spite of the strong evidence in favour of a morphophonetic origin of the negative verb
 1094 stems, some scholars still share the idea of Picard (1957) according to which the negative
 1095 perfective represents a sort of “intensive” form of the perfective (“*prétérit intensif*”). In
 1096 the same line of thought, Chaker (1996: 18) stated that it was “a former intensive form
 1097 which must have been used in environments strongly characterised by modality: negative
 1098 statements (prohibition), wishes, unreal hypotheses, etc” [our translation]. But the
 1099 empirical data contradict this view. As pointed out by Brugnatelli (2002: 171), the
 1100 negative perfective is absent when modality is heavily involved, such as in wishes
 1101 (optative) and oaths, for which Berber uses [*a *wər/wəl* + aorist] and [*ma* (or equivalents)
 1102 + positive perfective], respectively, without NEG₂, as is exemplified in (54) from Rif
 1103 Berber (Senhaja), where negation is marked by the conditioned variant *ma* ___ \emptyset or its
 1104 free variants like *ka* ___ \emptyset .

1105
 1106 (54) a. *wəllah ma skurksəy!*
 1107 by God NEG1 lie.PFV.1SG
 1108 ‘By God, I did not lie!’

1109
 1110 b. *wəllah ka skurksəy!*
 1111 by God NEG1 lie.PFV.1SG
 1112 ‘By God, I did not lie!’
 1113 (Lafkioui 2007: 234; Rif Berber, Senhaja)

1114
 1115 This kind of constructions are counterfactual conditionals, in which the negative clause
 1116 forms the protasis with the conjunction “if” as the negator, while the apodosis, which
 1117 conveys a meaning like e.g. “may I be damned”, is implied.

1118 The counterfactual conditional is the only context in which the negative perfective may
 1119 occur outside a negation configuration. Therefore, it is not surprising that some of these
 1120 constructions are introduced by amalgamated connectives containing the negative particle
 1121 **wər/wəl*, such as the Tashelhiyt form *m-ur* (‘if’, ‘when’), and possibly also the Kabyle
 1122 form *lemmer* (‘if’, ‘when’). The use of negative forms of the verb in counterfactual
 1123 conditionals is a phenomenon parallel to what is recorded in Ungarinjin (Australian
 1124 language), where the irrealis of the verb appears to stem from a former negative form
 1125 (Miestamo 2005: 225).

1126
 1127 The most important phonetic change in the negative stems thus concerns palatalisation,
 1128 which generally entails the presence of a front vowel. We find similar phenomena in many

1129 other languages of the world, such as the Old Irish genitive *maicc* (from *macc* ‘son’), in
 1130 which a final *-i*, still preserved in Ogamic *maqqi*, has completely disappeared, leaving
 1131 only a phonetic vestige in the palatalisation of the final consonant (Szemerényi 1980:
 1132 169). Another fitting case is the well-known phenomenon of umlaut in German, in which
 1133 final vowels undergo fronting under the influence of *i*-endings that have disappeared.

1134 This does not mean however that all attested forms of NEG2 are necessarily cognates
 1135 of the unidentified oldest pan-Berber marker which triggered the phonetic change. Yet
 1136 this particular phonetic change, which is shared by all Berber languages, entails the
 1137 existence of a postverbal negator. Even if the phonetic evidence points to the former
 1138 existence of a front vowel, it is seldom attested as such in the NEG2 markers related to
 1139 **kʷāra ~ (h)āra(t)* ‘thing’. The vowel *i* of *kira* in Augila (Libya) could come from *a*, as
 1140 this phonetic correspondence is well known in Berber, like e.g. in *imin* (Augila) vs. *aman*
 1141 (pan-Berber) for ‘water’. But the related form *šīra* ‘thing’ in El-Fogaha (Libya), where
 1142 the development *i < a* is absent, indicates that the front vowel is indeed the original one.
 1143 Moreover, the palatal stop **kʷ*, reconstructed by Kossmann (2013: 332) for **kʷāra* instead
 1144 of the velar **k*, confirms the previous existence of a front sound in the first syllable of
 1145 this word. In any case, given that the vocalic modifications of the verbal stems are archaic,
 1146 while the lexical items used as NEG2 are still easily recognizable, one cannot rule out the
 1147 possibility that these items were added in more recent times to an earlier NEG2 which
 1148 has completely disappeared. Indeed, changes affecting NEG2 are visible in various
 1149 Berber languages, such as in Central Rif Berber (North Morocco), where the most
 1150 widespread Berber negators are replaced by the marker *bu/bu* in specific grammatical
 1151 contexts (Lafkioui 2013a, 2013b).

1152 Other accounts that support our hypothesis of the ancient NEG2’s postposition as the
 1153 formal trigger of NEG3’s creation in Berber come from the behaviour of verbs with a
 1154 post-radical vowel alternation *a/i* in the perfective; the vowel *i*, which is characteristic of
 1155 the negative stem, corresponds to the vowel pattern of the first two grammatical persons
 1156 of the matching positive stem. The origin of the vowel alternation in these verbs has been
 1157 variously explained. A most plausible theory is that of Vycichl (1952: 75, 79), who relates
 1158 these alternations to the presence vs. absence of a subsequent consonant. The vowel *i* is
 1159 typical of the 1st and 2nd person singular, where it is always followed by a consonant,
 1160 originally a plosive. On the other hand, the vowel *a* (and sometimes also *u*) always goes
 1161 with the 3rd singular and 1st plural, where it is in absolute final position. The examples in
 1162 (55) from Kabyle Berber illustrate this hypothesis for the perfective of the verb ‘to wear’:
 1163

1164 (55)

	Positive	Negative
1165	1S <i>əlsiy < *lsayC</i>	<i>əlsiy < *lsayC</i>
1166	2S <i>təlsid < *tlsayC</i>	<i>təlsid < *tlsayC</i>
1167	3S <i>yəlsa < *ylsay #</i>	<i>yəlsi < *ylsay (C-...)</i>
1168	1P <i>nəlsa < *nlsay #</i>	<i>nəlsi < *nlsay (C-...)</i>

1169 (Lafkioui, personal corpus; Kabyle Berber)

1170 A similar development, wherein one and the same vowel brings forth different outcomes
 1171 according to the phonetic context, took place in other Berber languages as well, when the
 1172 verb is followed by a clitic, like for instance in Nefusa Berber (Libya) in (56), where the
 1173 final *û* comes from *a* (56a) and the internal *é* comes from *i* (< **ay*, 56b).

- 1174
 1175 (56) a. *yengû* ‘he killed’
 1176 b. *yengé=šek* ‘he killed you (m.)’
 1177 *yengé=šem* ‘he killed you (f.)’
 1178 *yengé=t* ‘he killed him’
 1179 *yengé=ttet* ‘he killed her’
 1180 (Beguinet 1942: 106; Nefusa Berber)¹⁶

1181
 1182 All these examples clearly account for our hypothesis that the verbal vowel alternation
 1183 *a/i* results from the sequence **ay* when occurring in absolute final position or before a
 1184 consonant, which can be part of e.g. a postposed negation marker (55) or of a pronoun
 1185 (56).

1186 Another case of vocalic change with a functional value triggered by the postposition
 1187 of an element is attested in Berber of Zuara (Libya), where interrogative sentences show
 1188 interesting phenomena not only in terms of intonation but also in terms of concatenative
 1189 and non-concatenative morphology. As Mitchell (2007: 25–26) pointed out, declarative
 1190 sentences “may often be ‘rendered’ interrogative by the addition of a sentence-affix *-a*,
 1191 which entails the accentuation of the syllable preceding it”. However, in some
 1192 ‘exclamation-question sentences’, the affix is replaced by a vocalic change of the last
 1193 word: “the short vowel *ə* is replaced by a long *a*, with the simultaneous omission of the
 1194 interrogative sentence-suffix *-a*.” From a diachronic perspective, this is another umlaut
 1195 case with internal vowel lowering related to the loss of the final vowel *-a* (57).

- 1196
 1197 (57) a. *yədwəl=ak* *axəmməm=ik* *n qəbəl*
 1198 came.back.PFV.3MSG=2MSG cogitation=2MSG of before
 1199 ‘Your earlier way of thinking has come back to you.’ (declarative)
 1200
 1201 b. *yədwəl=ák* *axəmməm=ik* *n qəbəl a?*
 1202 came.back.PFV.3MSG=2MSG cogitation=2MSG of before QUEST
 1203 ‘Has your earlier way of thinking come back to you?’ (question 1)
 1204
 1205 c. *yədwəl=ák* *axəmməm=ik* *n qəbal?*
 1206 came.back.PFV.3MSG=2MSG cogitation=2MSG of before
 1207 ‘Has your earlier way of thinking come back to you?’ (question 2)
 1208 (Mitchell 2007: 26; Zuara Berber)

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

1209 When the last word of the question is a verb, its vocalic pattern changes (58–59); it is
1210 generally the vowel of the final syllable which is affected (58b–59b).

1211

1212 (58) a. *yəssən*

1213 know.PFV.3MSG

1214 ‘He knows.’

1215

1216 b. *mám̄mu yəssán?*

1217 who know.PFV.3MSG

1218 ‘Who knows?’

1219

1220 (59) a. *yəkmál*

1221 complete.PFV.3MSG

1222 ‘He (was) completed.’

1223

1224 b. *i mátta yəkmál?*

1225 to what complete.PFV.3MSG

1226 ‘What’s all this about?’

1227 (Mitchell 2007: 26; Zuara Berber)

1228

1229 Given that this phonetic change concerns all final words of an (exclamation-)question
1230 sentence, not just verbs but any grammatical unit, one cannot yet label such verbal forms
1231 as specific “question forms”, but they are a good example of how Berber negative stems
1232 could have come into being. In this case, the last step of a full grammaticalisation is not
1233 yet completed.

1234 Our investigation of the origin of NEG3 has shown that the presence of a postverbal
1235 negator (NEG2) in Berber is most probably ancient and at the basis of the origin of
1236 dedicated negative verb stems (NEG3), which are marked by specific vowel patterns
1237 resulting from certain phonetic phenomena like accentuation and umlaut. Since these
1238 negation constructions with NEG3 are widespread all over North Africa, it is reasonable
1239 to regard them as tracing back to the same ancient stage of Berber’s language history.
1240 Therefore, the hypothesis that considers the origin of double negation [NEG1 – V/V_{NEG3}
1241 - NEG2] in Berber as a result of contact with Arabic is questionable, all the more because
1242 double negation in Arabic would have come into being when a two or three-fold negation
1243 system was already firmly established in Berber.

1244 The influence of Arabic on Berber negation is rather that of an incentive to preserve
1245 NEG2 in those languages where the Berber variants became analogous to the Arabic
1246 variants by means of a palatalisation of the Berber velar **k* (e.g. Berber **k(i)ra* > *šra/šal/š*,
1247 with *š* occurring in both Berber and Arabic). These palatalising languages belong to a vast
1248 Berber-speaking area extending from the centre of North Africa, whereas the Berber

1249 languages spoken in its fringes (e.g. Mauritania, Libya, Siwa, Sahara), which generally
1250 drop NEG2, do not have palatalisation of *k.

1251

1252 **5 Conclusion**

1253

1254 The present study has demonstrated from a synchronic, diachronic, and typological
1255 perspective that Berber possesses an ancient and deeply rooted triple negation, NEG3
1256 being dedicated stem vowel alternations, engendered by specific morphophonemic
1257 mechanisms, which are argued to form a typologically new source for the creation of
1258 negators.

1259 Furthermore, the study has shown that the language stage [NEG1 + V/V_{NEG3} + NEG2]
1260 is probably of Berber origin and therefore precedes the presently attested [NEG1/NEG4
1261 + V]. In doing so, we have proven that the Jespersen Cycle has returned back to its starting
1262 point in certain Berber languages, for which we discussed three main parameters:
1263 economy, the NEG-first principle, and semantic bleaching. In the same line of thought,
1264 we have also provided accounts that point to Berber as a substrate in the development of
1265 double negation in North African Arabic.

1266 From a typological perspective, Berber, with its widespread use of two concatenative
1267 negators (NEG1/NEG4, NEG2) combined with a third, non-concatenative negator
1268 (NEG3), can be considered one of the few languages in the world which possess a “triple
1269 negation” system, a feature also pointed out in some other languages belonging to
1270 different phyla, such as in Lewo (Malayo-Polynesian language spoken in Vanuatu), in
1271 Brabantian Dutch and in Bantu (van der Auwera et al. 2013). With respect to the origin
1272 of the negative stems (NEG3), it is reasonable to regard the discussed morphophonetic
1273 mechanisms (including palatalisation) triggered by the presence of a postverbal negator
1274 as an essential source for new negators, beyond those already known, like, for instance, a
1275 word expressing minimal value (e.g. French *pas* ‘not even a step’), a negative word (e.g.
1276 English *not*, which originally meant ‘nothing’), an emphatic element (e.g. French *du tout*
1277 or English *at all*), a particle of negative answer (e.g. Brazilian Portuguese *não*), a
1278 repetition of the first negator (e.g. Brabantian *nie*), locative and possessive pronouns
1279 (Bantu), among others (e.g. Devos and van der Auwera 2013, van der Auwera 2010).

1280 Finally, evidence for the strongly asymmetric nature of Berber negation was given in
1281 this study, even though a new trend towards more symmetrical negation patterns is also
1282 found in certain Berber languages.

1283

1284

1285	Abbreviations	
1286	1	first person
1287	2	second person
1288	3	third person
1289	A	aspect(ual)
1290	ACC	accusative
1291	AOR	aorist
1292	AUX	auxiliary
1293	DEICT	deictic
1294	DEM	demonstrative
1295	PRO.DIR	direct object pronoun
1296	DS	dependent state
1297	EXT.NEG	existential negation/negator
1298	F	feminine
1299	IMP	imperative
1300	IPFV	imperfective
1301	IRR	irrealis
1302	M	masculine
1303	NEG	negation, negator
1304	NIPFV	negative imperfective
1305	NPFV	negative perfective
1306	PFV	perfective
1307	PL	plural
1308	PRDR	predicator
1309	PROX	proximal
1310	PRSM	personal marker
1311	PTCP	participle
1312	PTCPM	participle marker
1313	RES	resultative
1314	S	subject
1315	SG	singular
1316	VENT	ventive
1317		
1318		

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