When is templatic morphology borrowed?

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When is templatic morphology borrowed? On the spread of the Arabic elative

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Abstract: Semitic languages are typologically unusual in making extensive morphological use of so-called “root-and-pattern” morphology, in the form of fixed-length templates that fix vowel qualities in the output while ignoring the vowels of the input. The expansion of Arabic over the past 1500 years has created ideal conditions for the borrowing of fixed-vowel fixed-length templates into the languages of massively bilingual minority groups in the Arab world. Prominent among the morphemes borrowed in such circumstances is the comparative/superlative template *ʔaCCaC*, conventionally termed the elative. This template has become fully productive in languages including Siwi Berber, Western Neo-Aramaic, and Mehri, and suppletively productive in Domari. A nearly exhaustive examination of massively bilingual minority groups in the Arab world suggests that the outcome is determined not only by sociolinguistic factors but also by structural ones: only languages with pre-existing triliteral fixed-vowel templates – used in particular for change-of-state verbs – borrow this template in a fully productive fashion, while other languages, if they borrow it at all, are forced to resort to suppletion and/or to leave it unproductive. This observation is consistent with two more broadly generalisable explanations: that the productive borrowing of “root-and-pattern” morphology requires not only the borrowing of its outputs but also the presence (through borrowing or common inheritance) of enough of the corresponding inputs, and that, in any given category, pre-existing root extraction processes are a precondition for the productive borrowing of “root-and-pattern” morphology.

Keywords: root-and-pattern morphology, templatic morphology, elative, comparative, Arabic, language contact

1 Introduction

Most Semitic languages, including Arabic, along with many of their Afroasiatic relatives, make extensive use, in both inflectional and derivational morphology, of fixed-length templates that fix vowel qualities and positions in the output (defining a “pattern”) while largely or entirely ignoring the vowel qualities of the input (traditionally analysed as extracting a consonantal “root”, but applicable even to borrowed vocabulary; cf. e.g. cases of reanalysis of Italo-Romance bases into roots in Maltese in Saade 2020). While usually labelled “root-and-pattern morphology”, this would better be termed “fixed-vowel fixed-length templatic morphology”, since many such templates demonstrably do not take a consonantal root as their input, as demonstrated for Arabic iambic plurals (McCarthy & Prince 1990) and Hebrew denominal verbs (Bat-El 1994; Ussishkin 1999). On a global scale, this phenomenon is rather unusual; the few examples of fixed-length templatic morphology in North America, such as Yawelmani (Archangeli 1983), limit their effects to syllable structure while preserving input vowels, and as such are not directly comparable. Within the Old World, such fixed-vowel templates are widespread in the Afroasiatic family and practically absent elsewhere (Arcodia 2013).

The distribution of “root-and-pattern” morphology – effectively limited to a single family – implies that this typological feature is unlikely to emerge independently, genetically stable once it has emerged, and difficult to borrow across language family boundaries. The borrowing of any single fixed-vowel fixed-length template into a language (as a productive process) is sufficient to establish “root-and-pattern” morphology within that language; this therefore suggests that fixed-vowel fixed-length templates are very difficult to borrow into languages without them. To complete the generalisation, we need to investigate a question left open by this reasoning: are fixed-vowel fixed-length templates equally hard to borrow into any language, or are they borrowed more easily by

languages which already have them? To test the latter hypothesis, it is necessary to examine the most recent, and geographically most extensive, expansion of a language with "root-and-pattern" morphology: the spread of Arabic.

The wide expansion of Arabic over the past 1500 years has created ideal conditions for the borrowing of fixed-vowel fixed-length templates into the languages of minority groups in the Arab world. A number of minority languages have for many generations been spoken only in relatively small enclaves entirely surrounded by Arabic speakers, by people many of whom learned fluent Arabic before adulthood. Some of these – Berber varieties in North Africa, Aramaic varieties in the Levant, and Modern South Arabian varieties in Arabia – belong to Afro-Asiatic and are known to have had "root-and-pattern" morphology prior to the expansion of Arabic. Others – smaller Indo-Iranian languages in the Middle East, and Nubian in the Sudan – did not. Nubian is overwhelmingly agglutinative; Indo-Iranian, like other Indo-European subgroups, has a limited number of morphologically conditioned vowel alternations, but makes little or no use of fixed-length templates. The hypothesis under discussion thus predicts that Arabic fixed-vowel fixed-length templates should not be productively borrowed into Nubian or Indo-Iranian, but might be borrowed into the Afro-Asiatic languages in question.

Arabic makes use of a large number of fixed-vowel fixed-length templates, but many of them are unlikely to be borrowed for reasons independent of their templatic nature. The commonest fixed-vowel fixed-length templates in Arabic are naturally inflectional, marking number and aspect; but cross-linguistically inflectional morphology is quite rarely borrowed (cf. Gardani 2008, 2012, 2018; Gardani, Arkadiev & Amiridze 2015). Derivational morphology is more easily borrowed (for root-and-pattern examples, cf. Coghill 2015, Arnold 2007), but is typically both less productive and less likely to be adequately described in a short grammar or to appear in a short corpus; this makes its borrowing difficult to investigate without extensive fieldwork (see also Gardani 2018 for other reasons why derivational borrowing is less well investigated). One Arabic fixed-vowel fixed-length template, however, is productive and common enough to be well-described and easy to find examples of, yet has a function that can relatively easily be borrowed into another language: the "elative" (as the comparative/superlative is traditionally called in Arabic linguistics). Unlike some other Arabic templates, it also turns out to take the root as its input rather than any stem, making it a particularly prototypical example of "root-and-pattern" morphology.

We are therefore led to pose the following questions:
(a) Among heavily Arabic-influenced languages, is the borrowing of the elative as a productive template restricted to languages which already had productive "root-and-pattern" morphology?
(b) If so, given that "root-and-pattern" morphology as described is the intersection of several features, can we isolate the relevant factors more specifically, or are they irretrievably connected to one another?
In order to answer these questions, this paper will, after discussing the morphology and history of the Arabic elative (Sect. 2), survey the distribution of elatives across languages in close contact with Arabic (Sect. 3), then seek to explain the observed results in relation to other aspects of the morphological structure of these languages (Sect. 4).

2 The Arabic elative and its development

In order to understand the borrowing of the Arabic elative, some background knowledge is necessary on its form, its history, and its variation across contemporary dialects. (For a fuller study of the Classical Arabic elative, see Bravmann (1968).)

2.1 The Classical Arabic elative

The Classical Arabic comparative/superlative form, traditionally termed "elative" in the Arabic context, is productive for a wide range of Arabic adjectives. It is, however, subject to strict input restrictions. Adjectives in Arabic normally fit one of a small set of adjectival templates, most commonly *BaCīD-* but also *BāCiD-*, *maBCūD-*, and a few others. (For convenience, unspecified consonants in templates will be denoted by consonantal capital letters in alphabetical order: *B, C, D, F...*) Stems morphologically related to the adjective, such as the inchoative verb and the deadjectival noun, use the same consonantal root with different templates imposed. The elative can be formed only from inputs whose root contains no more than three consonants. Adjectives containing four or more root consonants, such as *muxaḍram-* 'shrewd' must thus form the comparative using analytic strategies instead (in Classical Arabic, *ʔakθar-* 'more' followed by the corresponding de-adjectival noun in the accusative.)

The elative most commonly takes the form of a template *ʔa-BCaD-*, and its other allomorphs are clearly relatable to this template (excluding a few suppletive comparatives such as *xayr-* 'better'). Strong roots (in traditional terms, ones with three non-semivowels) and hollow roots (ones with a medial semivowel *C=y/w*) are mapped directly to *ʔa-BCaD-*, e.g. *qabīħ-* 'ugly' > *ʔaqbaħ-* 'uglier', *jayyid-* 'excellent' > *ʔajwad-* 'more excellent'. Defective roots (ones with a final semivowel *D=y/w*) are mapped to *ʔa-BCā* (originally **ʔaBCay*), e.g. *ɣālī-* 'expensive' > *ʔaɣlā*, *ħulw-* 'sweet' > *ʔaħlā*. Doubled roots (whose last two surface consonants are identical, *C=D*) are mapped to the template *ʔa-BaCC-*, e.g. *qalīl-* 'few' > *ʔaqall-*. With appropriate assumptions about how roots map to templates in Arabic, it is possible to unify the three allomorphs of this template, by postulating short vowel deletion between two skeletal positions linked to the same consonant and followed by a vowel (McCarthy 1981), and semivowel deletion between two short vowels with compensatory lengthening. However, while such formulations may simplify the description from a language-internal perspective, they are not appropriate to the description of its transfer across systems. In morphology as in phonology, borrowing in the first instance transfers surface forms (i.e., in terms of MAT borrowing; see Gardani 2020b and references therein); L1 learners have access only to the surface forms transferred, and must deduce underlying forms within the context of the system to which they have been transferred.

The comparandum, if present, is placed after the elative within a prepositional phrase using *min* 'from, than'. If the elative is definite – whether through a definite article *al-* or an iḍāfa construction (used to mark possession) – it normally receives a superlative interpretation. When used as a superlative, it may optionally agree with the referent in gender and number; when used as a comparative, it does not.

2.2 Root-based or stem-based?

As noted in Sect. 1, many nonconcatenative morphological processes in Semitic languages have been shown to take fully vocalised stems as their input, rather than consonantal roots, as demonstrated for Arabic iambic plurals (McCarthy & Prince 1990) and Hebrew denominal verbs (Bat-El 1994; Ussishkin 1999). This follows from the fact that such processes:

- operate on morphologically complex stems while preserving affix consonants in the output, e.g. Arabic *mi-ftāħ* 'key' > *mafātīħ* 'keys', Hebrew *kamc-an* "stingy person" > *hit-kamcen* 'to be stingy';
- preserve (in specific contexts) input consonant clusters and one-to-many consonant mappings: Arabic *jilbāb* 'jilbab (garment)' > *jalābīb* 'jilbabs' (not e.g. **jalālīb*), Hebrew *praklit* 'lawyer' > *priklet* 'to practice law' (not e.g. **pirklet*);
- preserve (in specific contexts) input vowel length in the output: Arabic *maktab* 'office' > *makātib* 'offices' vs. *maktūb* 'letter' > *makātīb*;

- occasionally preserve input vowels: Hebrew *kod* 'code' > *koded* 'to encode' vs. *dam* 'blood' > *dimem* 'to bleed'.

The Classical Arabic elative formation, however, behaves quite differently from either of these. If considered as a relation between the positive adjective and the corresponding elative form, then it displays none of the stem-input indicators above; it:

- does not preserve affix consonants in its output, instead unambiguously dropping them: *šabʕ-ān* 'full' > *ʔašbaʕ* 'more full', *m-uhimm* 'important' > *ʔahamm* 'more important';
- does not preserve input consonant clusters: *šabʕ-ān* 'full' > *ʔašbaʕ* 'hungrier';
- does not preserve one-to-many consonant mappings: *laḏīḏ* 'delicious' > *ʔalaḏḏ* 'more delicious';
- does not preserve vowel length or quality in the output: the elative always contains precisely two vowels, both of them *a*, and both short unless the root ends in a semivowel.

In fact, if the positive adjective is treated as the relevant input stem, then it becomes clearly necessary to appeal to the consonantal root, as already shown for Egyptian Arabic by Davis (2017). Hollow roots (ones with a medial semivowel, cf. Sect. 2.1) neutralise the distinction between root-medial *y* and *w* in their corresponding adjectives, but the elative forms restore it; thus:

- *√hwn* 'EASE' > *hayyin* 'easy', *ʔahwan* 'easier' (cf. imperfective verb *-hūn-* 'be/become easy')
- *√swʔ* 'EVIL' > *sayyiʔ* 'bad', *ʔaswaʔ* 'worse' (cf. impf. v. *-sūʔ-* 'be/become bad')

  vs.
- *√byn* 'CLEAR' > *bayyin* 'evident', *ʔabyan* 'more evident' (cf. impf. v. *-bīn-* 'be/become evident')
- *√ṭyb* 'GOOD' > *ṭayyib* 'good', *ʔaṭyab* 'better' (cf. impf. v. *-ṭīb-* 'be/become good')

As these examples illustrate, the relevant distinction is maintained in the corresponding stative/inchoative verbs, though only in the imperfective (contrast the perfective stems *hān-* and *bān-*). One might therefore be tempted to take these as the input, instead of appealing to a root. In general, an imperfective Form I verb stem differs from the hypothetical consonantal root only in including a vowel and in having a fixed syllabic structure, so the two analyses are equivalent for most purposes; the rare exceptions, however, include cases where the imperfective stem fails to predict the attested elatives, e.g.:

- *√xwf* 'FEAR' > *muxīf* 'scary', *ʔaxwaf* 'scarier' (cf. impf. v. *-xāf-* 'fear', verbal noun *xawf* 'fear')

  vs.
- *√hyb* 'FEAR' > *muhīb* 'scary', *ʔahyab* 'scarier' (cf. impf. v. *-hāb-* 'fear', v. n. *hayb-ah* 'fear')

Even if such cases could be ignored, the stem-based analysis would still be hard to sustain in cases where the semantically relevant verb stem is built on a template other than Form I. Despite violating a general principle laid down by prescriptive grammarians, many such cases are reported (Wright 1896: 142); in such cases, when the two hypotheses make different predictions, it is consistently the root-based prediction which wins out, e.g.:

- Form IV *-uqīm-* 'make stand upright, establish' (cf. Form I *-qūm-* 'stand upright (intr.)') yields *ʔaqwam* 'establishing better', as predicted by the consonantal root, rather than **ʔaqyam* as would be predicted from the stem.
- Form VIII *-ḥ-t-āl-* 'be crafty' (cf. Form I *ħūl-/-ħīl-* 'shift') yields *ʔaḥwal* 'more crafty', as predicted by the consonantal root, rather than **ʔaḥtal* as would be predicted from the stem.

It is perhaps conceivable that the stem-based account could be saved in such cases by a more detailed case-by-case examination of the semantics of the Form I bases in question. But even if that were to prove possible, the stem-based account would still have no empirical advantage over the root-based account. The vowel of the verb stem is not reflected in the elative, exceptionlessly becoming *-a-* in the elative: *-kbur-* 'be/become big' > *ʔakbar* 'bigger' just as *-ṣɣar-* 'be/become small' > *ʔaṣɣar* 'smaller'. Neither is its syllabic structure, which is usually identical with that of the elative (Form I, like the elative, has a stem of the form *-BCVD-*), but differs systematically in form XI verbs (for which the elative is identical to the positive adjective): *-swadid-* 'be/become black' > *ʔaswad* '(more) black', never **ʔaswadd*. Indeed, the elative template systematically neutralizes all contrasts between verb stems in vowel choice and syllabic structure. In Classical Arabic, there can thus be no purely empirical internal motivation for preferring to analyse the elative as formed from the verb stem rather than from the root. However, it cannot be assumed that this analysis carries over to all modern Arabic dialects, much less to other languages that have borrowed the elative.

2.3 The elative in modern Arabic dialects

The elative remains productive in most Arabic varieties. The chief exceptions are dialects of Morocco and Algeria, where it is often restricted to a fixed number of lexicalised items, typically 'more', 'fewer', 'better', 'worse', 'bigger', 'smaller' (Heath 1987:160–161; Heath 2002:333). The Berber and Songhay languages of Morocco and Algeria are therefore excluded from the set of Arab world minority languages examined in this article, since they cannot be assumed to have been in close contact with a variety of Arabic in which the elative is productive.[1] Otherwise, allowing for regular sound correspondences, its form, meaning, and syntax are generally well-conserved. Two divergences from Classical Arabic are conspicuous throughout: superlatives, like comparatives, can no longer take gender and number agreement, and the periphrastic strategy used for adjectives not forming elatives is typically to place a reflex of *ʔakθar-* after the adjective itself (not a deadjectival noun). Three other points are variously conserved or changed, depending on the dialect: the treatment of doubled roots, the input restrictions, and the form of suppletive comparatives.

Most of the dialects involved in the contact situations to be discussed here – Western Libyan (Pereira 2010:213–215), Eastern Libyan (Owens 1984:185), Egyptian (Mitchell 1956:89), central Omani (Reinhardt 1894:64) – retain the full allomorphy of the elative as attested in Classical Arabic. In Dhofar Arabic, however, identical consonants are separated in the elative, e.g. *agdad* 'newer', rather than Classical *ʔajadd-* (Davey 2013:87–88). In Syrian Arabic, similarly, the geminate allomorph is often optional where the consonants are separated in the positive adjective (Cowell 1964:310–315): thus *xafīf* 'light' > *ʔaxaff / ʔaxfaf* 'lighter', but *mhəmm* 'important' > *ʔahamm* 'more important' (perhaps a synchronic borrowing from Classical Arabic?) It thus appears that the allomorph *ʔa-BaCC-* shows some tendency within Arabic to be regularised to *ʔa-BCaC-*, particularly in cases where the C's are separated in positive adjectives (suggesting a move towards stem-input rather than root-input).

Likewise, most of the dialects under discussion seem to retain the classical input restriction: only if the root has no more than three consonants can an elative be formed. This is no longer true of Syrian Arabic, however; there, the elative has also been extended to quadriliterals in the form *ʔaBaCDaF*, e.g. *mbahdal* 'shabby, dirty' > *ʔabahdal* 'shabbier, dirtier', *zangīl* 'rich' > *ʔazangal* 'richer'. (Nonetheless, adjectives which for some reason do not form elatives, e.g. *maʕžūʔ* 'crowded', use the analytic strategy with *ʔaktar* 'more' as in other dialects.)

Suppletive comparatives are still present in most varieties. In Dhofar, however, they have been partly regularised by optionally adding the prefix *ʔa-* found in regular elatives, yielding forms such

[1] Many Berber languages of this region have nevertheless borrowed several of the few elatives that are widely retained in Moroccan and Algerian Arabic; Kabyle, for instance, has *xiṛ* 'better, *aqəll* 'fewer, *akṯəṛ* 'more.

as *(a)xēr* ‘better’, *(a)xass* ‘worse’.

2.4 Cognates of the elative outside Arabic

Despite the extensive written attestations of other branches of Semitic over millennia, the only plausible ancient cognates for the elative elsewhere in Semitic, notably Akkadian *šuBCuD*-adjectives (Speiser 1952), indicate a proto-Semitic prefix **šV-* (the correspondence of **š-* to Arabic *ʔ-* is also found in the causative prefix) and have an intensive rather than comparative sense. Some Semitists, *contra* Speiser, support the controversial hypothesis that Hebrew too preserves a few relics of an elative form *ʔaBCāD* (Rubin 2010b) – but the forms cited as such are plain adjectives, or at most, like their Akkadian counterparts, have an intensive rather than a comparative sense. The comparative/superlative use of a template *ʔa-BCaD-* thus combines a phonological innovation specific to parts of West Semitic with a semantic innovation either unique to Arabic or, at most, shared with its closest relatives. Similar forms in other Afro-Asiatic languages in close contact with Arabic are therefore to be interpreted as loans rather than common inheritance. The only language group for which common origin could reasonably be proposed as an explanation for the elative's presence is Modern South Arabian, and there – as will be seen in Sect. 3.2 – distributional evidence suggests otherwise.

3 Comparative strategies in heavily Arabic-influenced languages

In this section, I will seek to examine the expression of the comparative (and, where attested and relevant, the superlative) across every language satisfying the following criteria:

1. It is spoken in a relatively small enclave entirely or largely surrounded by Arabic speakers using a dialect in which the elative remains productive.
2. Many or most speakers learn fluent Arabic before adulthood, and have for at least the past two centuries.
3. It is sufficiently well-documented that something can be said about the expression of the comparative.

The history of bilingualism in the relevant languages is often not very well attested, so the application of criterion 2 will reflect a balance of probability rather than absolute proof.

3.1 Comparative strategies in Eastern and Southwestern Berber

The sedentary Berber varieties of Tunisia, Libya, and Egypt are spread across a number of relatively small communities isolated to varying degrees from one another by Arabic-speaking regions. Within this region, Berber is most prominent around the Libyan-Tunisian border zone. Djerba on the Tunisian coast, Douiret and Tamezret in southern Tunisia, and Zuwara and the Nefusa Mountain communities in western Libya, are relatively close to one another, and have had significant mutual contact. Sened in Tunisia (now extinct) was geographically closer to Chaoui Berber in Algeria than to other Tunisian varieties, but matches other Tunisian varieties in its comparative strategies.

