Ordinal numerals as a criterion for subclassification: the case of semitic

Suchard, B.D.

Transactions of the Philological Society

PhilSoc The Philological Society

Transactions of the Philological Society Volume 00 (2025) 1–17 doi: 10.1111/1467-968x.70003

ORDINAL NUMERALS AS A CRITERION FOR SUBCLASSIFICATION: THE CASE OF SEMITIC

By Benjamin D. Suchard

KU Leuven, Leuven, Belgium and Leiden University, Leiden, the Netherlands

(Submitted: 17 April, 2025; Accepted: 22 September, 2025)

Abstract

This article explores how ordinal numerals (like *first*, *second* and *third*) can help classify languages, focusing on the Semitic language family. Ordinals are often formed according to productive derivational processes, but as a separate word class, they may retain archaic morphology that is otherwise lost from the language. Together with the high propensity of 'first' and, less frequently, 'second' to be formed through suppletion, this makes them highly valuable for diachronic linguistic analysis. The article identifies four main patterns of ordinal formation across different Semitic languages. Together with innovations in the lowest two ordinals, these can be correlated with more and less accepted subgroupings within Semitic as a whole. Concretely, they offer support for the widely accepted West Semitic, Northwest Semitic and Abyssinian (Ethio-Semitic) clades as well as the recently proposed Aramaeo-Canaanite clade and provide new evidence for the further subclassification of Abyssinian that matches other recent proposals. However, no evidence was found to support the debated Central Semitic or South Semitic groupings. Given the accurate identification of accepted subgroupings and high level of detail, this approach holds promise for the classification of other language families, especially where other linguistic data are scarce.

1. Introduction

Ordinals—numeral expressions like *first*, *second*, *third*, etc.—occupy a unique niche in the linguistic ecosystem. As the cross-linguistically most common category of numeral derivatives (Veselinova 2004), they often constitute independent lexemes while maintaining paradigmatic relations with other types of numerals and with each other. This allows for ordinals to serve as exemplars of productive derivational procedures, but also to retain archaic morphological and lexical material that was lost in other parts of the language. Together with the propensity of words for 'first' and, in some languages, 'second' to innovate suppletive forms compared to their associated cardinals (i.e. 'one' and 'two'; Stolz & Robbers 2016), this double nature of ordinal numerals makes them particularly interesting from a diachronic perspective.

In this paper, we will examine the formation of the first ten ordinals in languages belonging to the Semitic language family [semi1276] and the implications of these different strategies for its subclassification. For reference, the corresponding Proto-Semitic cardinals from 'one' through 'ten' are shown in Table 1 (note that 'three'–'ten' mark the masculine with what is ordinarily a feminine suffix, leaving the actual feminine unmarked).[1] We will see that nearly every innovation in the realm of ordinal derivation bears on the subclassification of these languages, a purpose for which they have not previously been used. After introducing the

[1] For the details of these reconstructions, see Suchard (2025). On 'one' in particular, see Wilson-Wright (2014).

Table 1. Cardinal stems 'one'–'ten' in Proto-Semitic

meaning	masculine	feminine
'one'	*ʕist-ān- (replaced by *ʔaḥad- in most languages)	*ʕist-ay- (replaced by *ʔaḥad-(a)t- in most languages)
'two'	*θn-	*θin-t-, *θn-at-
'three'	*ɬalāθ-(a)t-	*ɬalāθ-
'four'	*ʔarbaʕ-(a)t-	*ʔarbaʕ-
'five'	*χam(i)s-(a)t-	*χam(i)s-
'six'	*sidθ-at-	*sidθ-
'seven'	*t͡sabʕ-at- (changed to *sabʕ-at- in most languages)	*t͡sabʕ- (changed to *sabʕ- in most languages)
'eight'	*θamāniy-(a)t-	*θamāniy-
'nine'	*tisʕ-at-	*tisʕ-
'ten'	*ʕaɬar-(a)t-	*ʕiɬr-

typological background of ordinals, we will consider the main strategies for ordinal formation in Semitic and relate them to previously suggested theories of this family's internal relationships. This will demonstrate the great and largely untapped potential of ordinal numerals to contribute to linguistic classification.

2. Typological background of ordinal numerals

Stolz & Veselinova (2013) present a cross-linguistic survey of the morphological relationship between cardinals and ordinals, stating that the latter 'typically identify the position a given member of a set occupies relative to other members of the same set'. In languages that use numerals to express ordinality (as opposed to temporal adverbs, for instance), there is a distinction between languages where ordinals are morphologically marked and those whose ordinals and cardinals are formally identical. Independent of this distinction, certain ordinals may be suppletive, that is not derived from the corresponding cardinal. Most commonly, this is the case for the ordinal 'first'. In some languages, concentrated in Europe, it is the first several ordinals, usually 'first' and 'second', that are suppletive (confirmed by Stolz & Robbers 2016, who compare two samples of European and Mesoamerican languages in this regard; see also the worldwide sample of Veselinova 1997). A new proposal to explain the suppletion of 'first' in the great majority of languages was recently put forward by Bach (2021), who suggests that this tendency arises from competition between cardinal-derived ordinals and another, non-numeral series of ranking adjectives, including words for 'first' and 'last'.

Among languages with suppletive ordinals, there are some where they coexist with cardinal-derived synonyms, while in others, only the suppletive forms exist. Suppletive forms may also make use of derivational morphology, applying it to a different stem than that of the cardinal (Stolz & Robbers 2016, 584–85). All these factors combine to allow for a language to be characterised as, for example 'first, two, three', with a suppletive ordinal corresponding to 'one' and morphologically unmarked ordinals from 'two' upwards; 'first/one-th, two-th, three-th', with all ordinals being derived from the cardinals and first derived ordinal coexisting with a suppletive form; 'first, second, three-th', with suppletive forms for the first two ordinals and derivation from the cardinals from 'three' upwards; and so forth.[2]

[2] While these terms are not used by Stolz & Veselinova, we could refer to suppletive ordinals that contain derivational morphology as 'firs-th' and 'secon-th'.

Veselinova (1997) studies the diachronic sources of suppletive ordinals and how ordinals are derived from cardinals in a sample of 47 languages. She identifies suffixation as the most common morphological procedure used to derive ordinals (found in 49% of languages that have them, 46% of her sample in total), followed at some distance by prefixation, circumfixation, postposition of a separate particle and compounding. Several other syntactic means of marking ordinals are marginally represented in her sample. As sources of suppletive 'first' cardinals, Veselinova identifies lexemes meaning 'to be in front, precede'; 'to begin, be early'; borrowing from other languages; and in one case, a word meaning 'headman, leader'. Suppletive words for 'second' were found to come from lexemes meaning 'other', 'behind', 'following', 'on this side', 'again' or, like some words for 'first', to have been borrowed.

This brief survey of the typological literature shows that ordinals are a frequently occurring class of derived numerals. There is a strong tendency for the ordinal 'first' to be suppletive and a weaker, partially areal tendency towards suppletion of the 'second' ordinal. When ordinals are derived from cardinal numerals, languages of the world make use of the full range of morphological procedures available to them to do so; these include the use of non-concatenative 'templates', not mentioned by Veselinova despite the presence of Modern Hebrew [hebr1245] in her sample. As we shall see, it is this cross-linguistically rare kind of derivation that predominates not just in Hebrew ordinal formation, but in Semitic as a whole.

3. Ordinal formation in the Semitic languages

As is typologically to be expected, we find a high degree of suppletion in the various words for 'first' and, in some languages, 'second'. We will discuss these first, before considering the main processes used to form the remaining ordinals. A representative sample of the suppletive 'first' ordinals is given in Table 2. Besides truly suppletive ordinals, with no morphological relation to the corresponding cardinal, we will also consider irregularly derived ordinals, that is those which are derived from the cardinal but not according to the productive morphological procedure seen in other ordinals. The following sections then discuss the four main categories (with several subcategories) of derived ordinals. Examples of these are presented in Table 3.

The languages under consideration span the breadth of the Semitic family. In each case, we will focus on the earliest attested stage of each language; thus, the modern varieties of Arabic, Hebrew and Aramaic are mostly excluded. Certain modern and poorly attested ancient languages have been left out of consideration due to a lack of reliable data. See Table 4 for an overview of the languages under discussion.

Table 2. Suppletive 'first' ordinals in several Semitic languages

Language	'first'	Base lexeme	Base lexeme meaning
Aramaic	*qaḏm-āy* etc.	*qəḏam* etc.	'to precede'
Sabaic	*qdm*	*qdm*	'to precede'
Ge'ez	*qadāmi*	*qadam-a*	'to precede'
Amharic	*(yä-)mä-ğämmär-əya*	*ğämmär-ä*	'to begin'
Akkadian	*pan-i-*	*pan-ûm*	'to face'
Old Babylonian	*maḫr-i-*	*maḫār-um*	'to face'
Old Babylonian	*rēš-t-i-*	*rēš-um*	'head'
Biblical Hebrew	*rīš-ōn*	*rōš*	'head'
Arabic	*ʔawwal-* etc.	**ʔ-w-l*?	'to be early'?
Ugaritic	*prʿ*	**p-r-* ʿ?	'to surpass'?
Jibbali	*énfí*	?	?

Table 3. The main ordinal patterns of Semitic

Language	'four'	'fourth'	Pattern/suffix
Old Assyrian	*arbe*	*rebi'-*	**CaCiC-*
Old Babylonian	*erbe*	*rebu-*	**CaCuC-*
Ge'ez	*ʾarbāʿ*	*rābaʿ*	**CāCiC-*
		rābʿāy	**CāCC-āy*
Biblical Hebrew	*ʔarbaʕ*	*rəḇīʕī*	**CaCīC-īy-*
Amharic	*arat*	*aratäññä*	**-äññä*

Table 4. Semitic languages discussed in this paper

Language name	Glottocode	Part of (lowest uncontroversial subgroup)	Glottocode
Old Assyrian	[olda1248]	Akkadian	[akka1240]
Old Babylonian	[oldb1249]	Akkadian	[akka1240]
Sabaic	[saba1279]	West Semitic	[west2786]
Ugaritic	[ugar1238]	Northwest Semitic	[nort3165]
Aramaic	[aram1259]	Northwest Semitic	[nort3165]
Syriac	[clas1252]	Eastern Aramaic	[east2680]
Turoyo	[turo1239]	Eastern Aramaic	[east2680]
Neo-Mandaic	[nucl1706]	Eastern Aramaic	[east2680]
Jewish Betanure	[beta1257]	North-Eastern Neo-Aramaic	[nort3241]
Western Neo-Aramaic	[west2763]	Aramaic	[aram1259]
Biblical Hebrew	[bibl1238]	Canaanite	[cana1267]
Classical Arabic	[clas1259]	Arabic	[arab1395]
Maltese	[malt1254]	North African Arabic	[nort3191]
Ge'ez	[geez1241]	Abyssinian (= Ethio-Semitic)[a]	[ethi1244]
Tigre	[tigr1270]	Abyssinian	[ethi1244]
Tigrinya	[tigr1271]	Abyssinian	[ethi1244]
Amharic	[amha1245]	South Abyssinian (= South Ethio-Semitic)	[sout3078]
Argobba	[argo1244]	South Abyssinian	[sout3078]
Harari	[hara1271]	South Abyssinian	[sout3078]
Ezha	[ezha1238]	South Abyssinian	[sout3078]
Zay	[zayy1238]	South Abyssinian	[sout3078]
Wolane	[wola1253]	South Abyssinian	[sout3078]
Silt'e	[silt1240]	South Abyssinian	[sout3078]
Inor	[inor1240]	South Abyssinian	[sout3078]
Mesqan	[mesq1240]	South Abyssinian	[sout3078]
Kistane	[kist1241]	South Abyssinian	[sout3078]
Gafat	[gafa1240]	South Abyssinian	[sout3078]
Mehri	[mehr1241]	Modern South Arabian	[mode1252]
Jibbali	[sheh1240]	Modern South Arabian	[mode1252]

[a]The term *Ethio-Semitic* is infelicitous in that it would seem to exclude speakers of these languages from Eritrea. *Abyssinian*, deriving from the ethnonym *ḥabäša* (Ge'ez: *ḥabaśat*, Sabaic: *ḥbs²t*), originally refers to the inhabitants of the kingdom of Aksum. Today, it is especially used by speakers of Tigrinya and Amharic, but also more widely (mostly in reference to Semitic-speaking Christian populations). While this still excludes a fair number of speakers, I find it preferable, in the absence of a fully ideal term for this subgroup of Semitic.

3.1. Suppletive and irregular words for 'first' and 'second'

In nearly all branches of Semitic, a suppletive ordinal 'first' is derived from the noun 'face' or a verb for 'to face', like Old Assyrian and Old Babylonian *pan-i-*, Old Babylonian *maḫr-i-*, verbs meaning 'to be in front, early, begin',[3] like Aramaic *qaḏm-āy* etc., Sabaic *qdm*, Ge'ez *qadāmi*, Tigrinya *qädam-ay*, Tigre *qadām*, Amharic (*yä-*)*mä-ǧämmär-əya* etc., or, in the case of Old Babylonian *rēš-t-i-*, Biblical Hebrew *rīš-ōn*, from a noun for 'head'. Ugaritic *pr*ʿ 'first' is of

[3] These meanings are often colexified in the relevant languages.

unknown origin but may be etymologically connected with Classical Arabic *faraʕa* 'to excel, surpass'. Classical Arabic *ʔawwal-* is not synchronically transparent but may also originally derive from a root meaning 'to be early, prominent'.[4] This word was borrowed into Mehri as *ḥ-āwəl-ay* and into Tigre as *ʾawal(−āy)*. Jibbali *énfí* means 'first' as well as 'previous, former'.

As predicted by Bach (2021), many of these suppletive 'first' cardinals are formally similar to the word for 'last' in the same language. Compare Old Assyrian and Old Babylonian *wark-i-*, Aramaic *ʔaḥr-āy* etc., Ge'ez *daḥāri*, Amharic (*yä-*)*mä-č̣ärräš-a* and Biblical Hebrew *ʔaḥărōn*. Proto-Arabic **ʔawwal-* (possibly < **ʔa-ʔwal-*; feminine **ʔūl-ay-* < **ʔuwl-ay-*),[5] however, more closely resembles the adjective **ʔāḫar-* (< **ʔa-ʔḫar-*; feminine **ʔuḫr-ay-*) 'other' than **ʔāḫir-* 'last' (feminine **ʔāḫir-at-*).

Old Assyrian and Old Babylonian also use the cardinals *ištên*/*ištêt* 'one (m./f.)' as ordinals 'first' (Kouwenberg 2017, 282; Streck 2022, 1:450).[6] Proto-Aramaic **θiny-ān* 'second' is derived from the root of **θr-ēn* 'two' in a way that is unique to this ordinal, perhaps influenced by **ʔuχr-ān* 'other' or the Proto-Semitic word for 'one, first', **ʕist-ān-* (although this is otherwise unattested in Aramaic). Suppletive forms for 'second' are found in Ge'ez *bāʿəd* 'second, other' and *dāgəm*, *kāʿəb*, both of uncertain etymology (Leslau 2006, s.vv.), and in Mehri *məšēġər* and Jibbali *məšáġər*, also meaning 'other'.

While these latter forms may form a shared innovation of Modern South Arabian, the many different words for 'first' notably cut across language groups. The frequency of the root *q-d-m* 'to be in front, early' reflects its widespread inheritance from Proto-Semitic. Since the attested forms cannot all be derived from a unified reconstruction, most of them are presumably independent innovations. A single ancestral form **qadāmi* can, however, be posited for Ge'ez *qadāmi*, Tigrinya *qädam-ay* (with a morphological change in the final syllable, see below) and Tigre *qadām*; the fact that this ordinal is formed according to the uniquely Abyssinian **CaCāCi* agent noun pattern (which in Ge'ez and Tigrinya also forms active participles; cf. Kogan 2015, 435) suggests that this is a shared Proto-Abyssinian innovation which was replaced by later innovations in South Abyssinian (see below).

3.2. *The *CaC̆īC- and *CaC̆ŭC- patterns*

We now come to the productive means of deriving ordinals from cardinals, which in nearly all branches of Semitic is done by inserting the root consonants (represented here as *CCC*) into a particular pattern. **CaCiC-* is the normal pattern of ordinals in Old Assyrian, for example *šani-* 'second' (with loss of the historical third root consonant **y*), *šališ-* 'third', *rabi'-* 'fourth' (Kouwenberg 2017, 282). Both vowels are short (*pace* Lipiński 2001, 301), as can be seen from the elision of the second vowel before a single consonant, as in the masculine singular nominative forms **šališ-um* > *šalš-um* and *rabi'-um* > *rab'-um*; this Akkadian syncope rule would not apply if the preceding vowel were long (Huehnergard 2011, 24). **CaCiC-* is a productive adjectival pattern in Akkadian which otherwise forms verbal adjectives, for example *paris-* 'cut' from the verb *parās-um* 'to cut'; it is also attested, though more rarely, in other branches (Fox 2003, 165–71). This pattern also forms some of the nouns expressing fractions in Old Babylonian, like *šališ-t-* 'one third', *sabī-t-* 'one seventh', the remainder showing a *CaCuC-t-* pattern (Streck 2022, 1:452).

[4] Cf. possible derivations from the same root like Akkadian *awīl-* '(free) man, citizen with full rights'; Arabic **ʔāl-* 'lineage', perhaps originally 'ancestry, ancestors'. A reviewer further suggests connecting Arabic *waliya* 'to be in charge', but this is formally difficult.

[5] For example, Classical Arabic *ʔawwal-*, Maltese *l-ewwel*.

[6] Cf. Biblical Hebrew *yōm ʔeḥāḏ* 'one day' or 'a first day' in Genesis 1:5.

For the regular ordinals, Old Babylonian attests the corresponding *CaCuC*- pattern from 'third' onwards, for example *šaluš*- 'third', *rebu*- (< **rabuʕ*-) 'fourth', *ḫamuš*- 'fifth' (Streck 2022, 1:449–50). This pattern also forms adjectives, although it is considerably less common than **CaCiC*- (Fox 2003, 173–77). The word for 'second', *šani*-, can be explained in different ways: as a **CaCiC*- formation of the Assyrian type (**θaniy*-), as a **CaCuC*- formation (**θanuy*-) with **uy* contracting to *i*, or, given its additional meaning of 'other', as a verbal adjective of the verb *šanûm* 'to change, be different' (historically unrelated to the cardinal 'two', see the section on **CāCiC*- below; cf. Huehnergard 2011, 426). Together with the higher productivity of **CaCiC*-, residual **CaCuC*- forms in Old Assyrian—*rabū-t*- 'fourth (f.)', *ḫamuš-ni* 'our fifth (witness)' and *ḫamuš-t*-, a period of time—suggest that the **CaCuC*- pattern is more original than **CaCiC*- (Kouwenberg 2017, 281–83; *pace* De Ridder 2021).

In other languages, traces of this pattern occur with a specialised meaning: there, they refer to periods of time, often days. In this function, they can function similarly to either cardinals (e.g. '3 days') or ordinals ('the third day'). A full set of these specialised numerals occurs in Ge'ez, ranging from *ʾəḥud* 'first (day)' and *sanuy* 'two (days), second (day)' to *ʿaśur* 'ten(th) (day/s)'; Suchard (2023a) argues that they go back to a **CaCuC*- pattern like that of Akkadian. An isolated cognate occurs in Biblical Hebrew *ʕāśōr* 'ten(th) (day/s)', which similarly comes from **ʕałur*-.

Other forms point to a **CaCūC*- pattern with a long vowel in the second syllable. These include vernacular Arabic names for days of the week like *ʔaθ-θalūθ* 'Tuesday' and *ʔar-rabūʕ* 'Wednesday' (Sanaani; Qafisheh 1992, 144), borrowed into Tigre as *ʾattalud* and *ʾarrabəʿ*, respectively (Elias 2014, 57). Similarly, Biblical Hebrew *šāḇūaʕ* 'seven (days/years)' reflects **sabūʕ*-. Meanwhile, Modern South Arabian specialised numerals like Mehri *śīləṯ* 'three (days)', *rība* 'four (days)', and *xáyməh* 'five (days)' (Rubin 2018, 300) point to a pattern like **CaCUC*-, where **U* is any high vowel (Dufour 2021); hence, they are compatible with both **CaCuC*- and **CaCūC*-.

We can reconcile these different patterns by noting that Akkadian often has a short vowel in the second syllable of adjectives where other languages have a long vowel (Huehnergard 2006, 10). Outside Akkadian, adjectives with a short vowel in the second syllable are most common in Hebrew, which fits nicely with the attestation in that language of both *ʕāśōr* < **ʕałur*- with a short vowel and *šāḇūaʕ* < **sabūʕ*- with a long vowel. Huehnergard suggests the languages other than Akkadian underwent a shared innovation morphologically lengthening the vowel in these adjective patterns; alternatively, Akkadian may have undergone analogical shortening, on the model of the conditioned shortening in a closed syllable of the feminine formed with the suffix **-t*-. Either way, this attested variation in vowel length allows us to group the Akkadian ordinals and the other languages' specialised numerals together and reconstruct the ancestral pattern as **CaC̆ŭC*-, the symbol **ŭ* expressing the uncertainty concerning vowel length.

A possible reflection of the **CaCiC*- pattern outside Akkadian, on the other hand, occurs in Classical Arabic *al-ḫamīs* 'Thursday', Maltese *Il-Ħamis* and related vernacular Arabic forms. As just argued for **CaCuC*- and **CaCūC*-, the difference in vowel length is understandable and can be represented by a reconstruction as **CaC̆īC*-. But given the lack of **CaCīC*- ordinals or their reflexes in Arabic otherwise, this may rather constitute a borrowing—from Hebrew (*ḥămīš-ī* 'fifth') or Aramaic (**ḫamīš-āy* 'idem') with loss of the redundant adjectival suffix,[7] or from some other language, in which case the word's value for numeral reconstruction is unclear.

[7] On the borrowing of Hebrew or Aramaic *š* as Arabic *s*, see most recently Suchard (2023b).

3.3. *The *CāCiC- and *CāCC-āy patterns*

The most widely attested way to form regular ordinals is the **CāCiC-* pattern, for example Ge'ez *śāləs*, Tigre *sāləs*, Classical Arabic *θāliθ-*, Maltese *it–tielet*, Mehri *śōləṯ*, Jibbali *śóləṯ*,[8] all 'third'. The Ancient South Arabian ordinals like Old Sabaic *s²lṯ* are probably also to be assigned to this pattern, although it is not known with which vowels they were pronounced. In the same way, the Ugaritic ordinals like *ṯlṯ* are interpreted as /tāliṯ–/ etc. by Tropper (2012, 364), among others (but see below).

Formally, the pattern is identical to the **CāCiC-* pattern that forms active participles of basic verbs (Fox 2003, 237–43). In this function, this pattern is also attested in Akkadian, Aramaic and Canaanite (but not productively in Modern South Arabian or Abyssinian, apart from Tigre). It can thus securely be reconstructed for Proto-Semitic.

Amharic attests the suppletive **CāCiC-* ordinal *dagəm*, also *dagm-äňňa* with the productive ordinal suffix (see below), with the meaning 'a second time, again', but this is likely a borrowing from Ge'ez (Leslau 1995, 263). Another formal reflex of this pattern, however, is found in some Gurage (South Abyssinian) languages and Harari, where we once again find a specialization to counting periods of time (Hetzron 1977, 112; and see especially the detailed discussions by Rubin 2023, 2024a, 2024b). After independent lexemes for 'yesterday', 'tomorrow', 'last year' and 'next year', etymological ordinals are used, with the current day or year included in the count, as in Ezha (Central West Gurage) **łāliθ-am* 'third (m.acc.)' > *sarsə* 'the year after next', **rābiɬ-am* 'fourth (m.acc.)' > *nabə* 'three years from now', **rābiɬ-t-am* 'fourth (f.acc.)' > *nabətə* '3 days from today' (Endalew 2022, 176–79).[9] Compare Wolane *sāys* 'period of 2 years' (Meyer 2006, 161), Ge'ez *śāləs-t-a* 'on the third day' (Leslau 2006, s.v.), and Tigrinya *saləs-ti* '3 days, every third day', *rabəʿ-ti* '4 days' (Kane 2000, s.vv.). The use of formally unmarked masculine forms to count years and feminine forms, marked with **-t-*, to count days can be understood with reference to Ge'ez *ʿām* (m.) 'year' and *ʿəlat* (f.), *maʿalt* (f.) 'day', assuming these words are reconstructible to Proto-Abyssinian.

The Ge'ez form *sānəy* 'the next day' differs from those just cited in using the unmarked, masculine form to refer to a day instead of a year.[10] And while Abyssinian typically replaces the Proto-Semitic cardinal **θn-* 'two' with **kəlʔ-ē* (originally 'pair'), a change that is also reflected in the synchronically regular ordinal *kāləʾ* 'second', *sānəy* preserves the old root for 'two', suggesting that it is an archaism and reflects a separate case of the shift from ordinal to specialised numeral counting a period of time. The masculine form may then reflect the masculine gender of the Proto-Semitic word for 'day', **yawm-*, preserved in Ge'ez as the adverb *yom* 'today'. We find similar adverbs referring to past years with an etymological feminine suffix in modern varieties of Aramaic, for example Western Neo-Aramaic *ṯōlṯaṯ* and *rēbʿaṯ*, Turoyo *təltaḏ*/*taltaḏ* and *rawʿaḏ*, Jewish Betanure (North-Eastern Neo-Aramaic) *tarṯel* and *roʾel*, all '2 years ago' and '3 years ago', respectively, and Neo-Mandaic *taltad* '2 years ago'; Syriac very rarely attests to the related forms *tåltaṯ* and *r[å]ḇʿaṯ*[11] (Mutzafi 2014, 66–67; Rubin 2023, 787). These can all derive from Proto-Aramaic reconstructions like **θāliθ-at* and **rābiɬ-at*. Formally, these are feminine singular forms of **CāCiC-* adjectives; on the preservation of the feminine suffix **-at* in Aramaic adverbs, now see Suchard (2024). Again, the gender agreement matches the basic term for the relevant period of time, in this case Proto-Aramaic **šan-ā* < Proto-Semitic **san-(a)t-* (f.) 'year'.

[8] For higher ordinals, Jibbali uses the corresponding cardinals (Rubin 2014, 282).

[9] The etymological accusative is used adverbially here.

[10] Ge'ez also attests forms with a feminine suffix, *sānit(ā)* and *sanit*.

[11] The cited form *raḇʾaṯ* is presumably a hypercorrection, as sequences of *aḇ* and *åḇ* are phonetically identical in the East Syriac pronunciation (Rudolf & Waltisberg 2020, 26–27).

Besides these temporal adverbs, another possible trace of a **CāCiC-* ordinal in Aramaic occurs in Biblical Aramaic *tlt?* 'as the third' if this originally reflected an adverbial form like **tālít-ā* (cf. Suchard 2022, 224). A possible reflex in Hebrew occurs in the adjective *šōne* 'different', formally corresponding to reflexes of **θāniy-* 'second' in other languages. Given the meaning, however, this is more likely a reflex of the root **s-n-w* 'to change, be different' (cf. Ugaritic */š-n-w/*, Aramaic *š-n-y*), which in Hebrew has merged with **θ-n-y* 'to repeat, do again' (cf. Aramaic *t-n-y*, Classical Arabic *θ-n-y*), the root that is associated with the cardinal **θn-* 'two'.

Ge'ez, Tigre, and Tigrinya all attest ordinals in which the **CāCiC-* pattern is extended with a productive adjectivizing suffix. Together with a regular syncope rule, this yields forms like Ge'ez *śāls-āy*, Tigre *sāls-āy*, and Tigrinya *sals-ay* for 'third'. Ge'ez also attests forms like *śāls-āwi*, with a different adjectivizing suffix. In Tigrinya and Ge'ez, these suffixes were also attached to **qadāmi* 'first', yielding Tigrinya *qädam-ay* and Ge'ez *qadām-āy*, *qadām-āwi* besides retained *qadāmi*.

In Tigrinya, these forms have fully replaced the **CāCiC-* pattern for ordinals, while in Ge'ez and Tigre the long and short forms of 'second'–'tenth' exist side by side. This shows that the full replacement of the **CāCiC-* pattern seen in Tigrinya was not a shared innovation in an ancestor of these languages. The creation of the extended **CāCC-āy* pattern, however, may be a shared innovation or can have occurred separately in the various languages, the new formation spreading through contact, a question that we will return to below.

*3.4. The *CaCīC-īy/āy- pattern*

Similar to the pattern discussed immediately above, Canaanite (including Hebrew) and Aramaic form the ordinals by attaching a productive adjectivising suffix to a pattern that is itself already adjectival in these languages (cf. Bauer & Leander 1922, 1:628; Fox 2003, 187–96). The vowel in the suffix differs between these languages, Hebrew attesting *ī* and Aramaic a reflex of **ā*; both vowels are attested in other languages' counterparts of this suffix (e.g. Classical Arabic *-iyy-* < **-īy-*; Ge'ez *-āy*), complicating its reconstruction (see also Suchard 2021). Following regular sound laws, Hebrew and Aramaic both regularly reduce the vowel in the first syllable, yielding forms like **θalīθ-īy/āy-* > Biblical Hebrew *šəlīš-ī*, Biblical Aramaic *təlīṯ-āy* 'third' and **rabīʕ-īy/āy-* > Biblical Hebrew *rəḇīʕ-ī*, Biblical Aramaic *rəḇīʕ-āy* 'fourth'.

Unexpected forms occur with the meanings 'second' and 'sixth'. The irregular derivation of forms for 'second' like Biblical Aramaic *tiny-ān* was discussed above. Biblical Hebrew *šēn-ī* 'second' would seem to reflect **θin-īy-*, not the expected form **θanīy-īy-* (which should normally yield ***šəniyy-ī*; for the relevant sound changes, see Suchard 2019, 2020). Upon closer consideration, however, *šēn-ī* can go back to **θanīy-īy-* after all. The contraction of **īyī* to just **ī*, as in **θanīy-īy-* > **θan-īy-*, is paralleled by the same development in the masculine plural form of adjectives formed with the **-īy-* suffix, as in **yahūd-īy-* > *yəhūḏ-ī* 'Judahite', plural **yahūd-īy-īma* > **yahūd-īma* > *yəhūḏ-īm*. Furthermore, the raising of **a* to *ē* in **θan-īy-* > *šēn-ī*, apparently triggered by the following high front vowel and **y* glide, is paralleled by the same development in the personal names **ʕalīy-* 'exalted' > *ʕēlī* 'Eli' (cf. Classical Arabic *ʕaliyy-* 'Ali', also from **ʕalīy-*) and **lawīy-* > *lēwī* 'Levi'.[12] The retention of **a* (with subsequent lengthening to *ā*) in words like **naqīy-* > *nāqī* 'innocent' and **tsʔalīy-* > *ṣālī* 'roast(ed)' must then be analogical with other **CaCīC-* adjectives and nouns. The use of *lēwī* as a tribal name, 'Levite', may in fact share both developments posited here

[12] Also compare the raising of **a* to *e* before a consonant followed by **y*, for example **gady-* > *géḏī* 'kid' (prepausal form), **ʔab-yatar-* 'the Father is noble' > *ʔeḇ-yāṯār* 'Abiathar'.

for **θanīy-īy-* > *šēnī*, if it reflects a gentilic adjective **lawīy-īy-* derived from the personal name.

The cardinal stem **sidθ-* 'six' assimilates to **siθθ-* in all of Northwest Semitic. In Aramaic, the new root **s-θ-θ*—regularly shifting to *š-t–t* in later Aramaic—was introduced to the ordinal, yielding forms like Syriac *štiṯ-åy*.[13] Hebrew irregularly derives 'sixth' by simply attaching the adjectivising **-īy-* suffix to the cardinal stem, giving *šišš-ī*, perhaps due to the difficulty of pronouncing the expected form **saθīθ-īy-* > ***šəšīš-ī* with three identical sibilants.[14]

Different from the **CāCC-āy* ordinals discussed above, the unsuffixed **CaCīC-* pattern is not directly attested as a way to derive ordinals. Possible traces of such a **CaCīC-* ordinal pattern, however, can be found. In Aramaic, **CaCīC-* adjectives derive nouns referring to fractions, as in Qumran Aramaic *tlyt* 'one third', Imperial Aramaic *rbyʿ* and Syriac *rḇiʿ-to* 'one fourth'. As the shift from ordinals to fractions is typologically common (Fradin 2015), this supports the reconstruction of a **CaCīC-* ordinal pattern. A lexicalised form may also survive in Biblical Hebrew *šālīš* 'captain, officer', usually etymologised as originally referring to the third man on a chariot (after the main combatant and his driver).[15] Finally, there is the possibility that the ambiguous Ugaritic forms like *tlṯ* reflect a **CaCīC-* pattern instead of **CāCiC-* as is otherwise assumed (thus also e.g. Bordreuil & Pardee 2009, 36). This receives support from the form *ṯn* 'second', without the etymological third radical **y*. As Ugaritic more frequently elides **y* following long **ī* than following short **i* (Tropper 2012, 195–98), *ṯn* can more easily be reconstructed as **θanīy-* than as **θāniy-*. If this interpretation of the Ugaritic numerals is followed, **CaCīC-* ordinals can be reconstructed for Northwest Semitic as a whole, with Canaanite and Aramaic further extending the pattern to **CaCīC-īy-* and **CaCīC-āy-*.

3.5. *The *-äňňä suffix*

The South Abyssinian languages attest to a method of ordinal derivation unlike any we have seen so far, despite its great cross-linguistic frequency: suffixation. Without changing the cardinal stem, these languages form the ordinal by attaching a suffix. Amharic and its close relative Argobba use *-äňňa* (Amharic also *-əňňa* and regionally *-əyya*; Leslau 1995, 262). Ezha (Central West Gurage) *-ənnə*, which the other Central West Gurage varieties regularly degeminate to *-ənə* (Fekede & Völlmin 2023, 478), is similar to Inor (Peripheral West Gurage) *-əɲə* (Berhanu & Hetzron 2000, 59). The East Gurage languages Zay and Wolane attest *-äɲä* and *-eɲɛ*, respectively (Meyer 2005, 257; Meyer 2006, 161),[16] while Harari has the consonant-final form *-āň* (Leslau 1963). Mesqan (West Gurage) attests a longer suffix, *-älläɲä* (Ousman & Meyer 2023, 595); Leslau (1956, 74) compares similar forms from Kistane (North Gurage), Silt'e and Wolane (both East Gurage; cf. Meyer 2006, 161) and Amharic. Just the *l*-element seems to be attested in Gafat (a recently extinct relative of the Gurage languages) *ələč-əllä* 'second', which uses probable borrowings from Amharic for 'first' and 'third' and the

[13] The plosive realisation of the second radical *t* instead of expected *ṯ* [θ] is probably due to the cluster with the preceding *š* [ʃ].

[14] We could also imagine haplology changing **šašīš-ī* to **šīš-ī*, which then changed to *šišš-ī* by contamination with the cardinal stem *šišš-*.

[15] *šālīš* can also mean 'measure' or refer to some kind of musical instrument. If these meanings trace back to an older, unattested meaning of **'one third', this would provide another example of a fraction noun possibly deriving from a yet older ordinal meaning.

[16] In his grammar of Wolane, Meyer (2006, 161) judges that this suffix 'is probably a loan from Amharic', something that could also hold for similar suffixes in the other Gurage languages. In Zay, however, the Amharic loanword *ʔandeɲɲɛ* 'first' can be distinguished from the native term *had-eɲɛ*, derived from the inherited cardinal *had* 'one' (Meyer 2005, 257–59).

aberrant suffix *-əyyä*, otherwise known from dialectal Amharic, for 'fourth' and higher ordinals (Leslau 1956, 74). In the absence of systematic studies into South Abyssinian reconstruction, we may tentatively represent the ancestor of most of these suffixes as **-äňňä*, combining the vowel qualities and consonantal palatalisation seen in most languages and the gemination of the consonant seen in those languages that have not simplified their inherited geminates. The suffix is also productively used to derive nouns and (other) adjectives, for example Amharic *bet* 'house' ➔ *betäňňa* 'friend of the family', *hayl* 'power' ➔ *hayläňňa* 'strong' (Leslau 1995, 236).

A second striking feature of the South Abyssinian ordinals is the possibility of regularly deriving 'first' from 'one', as in Amharic *and* ➔ *and-äňňa* (Leslau 1995, 261), Harari *aḥatt* ➔ *aḥatt-āň* (Leslau 1963, s.v.) and Ezha (Central West Gurage) *att* ➔ *att-ənnə* (Endalew 2022, 73). Like the use of suffixes to derive ordinals itself, this 'one-th' derivation is shared with the distantly related Central and East Cushitic languages with which Abyssinian has long been in contact, for example Awngi [awng1244] (Central Cushitic) *ɨmpɨl* 'one' ➔ *ɨmpɨl-ant-* 'first', *laŋa* 'two' ➔ *laŋa-nt-* 'second', *ʃuχa* 'three' ➔ *ʃuχa-nt-* 'third' (Zelealem & Allene 2023, 155); Sidaama [sida1246] (Highland East Cushitic) *mít-e* 'one' ➔ *mit-ikkí* 'first', *šoól-e* 'four' ➔ *šool-kí* 'fourth', *ónt-e* 'five' ➔ *ont-ikkí* 'fifth' (Kawachi 2023, 327); Somali [soma1255] (Lowland East Cushitic) *sáddex* 'three' ➔ *saddex-aád* 'third' (Nilsson 2023, 358). Hence, the South Abyssinian abandonment of pattern-based derivation in favour of suffixation can be seen as a contact feature.

4. Implications for subclassification

Having examined the ordinal formations in a large sample of the Semitic languages, we will now consider the implications for subclassification in order to see how the distribution of the different attested derivational strategies compares to family trees of Semitic based on other criteria.

The most widely accepted subclassification of Semitic today is that put forward by Huehnergard & Rubin (2011). Following in the footsteps of Hetzron (1976), this subclassification is primarily based on shared morphological innovations. In nested list form, it consists of the following clades (names adapted to those used in this article):

- East Semitic
  - Eblaite [ebla1238][17]
  - Akkadian
    - Assyrian
    - Babylonian
- West Semitic
  - Abyssinian
  - Modern South Arabian
  - Central Semitic
    - Ancient South Arabian [sayh1236], including Sabaic
    - Arabic
    - Northwest Semitic
      - Aramaic
      - Canaanite
      - Ugaritic

[17] To my knowledge, no (phonetic spellings of) Eblaite ordinals are attested.

The key distinctive feature of this classification is the grouping of Arabic and Ancient South Arabian with Northwest Semitic as *Central Semitic*. Competing schemes often instead posit a *South Semitic* clade, consisting of Arabic, Ancient South Arabian, Abyssinian and Modern South Arabian. The Central Semitic clade is mainly characterised by the shape of the imperfective conjugation of the verb (Huehnergard 2005), a feature whose innovative nature remains contested (e.g. Kouwenberg 2010; see the discussion in Kogan 2015, 129–226; Bjøru & Pat-El 2021).

Despite ongoing debate, the higher-level groupings of Huehnergard and Rubin's classification have received confirmation from lexical evidence (Kitchen et al. 2009; Kogan 2015). At the lower levels, several more and less recent proposals for subclassification are relevant to the current discussion.

For Abyssinian, most scholars provisionally accept the detailed subclassification argued for by Hetzron (1972). Simplifying Hetzron's account somewhat, this can be represented as follows:[18]

- North Abyssinian
  - Ge'ez
  - Tigre
  - Tigrinya
- South Abyssinian
  - Transversal
    - Amharic–Argobba
    - Harari–East Gurage
  - Outer
    - Gafat–Kistane
    - Muher–West Gurage

Hetzron's identification of a South Abyssinian clade follows Cohen (1937) and has been adopted in the present discussion as well, in spite of the objections levelled by Hudson (2007, 2013) and Voigt (2009; see the response to Hudson 2013 by Meyer 2018). As noted by Bulakh & Kogan (2010), the shared features of North Abyssinian, however, are all archaisms—an insight they also attribute to Hetzron. Based on several innovations not shared by Tigre and/or Ge'ez, Bulakh & Kogan present two alternative subclassifications of Abyssinian, with Tigrinya forming a clade together with South Abyssinian and either Tigre or Ge'ez being the first language to branch off within Abyssinian as a whole. A further study by Bulakh & Kogan (2014) adds another innovation shared by all of Abyssinian apart from Tigre.[19] Based on their observations, it seems most likely that Tigre does indeed represent the first language to branch off from the rest of Abyssinian; to use a geographically imprecise term, we may refer to the clade encompassing everything but Tigre as Highland Abyssinian. Those innovative features Tigre shares with Tigrinya and South Abyssinian, but not Ge'ez, can then be understood as having spread through contact, possibly after the death of Ge'ez as an L1 in the early Middle Ages.

Turning to the Northwest Semitic clade, this is characterised by just a small number of shared innovations and was not recognised by Hetzron (1976), for instance, who preferred to identify Arabic as the closest relative of Canaanite. The Northwest Semitic credentials of Ugaritic have also been questioned (see Noorlander 2016). Within the now mostly accepted Northwest Semitic subgroup, Kogan (2015) finds strong lexical evidence for a special relationship between Canaanite and Ugaritic. Pat-El & Wilson-Wright (2018), on the other

[18] Muher [muhe1234], not previously mentioned, belongs to the North Gurage areal grouping.

[19] Bulakh & Kogan (2014) furthermore question the validity of Hetzron's Transversal clade within South Abyssinian. Ordinal formation does not provide any additional evidence on this matter.

hand, have recently argued for an Aramaeo-Canaanite clade to the exclusion of Ugaritic (see also Huehnergard & Pat-El 2019).

Comparing all these proposals for subclassification to the data on ordinals yields good correspondences. Akkadian attests the **CaCiC-* (Assyrian) and probably more archaic **CaCuC-* (Babylonian) ordinal patterns; besides the traces of **CaCuC-* in Assyrian identified by Kouwenberg (2017), the higher productivity of Akkadian *CaCiC-* compared to *CaCuC-* as an adjectival pattern makes it easier to explain the Assyrian use of *CaCiC-* for the ordinals as an innovation. We have seen that Babylonian *CaCuC-* can be connected with **CaCuC-* and **CaCūC-* forms used to count periods of time in other languages to arrive at a reconstructed **CaCŭC-* pattern. Given its broad distribution, this **CaCŭC-* pattern must be Proto-Semitic. The Old Babylonian use of *CaCuC-* to regularly form ordinals allows us to project this function back to **CaCŭC-* at the Proto-Semitic stage. