Bulletin of SOAS, **81**, 2 (2018), 205–225. © SOAS, University of London, 2018.
doi:10.1017/S0041977X18000447 First published online 28 March 2018

The feminine endings **-ay* and **-āy* in Semitic and Berber[1]

Marijn van Putten
Leiden University
m.van.putten@hum.leidenuniv.nl

Abstract
This paper examines the evidence for the marginal feminine endings **-ay-* and **-āy-* in Proto-Semitic, and the feminine endings **-e* and **-a* in Proto-Berber. Their similar formation (**CV̆CC-ay/āy*), semantics (verbal abstracts, underived concrete feminine nouns) and plural morphology (replacement of the feminine suffix by a plural suffix with *-w-*) suggest that this feminine formation should be reconstructed to a shared ancestor which may be called Proto-Berbero-Semitic.
Keywords: Berbero-Semitic, Afro-Asiatic, Historical linguistics, Feminine suffix, Semitic, Berber

1. Introduction

Both Berber and Semitic distinguish two genders, masculine and feminine. In both language families the feminine can be regularly marked with a suffix **-t* (also **-at*, in Semitic) to derive feminine nouns from masculine nouns (Huehnergard 2004: 147f.; Kossmann 2012: 52f.).

Besides the common feminine formations in Semitic that are marked by the suffixes **-t* or **-at* there are at least two other, less common, feminine formations which surface as *-ā* and *-āʔ-* in Arabic, which, as we will see later, also have reflexes in other Semitic languages (Huehnergard 2004: 148).

Similarly, besides the suffix **-t*, Berber has two other feminine suffixes **-e* and **-a* (Prasse 1974: 44f.), which are more common and productive in Berber than they are in the Semitic languages, but are nevertheless much less common than formations with *-t*.

In this paper I will examine the origins, morphology and semantic function of these, less common, feminine suffixes found in Semitic and Berber. I will argue that these must be reconstructed to **-ay* and **-āy*; and belonged to a shared ancestor of Semitic and Berber which we will call Proto-Berbero-Semitic here.[2]

We will start by examining these feminine suffixes in Arabic, where it appears to have been retained in its most original form. Then we will examine

1 I would like to thank Maarten Kossmann, Benjamin Suchard, Fokelien Kootstra, Ahmad Al-Jallad, Stanly Oomen and Lameen Souag for commenting on an early draft of this paper.
2 Note that Proto-Berbero-Semitic is taken here purely to mean a shared ancestor of Semitic and Berber, this earliest common ancestor may be Proto-Afro-Asiatic itself. However, as no other language families of the Afro-Asiatic phylum are discussed, I have refrained from using the term Proto-Afro-Asiatic.

the Semitic evidence outside of Arabic and reconstruct the feminine suffixes for Proto-Semitic. In the second part we will examine these feminine formations in the Berber languages, and reconstruct them for Proto-Berber. In the final part of the paper, we will consider the similarities in formation, morphology and semantics between Semitic and Berber, and suggest a preliminary reconstruction of this feminine formation in a language ancestral to these languages.

In this paper a variety of lexical items will be cited from a large number of different languages. When no further reference is given, the following sources were used for the respective languages: Arabic: Lane 1863–1893; Geez: Leslau 1987; Ghadames: Lanfry 1973; Mali Tuareg (abbreviated M): Heath 2006; Niger Tuareg (Iwellemmeden dialect W, Ayer dialect Y): Prasse et al. 1998; Figuig: Benamara 2013; Middle Atlas Berber: Oussikoum 2013; Mzab: Delheure 1984; Ouargla: Delheure 1987; Awjila: Van Putten 2014; Siwi: Naumann (unpublished).

2. The feminine suffixes *-*ay*- and *-*āy*- in Arabic

We will discuss the feminine suffixes and their morphology individually.

2.1. The *-*ay*- suffix

Arabic has a feminine suffix *-ā*, normally written with the *alif maqṣūrah* (Fischer 2002: §64b). This *alif maqṣūrah* points to an original suffix *-*ay* in Proto-Arabic.[3] This feminine suffix is commonly found on the feminine counterpart to the masculine *ʔaf̣ʕal* elatives. Feminine elatives have the *fuʕl-ā* feminine formation (Fischer 2002: §127). As these nouns do not take nunation, unlike other nouns that end in a final diphthong (e.g. *fatan* < **fatay-Vn*), it seems that these feminine formations were originally diptotes, just like their masculine counterparts (Fischer 2002: §125a).

	masculine	feminine	
nom.	**ʔakbar-u*	**kubr-ay-u*	'greatest'
gen./acc.	**ʔakbar-a*	**kubr-ay-a*	

Besides the feminine counterpart of elatives, the *-*ay*- suffix is also employed for several other adjectival formations. The *faʕl-ā* is the feminine counterpart to masculine *faʕl-ān-u* adjectives, e.g. *kaslānu* 'lazy', fem. *kaslā* (Fischer 2002: §119).

We also find nouns with the *-*ay*- suffix with the patterns **faʕl-ay-*, **fiʕl-ay-* **fuʕl-ay-* and **faʕal-ay*. These generally denote abstracts and verbal substantives (Fischer 2002: §75b): *daʕwā* 'claim', *ḏikrā* 'memory', *bušrā* 'good tidings', *ǧafalā* 'everyone without distinction'

This formation occasionally denotes concrete nouns:

miʕzā 'goats' (besides *miʕzan*)
siʕlā 'female demon' (besides *siʕlāh*)
šiʕrā 'sirius (star)'

3 For a discussion on the developments of the triphthongs in Arabic, see Van Putten (2017).

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

The pattern *fuʕāl-ay* is used to denote names for birds (Fischer 2002: §77): *ḥubārā* 'bustard'.

The plural of nouns with this suffix are formed with *faʕālin, faʕālā* (Fischer 2002: §99a):

fatwā	pl. *fatāwin*, *fatāwā*	'legal opinion'
ḏifrā	pl. *ḏafārin, ḏafārā*	'camel's sweat gland behind the ear'

When followed by the sound feminine plural suffix, the etymological *y* of the suffix appears, e.g. *ḥublā* 'pregnant' pl. *ḥublayāt-*, *ḏikrā* 'memory' pl. *ḏikrayāt-* (Fischer 2002: §105b).

2.2. The **-āy-* suffix

There is a group of feminine nouns and adjectives with a diptotic suffix **-āʔ-*. This ending is attested as the feminine counterpart to the *ʔafʕal-* adjectives of colour or bodily defects. Feminines of this type always have the stem shape *faʕl-āʔ-*. The Classical Arabic paradigm is given below:

	masculine	feminine	
nom.	*ʔabyaḍ-u*	*bayḍ-āʔ-u*	'white'
gen./acc.	*ʔabyaḍ-a*	*bayḍ-āʔ-a*	
nom.	*ʔaṭraš-u*	*ṭarš-āʔ-u*	'deaf'
gen./acc.	*ʔaṭraš-a*	*ṭarš-āʔ-a*	

Besides this adjectival pattern, there are several other formations with this feminine suffix. It generally has the same abstract and verbal substantive function as nouns with the **-ay-* suffix. The vast majority of the abstract nouns have a *faʕl-āʔ* formation, e.g. *baʔsāʔ-* 'suffering', *baġdāʔ-* 'hatred', *ḍarrāʔ-* 'hardship', *sarrāʔ-* 'ease', *naʕmāʔ-* 'favour', *faḥšāʔ-* 'immorality', *dakkāʔ-* 'level'. There is, moreover, a degree of free variation between the **-ay-* suffix and this feminine suffix, e.g. *ruhbā, ruhbāʔ-* 'dread' (Fischer 2002: §75b.4).

Occasionally, concrete nouns also have this suffix:

ṣaḥrāʔ- 'desert'
ʕaḏrāʔ- 'virgin'
saynāʔ- 'Mount Sinai'

Based purely on Classical Arabic evidence, it is difficult to decide what the origin of this feminine ending is. It may come from either **-āʔv̆*, **-āwv̆* or **-āyv̆*, as Classical Arabic has undergone a shift from **w, y > ʔ /ā_v̆* (Brockelmann 1908: 138; Al-Jallad 2014a: 11–2).