Several other peripheral Berber-speaking communities are much more isolated from one another and from the rest of Berber. Of these, only Siwa in Egypt has a language well enough attested to discuss here (cf. criterion 3 in Sect. 3). Sokna and El-Fogaha, in the Fezzan, must be excluded simply because no examples of comparative constructions are attested in the meager corpora recorded for either of them (Sarnelli (1924), Paradisi (1963)). Awjila in Libya is barely better attested; the only comparative recorded in the texts of Paradisi (1961) is suppletive *axer* ‘better; lest’ (< Arabic), so nothing can be said about productive comparative strategies in this language.

It is questionable whether Ghadames, in the extreme west of Libya, should be included in this survey. Geographically, this town is a bridge between two Berber-speaking groups, the Nefusis and the Tuareg. The latter community is largely outside of the Arabic-speaking world, and much less profoundly influenced by Arabic. As such, Ghadames fails to satisfy one of the criteria set forth in the introduction; its speakers are not surrounded entirely or largely by Arabic speakers. On the other hand, it appears that many speakers have been bilingual in Arabic for at least a couple of centuries, due to the town's extensive trade with Arabic speakers from further north. Its dominant comparative strategies – marking the standard of comparison with the preposition *ʕaf* 'on', or using *užar* 'more' – owe nothing to Arabic influence. However, even in Ghadames we find two high-frequency suppletive comparatives borrowed from Arabic: *dun* 'less' and *xer* 'better', the latter followed by the genitive marker *n* (Lanfry 1968:371).

In all of these varieties except Ghadames, dialectal Arabic short vowels are regularly borrowed as *ə* (usually reduced to Ø in open syllables), while long vowels *ā, ī, ū* are borrowed as full vowels *a, i, u*.

3.1.1 Tunisia and northeastern Libya

Insofar as can be judged from the limited data available, the closely related dialects of Tunisia and western Libya all seem to use variants of the same strategy for expressing comparison: namely, the elative, with the standard of comparison marked using *n*. For example:

(1)	*lʕib*	*a-máqqar*	*d-la*	*kul*	*ákbəṛ*	*uší*
	shame	M.SG-big	and-REL	all	bigger	still
	'[And then there is] the great shame, and this is an even more important matter [...]' (Mitchell 2009:320, Zuara)					

This elative strategy is the only one attested in the available text corpora, whereas non-elative-based strategies (notably adjective + 'more') are attested, if at all, only in elicitation from or by conscious linguistic purists. The most frequently attested elatives in these varieties, and their opposites, are all suppletive relative to the corresponding non-elative adjectives, while less frequent ones commonly correspond to adjectives or stative verbs borrowed from Arabic into these varieties. The latter make it possible in principle for even a monolingual speaker to deduce the morphology involved and apply it to inherited Berber vocabulary; four independently elicited attestations across this region for two colour terms confirm that this has in fact happened, but its textual frequency in available corpora is zero. All elatives attested in the corpora are straightforward Arabic loans. (The apparent exception of *iṭəṛ* 'more' is probably an Arabic loan as well, borrowed early on from Arabic *əkṭəṛ* with emphasis spread and the frequently attested Berber shift *k* > *y*.) Table 1 gives a general overview of the available data. (Grey represents adjectives whose elative in that variety is attested in elicitation or corpus data; bold indicates borrowings from Arabic; *f* = textual frequency in corpora examined.)

Table 1. Elatives in Tunisian and northeastern Libyan Berber

	Nefusi (N)	Zuara (Z)	Tamezret (T) / Zraoua (R)	Sened (S)	Elative	*f* (N)	*f* (Z)
good	***yə-zʕəm, a-zʕim***	***a-ṣbiḥ, yə-zʕəm***	***yə-bha, ḥəlw*** / *?*	***yə-bha, a-ṣbiḥ***	***xer*; *əḥsən***	6; 2	37; 1
many	*yə-rxa*	***bzayəd***	*əggət / əggəṯ*	*əggət*	***əktər*** (+Z *iṭəṛ*)	3	20 (1)

few	*idrus*	*aššar, idrus*	*ḏrus*	*drus*	N ***dun***, ZS ***aqəll***	1	2
big	*məqq^{w}aṛ, a-məq^{w}ṛan*	*a-məqqaṛ*	*a-məqqar / a-məqq^{w}aṛ*	*amuqrar*	***əkbəṛ***	2	3
little	*məššək, a-məškan*	*a-ħəškun*	*a-məzzyan / a-məẓyan*	*amuzzyan*	***əṣɣəṛ***	0	0
long			*? /* ***iḏwil***	*azəgrar*	***əḏwəl***	0	0
short	*gəzzəl, a-gəzlal*		***qṣir / uqṣiṛ***	*agəzlal*	***əqṣər***	1	0
cheap					***əṛxəs***	0	1
strong	***yə-qəwwa***		***yə-qwa***		***əqwa***	1	0
strong, healthy					***aṣəħħ***	0	0
knowledgeable	***əl-ʕaləm***				***əʕləm***	9	0
clever	***əl-falaħ***	***(əl-)faləħ***			***əfləħ***	0	0
soft			***yə-rḏəb***		***əṛḏəb***	0	1
hard		***yə-qsəħ***	***? / yə-qsəħ***	*yə-qqur*	***əqsəħ***	0	1
easy		***yə-shəl / yə-zhəl***			***əshəl***	0	5
black	*zəṭṭaf*	*a-səṭṭaf*	*a-zəṭṭaf*	*a-ɣuggal*	Z *əsḏəf;* S ***aswəd***	0	0
white	*məlləl, a-məllal*	*a-məllal*	*a-məllal*	*a-məllal*	*əməll*	0	0

The subsections following give details of the strategies used in specific towns or areas within this broader region.

3.1.1.1 Zuaran

Zuara, on the coast just north of the Nefusa Mountains, is the most useful starting point for this region, since the largest single eastern Berber corpus available is Mitchell (2009), containing 169 pages of Zuaran Berber texts and translations. Mitchell (1954:417) notes the existence in Zuaran of a comparative form "chiefly (but not essentially) confined to Arabic loans in the elative form but marked as Berber by pronominal suffixation, syllable structure, and prominence", giving two examples: *əfləħ* 'cleverer' (cp. *(əl)faləħ* 'clever') and – from an inherited Berber adjective – *əsḏəf* 'blacker' (cp. *asəṭṭaf* 'black'). This claim can to some extent be tested directly by examining his texts. Despite its size, this corpus contains only a small number (by type count) of comparatives, all but one of them (*iṭəṛ*) transparently loans from Arabic: *xir* 'better', *əħsən* 'better', *əktəṛ* 'more', *iṭəṛ* 'more', *aqəll* 'less', *əshəl* 'easier', *əkbəṛ* 'bigger', *əṛxəs* 'cheaper', *əṛḏəb* 'softer', *əqsəħ* 'harder'. The overwhelming majority of the comparatives (by token count) are accounted for by *xir* 'better' alone, and most of the rest by *əktəṛ* 'more'.

In Zuaran, as in Arabic, the elative shows no agreement with its referent. In almost all cases, it is used predicatively or adverbially rather than attributively; in the common expression *wəlliš əBCəD n-* [NEG.EXIST BCD.CMPR GEN] 'there is nothing more BCD than...', the elative looks like an argument, but could also be seen as the predicate of an implicit relative clause. In comparative usages, including the sole attestation of *iṭəṛ*, the standard of comparison follows and is placed in the genitive (for nouns, this involves the preposition *n*; for pronouns, a distinct series is used). The few

superlative usages are scattered across several constructions. Two can readily be interpreted as codeswitches, but might also reflect borrowing: following the noun and with an Arabic definite article in *ɔ́lfərq lɔ́kbəṛ* [difference DEF-big.CMPR] 'the biggest difference' (p. 162), and preceding the noun in *ɔ́ḥsən wɔ́ḥəd* [best one] 'the best one' (p. 162). The third is unambiguously non-Arabic in structure: following the noun inside a relative clause with *kul* 'all' in *əḍḍífət la kul ɔ́kbəṛ* [party REL all big.CMPR] 'the biggest party of all' (p. 250).

In recent elicitation thanks to Evgeniya Gutova (Buzakhar 2014), quite a different situation was found: rather than elatives (Arabic or Berber) being used, comparatives were formed using the adjective directly followed by *iṭəṛ* 'more'. This difference is most likely tied to the sociopolitical context: these sentences were elicited through a prominent Amazigh activist, soon after the 2011 Libyan revolution, and occasionally include rare words or borrowings from other Berber varieties chosen specifically to avoid the use of Arabic loans. Even so, the fact that native speakers find this strategy feasible suggests that the elative is not as well-entrenched here as in some of the non-Berber cases examined in this article.

3.1.1.2 Nefusi

For Nefusi, a less extensive but wider variety of data is available, all presenting a similar picture. For the dialect of Fassato, near Jadu, Beguinot (1942:126) reports that comparatives may be formed either by putting *əktər* 'more' after the adjective or by using "le forme di comparativo arabo ['the forms of the Arabic comparative', my translation]", e.g. *əkbər* 'bigger', *əṣɣər* 'smaller'. His texts and glossary yield a few more comparatives, all Arabic loans (Beguinot 1942:144, 171, 202). Provasi (1973) provides a set of texts from Jadu itself, including three elatives (Provasi 1973:502, 505, 515). Another village near Jadu, Gemmari, is reflected in the texts of Buselli (1924), again with three elatives. An early record of Nefusi Berber vaguely labelled "Dyebayli", dating to 1831, confirms the presence even at this comparatively early date of <*kheyr*> 'better' (Guiraudon 1893:688). Beguinot's second strategy, the use of the Arabic comparative, is thus well-attested throughout the available Nefusi corpus, extending over a century and including at least three different villages. In contrast, no textual examples of his first strategy are attested.

As in Arabic and Zuaran, the elative in Nefusi shows no agreement with its referent. It is usually used predicatively or adverbially; the few apparently attributive comparative examples, e.g. *úğun əʕləm-ánna* [one wise.CMPR-GEN.1PL] 'one superior to us in wisdom' (Provasi 1973:289), can be interpreted as indefinite relative clauses. In comparative usages, the standard of comparison follows and is likewise placed in the genitive (although Beguinot notes that the dative is also possible for pronouns following *əkbər* 'bigger'). In the superlative, the elative precedes the noun: *ɔ́ḥsən tbušílt di lʕaləm* [best girl in world] 'the best girl in the world' (Provasi 1973:515).

One early mixed Nefusi source indicates a different picture. Calassanti-Motylinski (1898:17) describes two comparative strategies with the plain indefinite form of the adjective, comparable to those attested for Ghadames but absent from Beguinot: one produced by placing *ujar* or *iṭər* 'more' after the predicate, followed with the standard of comparison marked by genitive *n*; the other, as in most Berber varieties, formed only by marking the standard of comparison with *ɣəf* 'on'. No unambiguous examples are attested in the text that follows his sketch. However, this sketch grammar is based on work in Algeria with a single speaker who was also familiar with the quite different Berber variety of the Mzab in Algeria, and several indications (notably the substitution of non-Arabic compound forms for numerals borrowed from Arabic) suggest a desire for purism. The results are therefore often not representative of any one variety, and may represent a sort of pan-Ibadi Berber koine (Brugnatelli 2005:140).

3.1.1.3 Southern Tunisia

Much less can be said about the situation in southern Tunisian Berber than in northeastern Libya, due to the paucity of data, but such data as is available points in a similar direction. For Douiret, in the far south, the poorly transcribed texts of Gabsi (2003) include two comparatives – *tazummurt awla* 'the olive tree needs it more' (p. 427), and *amallid, amallik, amallal min kas n el-buḷḷar* 'it's whiter than you, whiter than me, whiter than a glass' (p. 433). The former must be discarded as idiomatic – within Arabic, *ʔawlā* 'more worthy' does not correspond to any commonly known non-comparative adjective. In the latter, the otherwise unexpected alternation between *amall-* and *amallal* is most easily explained by reconstructing: **əməll-id, əməll-ik, a-məllal am əlkas n əlbəḷḷaṛ* [white.CMPR-1SG, white.CMPR-2SG, MSG-white like cup GEN crystal] 'whiter than you, whiter than me, as white as a crystal glass', in which case *əməll* would be an elative derived from the Berber adjective *aməllal* 'white', precisely paralleling Zuara Berber.

For Tamezret, somewhat further north, Ben Mamou (2005) documents *əkṯər* 'more' and *xir* 'better', both taking *n*. These are also the only two elatives attested in Stumme's (1900) texts. Elicitation with a speaker from the neighbouring village of Zraoua, however, yielded a larger harvest of elatives (see Table 1).

For Sened, much further north, Provotelle (1911:44–45) reports four comparative constructions, some rather anomalous; this may reflect language loss, as Sened was in the process of shifting to Arabic at the time (it is now exclusively Arabic-speaking). The normal Berber adjective could be used, with the standard of comparison being marked using the prepositions *af* 'on' or, unusually, *n* 'of'; or *əggət n* 'more (lit. much) than' could be placed after the predicate. However, he specifically notes that the comparative could also be expressed by "la forme arabe du comparatif suivi par *n* ['the Arabic comparative form followed by *n*', my translation]", giving three examples: <*akbar*> 'bigger', <*äsoued*> 'blacker', <*äqel*> 'less'. The only comparative found in his text provides a fourth, although the use of Arabic *mən* 'from' suggests a codeswitch: <*idjen asakh mennek*> [one.M strong.CMPR from-2MSG] 'quelqu'un plus fort que toi' (Provotelle 1911: 91). Given the author's stated goal (Provotelle 1911: 10) of recording the remaining Berber elements in a variety rapidly giving way to Arabic, it can be assumed that his elicitation sought to maximise the use of non-Arabic forms; the fact that his efforts nevertheless yielded Arabic elatives suggests that here, as in Nefusi and Zuwara, Arabic elatives had become the dominant comparative strategy.

For the island of Djerba, the sparse data available does not allow us to determine whether Arabic influence has affected the expression of the comparative: Calassanti-Motylinski (1897:382) yields only one comparative, *iṭər n* 'more than'.

3.1.2 Siwi

Siwi is both better documented than any other Eastern Berber language and profoundly influenced in its comparative strategies by Arabic. About 75% of Siwi adjectives are loans from Arabic – Souag (2013:87–90) lists 53 from Arabic vs. 18 from Berber; Walker (1921:67–71) lists 41 from Arabic, 9 from Berber, and 3 of unclear origin, excluding compounds and verbs. Most inherited adjectives (14/18 or 8/9 respectively) are already triliteral, usually fitting one of the two templates *a-BCaD* or *a-BəCCaD*, both widespread in Berber, or more rarely *BaCəD / BaCaD* or *a-BəCDan*. Alongside these, Siwi has borrowed Arabic triliteral adjectives fitting all four templates, e.g. *a-šmal* 'bad' < *šimāl*, *a-tiyyaq* 'narrow' < *ḍayyiq*, *šarəf* 'old (person)' < *šārif*, *a-šəbʕan* 'rich' < *šabʕān*; such loans have also introduced templates with no Siwi-internal Berber parallels, such as *a-BCayyəD* (*a-kwayyəs* 'good' < *kuwayyis*).

The formation of the comparative parallels Arabic in detail, morphologically and syntactically, as discussed in Souag (2009). The template *(ə)BCəD* productively forms comparatives from triliteral adjectives, not only for strong and hollow roots but also – unlike most varieties of Arabic – for

doubled roots: thus (of Arabic origin) *a-qdim* ‘old’ > *qdəm* ‘older’; *a-kwayyəs* ‘good’ > *kwəs* ‘better’; and *a-xfif* ‘light’ > *xfəf* ‘lighter’. For defective roots (of the forms *a-BCV*, *BaCi*), it retains a reflex of the Arabic allomorphy *(ə)BCa*: thus *qawi* ‘strong’ > *qwa* ‘stronger’, *a-ħlu* ‘sweet’ > *ħla* ‘sweeter’. Two comparatives are suppletive: *xer* ‘better’ (from Arabic), *ṭəmṃ* ‘more’ (of unknown origin). The latter is used adverbially, following the adjective, to form comparatives of non-triliteral adjectives or stative verbs, e.g.:

(2)	*yə-qquṛ*	*ṭəmṃ*	*n*	*wa*
	3M.SG-dry	more	GEN	this.MSG
	‘It's drier than this.’ (Souag 2013:104)			

The comparandum, where present, is governed by *n* ‘of, (than)’ and follows the verb, e.g.:

(3)	*kan*	*drə́s*	*n*	*tláta,*	*l-y-ə́nfu*
	if	less	GEN	three	NEG-3M.SG-benefit
	‘If it is less than three, it is of no use.’ (Schiattarella 2016:184)				

A superlative form can be produced by adding the suffix *-hŭm*, Arabic (but not Siwi) for ‘(of) them’, or by preposing the comparative to the noun, e.g. *ʕali* ‘high’, *adrar* ‘mountain’ > *adrar ʕla-hŭm* or *ʕla adrar* ‘the highest mountain’ (Souag 2013:104).

The comparative has been extended to triliteral adjectives of Berber origin as well as Arabic ones, showing the same morphology: *a-gzal* ‘short’ > *gzəl* ‘shorter’; *a-zuwwar* ‘big’ > *zwər* ‘bigger’; *a-məllal* ‘white’ > *mləl* ‘whiter’; *drus* ‘few’ > *drəs* ‘fewer’. This extension has obviously been facilitated by the frequency of triliterals. The only Berber root for which the defective allomorph is attested is *a-ẓəy* ‘bitter’ > *ẓya* ‘more bitter’; *a-ẓəy* does not conform to any independently attested adjectival template.

Despite the high productivity and entrenchment of the elative in Siwi, its textual frequency appears to be relatively low. The longest single published collection of Siwi texts is Schiattarella (2016), with 125 pages of texts and translations. This corpus contains only 12 comparative tokens: *kwəs* ‘better, more beautiful’ appears 6 times, *drəs* ‘fewer’ twice, and *xer* ‘better’ and *ṭəm* ‘more’ once each. Souag's (2013:233–278) 45 pages of texts and translations include no comparatives at all. Examining the author's unpublished corpus of Siwi recordings (excluding elicited sentences) yields a wider selection, as illustrated in Table 2, though the numbers remain low. Combining both data sets, we find 16 tokens of Arabic-derived elatives versus only 5 of Berber-derived ones; in other words, 76% of elative tokens in this data set are Arabic loans.

Table 2. Elatives in Siwi

	Adjective	Elative	*f* (Souag’s unpublished corpus)	*f* (Schiattarella 2006)
many	*dabb*	*ṭəmṃ*	3	1
good, beautiful	***akwayyəs***	***kwəs***	2	6
good	***akwayyəs, azʕim***	***xer***	1	1
good	(***rabaħ***?)	***rbəħ***	1	0
sweet	***aħlu***	***aħla***	1	0

wide	***wasaʕ***	***wsəʕ***	1	0
dear	***ɣali***	***ɣla***	1	0
high	***ʕali***	***ʕla***	1	0
few	*drus*	*drəs*	0	1
few	*drus*	***aqəll***	1	0

3.2 Comparative strategies in Modern South Arabian (MSA)

According to Rubin (2014a), the MSA languages fall into two subgroups: Eastern, consisting of Soqotri and Jibbali, and Western, consisting of Hobyot on the one hand and Mehri, Bathari, and Harsusi on the other. Bathari is too poorly documented to be discussed here, but for all the rest materials are available to various extents, with sources ranging over a century. Unfortunately, many of the earlier sources are of mixed quality, plagued by overreliance on individual multilingual informants. All MSA languages allow – and usually either require or strongly prefer – non-elative strategies to express comparison, simply involving the plain form of the adjective. Nevertheless, some also make use of elatives, and in Mehri and Harsusi the latter strategy has become fully productive.

In the Eastern subgroup, elatives are marginal or absent. Wagner (1953:67) reported that both Soqotri and Jibbali lacked elatives entirely. More recent data indicates that Jibbali has borrowed two elatives from Arabic – *axér* ‘more (in elatives); better’, also postposed to adjectives to form their comparatives, and *xass* ‘least’ (Rubin 2014b:94; Johnstone 1982). There are no indications, however, of productive use of an elative template.

In the Western subgroup, the use of elatives – like the influence of Arabic more generally – is more conspicuous, but still limited. Hobyot normally expresses comparatives with the plain adjective, as illustrated by numerous examples (Nakano 2013:42, 84, 103, 236–237, 242, 276, 280, 286, 289), but it has at least three elatives attested, all probably borrowed from Arabic: *axayr* ‘better’ (*ibid*:186, 241, 263, 281-282), *aḳlēl* ‘smallest’ (*ibid*:105), and *arḥām* ‘nicer’ (*ibid*:303). Only in the Mehri-Bathari-Harsusi group does the elative seem to be productive. For Harsusi, the northernmost and most Arabised MSA language, Johnstone (1977) lists not only the potential Arabic borrowings *axayr* ‘better’, *erḥām* ‘more beautiful’, *xass* ‘worse’, *eḵṯēr* ‘more’ (and *zēd*), *eṯḵāl* ‘heavier’, but also the clearly non-Arabic words *'āḳār* ‘bigger’, *eḵṣām* ‘colder’. Unfortunately, no grammar of this variety has been published. For a better understanding of the use of the elative in this region, it is necessary to turn to the largest and best-described MSA language: Mehri.

Elatives are not obligatory in Mehri; all attested varieties allow comparison to be expressed through other strategies, notably the plain adjective optionally followed by *axayr* ‘better’ or *aḵṯēr* ‘more’ (Watson 2012:108), and this was the only strategy noted for Yemeni Mehri by Jahn (1905:69). Nevertheless, elatives seem to be used throughout Mehri. At present, elatives are more common in Omani Mehri than in Yemeni Mehri (Watson 2012:107), but are “quite rare” even in Johnstone’s Omani texts gathered during the 1960s and 1970s (Rubin 2010a:83). The earliest report of Mehri elatives, however, comes from fieldwork with Yemeni speakers (Bittner 1909:section 103; Wagner 1953:67), suggesting that the elative has been established in both varieties for well over a century.

In Mehri, elatives regularly take the form *aBCēD* or (conditioned by whether C is guttural/emphatic and whether D is sonorant) *aBCāD* (Watson 2012:107). Johnstone usually transcribes the initial vowel of the elative as *ə*, but sometimes as *a*. Many common elatives are suppletive, including *axayr* or *xār* ‘better’, *(a)xass* ‘worse; less’, *aḳlāl* ‘smaller, fewer’, *aʕḳār / aʔḳar / āḳar* ‘bigger, older’. The word *zōyəd* ‘more’ is not elative in form. As in Classical Arabic but unlike in most

modern Arabic varieties, elatives, like other adjectives, can also form diminutives (on the pattern *aBCāyaD*, yielding the interpretation ‘slightly ...er’); this unusual possibility is documented only by Watson.

A preliminary idea of the frequency of elatives in Mehri can be formed by examining Johnstone's texts as edited by Stroomer (1999) and Watson’s (2012:406–470) example texts. In both cases, rather few elatives were found, and the only elative to occur more than twice was suppletive ‘better’. Combining Watson (W) with Johnstone (J), as reflected by his own dictionary (Johnstone 1987), his texts (Stroomer 1999), and Rubin’s (2010a) grammar, yields the following general picture of the form and frequency of the elative in Mehri (forms sufficiently similar in form and meaning to Arabic to seem like potential borrowings are in bold, without presupposing any conclusions about their true etymology):

Table 3. Elatives in Mehri

	Adjective	Elative	*f* (J)	*f* (W)
good	***gīd*** W	***axayr*** JW / ***xār*** J	18	5
bad	*ḳōməḥ* W	***(a)xass*** JW	2	1
good-looking, nice	***arḥaym*** W	***arḥām*** W *(**ərḥām** J)*	0	2
many	*mēkən* J	***akt̲ēr*** W *(**əkt̲ēr** J)*	0	1
small, few	*ḳannawn* W	***aḳlāl*** W *(**əḳlāl** J)*	0	0
big	*śōx* W	*aʕḳār / aʔḳar / āḳar* W	0	1
long	***ṭəwayl*** W	***aṭwāl*** JW	1	1
short	***ḳəṣayr*** W	***əḳṣār*** J	0	0
cold	*ḳaṣam* W	*aḳṣām* W *(əḳṣām J)*	0	0
warm	*ḥōb* W	*aḥwēb* W	0	0
hot	*ḥarḳ* W	***aḥrēḳ*** *(**əḥrēḳ** J)*	0	0
fat	*ṣaylaḥ* W	*aṣlēḥ* W	0	0
thin	*xt̲aym* W	*axt̲ēm* W	0	0
near	***ḳrīb*** W	***aḳrāb*** W	0	0
easy	***sēhəl*** J	***əshēl*** J	0	0

The comparative picture across MSA (omitting Soqotri, for which no elatives have been reported) is rather more limited:

Table 4. Elatives across Modern South Arabian

	Jibbali	Hobyot	Mehri	Harsusi
better / more	***axér***	***axayr***	***axayr / xār***	***axayr***
worse / less	***xass***	?	***(a)xass***	***xass***
nicer / more beautiful	-	***arḥām***	***arḥām***	***erḥām***
less / fewer / smaller	-	***aḳlēl***	***aḳlāl***	-
more	-	?	***akt̲ēr***	***ekt̲ēr***
bigger	-	?	*aʕḳār / aʔḳar / āḳar*	*āḳār*

colder	-	?	*aḳṣām*	*eḳṣām*

All of these except the last two are also found in Arabic, and all except ‘nicer’ and ‘colder’ (exclusive to Mehri and its closest relative Harsusi) are suppletive within MSA – whereas not only ‘nicer’ but also ‘worse’, ‘less / fewer’ and ‘more’ are regularly derived within Arabic. This makes it all the more improbable that elatives should be original to MSA. Rather, the MSA elative – where it exists – is to be interpreted as a loan from Arabic, and Soqotri's lack of the elative faithfully represents the original situation in MSA.

3.3 Comparative strategies in Neo-Aramaic

Before the expansion of Arabic, Aramaic – originally spoken in Syria – had expanded throughout the Fertile Crescent from Palestine to Iraq. The long written record of Aramaic makes it possible to determine directly what comparative strategies were being used prior to Arabic influence, rather than resorting to reconstruction. In the earliest well-attested varieties, those of the Persian Empire, we find that “Adjectives (and adverbs) have no morpheme for the comparative and superlative degrees, though the term mentioned as a yardstick is preceded by the preposition *mn*” (Muraoka & Porten 1998:187). This strategy was retained unchanged by its descendants in Late Antiquity, including Syriac (Muraoka 2005:76), Palestinian Aramaic (Dalman 1905:227), and Mandaic (Nöldeke 1875:358). Most modern Aramaic dialects are not directly descended from the dialects of which we have earlier written attestations, but since all attested Aramaic varieties prior to Arabic contact show essentially the same comparative forming strategy, it is nevertheless clear that any modern strategies involving explicit marking on the adjective are innovations.

Today, the surviving Neo-Aramaic varieties are spoken in four main clusters (or, increasingly, in diaspora): Western Neo-Aramaic in Syria, near Damascus; Turoyo in southeastern Turkey; Northeastern Neo-Aramaic in villages scattered across the region where Turkey, Iraq, and Iran meet; and Neo-Mandaic in southwestern Iran. The degree of Arabic influence is by no means uniform. Only Western Neo-Aramaic is surrounded entirely by Arabic, which acts as its speakers' lingua franca for interactions outside the village. All the other varieties are spoken along the wide, porous frontier between Arabic and Iranian languages. Turoyo is spoken in a historically multiethnic part of Turkey, in which Kurdish predominates today, but in which Arabic dialects are also found, and were probably more influential in the past. Northeastern Neo-Aramaic speakers in Iraq and Syria likewise lived in a primarily Kurdish context, although in the southernmost settlements on the Mosul Plain they had more contact with Arabic. Neo-Mandaic speakers in Iran lived in the largely Arabic-speaking region of Khuzistan, providing an incentive to be multilingual in both Persian and Arabic.

All modern varieties continue to mark the standard of comparison with reflexes of inherited *min* ‘from’, but show different external influences in the form of the comparative adjective. In the easterly varieties, Iranian influence is typical. In Neo-Mandaic, a comparative adjective without an overt standard of comparison is marked by the Persian suffix *-tar*, irrespective of the adjective's etymology (Häberl 2009:147–148). In Northeastern Neo-Aramaic (NENA), Kurdish *biš* is placed before the adjective to form the comparative; this holds at least for the dialects of Christian Alqosh, Christian Barwar, Jewish Arbel, and Jewish Azerbaijan (Coghill 2004:286; Khan 2008:528–530; Khan 1999:242–243; Garbell 1965:84). A special comparative ‘better’, irregular in Christian Alqosh (*ṭo*) and suppletive in Jewish Arbel (*ṭam*), may also be found, derived from inherited material. The only reported uses of Arabic elatives for comparison in NENA occur sporadically – with Arabic adjectives – in the late seventeenth century Jewish Neo-Aramaic texts of Nerwa and Amadya in northern Iraq, such as ***ʔaṣʕab*** ~ *biš ṣaʕba* ‘more difficult’ (Sabar 1984:206). In the absence of any confirmation from oral data, such examples may be suspected of constituting codeswitching by bilinguals rather than representing the dialect proper. For any significant use of

elatives, we must turn to the westerly varieties, in the next section.

3.3.1 Western Neo-Aramaic (WNA)

In WNA, morphological comparatives are consistently formed using the Arabic elative template *aCCaC*. Spitaler (1938:87) already points out that the comparative is formed "just by Arabic elative forms, which can also occasionally be formed from Aramaic roots [um lauter arabische Elativformen, die gelegentlich auch von aramäischen Wurzeln gebildet werden können]". Correll (1978:24) observes the same, and Arnold (1990:381) confirms this based on much more extensive first-hand fieldwork, stating that "Elative können zu allen Adjektiven aramäischen und arabischen Ursprungs folgender Struktur gebildet werden ['Elatives can be formed from all adjectives of Aramaic and Arabic origin of the following structure', my translation]". Most attested examples are either Arabic loans or indistinguishable from Arabic, but a few – notably *awrab* "bigger", *azʕar* 'smaller', *awḳar* "heavier", *awrax* 'longer' – are unambiguously formed from Aramaic adjectives. Examination of Arnold's (1989) WNA texts from Bax'a gives an idea of the frequency of different forms; combining all these data sources, as well as Arnold (2006:91), yields the following (Arabic loans in bold):

Table 5. Elatives in Western Neo-Aramaic

	Adjective	Elative	*f* (Bax'a)
many	***kaṯṯer***	***akṯar***	22
few	*ḳallel*	***aḳall***	1
good	?	***aḥsan***	10
good	*ṭabb, ṭōba*	***aṭyab***	0
sweet, beautiful	*iḥˀl*	***aḥla***	10
beautiful, good	***kayyes***	***akyas***	0
valuable	*iḳḳer*	*awḳar*	0
valuable	***ġōl***	***aġla***	1
healthy, strong	?	***aṣaḥḥ***	2
strong, able	***ḳadīr***	***aḳtar***	0
strong	***iḳw***	***aḳwa***	0
capable	***šōṭar***	***ašṭar***	1
respectable	?	***anḏaf***	1
big	*rab / ōrab, rappa*	*awrab*	2
small	*uzʕur*	*azʕar*	1
high	*iʕˀl / ʕall, ʕillō*	***aʕla***	0
fat, thick	?	***asmak***	1
thin	?	***arfaʕ***	1
long, tall	*arrix*	*awrax*	0
long, tall	***ṭawwel***	***aṭwal***	0
cold	***ḳarres***	***aḳras***	0
old	*ʕaččeḳ*	***aʕčaḳ***	0

poor	***ifḳer***	***afḳar***	0
far	***baʕʕeḏ***	***abʕaḏ***	1
concerned	?	***aʕza***	1

Textual and lexical data gives a more complete picture of the elative in WNA than the grammatical descriptions provide. When C=D, the elative takes the allomorph *aBaCC*, as in Arabic (*aḳall, aṣaḥḥ*); when D is missing or semivocalic, it becomes *aBCa* (*aḥla*, *aʕla*, *aḳwa, aġla*), again as in Arabic. (No elatives from weak-middle roots happen to be attested.) Unlike in Arabic, however, a third allomorph is also found: when B is missing or a semivowel, the elative becomes *awCaD* (*awrab*, *awḳar*, *awrax*). As in Arabic, some adjectives – presumably ones which cannot take the elative – use the analytic strategy with adverbial *akṯar*: *maḳᵊrfa akṯar* [ugly.M.SG more] ‘uglier’ (Arnold 1989:346), *nuṣṣabōyṯa akṯar* [frightning.F.SG more] ‘more frightning’ (*ibid*:152).

In their syntax, WNA elatives seem to agree perfectly with Arabic. They show no agreement with their controller, neither in gender nor in number. In a superlative usage, the elative precedes the definite noun: *aḥla ʕīšća* [beautiful.CMPR life] ‘the most beautiful life’ (Arnold 1989:286).

The large majority of attested elatives are identical to Arabic (apart from the regular sound changes applied to loans), both by type count and by token count. However, since Aramaic and Arabic were quite closely related to begin with, many of the adjectives to which these correspond are not Arabic loans, but rather inherited Aramaic forms; thus *aḥla* ‘sweeter’ corresponds equally well to WNA *iḥᵊl* (inherited, cp. Syriac *ḥlā*) and to Arabic *ḥulw* ‘sweet’. Such cases no doubt facilitated the process of reanalysis.

3.3.2 Turoyo

In Turoyo (Jastrow 1993:240–242, 1992:147; Ritter 1979:26–43), the commonest means of forming morphological comparatives from unmarked adjectives is by removing the nominal suffix *-o* (historically a definite article). The Arabic elative in *aBCaD*, however, is well-attested, not only for adjectives borrowed from Arabic but also for ones inherited from Aramaic or borrowed from Kurdish; it seems to be regular for triliteral adjectives with a weak third consonant. Even the Kurdish comparative suffix *-tər* is sometimes used, underscoring the speakers' openness to borrowed strategies in this domain. Irrespective of the morphology of the comparative adjective, its comparandum, if present, follows the adjective within a prepositional phrase using *m-* "from, than". The following Arabic-style elatives, some with non-Arabic alternatives, may be cited:

Table 6. Elatives in Turoyo

	Adjective	Elative
black	*komo*	*akyam*
strong	***qawyo***	***aqwe***
inaccessible	*ʕaṣyo*	*aʕṣe*
sweet, beautiful	*ḥalyo*	***aḥle***
short	*karyo*	*akre*
hard	*qašyo*	*aqše*
high	*ʕeloyo*	***aʕle*** / *ʕlaytər*
difficult	***ṣaʕbo***	***aṣʕab*** / *ṣaʕbotər*
stout	***xašuno***	***axšan*** / *xāšən*

little, few	***noquṣo***	***anqaṣ*** / *nóqəṣ*
bad	*ḥarbo*	***axrab*** / *axrabtər / xarabtər*
rich	***ʒangīn***	*azgan*
more	*zōyūdo*	***azyad***
bad	*pīs* (< Kurdish)	*apyas*
beautiful	(< Kurdish *spehī*)	*aṣpah*
right, appropriate	?	***afraḏ***
lewd	?	***afḥaš***
brave	?	***asxam***
robber	?	***aqṭaʕ***
beating	?	***aḏrab, azrab***

As illustrated by the last two examples in Table 6, the elative is sufficiently productive for words of Arabic origin to be applied even to nouns and participles. Its allomorphy, as far as can be determined from the available examples, is as in Arabic: weak-final roots take the allomorph *aBCe*, while weak-middle ones take *aBwaD*. No weak-initial examples, nor ones where C=D, happen to be attested. The case of 'rich' (*zangīn* > *azgan*) suggests that even quadriliteral adjectives can be squeezed into the triliteral template by dropping a medial sonorant.

3.4 Comparative strategies in fringe Indo-Iranian languages

At least four Indo-Iranian languages are spoken by populations almost entirely bilingual in Arabic: Kumzari, Luwati, and Zadjali in Oman, and Domari in the Levant. If the Arabic elative were to be borrowed into any Indo-Iranian language, these would be the prime candidates. Unfortunately, nothing can be said about the expression of the comparative in Luwati (Salman & Kharusi 2012) or Zadjali (Al Jahdhami 2017), relatives of Sindhi whose grammars remain almost entirely undocumented. The other two, however, are now sufficiently well described to be discussed. Of these, Kumzari has not adopted the elative; Northern Domari makes only limited use of it; but Southern Domari has turned the elative into its only strategy for expressing comparison, through what looks like systematic codeswitching.

3.4.1 Kumzari

Kumzari is an Iranian language spoken at the northern tip of the Musandam Peninsula, on the southern shore of the Straits of Hormuz, and on Larak Island, within the Straits. Both communities consider themselves Arab, and those of Musandam have traditionally formed part of a tribal confederation whose other members speak Arabic (Anonby & Yousefian 2011: 32–33, 46). Most speakers are at least bilingual, and "most formal Kumzari oral literature (especially poetry and songs) is performed in Shihhi Arabic" (Anonby & Yousefian 2011: 32.) The conditions are thus more propitious for borrowing than in any other Iranian language, and the rate of lexical borrowing is accordingly rather high. Nevertheless, comparison seems to be handled exclusively through inherited strategies. Thomas (1930:9), Al Jahdhami (2013:68–72), and van der Wal Anonby (2015:81) all confirm that Kumzari forms comparatives regularly with an inherited suffix respectively transcribed *-te'r-* / *-taɻ-* / *-tar*, transparently cognate with Persian *-tar*. Neither makes any mention of an Arabic elative strategy, and no Arabic elatives appear in Thomas' examples and vocabulary, even though Thomas takes pains to include Arabic loans. The texts recently gathered by van der Wal Anonby (2015:262–332) confirms this: the only Arabic elative in her 70 pages of bilingual text is a single occurrence of *aḥsan* 'better' (van der Wal Anonby 2015:300) – vs. at least

four occurrences of inherited *bātar / bētar* ‘better’ – and the omission of this word from the subsequent glossary suggests that it was analysed as a codeswitch. It thus appears that the Arabic elative has failed to gain a foothold in Kumzari despite seemingly propitious circumstances.

3.4.2 Domari

Domari is the Indic language spoken by the Dom, a loose community of itinerant craftsmen spread across the Levant. At least two dialect groups can be distinguished: Northern and Southern.

The only Northern variety for which the comparative construction has been described is that of Aleppo (Herin 2012:23). There, the elative’s usage is quite limited. Adjectives productively form a comparative with the borrowed Kurdish suffix *-tar*: thus *drōng-tar* ‘bigger’, *dūr-tar* ‘further’, *xalyā-tar* ‘faster’. The standard of comparison precedes the adjective, and is left unmarked if non-pronominal (but placed in the ablative if pronominal). The superlative too involves a Kurdish (originally Turkish) morpheme *ān* ‘the most’, preceding the adjective. Nevertheless, three borrowed Arabic elatives are also attested, two of which are also attested in Southern Domari as seen in the next paragraph: *aḥsan* ‘better’ (vs. *bkēz* ‘good’), *aktar* ‘more’ (vs. *bū* ‘a lot’), *aqall* ‘less’ (vs. *tīkā* ‘a little’).

Southern Domari, rather better described, shows far more extensive usage of the elative; indeed, the elative appears to be the only comparative strategy in use. There exist two full-length grammatical descriptions of Southern Domari with accompanying texts: Macalister (1914) and Matras (2012). Both specifically describe the variety of Jerusalem. For this variety, Macalister (1914:18) already claims that “There is no native form for the comparison of adjectives. This is most commonly expressed by the use of Arabic formulae, as *ắḥsăn min* ('better than') [...] *ăkṯăr min* ('greater than'), and the like. […] The comparison of adjectives cannot be expressed in pure Nuri except by the use of the intensive adverb *bōl* 'much, very'.” Matras (2012:206) reaches the same conclusions: “Normally, both comparative and superlative constructions draw directly upon the Arabic comparative and superlative form”, resulting in (Matras 2012:207) “a system of complete bilingual suppletion, with every inherited positive form of an adjective – such as *tilla* “big”, *kaštōta* “small”, *ghāy* “good”, and so on – having an Arabic-derived counterpart comparative/superlative form – *akbar* “bigger”, *azɣar* “smaller”, *aḥsan* “better”.”

Remarkable as this claim may appear, an examination of the available texts reveals no counterexamples. Macalister's texts and the example sentences in his lexicon yield only the following comparatives, all direct loans from Arabic:

(4)	*aḳrab*	*min-*	*ílli*	*păcī́-si*
	nearer	from	REL	behind-3SG
	‘nearer than what was behind it’ [i.e. nearer than before] (Macalister 1914:127–128)			

(5)	*lắh-erd-a*	*áḥsan*	*min*	*ā́ūwăl*
	see-PAST-M	better	than	before
	‘he saw better than before’ (Macalister 1914:130)			

(6)	*ḳā́ūte*	*bīr-ḗndi*	*ắktăr*	*mnḗš-măn*
	thieves	fear-PERF.3PL	more	from-1PL
	‘the thieves were more frightened than we were’ (Macalister 1914:139)			

Matras (2012:191, 206–207, 369, 414) records a number of other examples, and his glossary adds a few elatives absent from his examples (Matras 2012:431).

The elative shows no agreement with its controller, although Domari adjectives otherwise often agree in gender and number. In comparative usages, the standard of comparison follows and is marked by the Arabic preposition *min*. Judging by the all too few available examples, the superlative seems to be followed by its noun, placed in Arabic; in other words, the superlative is formed by codeswitching the whole phrase. Such an analysis might seem incredible, but it is not completely unprecedented; a similar phenomenon is attested for numeral+noun phrases both in Domari itself (Matras 2012:191–201) and in Beni-Snous Berber (Souag & Kherbache 2016).

It thus appears that both Domari varieties show bilingual suppletion involving Arabic elatives – but in Aleppo (A) this is restricted to a small, fixed set of high-frequency elatives, while in Jerusalem (J) multiple credible testimonies indicate that it has been extended to all adjectives, although no source has provided the full data necessary to confirm this systematically. Combining all the sources, we find 3 attested Arabic comparatives in Aleppo Domari and 10 in Jerusalem Domari:

Table 7. Elatives in Domari

	adjective (J)	comparative	regional distribution	Number of attestations in examples (J)
many	*bol*	***aktar***	JA	1
few	*šīnak*	***aqall***	A	0
good	*ghāy*	***aḥsan***	JA	3
big	*tilla*	***akbar***	J	4
small	*kaštōta*	***azɣar***	J	1
near	*qarīb*	***aqrab***	J	1
clean, honest	*nḍīf*	***anḍaf***	J	0
strong	?	***aqwa***	J	0
important	?	***ahamm***	J	0
sincere	?	***ašraf***	J	0

3.5 Comparative strategies in Sudanese languages

The only Sudanese language group that strictly satisfies the criteria outlined in Sect. 3 is Nubian, whose speakers in the Nile Valley at least have been shifting to Arabic for centuries now. Beja is bordered by Arabic in the north, but Tigre in the south; some Beja speakers have shifted to Arabic, but in general Arabic influence is less than its location might have led one to expect. Over the nineteenth and twentieth centuries, Arabic bilingualism became much more widespread, and some smaller languages well beyond the Nile Valley have disappeared in favour of Arabic; but this length of time has been too short to expect major reworkings of the grammar, especially bearing in mind the tendency of descriptive grammars to focus on conservative speakers. Be that as it may, no language of Sudan shows much Arabic influence on its comparative strategies, although the elative is alive and well in Sudanese Arabic (Reichmuth 1983). In light of this fact, the languages of Chad – a rather less intensively Arabised country – will be excluded from this survey. The Eastern Jebel languages will also be excluded despite showing signs of profound Arabic influence (Bender 1989:177), simply for lack of data.

3.5.1 Nubian

Two Nubian languages are spoken along the Nile: Nobiin on the one hand, Kenuzi-Dongolawi on the other. The hills of Kordofan are home to a number of Nubian varieties grouped together under the name of Ajang, many of them moribund: Dilling (including Debri), Kadaru (including Taglennaa), Ghulfan/Uncunwee, Dair, El Hugeirat, Karko/Tabaq, Wali, and Haraza (extinct). Further east, two languages are attested: Birgid (extinct, closely allied to the Kordofanian varieties) and Midob. Many Nubian varieties, especially the extinct ones, are so poorly documented that little or nothing can be said about this aspect of their grammar. The Nile varieties, however, are relatively well-described, and have a longer history of contact with Arabic than the others. Even in Darfur and Kordofan, some communities have shifted to Arabic, suggesting the importance of Arabic influence.

All available data points to the same conclusion: throughout Nubian, the Arabic elative is absent. Like Old Nubian (Browne 2002:30), Nobiin (Werner 1987:107; Lepsius 1880:54–55), Dongolawi (Armbruster 1965:341), and Midob (Werner 1993:67) all use the same strategy for expressing comparison, marking the standard of comparison with a postposition and leaving the adjective in its usual form. Among the lexical and grammatical sources examined for these languages, the only Arabic elative found which might have a comparative meaning is Dongolawi *áhsɛn* 'better, best' < Arabic *'aḥsan* (Armbruster 1965:11), used predicatively in contexts such as in (7).

(7)	*téŋ*	*kóor*	*kɪnnéɛg*	*áhsén-un*
	3SG.GEN	wound	a.little	better-PRED
	'His (her, its) wound is a little better.' (Armbruster 1965:11)			

None of the examples given in the source include a standard of comparison, making its interpretation as a comparative synchronically uncertain. If speakers postulate a relation between *áhsɛn* and any non-comparative adjective at all – no evidence of such a relation is available – it would necessarily be one of suppletion.

In the Taglennaa dialect of Kadaru, spoken in the Kordofan Hills, comparison is expressed through a different strategy, using a verb meaning 'surpass, exceed' (Ibrahim & Jakobi 2015:196). No borrowing of Arabic elatives is mentioned. However, in a short study of code-mixing in Kadaru, Birema (2006:92) gives two sentences with Kadaru as the matrix language that include Arabic comparatives introduced as multi-word embedded language islands – one with *aktar min kida* [more from thus] 'more than this', another with *aktar haja* [more thing] 'most (thing)'. While such examples have no direct bearing on the question of borrowing, they do suggest how the Arabic elative might be able to gain ground.

3.5.2 Beja

The extent of Arabic influence on Beja is regionally variable; the northernmost population group, the Ababda in Egypt, has shifted to Arabic (de Jong 2002), whereas the Beni Amer of the southeast have shifted to Tigre. The only strategy for expressing comparison reported in Beja is the use of the enclitic *-ka*, suffixed to both the standard of comparison and the adjective or to just one of them (Wedekind 2007:83; Vanhove 2017:114). An adjective with *-ka* in the definite is interpreted as superlative. No Arabic elatives are reported.

3.5.3 Kordofan

In Kordofan, to the south of Ajang Nubian and Nyimang, a number of languages belonging to several distinct families are found. Immediately south of Nubian are the Katla and Temein families

in the west and the Rashad family in the east. Further south, Daju and Kadu stretch along the western edge of the area, while Heiban and Talodi have a more central position, with Lafofa at the extreme south. A priori, one might expect to see the greatest Arabic influence within this region in the more northerly families along the edges: Nyimang, Daju, and Rashad. Unfortunately, for none of these three do there seem to be any published materials covering the domain of comparison; most language groups of this region are not very well described grammatically. It is thus necessary to adopt a more pragmatic approach to language selection here. Such results as can be gleaned for Kordofan suggest that the Arabic elative has gained as little ground here as elsewhere in Sudan.

In the attested Heiban languages, a (stative) verb is marked as comparative with a suffix (Ebang *-anu / -ani*, Tira *-ano*, Otoro *-ɛnu / -inu*, and sometimes with stem suppletion (Stevenson 2009:219; Schadeberg 2013). The standard of comparison is typically marked with a locative preposition (Ebang *gi*, Tira *k- / kan*), but in Tira can also be marked with *mina*, which Stevenson (2009:53) regards as an Arabic loan. In none of these is the use of Arabic elatives reported.

In the Katla language Tima, a prepositional strategy is used as in Nubian; the standard of comparison is marked with *a-* 'from', sometimes accompanied by clitic doubling (Alamin 2013:262–263). There, too, no Arabic elatives are reported.

4 Explaining the results

At first sight, the observed outcomes fall neatly into a four-way typology, as schematized in Table 8):

Table 8

Stage 1	No elatives	Kumzari, NENA (with one inadequately documented possible exception), Neo-Mandaic, Soqotri, and all Sudanese languages examined (except Dongolawi?)
Stage 2	Closed set of elatives	Ghadames, Jibbali, Hobyot, Northern Domari, ?Dongolawi
Stage 3	Open set of elatives (yielding systematic suppletion for non-Arabic adjectives)	Southern Domari, ?Nefusi
Stage 4	Productive use of elatives	Siwi, Zuwara, Zraoua, Western Neo-Aramaic, Turoyo, Mehri, Harsusi

In Stage 4, the set of inputs to the elative is open, as shown by the simple fact that in these languages it can be applied to inherited adjectives not resembling Arabic:

Siwi: *atrar* 'new' > *ətrər* 'newer'
Zuwara: *asəṭṭaf* 'black' > *əsḍəf* 'blacker'
Zraoua: *aməllal* 'white' > *əməll* 'whiter'
Western Neo-Aramaic: *rab* 'big' > *awrab* 'bigger'
Turoyo: *komo* 'black' > *akyam* 'blacker'
Mehri: *ḥōb* 'warm' > *aḥwēb* 'warmer'
Harsusi: *ḳasm* 'cold' > *eḳṣām* 'colder'

Nevertheless, Stage 4 may usefully be further subdivided according to 'profitability' (Bauer 2001). In Siwi, Western Neo-Aramaic, and Domari, the Arabic elative is the only strategy used to produce the comparative of appropriately formed triliteral adjectives. In Turoyo, Zuwara, and Mehri, it is in

competition with other strategies for almost all adjectives for which it is available. (The situation in Harsusi and Zraoua is less clear, given the limits of the data.) In principle, the same subdivision can be applied to the languages with an open set of elatives: in Domari the elative seems to be the only strategy, whereas in Nefusi other strategies are at least reported (though not attested in the corpus).

4.1 The spread of the elative

How do elatives go from being isolated borrowings to constituting the dominant comparative strategy in a language? In all of the communities in question, adult men at least are typically bilingual in Arabic as a matter of course, along with many adult women and older children; it is thus certain *a posteriori* as well as *a priori* that bilinguals would have played an important role in their introduction. In principle, one could imagine a situation where adult bilingual speakers took the lead, deliberately applying the elative template in their first language while scrupulously avoiding Arabic loans. However, in light of the available data, it makes more sense to assume a situation in which children and monolinguals continue to play a key role.

Suppose that in a given language, at some point, many adult speakers were bilingual and preferentially resorted to Arabic even in otherwise monolingual L1 utterances to form comparative constructions. Children acquiring the language would thus frequently hear Arabic elatives. Initially, they would acquire the most frequent ones as isolated, suppletive lexical items (Stage 2 in Table 8); Moravcsik's (1978:110) second generalisation makes this stage a precondition for any more extensive borrowing of the elative. If the bilingual adults had a particularly strong preference for Arabic in this context, the children would acquire this convention as well as they grew up to become bilingual, yielding Stage 3 above. Elatives for which the language had also borrowed the corresponding adjective, or for which that adjective happened to be cognate or accidentally similar, would provide the children with regular adjective-elative pairings. If the latter are sufficiently numerous, they permit even monolingual speakers to identify the elative template and extract the pattern. This in turn allows them to go on to apply it to non-Arabic adjectives, yielding Stage 4 (productive application of a borrowed pattern).

This account – unlike one involving bilinguals alone – suggests that elatives of Arabic origin should outnumber non-Arabic elatives by token frequency even in case 4, since their high frequency would be a necessary prerequisite for the template's extension to non-Arabic forms. This expectation is borne out: as shown in Table 9, in all the available token frequency data, elatives borrowed from Arabic overwhelmingly outnumber elatives coined language-internally from inherited adjectives. (This is also trivially true of languages without productive elatives.)

Table 9. Elative token counts by etymology

	Total Arabic	Total non-Arabic
Zuwara (Mitchell 2009)	73	0
Nefusi (all sources)	25	0
Siwi (own data; Schiattarella (2016))	16	5
WNA (Arnold 1989)	52	3
Mehri (Watson 2012; Stroomer 1999)	31	1

The account above also predicts that, to reach Stage 4, a language's lexicon must contain a number of adjective-elative pairs in which the elative is borrowed from Arabic but nonetheless is in a transparent relationship with the corresponding adjective, whether because the latter is an Arabic loan or for some other reason. Not only is this prediction borne out, but those Stage 4 languages

where the elative has become the primary comparative strategy – Siwi and WNA – stand out relative to other languages at stages 3 and 4 for their high proportion of regular adjective-elative pairs involving Arabic elatives (cf. Table 10).

Table 10. Elative token counts by etymology and relation to the corresponding adjectives

	Proportion of regular ones among Arabic	Arabic elative, suppletive	Arabic elative, regular	Non-Arabic elative, suppletive	Non-Arabic elative, regular	Proportion of regular pairings overall
Zuwara (Mitchell 2009)	9%	64	6	0	0	9%
Nefusi (all)	40%	15	10	0	0	40%
Siwi (all)	80%	3	12	4	1	65%
WNA (Arnold 1989)	78%	10	36	0	3	80%
Mehri (all)	13%	27	4	1	0	13%
Domari (all)	10%	9	1	0	0	10%

However, the case of Domari seems to prove that even full use of Arabic elatives together with the borrowing of a significant number of adjectives from Arabic is not sufficient to allow extension of the elative to inherited adjectives. If we assume the elative template can take adjective stems as input, then this appears unexpected; why should Arabic stems be acceptable inputs, but not inherited ones? If we assume it can only take roots as input (as in Classical Arabic), then one might be tempted to attribute this to the difficulty of interpreting inherited adjectives as roots plus templates in a language without inherited "root-and-pattern" morphology. A closer look at the data, however, makes it unclear why that should pose any great difficulty. Matras (2012:202) gives a list of Domari adjectives including 14 of non-Arabic origin; another 16 can be found in his glossary. 20 out of these 30 contain exactly three consonants, and 11 fit into a single "template" *BvCDa*. Why, then, have Domari speakers not extracted "roots" from these to produce forms like *gulda* 'sweet' > **aglad* 'sweeter', *dirga* 'long' > **adrag* 'longer', when speakers of so many other languages have?

4.2 The role of inchoative and factitive verb formation

The contrast between Domari and the various Stage 4 languages becomes less puzzling when one realizes that the latter never had to learn to extract roots from inherited adjectives in the first place. Rather, in all the Stage 4 languages, triliteral adjectives already correspond to stative/inchoative (change-of-state) and factitive verbs formed from the root of the adjective using fixed-vowel fixed-length templates. Comparing such verbs to the corresponding adjectives gives speakers a direct motivation, prior to contact with Arabic, for abstracting a triliteral consonantal root from the different vowel patterns with which it appears, facilitating its use in other morphological processes.

Throughout Berber, most adjectives correspond to inchoative/stative verbs formed by imposing a different vocalic template on the consonants from which the adjective is formed (Prasse 1972:187, 193; Souag 2013:20); factitives are in turn formed from these using the causative prefix *s-*. In Siwi, the template *-əBCəD-* (triliterals) / *-BəCDəF* (quadriliterals) is imposed to form inchoatives, and causatives are formed by prefixing *s(s)-* to the same template, at least for triliterals – *aħəkkik* 'small' > *y-əħkək* 'he got smaller', *azəṭṭaf* 'black' > *y-əzṭəf* 'he turned black' > *yə-ssəzṭəf* 'he blackened'. The same holds in Zuwara: *t-əmɣəṛ* 'she grew older' < *aməqqaṛ* 'big' (Mitchell 2009:200), *asəṭṭaf*

‘black’ > *y-əzḍəf* ‘he was/became dark in colour’ > *y-sázḍəf* ‘he dyed darker’ (Mitchell 2009:56). In Tamezret (Ben Mamou 2005) and Zraoua (author's notes), the inchoative pattern is instead *-əBCaD*. The available documentation on Nefusi does not explain the formation of inchoative or factitive verbs, but given its close relationship to the others, it either still has the same feature or did in the past.

Throughout Aramaic, inchoatives are formed by imposing the G-stem template on the root of the adjective, and factitives with the C-stem. In Western Neo-Aramaic, this situation has been maintained perfectly: *rab* ‘big’ > *ireb, yīrab* ‘(to) get big, grow’ (Arnold 2006:96), *ṭabb* "good" > *aiṭeb* ‘(to) become healthy’ (Spitaler 1938:171), *arrix* ‘long’ > *awrex* ‘(to) lengthen’ (Spitaler 1938:77, 131), *ixfen* ‘hungry’ > *ixfen* ‘(to) hunger’ (Spitaler 1938:66, 143). Likewise in Turoyo: *yaquro* ‘heavy’ (*yaqŭr* ‘heavier’) > *k-yōqır* ‘got heavier’ (Jastrow 1992:147; Ritter 1967:170). NENA retains the G-stem for the inchoative, while using the D-stem for the factitive: cp. Barwar *basima* ‘pleasant, healthy’, *bsama* ‘to be pleasant, healthy’, *mbasome* ‘to heal’; *šaxina* ‘hot’, *šxana* ‘to become hot’, *mšaxone* ‘to heat’ (Khan 2008:256, 411). Only Neo-Mandaic stands out, forming the factitive with a light verb *tmm* ‘become’ presumably under Iranian influence (Häberl 2009).

In Modern South Arabian, the available grammars do not discuss these formations in detail, but the dictionaries make it clear that they exist throughout. For Mehri, Watson (2012:102–103) gives examples such as *haḳṣawm* ‘to spend the hot part of the day’, *šaḳṣawm* ‘to cool down’ < *ḳāṣam* ‘cold’, *nhaśīrūr* ‘to be/become green’ < *hśīrūr* ‘to colour green’ < *hśawr* ‘green’. For Harsusi, Johnstone (1977) includes examples such as *réḥeḳ* ‘distant’ > *rēḥeḳ* ‘to be distant’, *ḳásm* ‘cold’ > *ḳaysem* ‘to get cold’, *aḳṣōm* ‘to cool (tr.)’. Likewise Jibbali (Johnstone 1982): *ḳasmún* ‘cool’ > *ḳésəm* ‘to go cold’, *eḳósum* ‘to cool (tr.)’.

This situation contrasts with that of most of the world's languages, including many in close contact with Arabic. Light verbs are typical in the Indo-Iranian ones: in Domari, inchoative verbs are derived by adding the light verb ‘become’ (Jerusalem *-(h)o-/-(h)r-*, Aleppo *h-*) to the stem, e.g. *tilla* ‘big’ > *tilla-hr-omi* ‘I have grown’ (Matras 2012:240; Herin 2012:45), while for Kumzari, we find *bār* ‘strong’ > *bār tō’a* ‘become strong’ (Anonby & Yousefian 2011:147). In Nubian and Beja, affixation is the rule: cf. Kunuz Nubian inchoative *-an-*, causative *-kir-* (Abdel-Hafiz 1988:108, 121), Nobiin inchoative *-aŋe*, causative *-kire* (Lepsius 1880:153–155), Beja inchoative *-am-* (Vanhove 2017:87).

Among the languages examined in this paper, all varieties with root-based templatic comparatives seem to have root-based templatic change-of-state verbs, although the converse is not true. This could plausibly reflect a specific relationship between comparative and change-of-state morphology; Bobaljik (2012:231) has already observed a relationship between the morphology of these two categories, proposing the cross-linguistic generalisation that “If the comparative degree of an adjective is suppletive [with respect to the positive adjective], then the corresponding change-of-state verb is also suppletive”. He explains this relationship in terms of semantic structure: a change-of-state verb, in Bobaljik's view, has the structure BECOME(MORE(X)), while a comparative adjective is simply MORE(X), so the former must be derived from the latter rather than directly from X. This view implies that, if MORE(X) is expressed through a template that neutralizes lexical vowel distinctions in X, then the same must be true of BECOME(MORE(X)), assuming both are lexicalized. The implied derivation is ahistorical in this case: most of these languages lexicalized BECOME(MORE(X)) long before lexicalizing MORE(X). However, it remains possible that the constraint is synchronically valid.

5 Conclusion

The case study examined here suggests two constraints on template borrowing both of which imply that “root-and-pattern” morphology should spread much more easily between related languages than between unrelated ones. In general:

(a) The productive borrowing of fixed-vowel templatic morphology is unlikely or impossible unless enough of the inputs corresponding to borrowed template outputs exist in the recipient (whether through borrowing or common inheritance) to justify analogical generalization of the template;

and more specifically:

(b) The productive borrowing of root-based (as opposed to stem-based) templatic morphology is unlikely or impossible unless root extraction is independently internally justified for non-borrowed words of the appropriate category.

While the latter claim is based upon a single case study, it appears consistent with the few other attested examples of fully productive root-input template borrowing of which I am aware, notably *l-BCaDət* deadjectival abstract nouns in Siwi Berber (Souag 2009) and *iBʰčCaD* Stem VIII passives in Western Neo-Aramaic (Arnold 2007:191). (*BCiDəF / BCiyyəD* nominal diminutives in Ghomara (Mourigh 2016:99–108) and the sporadic instances in languages such as Persian where Arabic broken plural morphology is applied to non-Arabic vocabulary (Gardani 2020a) involve stem-input templates, and as such are not directly relevant to this claim.) More research is undoubtedly necessary in order to find a wider range of examples against which to test this hypothesis.

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