Old Arabic[4] evidence, however, seems to answer this question unambiguously. Both Safaitic and Hismaic have not regularly undergone the **w, y > ʔ*

4 Old Arabic is understood here to mean the documentary evidence of Pre-Islamic Arabic. Huehnergard (2017) and Al-Jallad (2018) have convincingly shown that Safaitic (and probably also Hismaic) share a number of clear morphological and phonological innovations that tie it closer to the Classical Arabic and the Arabic dialects than any other branch of Semitic, and can thus be safely assumed to be part of the varities that go back to Proto-Arabic.

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

/*ā_ў* shift[5] and show evidence of the feminine (and plural) suffix as */-āy/. Graf and Zwettler (2004), discussing the Hismaic Madaba inscription, translate the following phrase thus:

w-ytḥlb ṣḥry
'and (now) he sweats feverishly (as a horse[?])'

Ahmad Al-Jallad (p.c.) has reinterpreted this inscription, a publication of which is in preparation, where he parses this phrase differently, yielding a much more plausible interpretation:

w-ytḥl b-ṣḥry
'and he encamped in the desert'

Accepting this interpretation, we now have a likely example of */saḥrāy/ in Old Arabic.

Additional evidence is found in Safaitic, which has the noun *ʕrḍ* 'valley' with a corresponding plural *ʔʕrḍy*, which Al-Jallad (2015: 65) convincingly argues can only be interpreted as being a reflex of the plural formation that corresponds to Classical Arabic *ʔafʕil-āʔu* (e.g. *qarīb-* pl. *ʔaqribāʔ-* 'relative', see Fischer 2002: §100), i.e. */ʔaʕriḍāy/.

Not only has this shift not affected all of Old Arabic, it has not taken place in several dialects of Yemeni Arabic of the Ṣaʿdah region either. Behnstedt (1987: 41) argues that the shift has not taken place in the dialects of Rāziḥ and Xawlān, as is shown by the active participles of medial weak verbs where medial *w* and medial *y* have not merged, e.g. *ṭāyir* 'flying', CAr. *ṭāʔir-*; *gāwul* 'saying', CAr. *qāʔil-*. Other dialects always have *y* in this position. For these dialects it is unclear whether they underwent a shift **āwi, *āyi* > **āʔi* with a subsequent shift to *āyi*, or whether **āwi* and **āyi* simply merged to *āyi*.

Reflexes of this sequence in other positions, however, suggest that other dialects of the region did not undergo the shift to *āʔ* either. For example, the *faʕāl* verbal nouns of final weak verbs retain this semi-vowel (which is always *y*, as III-w and III-y verbs have merged to III-y) in many more dialects than just Xawlān and Rāziḥ. It is also found in Banī Maʿāḏ, Im-Maṯṯah, Šidāʾ, Ḥijlah, Xāšir and Banī ʿAbādil (Behnstedt 1987: 59), e.g. *ġadāy(-in)* 'lunch', CAr. *ġadāʔ-*; *ʕašāy(-in)* 'dinner', CAr. *ʕašāʔ-*; *ġalāy* 'becoming expensive', CAr. *ġalāʔ-*; *ŝirāy* 'buying', CAr. *šarāʔ-*.[6]

We might therefore expect these dialects to have the shape of the feminine suffix *-āy-*. Behnstedt (1987: 60f., and wordlist *s.v.*) describes the reflex of this feminine suffix for the Rāziḥ and Im-Maṯṯah dialects and shows that while Im-Maṯṯah has the predicted *-āy-*, Rāziḥ has *-āʔ-*:

Rāziḥ	Im-Maṯṯah	
bēḏāʔ	*bayṯāy*	'white'
ṣafrāʔ	*stafrāy*	'yellow'
n/a	*stanğāy*	'deaf'
ʕamyāʔ	*ʕamyāy*	'blind'

5 There is some evidence for it in some Safaitic inscriptions (Al-Jallad 2015: 121).
6 Reflexes of this **āyў* and **āwў* are also found in *ʔafʕāl* and *fiʕāl* plurals of final weak nouns (Behnstedt 1987: 60).

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

Behnstedt considers the appearance of this *y* "allerdings [. . .] unetymologisch", and suggests that it arose through a sound law **āʔu* > **āyu* > *āy*. There is, however, no evidence for such a shift, and in light of the Old Arabic evidence, it seems that the *y* certainly is etymological.

The Rāziḥ dialect, while it did not undergo the *w, y* > *ʔ /ā_ŏ* shift, appears to have undergone a shift **āy* > **āʔ* word-finally. This is confirmed by a variety of lexical items that have /ʔ/ word-finally, where /y/ would be expected (examples from the wordlist in Behnstedt 1987):

samāʔ 'heaven', cf. Safaitic *smy* */samāy/ (Al-Jallad 2015: 342), Geez *samāy*.
balāʔ 'affliction' verbal noun of *balē* 'to ruin, afflict' √bly.
ḥamāʔ 'heat', verbal noun of *ḥamē* 'to heat' √ḥmy.

A reconstruction of the feminine suffix as **-āy-*, rather than the **-āʔ-* therefore seems more likely. A final argument in favour of a suffix **-āy-* over a suffix **-āʔ-* are the broken plural patterns associated with nouns of this shape. Like nouns with the feminine suffix **-ay*, the semi-vowel of the suffix is incorporated into the broken plural pattern in Classical Arabic (Fischer 2002: §99a):

Singular	Plural	
ʕaḏrāʔ	*ʕaḏārā, ʕaḏārin* (ى)عذار	'virgin' < **ʕaḏāray-u, *ʕaḏāriy-un*
ṣaḥrāʔ	*ṣaḥārā, ṣaḥārin* (ى)صحار	'desert' < **ṣaḥāray-u, *ṣaḥāriy-un*

These plurals that contain a consonant *y*, not overtly present in the singular. would be difficult to understand if the feminine suffix *-āʔ-* did not come from an original form **-āy-*.

Nouns with this suffix may also have a sound feminine plural suffix, in which case the final *ʔ* (< **y*) turns into a *w* (Fischer 2002: §105b):

Singular	Plural	
ṣaḥrāʔ-	*ṣaḥrāwāt-*	'desert'
ḥaḏrāʔ-	*ḥaḏrāwāt-*	'herb'
ʕaḏrāʔ-	*ʕaḏrāwāt-*	'virgin'

The shift of the feminine ending **-āy-* to **-āw-* when followed by the sound feminine plural suffix cannot be motivated by any regular sound law in the Arabic language, and is difficult to explain as an internal innovation in Arabic, which suggests that this alternation may be old.

2.3. The feminine suffixes in other Semitic languages

The feminine endings **-ay* and **-āy* are quite a marginal group within Arabic, but are attested even more sparsely in other Semitic languages. Despite their highly vestigial status in most Semitic languages, there are clear indications that they exist outside of Arabic and must be reconstructed for Proto-Semitic. Brockelmann (1908: 410 ff.) discusses these suffixes in Proto-Semitic in some detail, and considers them part of a larger ancient noun-class system. Hasselbach (2014) considers these formations simply as marginal feminine endings, and shows that their use as verbal abstract and formation are attested across most branches of Semitic.

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

*2.3.1. *-ay in other Semitic languages*

Hasselbach (2014: 332) identifies the Arabic ending that we reconstruct as **-ay* as coming from Proto-Semitic **-ā*, but the spelling of this final *-ā* with *yāʔ*, as well as evidence from the rhyme in the Quran and other evidence (see Van Putten 2017), leave little doubt that the Arabic suffix should be equated to what Hasselbach reconstructs as **-ay*.

Hasselbach (2014: 336) expresses some doubt as to whether the **-ay* ending can be reconstructed for Proto-Semitic, as she does not think it is clearly attested in Akkadian. However, Wilson-Wright (2014) reconstructs this ending for the feminine Proto-Semitic numeral 'one': **ʕast-* fem. **ʕast-ay-* based on Akkadian *ištēn* fem. *ištī(a)* < **ištay-at* and several vestigial forms such as that found in Hebrew *ʕaštē ʕāśār* 'eleven'. Accepting this reconstruction, we can state that there is some evidence of this feminine ending in Akkadian as well, and it can therefore probably be reconstructed for Proto-Semitic.

Besides the numeral 'one', the feminine ending **-ay* appears on a variety of isolated feminine nouns throughout Semitic. Syriac, for example, has several feminine nouns ending in *-ay*: *salway* 'quails',[7] *kawkḇay* 'a kind of bird', *ḥēpay* 'a kind of gnat'; *gwāḡay* 'spider'; *tanway* 'condition (terms)' *ṭūʕyay* 'error'; *ṭūšyay* 'concealment' (only in *b-ṭūšyay* 'in secret') (Nöldeke 1904: §83).[8]

Geez also has a small set of feminine nouns with the suffix *-e* (< **-ay*). They generally have a stem shape *CaCC* or *CəCC* (Dillmann 2005: §128 (c)). The formation is thus parallel to the Arabic formation **fʕl-ay-*.

śarwe	'beam of wood'
sarwe	'army'
ʔarwe	'beast'
talbe	'flax' (also *təlabe, talabe, təlābe*)
karbe	'myrrh'
zoṗe	'ebony'
ḍāḍe	'moth'
qaṣāṗe	'chameleon'
ʔanqe[9]	'hawk' (pl. *ʔanāqəy*, cf. Ar. *fatwā* pl. *fatāwin*)
kāʕse	'dung'
gəmʕe	'pitcher' (pl. *gamāʕəy, gamāʕəw, gəmʕeyāt*)
q^{w}*asṭe*	'big stomach of ruminants'
q^{w}*əsṭe*	'hump of animal'

7 cf. here Ar. *salwā* 'quails', which is probably cognate, but perhaps a loanword, as the word seems somewhat isolated within Arabic. Ar. *saliya* 'to get rid of a memory, forget' is not obviously semantically related to the noun, but nouns, especially of animals, are of course prone to being built on isolated non-productive roots.

8 The Syriac feminine ending *-ay* presents an etymological conundrum. The triphthong **-ayu(m)* is expected to collapse to ***ē*, and not be retained as *-ay*, cf. *ʔeḥdē* 'I rejoice' < **ʔiḥdayu* and *qnē* 'reed' < **qanayum*. This might suggest that the feminine ending (at least in Syriac) was not originally diptotic or triptotic, but without any case marking.

9 cf. Ar. *ʕanqāʔ-* 'a type of (legendary) bird'. Due to the merger of *ʔ* and *ʕ* in the modern South-Ethio-Semitic languages, the two consonants have occasionally become confused in Geez, which appears to have happened in this word (see Leslau 1987: XIX).

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

Besides these, Geez, like Arabic, uses this suffix to derive abstract verbal nouns. In Geez, however, they are used to derive these from derived verbs (Dillmann 2005: §120). The patterns seem to be based on *CuCāC-ay*, a pattern we only find as a plural formation in Arabic (Fischer 2002: §122). The Geez formation retains the lengthening of the vowel and/or the consonant of the verb it is derived from:

L-stems/t-L-stems: *CuCāCe*	
burāke 'blessing'	*bāraka* 'to bless'
gubāʔe 'assembly'	*gābəʔa* 'to gather, collect'
kufāle 'partition'	*takāfala* 'share among themselves'
D-stems *CəC̄āCe*	
həllāwe 'existence, being'	*hallawa, hallo* 'to exist'
ḥəddāse 'renewal'	*ḥaddasa* 'to renew'
śəllāse 'Trinity'	*śallasa* 'to triple'

With traces of the *-*ay* ending present in Arabic, Geez, Aramaic, Hebrew and Akkadian, it seems readily reconstructable for Proto-Semitic.

2.3.2. *-āy *in other Semitic languages*

On the basis of Old Arabic and modern dialectal evidence, we have argued that the Classical Arabic *-*āʔu* feminine ending must go back to a Proto-Arabic suffix *-*āy-*. Hasselbach (2014: 333), who would reconstruct this suffix as *-*āʔ-* equates it to the Akkadian suffix *-*āʔ-*, which may mark verbal nouns that express planned or regular actions, citing Old Akkadian *muḫurrāʔum* 'regular receipt' and distributive numbers such as Old Babylonian *šulušā* 'three each' < **šulušāʔ*.

The fact that Akkadian has *-*āʔ-*, while Proto-Arabic must have had *-*āy-* is no great impediment to reconstructing the suffix as *-*āy-* for Proto-Semitic. Like Classical Arabic, and Aramaic, Akkadian appears to have undergone a shift of **āy/wv* > **āʔv*. This can be seen from the active participle of medial weak verb, which replaces the medial radical with *ʔ* (Huehnergard 1997: 196).

A possible reflex of this ending might be present in Ugaritic. Van Soldt (2010) has shown that Ugaritic names belonging to females with the (hypocoristic?) ending *-āyu* are overrepresented. He counts (p. 316) 40 per cent of the names as belonging to females, while over the whole corpus of Ugaritic less than 5 per cent of the attested names belong to females. This form is of course quite similar formally to the Arabic *-*āy-* suffix, and the connection with feminines makes a comparison plausible. It should however be noted that still a small majority of the nouns with this ending refer to masculine names, which makes the equivalence far from perfect.[10]

Van Soldt (2005) also shows that this same suffix *-āyu* occurs in several place names, such as *maʕrabāyu*. He argues that these may be feminine, if we assume that the word for 'town', a feminine noun (*qarītu* or *qar(a)tu*) on which such a place name would depend, is elided. *maʕrabāyu* could then be understood as

10 Van Soldt (2012) studies the similar-looking ending *-āyu* in personal names in the Amarna letters, and shows that the nine attested names with this suffix all belong to men.

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

'the western (town)'. While it is possible that the *-āyu* ending for place names is feminine, there is no positive evidence for this. Moreover, not all nouns with the ending *-āyu* in Ugaritic are feminine.

There appears to be one example of a verbal abstract feminine noun in Ugaritic that has a suffix *-y*, namely: *nʕmy* */naʕmāyu/ 'delight, goodness, beauty', cf. Ar. *naʕmāʔ-* 'favour, good will' (Olmo Lete and Sanmartín 2003: 615). The retention of **y* in the consonantal writing implies that the suffix was *-āyu* and not *-ayu*, as Ugaritic underwent a shift of **-ayv̆$_2$ > *v̆$_2$* (Huehnergard 2012: 28; Tropper 2000: 198 ff.).[11]

The Geez feminine suffix *-ā* has close parallels with the Arabic feminine ending **-āy* that suggest a common origin. Nouns of this type generally have the shape *CV̆CC* or *CaCaC* + the suffix *-ā*.[12] They are used to form verbal nouns and abstract nouns as well as, occasionally, concrete nouns. As discussed in section 3.2.1 above, this suffix should not be connected with Classical Arabic *-ā*, as this likely corresponds to the *-e* ending instead. Therefore it is more likely that this ending corresponds to the Classical Arabic *-āʔu* ending instead.

There are a number of verbal nouns derived from the G-stems and D-stems with the shape *CaCaCā* (Dillman 2005: §111 (a)):

makarā 'trial, temptation'	*makkara* 'to tempt'
ʔabasā 'transgression, sin'	*ʔabbasa* 'to sin'
ʕamaḍā 'injustice' (also *ʕamaḍ*)	*ʕammaḍa* 'act unjustly'
zalafā 'reproof, correction'	*zalafa* 'to rebuke'
maʕazā 'odour'	*məʕza, maʕaza* 'to smell sweet'
ḥatatā 'searching, inquiry'	*ḥatata* 'to search'
xaśaśā 'inquiry, searching'	*xaśaśa* 'to seek, seek out'
nakarā 'wonder'	*ʔankara* 'to wonder'

There are some cases where the noun retains the gemination found in the corresponding verb:

dammanā 'cloud, mass'	*dammana* 'to cover with clouds'
qabbalā 'meeting'	*taqabbala* 'to go out to meet'

Besides this, there are several nouns with this formation that are not deverbal but simple nouns:

qaṣalā 'crown, diadem'
kawalā 'rear, behind'
ḥamadā 'snow'
saqalā 'tent'

11 It is also possible that the suffix was *-iyu*, as that sequence is not lost (Huehnergard 2012: 29), but considering the semantics of these words as deverbal abstracts, it seems reasonable to equate it with the Arabic suffix *-āy*.

12 Note that the *CaCaC-* stem takes the *-ay-*, rather than *-āy-*, suffix in Arabic.

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

Several deverbal nouns from G-stems and general nouns have the shape *Cə/aCC* followed by *-ā* (sometimes interchanging with *-at*) (Dillmann 2005: §127(b):

ḥənṣā, ḥənṣat 'building'	*ḥanaṣa* 'to build'
g^{w}əyyā, g^{w}əyyat 'flight'	*g^{w}ayya, g^{w}ayaya* 'to run, flee'
nətgā, nətgat, nətg 'lack, defect'	*nataga, natga* 'to cease, stop'
nəfqā, nəfqat, nəfq 'half, middle'	*nafaqa* 'to tear off, divide (in two)'
māḥəlā[13], *maḥalā* 'oath'	*maḥala* 'to swear'
labḥā 'earthenware'	*labḥa* 'to make earthenware'

Besides this, there are several simple nouns with this formation:

miʕā 'oil of myrrh'
taqdā 'coriander'
k^{w}allā, k^{w}allat 'valley'
zabdā, zabd, zabdəw 'pelt, skin garment'

A few deverbal nouns have the formation *CəC̄əCā*:

nəssəḥā 'penitence'	*nassəḥa* 'to repent'
fəśśəā 'joy'	*tafaśśəḥa* 'to rejoice'

The stems that the *-ā* feminine suffix of Geez can connect to (mostly *CaCaC*, *CaCC*, *CəCC*), are similar to the Arabic *-*ay*- and *-*āy*- suffixes (which connect to *CaCaC*, *CaCC*, *CiCC* and *CuCC*). Moreover, the formation is generally used to form abstract deverbal nouns, but can also be used for general noun formations. As in Arabic, *-ā* is not a derivational feminine suffix, and a noun cannot be made masculine by removing it.

The parallels between Arabic and Geez are manifold, but the etymological connection is somewhat difficult. From lexical items such as Geez *samāy* 'sky' ~ Ar. *samāʔ* 'id.', and Geez *māy* 'water' ~ Ar. *māʔ* 'id.', Geez *śəqāy* 'torment, torture, pain' ~ Ar. *šiqāʔ* 'id.' we can see that *āy* in Geez generally corresponds to Arabic *āʔ* < **āy*. We might therefore expect the Arabic feminine suffix *-*āy*- to be reflected in Geez as **-*āy*, not as *-ā*.

The difference between **samāy*-, and feminines in *-*āy*, however, is that in Arabic the former is a triptote and the latter a diptote. If we project the diptosy of this ending back to a common ancestor of Ethio-Semitic and Arabic (e.g. Proto-West-Semitic), we may imagine that this gave rise to a difference in reflexes by assuming *-*āyv̆* yielded *-*ā*, while the loss of **y* was guarded by mimation in the triptotic nouns.

1. **samāyum*	**hamad-āy-u/a*	
2. **samāyum*	**hamad-ā*	(Proto-Geez *-*āyv#* > *-*ā*)
3. **samāyəm*	**hamad-ā*	(Loss of *u/i*-contrast before mimation, see Al-Jallad 2014b)
4. *samāy*	*hamad-ā*	

13 From **maḥlā*, **aHC* > *āH(ə)C*, where *H* is *ʔ, ʕ, h, ḫ* or *ḥ* (Tropper 2002: 36).

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

This rule is *ad hoc* as there are no parallel environments to this feminine ending with which we could confirm this development.[14]

With the presence of the *-*āy*- suffix in Arabic, Ugaritic, Akkadian and probably Geez, this suffix is also safely reconstructable for Proto-Semitic.

2.3.3. Conclusion on feminine nouns in Arabic and Semitic

Summing up, there is clear evidence that the feminine suffixes *-*ay* and *-*āy* existed in Proto-Semitic. These suffixes may only be placed on a limited amount of stems. The ones identified are *CvCC*, *CaCaC* and *CuCāC*. In Arabic and Geez these formations are fairly productive, in other Semitic languages they are purely vestigial. Formations with this suffix are mainly employed to form abstract deverbal nouns, and besides that, may also refer to concrete nouns. Finally, it has been argued that the *y*∼*w* alternation found in sound plural of feminines with the suffix *-*āy*- such as **ṣaḥrāy*, pl. **ṣaḥrāwāt* cannot be explained easily as an Arabic internal development and therefore might be old.

A final similarity between these Arabic and Geez feminine endings is that the suffixes cannot be used as derivational feminine suffixes, e.g. Ar. *ʕaḏrāʔ*-, 'virgin', does not have a counterpart **ʕaḏr*- 'male virgin'. Whenever the feminine suffixes *-*ay and* *-*āy* are attested as a productive suffix beside a masculine form, as in the *ʔafʕal* adjective classes of Arabic, we find that the feminine suffix is not the only distinguishing factor between the stems, but that the masculine and feminine forms also use different stems.

3. The feminine suffixes *-e* and *-a* in Berber

The most common Berber feminine suffix is *-t*, which is cognate to the Semitic *-*t/-at*. This feminine ending can be productively used to form diminutives or feminines of masculine nouns, e.g. *a-ɣyul* 'donkey',[15] *ta-ɣyul-t* 'she-donkey'.[16] A smaller group of feminine nouns take the suffixes *-e* or *-a*, which do not normally have a masculine counterpart. These nouns consistently have a stem shape **CəCC* or **CăCC*, or shapes with long vowel, the latter presumably due to the loss of a Pre-Proto-Berber radical. Many lexical items with these suffixes can be easily reconstructed for Proto-Berber,[17] and this formation is commonly attested

14 Another option is to consider the alternation that the optional loss of the *yu* syllable of the *-āyu* that we find in Ugaritic (Van Soldt 2010) was original. In that case, Geez may simply reflect the *-ā* variant.

15 Berber distinguishes between plain vowels **a, *i, *u, *e* and central vowels **ă* and **ə*. This contrast can probably be reconstructed originally as a length distinction, but in this article I will use the traditional notation of these vowels.

16 Most nouns in Berber have a noun prefix presumably of deictic origin, which reflects gender, number and 'state' (approximately a form of case).
Free State masc. sg. **a*- pl. **i*- fem. sg. **ta*- pl. **ti*- (or **tə*-);
Annexed State masc. sg. **wă*- pl. **yə*- fem. sg. **tă*- pl. **tə*-
Van Putten (2016a) shows that the nouns with prefixes *e-/te-* in the Free State are conditioned allophones of **a-*/**ta-*. Van Putten (2016b) discusses the reflexes of the prefixes in Eastern Berber languages.

17 To name just a few mentioned in Kossmann 1999: {190} **ta-βădd-e* 'standing, height', {193} **ta-βăl-e* 'sheep', {211} **ta-βur-e* 'work', {418} **ta-gərs-a* 'ploughshare', {569}

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

as a verbal noun formation in all Berber varieties. Its reconstruction to Proto-Berber is therefore uncontroversial. The similarity between these suffixes, and the Arabic suffix *-*ay*/-*āy* was recognized by Prasse (1974: 45). This section will examine the morphology, semantics and plural formation of these Berber feminine noun formations.

Nouns of this type are often deverbal abstract nouns. Some examples from Mali Tuareg are:

ta-năkr-a 'getting up'	*ənkər* 'to get up'
te-hădd-e 'standing up'	*əbdəd* 'to stand up'[18]
ta-nəbr-e 'pasturing at night'	*əmbər* 'to be taken to pasture at night'
tă-zuɣ-e 'redness'	*izwiɣ* 'to be red'

This formation is also often attested for concrete nouns, e.g.

te-năll-e 'thread'
ta-wəkk-e 'worm'
ta-fəkk-a 'body'
ta-səṭṭ-a 'broken-off, dry branch from a tree'

Denominal collective nouns are also occasionally derived with this formation, e.g.

ta-ɣəss-a 'body' *e-ɣăss* 'bone'

Some nouns have only two root consonants and a long vowel instead of a third radical. These long vowels have been hypothesized to come from a lost radical (for example by Prasse 1972: 67 ff.; 1974: 338, 334–5) as shown in Table 1.

Table 1. Pre-Proto-Berber origin of biradical feminine formations with *-e* and *-a*

	Proto-Berber	Pre-Proto-Berber	Associated verb
t-aɣm-a 'thigh'	< **t(a)-aɣm-a*	< **ta-Hăɣm-ay*	
t-ekl-e 'going'[19]	< **t(a)-akl-e*	< **ta-Hăkl-ăy*	**akəl* 'to go' < **ăHkəl*
t-eɣs-e 'sheep, goat'	< **t(a)-aqs-e*	< **ta-Hăqs-ăy*	
t-irw-a 'giving birth'	< **t(a)-irw-a*	< **ta-Hərw-ay*	**arəw* 'to give birth' < **ăHrəw*
t-irw-e 'id'	< **t(a)-irw-e*	< **ta-Hərw-ăy*	**arəw* 'to give birth' < **ăHrəw*
te-meḍ-e 'hundred'	< **ta-maḍ-e*	< **ta-măHd-ăy*	
ta-gur-e 'throwing'	< **ta-gur-e*	< **ta-gəHr-ăy*	**ăgər* 'to throw' < **ăgHər*
tă-nay-a 'climbing'	< **ta-nay-a*	< **ta-năHy-ay*	**ănəy* 'to climb' < **ănHəy*

**ta-kV̆rz-a* 'ploughing', {594} **ta-kə̀ʔt-e* 'hit', {603} **ta-βăyn-e* 'dates', {722} **ta-aɣs-e* 'goat'.

18 Proto-Berber **β* becomes *b* preconsonantally, and *h* elsewhere in Tuareg. See Kossmann (1999: 61–135) for an in-depth discussion.

19 The *e* vowel in this stem is the result of Mid Vowel Harmony, that causes the original **a* to shift to **e* due to a preceding **e* or **ă* vowel. Mid Vowel Harmony is discussed in more detail in Van Putten (forthcoming).

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

3.1. Evidence for **Vy* > **V* in word-final position

There is no direct Berber-internal evidence that the feminine suffix *-*a*, may be reconstructed for Pre-Proto-Berber *-*ay*. There is however some evidence that word-final *-*a* can come from an earlier sequence *-*ay* or *-*aw*, making it plausible that the feminine suffix *-*a* originally comes from *-*ay* and can therefore be compared to the Proto-Semitic feminine suffix *-*āy*-. There are examples of masculine nouns with a word-final plain vowel which corresponds to a feminine noun with a final cluster *-*y-t* or *-*w-t*, e.g.

Fig. *a-ɣənža* 'big spoon' *ta-ɣənžay-t* 'spoon'
Fig. *a-ziza* 'blue (m.)' *ta-zizaw-t* 'blue (f.)'

Similar alternations are found between the masculine singular and plural:

Fig. *a-ɣərda* *i-ɣərday-ən* 'rat'
Fig. *a-ziwa* *i-ziway-ən* 'bunch of dates'
Fig. *a-ɛəqqa* *i-ɛəqqay-ən* 'part of a necklace'

This alternation is best explained by assuming a Pre-Proto-Berber loss of word-final **y*, and **w*, where the semi-vowel resurfaces when it is no longer in word-final position. As such, the feminine ending *-*a* may come from Pre-Proto-Berber *-*ay*, and therefore can formally match the Proto-Semitic *-*āy*.

In Awjila Berber, final **y* is occasionally found in nouns that have a feminine ending *-*a* in other dialects:

Awj. *taɣmáy* pl. *taɣmawín* 'thigh', cf. Tashl. *taɣma*; Tuareg *taɣma*; Ghadames *taɣma*, etc.
Awjila *tqárṭay* pl. *tqarṭiwín* 'paper'; Siwi *tyarṭa* 'paper'[20]

There is one metathesized example that also seems to point to a feminine suffix *-ay*:

Awj. *təkšáymt* 'watermelon', Ghadames *tammăksa* 'melon', Siwi *taṃəksa* 'id.'.

There are several other cases where word-final *-ay* not related to a feminine suffix also corresponds to word-final *a* in other dialects,[21] e.g.

Awj. *aẓmáy* 'rush', cf. Siwi *aẓəmma* 'id.'
Awj. *aziwáy* 'bunch of dates', cf. Ghadames *aziwa* 'id.', Fig. *aziwa* 'id.', Ouargla *taziwayt* 'bunch', Mzab *taẓiwayt* 'id.'

There are, however, other cases where the final *-a* in other Berber languages simply corresponds to *-a*.

20 Note, however, that this is certainly a loanword from Latin *carta, charta* 'paper' (Kossmann 2013a: 66). One referee of this paper suggested that the Awjili form may have come through Greek *chartēs*, whose /ē/ vowel might explain the *-ay* in Awjili. I accept this as a possibility.

21 There are also examples where Awjili retains final *w* after a long vowel, e.g. *aməklíw* 'lunch', cf. Kb. *imekli* 'lunch' and *agíw* 'bucket', cf. To. *ăğa* 'id.'. Other examples clearly show *w* after a plain vowel corresponding to *w* elsewhere, e.g. Awj. *agnáw* 'black slave', Ghadames *ǵanaw* 'slave', Nefusa *agnáw*.

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

Awj. *tamə́sna* 'the outside', cf. Ghd. *tamăsna* 'desert'
Awj. *tuqə́rṭa* 'theft', cf. Nef. *tukə́rḍa*
Awj. *tkirzá* 'ploughing', cf. MA *tayərza*

It is unclear what causes the double reflexes of the suffix *-a* in Awjili.

3.2. Proto Berber **-e* < Pre-Proto-Berber **-ăy*

The feminine suffix *-e* shows up in the majority of the languages as *-i*. Only Tuareg and Ghadamsi retain this contrast.[22] Prasse (1974: 44) suggests that this suffix came from an earlier *-ăy*. This is mainly based on the comparison with the Arabic feminine suffix *-ay*. This equation is attractive and a development *ăy# > *e* is phonetically plausible. There are, however, some cases of word-final *ăy* that can be reconstructed for Proto-Berber. This mostly occurs in the perfective stem of verbs with a final *y*. These can plausibly be explained as the result of analogy:

Aorist	Perfective	
*y-ălməd	*y-əlmăd	'to learn'
*y-ărwəy	*y-ərwe >> *yərwăy	'to knead'

There are no clear examples of nouns that end in *-ăy*, nor are there many examples of nouns that end in *-e* where it does not involve this feminine suffix under discussion. This makes it difficult to prove that a development *ăy# > *e* has taken place, but there is no clear counter-evidence for it either. A reconstruction of the feminine suffix as *-ăy* for Pre-Proto-Berber, equating it to the Semitic suffix, seems possible.

3.3. Plural formation of the feminine endings **-e* and **-a*

Berber has a variety of plural formations of nouns that end in *-e* and *-a*. Some are formed through suffixation, while other are formed by apophonic formations. We will focus here on the suffixed plural formation.

The suffixes that are found for these nouns are *-iw-en* and *-aw-en*.[23] These two suffixes are in complementary distribution. If the preceding vowel is low (*a*, *ă* or *e*[24]) the suffix is *-iw-en*, if the preceding vowel is high (*u*, *i* or *ə*) the suffix is *-aw-en*.[25]

22 Ghadamsi occasionally has *-i* for nouns of this type, where we would expect *-e*, e.g. *taɛri* 'reading', *taẓuni* 'dividing' but *tăẓẓe* 'planting', *toffe* 'blowing up'. This may be the result of inaccurate transcriptions, but a real contrast cannot be ruled out.

23 Besides plural formations with the suffixes *-iw-en/-aw-en*, these nouns occasionally have apophonic plurals. These come in the shapes *ti-CəCw-en* (e.g. M Tuareg *tafəkka* pl. *tifəkwen* 'body') or *ti-CəCC-(a), (e.g. M *tenăde* pl. *tinədd* 'fever'; Y *tenăde* pl. *tinədda* 'id.'). An in-depth discussion of these plural formations falls outside the scope of this paper.

24 *e* in these environments are allophones of *a* triggered by mid vowel harmony triggered by *e* or *ă* later in the word, see Van Putten (forthcoming)

25 The varieties discussed in the following subsections have been chosen as they are representative of the "blocks" suggested by Kossmann (forthcoming). Excluded are the Awjila block, which consists of only one language, and the Western block which consists of only one well-documented language (Zenaga). The former has too little lexical data to make large pronouncements. The latter has undergone vastly divergent phonological

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

3.3.1. Tuareg

The examples below are taken from Heath's (2006) Mali Tuareg dictionary. The alternation found in Tuareg is almost completely regular.[26]

te-hădd-e	*ti-hadd-iw-en*[27]	'height, standing up'
ta-năkr-a	*ti-nakr-iw-en*	'standing up'
ta-wəkk-e	*ti-wəkk-aw-en*	'earthworm'
ta-fəkk-a	*ti-fəkk-aw-en*	'body'
t-aɣm-a	*t-aɣm-iw-en*	'thigh'
t-eɣs-e[28]	*t-aɣs-iw-en*	'sheep, goat'
t-ord-a	*t-ord-aw-en*	'expectation, hope'
t-uks-e	*t-uks-aw-en*	'heat'
t-ikr-a	*t-ikr-aw-en*	'theft'
t-iws-e	*t-iws-aw-en*	'tribute, tax'
tă-mar-a	*ti-mar-iw-en*	'force, vigour'
te-ner-e	*ti-nar-iw-en*	'desert'
tă-kob-a	*ti-kob-aw-en*	'sword, sabre'
ta-hoḍ-e	*ti-hoḍ-aw-en*	'oath'
ta-kiy-a	*ti-kiy-aw-en*	'body'

3.3.2. Ghadames Berber

Ghadamsi appears to have the same allophonic distribution as Tuareg, but the limited number of lexical items with this formation found in Ghadamsi, and some internal developments obscure the distribution somewhat. The lexical data is taken from Lanfry (1973).

ta-waɛn-e[29]	*t-wăɛn-iw-én*	'load, burden'
ta-βal-e	*t-βal-iw-én*	'sheep'
t-amẓ-a	*t-ămẓ-iw-én*	'ogre'
t-aɣm-a	*t-ăɣm-iw-én*	'thigh'
t-akn-a	*t-akn-iw-én*	'co-wife'
t-arw-a	*t-arw-iw-én*	'child'
t-aɛl-a	*t-aɛl-iw-én*	'wick'
ta-qărqăb-a	*tə-qărqab-iw-én*	'skull'
ta-ma/ăsn-a	*tə-masn-iw-én*	'desert'
ta-faṣk-a	*tə-făṣk-iw-én*	'religious feast'
ta-băğn-a	*tə-băğn-iw-én*	'skull'

---

and morphological developments from the rest of Berber. This makes interpretation of such formations difficult. The plural suffix usually seems to become *-ūn*, e.g. Zng. *taʔša(h)* pl. *taʔšūn* 'liver' < **ta-ʔVs-a* 'id.', cf. Kb. *tasa*, Siwi *tsa*, Ghd. tósa. A full study of of the Zenaga material is outside the scope of this paper.

26 Out of a sample of 160 nouns, I have found three counterexamples: *taɣăya* pl. *tiɣayawen* 'hoop', *tahăla* pl. *tihălawen* 'weeping', *te-ɣăfădd-e* pl. *ti-ɣăfădd-aw-en* 'first born'.

27 The lengthening of the stem vowel **ă* to *a* in the plural of nouns of this type appears to be a Tuareg innovation not found in other Berber dialects. The exact details of this development are not yet understood.

28 This form is ultimately from **t-aɣs-e*, through an ancient **a* > *e* shift. The **a* vowel resurfaces in the plural. For a discussion on this shift see Van Putten (2016b and forthcoming).

29 Lanfry occasionally transcribes *a* for *ă* (Kossmann 2013b: 15).

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

ta-kərḍ-a	*tə-kərḍ-iw-én*[30]	'letter, written paper'
ṭ-ărš-i[31]	*ṭ-ărš-iw-én*	'date before maturity'
ta-waɛn-e	*t-wăɛn-iw-én*	'a load'
ta-βal-e	*t-βal-iw-én*	'sheep'
ta-wağ-e	*t-wəğğ-iw-én*[32]	'bread'
ta-naḍr-e	*tə-naḍr-iw-én*	'half a handful (of s.th.)'
ṭo-ḍăβl-a	*ti-ḍəβl-iw-én*[33]	'a plank of palm'
ta-măks-a	*tə-məks-iw-én*	'melon'
ṭ-ór-a	*ṭ-ór-aw-én*	'lung'
t-ós-a	*t-os-aw-én*	'liver'
ta-maṣur-a	*t-maṣur-aw-én*	'type of vase'
t-ədr-a	*t-ədr-aw-én*	'spike of a palm trunk'
t-əfr-a	*t-əfr-aw-én*	'leaf'
ta-zrir-a	*t-əzrir-aw-én*	'type of flower holder'
to-sənt-a	*ti-sənt-aw-én* (also: *ti-sənt-iw-én*)	'cushion'
to-ḍiḍḍ-a	*ti-ḍəḍḍ-aw-én* (also: *ti-ḍəḍḍ-iw-én*)	'type of worm'

An unusual exception, with a suffix *-ew-en* rather than *-aw-en* or *-iw-en* is attested once:

ta-ləqq-e	*t-ləqq-ew-én*	'poor person'

Another form that seems to be an exception is the following:

tó-rəğl-a	*ti-rəğl-iw-én*	'large bunch of dates'

One wonders whether this exception is related to the neutralization of *ă* and *ə* before *ğğ* (see n. 32).

Two exceptions remain that defy any obvious explanation:

to-lifs-a	*ti-ləfs-iw-én*	'viper'
tamənḍa	*tə-mənḍ-iw-én*	'upright beam of a loom'[34]

30 *ə* and *ă* are neutralized to *ă* before *r, l, ɣ, x, ḥ* and *ɛ*. This should probably be considered the reason for the apparent exception of this noun.

31 This is presumably /t-ărš-e/. There are a few other examples where the feminine suffix *-e* is written as *-i* by Lanfry. The contrast in final position was apparently difficult to hear. Compare, for example *taɛri* 'reading' *taẓuni* 'dividing' but *tărṛe* 'playing' and *tasəkke* 'constructing' (Kossmann 2013b: 89).

32 *ă* is raised to *ə* before *ğğ* (Kossmann 2013b: 17), so the plural is probably from **twăğğiwen*. The gemination of the *ğ* in the plural is not understood.

33 Apophony in the stem between *ă* and *ə* in this word (*ṭo-ḍăβl-a*) and the next (*ta-măks-a*) is unknown outside of Ghadames. It might be a mistranscription, but without more data it is difficult to be sure.

34 Notice that in other Berber languages the noun has a regular feminine ending *t*, and the singular has a stem consonant *w*, this origin might explain its exceptional behaviour in Ghadamsi, e.g. Ouargla *timənḍut, timənḍiwt*, Fig. *timənḍəwt*.

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

3.3.3. Figuig

In the Zenatic dialects,[35] the distribution has become less clear, due to the loss of numerous relevant contrasts: **i* and **e* merge to *i*, and **ə* and **ă* merge to *ə*. This has led to a restructuring of the allophony, but the choice of *-aw*, and *-iw* in many environments remains predictable. The distribution found for Figuig seems to be similar to other Zenatic languages. A corpus of all Figuig feminine nouns that end in *-i* and *-a* that pluralize with either *-iw-in* or *-aw-in* have been established. The resulting list of 140 words displays the following distribution:

If a noun ends in *-i (< *-e)*, the plural suffix is always *-iw-in.*

t-idd-i	*t-idd-iw-in*	'height' (cf. Tuareg *te-hădd-e* pl. *ti-hadd-iw-en*)
t-wil-i	*ti-wil-iw-in*	'a quantity'
ta-yur-i	*ti-yur-iw-in*	'going'
t-amm-i	*t-amm-iw-in*	'eyelash'
ta-zəwɣ-i	*ti-zəwɣ-iw-in*	'redness' (cf. Tuareg *tă-zuɣ-e* < **ta-zəwɣ-e*)

If nouns end in *-a*, the plural suffix is *-iw-in* or *-aw-in*, conditioned by the stem vowel as in Tuareg and Ghadamsi:

t-ifs-a	*t-ifs-aw-in*	'spring'
t-biš-a	*ti-biš-aw-in*	'rain'
t-ufr-a	*t-ufr-aw-in*	'concealment'
t-šum-a	*ti-šum-aw-in*	'loins'
t-mall-a	*ti-mall-iw-in*	'pigeon'
t-ɣaws-a	*ti-ɣaws-iw-in*	'case, thing'

There are two examples of nouns with a stem-internal *a* whose suffix is *-aw-in*. They both have the shape *t-CaC-a*, but *tyaṛa* 'residue' also has this shape and does have the expected plural *tiyaṛiwin*:

t-naf-a	*ti-naf-aw-in*	'slumber'
t-ɣara	*ti-ɣar-aw-in*	'manner'

If, however, the stem has a suffix *-a* and the stem vowel *a* is stem-initial, the suffix is usually *-aw-in* (13x), but three cases have the expected *-iw-in*, and one noun is attested with both suffixes.

t-an-a	*t-an-aw-in*	'gums (mouth)'
t-ašl-a	*t-ašl-aw-in*	'spending the day'
t-ard-a	*t-ard-aw-in*	'washing'
t-amar-a	*t-amar-aw-in*	'pain, suffering'
t-aɣ-a	*t-aɣ-iw-in*	'artichoke'
t-aɣm-a	*t-aɣm-iw-in*	'thigh'
t-ayd-a	*t-ayd-iw-in*	'cypress; wood'
t-awl-a	*t-awl-aw-in,* *t-awl-iw-in*	'wandering'

35 The Zenatic is the most widespread group of Berber languages, and is identified by a set of morphological and phonetic innovations (Kossmann 1999: 31).

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

Finally, nouns without a plain stem vowel may have either *-aw-in* or *-iw-in* as a suffix. This is to be expected, as the *ə* that we find in such stems is a merger of **ă* and **ə*. These two vowels would condition a different suffix. Notice that in the examples below, the suffix corresponds with the original stem vowel in three cases for which I have found cognates in Tuareg and Ghadamsi. Nouns with the *-iw-in* suffix outnumber nouns with the *-aw-in* suffix (4:1).

ta-ḍṣ-a	*ti-ḍṣ-iw-in*	'laughing'	(cf. Tuareg WY *ta-ḍăẓ-a*)[36]
ta-rəwl-a	*ti-rəwl-iw-in*	'fleeing'	(cf. Tuareg *ta-răwl-a*)
ta-ləfs-a	*ta-ləfs-iw-in*	'viper'	
ta-məɣṛ-a	*ti-məɣṛ-iw-in*	'feast'	
ta-šərz-a	*ti-šərz-iw-in*	'sowing'	
ta-šətš-a	*ti-šətš-aw-in*	'worm'	(cf. Ghd. *tokəkka*; Tuareg *tawəkk-e*)
ta-ḥənn-a	*ti-ḥenn-aw-in*	'present, gift'	
ta-qənt-a	*ti-qənt-aw-in*	'type of dish'	
ta-səlɣ-a	*ti-səlɣ-aw-in*	'globe daisy'	
ta-fɣ-a	*ti-fɣ-aw-in*	'artichoke'	

Despite the regularization of the alternation with nouns with the old **-e* suffix, the allophonic conditioning of this suffix *-iw-/-aw-* seems to have been the original form in Figuig (and other Zenatic varieties) as well.

3.3.4. Middle Atlas Berber

Middle Atlas Berber, as well as the other languages of Kossmann's Western Moroccan + Kabyle block (Tashelhiyt and Kabyle; Kossmann forthcoming) have lost the allophony of this plural suffix. *-awin* is completely absent.

t-aɣm-a	*t-aɣm-iw-in*	'thigh'
ta-bard-a	*ti-bard-iw-in*	'pack saddle'
ti-məzgid-a	*ti-məzgid-iw-in*	'mosque'
t-ixs-i	*t-ixs-iw-in*	'sheep'
ti-wiš-i	*ti-wiš-iw-in*	'giving; gift'
t-ukk-i	*t-ukk-iw-in*	'giving; gift'
ta-gun-i	*ti-gun-iw-in*	'sleep'
ta-yugg^{w}-a	*ti-yugg^{w}-iw-in*	'pair of oxen'

3.3.5. Conclusion on the plural formation

The allomorphy between the suffixes **-iw-en* and **-aw-en* appears to be reconstructable for Proto-Berber. We may assume that this phonetically conditioned allomorphy goes back to a single form. In light of the similarities of this Berber feminine formation with that of Semitic, I would suggest that this plural suffix can be equated to the plural suffix with the sg. **-āy* pl. **-āw-āt* alternation that we find in Arabic. In this case, it seems most attractive to reconstruct the original suffix as **aw-en* for a Pre-Proto-Berber stage.

There is some reason to assume that the feminine plural suffix **-en* derives from a Pre-Proto-Berber **at-ăn* (for a similar suggestion see Vycichl 1989).

36 *ə* is lost in open syllables in Northern Berber.

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

In Tuareg, verbs that end in an augment *-ăt* end in *-at* in the imperfective. When this augment is followed by the 3pl.m. suffix *-ăn*, both *-ăt* and *-at* become *-en* (Heath 2005: 294–9). While the origins of this *-ăt* augment are unclear, at least some of these final-*t* verbs with *Ø∼t* alternation seem to point to some kind of intervocalic lenition of **t* (Awjili, for example, has similar alternation in three verbs, Van Putten 2014: 95).

3.4. Conclusion on the feminine formation in Berber

To summarize, Proto-Berber has two feminine suffixes: **-e* and **-a*. Feminines of this type may only be built in a limited number of stem formations, namely: *cvcc* (and forms that are probably ultimately from the same formation like *v̄cc* and *cv̄c*). These feminines can be used to form deverbal abstract nouns, but are also occasionally used to form general nouns. The plural suffix is **-a/iw-en* where the *a∼i* alternation appears to have originally been allophonic. Finally, these feminine endings do not productively form feminine counterparts to masculine nouns, and are therefore not derivational feminine markers (unlike the feminine marker **-t*).

4. Summary and conclusions

In the previous two sections we have looked at the Proto-Semitic feminine markers **-ay* and **-āy*, and the Proto-Berber feminine markers **-e* and **-a*. It is argued that the Berber suffixes could go back to earlier **-ăy, -ay*, matching the Semitic suffixes.

Table 2. Comparison of the Semitic and Berber feminine formations

Semitic	Berber
Feminine markers	
✔ **-ay, -āy*	✔ **-e, -a* (< **-ăy, -ay* ?)
Stems	
✔ **ca/i/ucc*	✔ **că/əcc* < **că/ĭ/ŭcc*
✘ **cacac*	
Plural formation	
✔ The **-āy* suffix has *y∼w* alternation between the singular and plural (Arabic only). sg. **cvcc-āy* pl. **cvcc-āw-āt*	✔ **-e* and **-a* have **w* in the plural formation that is absent in the singular. sg. **cvcc-ăy/ay* pl. **cvcc-a/iw-en* (< **cvcc-aw-at-ăn* ?)
Semantics	
✔ Primarily deverbal abstract nouns	✔ Primarily deverbal abstract nouns
✔ Concrete nouns	✔ Concrete nouns
✘ Feminine elatives (Arabic only)	
✘ Colours/Physical defect adjectives (Arabic only)	
✔ Not used as a derivational feminine suffix.	✔ Not used as a derivational feminine suffix.
✔ Occasional free variation of **-ay* and **-āy*	✔ Occasional free variation of **-e* and **-a*

https://doi.org/10.1017/S0041977X18000447 Published online by Cambridge University Press

These feminine formations show remarkable similarities in stem formation, meaning, and plural formation, which strongly suggests a shared origin. These similarities are displayed schematically side-by-side in Table 2.

The striking similarities in formation, semantics, and the similar morphological idiosyncrasies of the plural formation, are difficult to understand as the result of chance correspondences. It therefore seems probable that this formation goes back to the common ancestor of Proto-Semitic and Proto-Berber. Whether this common ancestor is Proto-Afro-Asiatic or a lower branch (e.g. Proto-Berbero-Semitic) will require further investigation. It is hoped that researchers with expertise in other branches of Afro-Asiatic will find the data presented in this article useful, and will be able to use it as a framework to study feminine formations in their respective languages of expertise.

For now I will hazard a tentative Proto-Berbero-Semitic reconstruction of this nominal formation:

**CV̆CC-ay/āy* pl. **CV̆CC-āw-āt*

Bibliography

Al-Jallad, A. 2014a. "On the genetic background of the Rbbl bn Hf̓m grave inscription at Qaryat al-Fāw", *BSOAS* 77/3, 1–21.

Al-Jallad, A. 2014b. "Final short vowels in Gəʿəz, Hebrew ʾattâ and the anceps paradox", *Journal of Semitic Studies* 59/1, 315–27.

Al-Jallad, A. 2015. *An Outline of the Grammar of the Safaitic Inscriptions*. Leiden and Boston: Brill.

Al-Jallad, A. 2018. "The earliest stages of Arabic and its linguistic classification", in E. Benmamoun and R. Bassiouney (eds), *Routledge Handbook of Arabic Linguistics*. London and New York: Routledge.

Behnstedt, P. 1987. *Die Dialekte der Gegend von Ṣaʿdah (Nord-Jemen)*. Wiesbaden: Harrassowitz.

Benamara, H. 2013. *Dictionnaire Amazighe–Français. Parler de Figuig et ses regions.* Rabat: IRCAM.

Brockelmann, C. 1908. *Grundriss der vergleichenden Grammatik der semitischen Sprachen. I. Band: Laut- und Formenlehre*. Berlin: Von Reuther & Reichard.

Delheure, J. 1984. *Ağraw n yiwalen tumẓabt t-tfransist – Dictionnaire Mozabite–Français*. Paris: SELAF.

Delheure, J. 1987. *Agerraw n iwalen teggargrent-taṛumit – Dictionnaire Ouargli–Français*. Paris: SELAF.

Dillmann, A. 2005. *Ethiopic Grammar*, 2nd edition enlarged and improved (1899) by Carl Bezold. Translated by James A. Crichton. London: Williams & Norgate.

Fischer, W. 2002. *A Grammar of Classical Arabic*. Third revised edition, translated from the German by Jonathan Rodgers. New Haven and London: Yale University Press.

Graf, D.F. and M.J. Zwettler. 2004. "The North Arabian 'Thamudic E' inscription from Uraynibah West", *Bulletin of the American Schools of Oriental Research* 335, 53–89.

HALOT=L. Koehler and W. Baumgartner (eds). 1994–2002. *The Hebrew and Aramaic Lexicon of the Old Testament*. Leiden: Brill.

Hasselbach, Rebecca. 2014. "Agreement and the development of gender in Semitic (Part II)", *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 164/1, 319–44.

Heath, J. 2005. *A Grammar of Tamashek (Tuareg of Mali)*. Berlin: Mouton de Gruyter.

Heath, J. 2006. *Dictionnaire Touareg du Mali: Tamachek–Anglais–Français*. Paris: Karthala.

Huehnergard, J. 2004. "Chapter 6: Afro-Asiatic and Semitic languages", in R.D. Woodard (ed.), *The Cambridge Encyclopedia of the World's Ancient Languages*. Cambridge: Cambridge University Press, 138–59.

Huehnergard, J. 1997. *A Grammar of Akkadian*. Atlanta: Scholars Press.

Huehnergard, J. 2012. *An Introduction to Ugaritic*. Peabody, MA: Hendrickson Publishers.

Huehnergard, J. 2017. "Arabic in its Semitic context", in A. Al-Jallad (ed.), *Arabic in Context, Celebrating 400 Years of Arabic at Leiden*. Leiden: Brill, 3–34.

Kossmann, M. 1999. *Essai sur la phonologie du proto-berbère*. Cologne: Rüdiger Köppe.

Kossmann, M. 2012. "Chapter 2: Berber", in Z. Frajzyngier and E. Shay (eds), *The Afroasiatic Languages*. Cambridge: Cambridge University Press, 18–101.

Kossmann, M. 2013a. *The Arabic Influence on Northern Berber*. Leiden and Boston: Brill.

Kossmann, M. 2013b. *A Grammatical Sketch of Ghadames Berber (Libya)*. Cologne: Rüdiger Köppe.

Kossmann, M. Forthcoming. "Berber subclassification", in R. Vossen (ed.), *The Oxford Handbook of African Languages*.

Lane, E.W. 1863–1893. *An Arabic–English Lexicon*. London: Williams & Norgate.

Lanfry, J. 1973. *Ghadamès II: Glossaire (Parler des Ayt Waziten)*. s.l.: Le Fichier Périodique.

Leslau, W. 1987. *Comparative Dictionary of Geʿez (Classical Ethiopic)*. Wiesbaden: Harrassowitz.

Naumann, C. Unpublished. *Siwi–English–Arabic Dictionary*.

Nöldeke, T. 1904. *Compendious Syriac Grammar*. Translated from the second and improved German edition by James A. Crichton. London: Williams & Norgate.

Olmo Lete, G. del and J. Sanmartín. 2003. *A Dictionary of the Ugaritic Language in the Alphabetic Tradition*. Translated by W.G.E. Watson. Leiden and Boston: Brill.

Oussikoum, B. 2013. *Dictionnaire Amazighe–Français. Le parler des Ayt Wirra, Moyen Atlas – Maroc*. Rabat: IRCAM.

Prasse, K.-G. 1972. *Manuel de grammaire touaregue (tăhăggart). I–III: Phonétique – Ecriture – Pronom*. Copenhagen: Akademisk Forlag.

Prasse, K.-G. 1973. *Manuel de grammaire touaregue (tăhăggart). VI–VII: Verbe*. Copenhagen: Akademisk Forlag.

Prasse, K.-G. 1974. *Manuel de grammaire touaregue (tăhăggart). IV–V: Nom*. Copenhagen: Akademisk Forlag.

Prasse, K.-G., G. Alojaly and G. Mohamed. 1998. *Lexique Touareg–Français. Deuxième édition revue et augmentée*. Copenhagen: Museum Tusculanum Press.

Putten, M. van. 2014. *A Grammar of Awjila Berber (Libya). Based on Umberto Paradisi's Work*. Cologne: Rüdiger Köppe.

Putten, M. van. 2015. "Some notes on the historical consonantism of Awjila", *Folia Orientalia* 51, 257–74.

Putten, M. van. 2016a [2015]. "Noun prefixes in eastern Berber", *Rivista degli Studi Orientali* 88/1–4, 11–37.

Putten, M. van. 2016b. "The origin of front vowel nominal prefixes in Berber", *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 116/1, 11–39.

Putten, M. van. Forthcoming. "The secondary origin of the Berber e vowel".

Putten, M. van. 2017. "The development of the triphthongs in Quranic and Classical Arabic", *Arabian Epigraphic Notes* 3, 47–74.

Soldt, W. van 2005. *The Topography of the City-State of Ugarit*. Münster: Ugarit-Verlag.

Soldt, W. van. 2010. "The Ugaritic suffixes *-āyu* and *-ānu*", in D. Shehata, F. Weierhäuser and K.V. Zand (eds), *Von Göttern und Menschen. Beiträge zu Literatur und Geschichte des Alten Orients. Festschrift für Brigitte Groneberg*. Leiden and Boston: Brill, 307–27.

Soldt, W. van. 2012. "On personal names ending in *-āyu* in the Amarna letters and in texts from Canaan", in R. Hasselbach and N. Pat-El (eds), *Language and Nature. Papers Presented to John Huehnergard on the Occasion of His 60th Birthday*. Chicaco, IL: The Oriental Institute of the University of Chicago, 443–50.

Tropper, J. 2000. *Ugaritische Grammatik*. Münster: Ugarit-Verlag.

Tropper, J. 2002. *Altäthiopisch. Grammatik des Geʿez mit Übungstexten und Glossar*. Münster: Ugarit-Verlag.

Vycichl, W. 1989. "Études de phonétique et d'étymologie berbères", *Journée d'Études de Linguistique Berbère. Samedi 11 Mars 1989 à la Sorbonne*. Paris: Publications Langues'O, 1–18.

Wilson-Wright, A. 2014. "The word for 'one' in Proto-Semitic", *Journal of Semitic Studies* 59/1, 1–13.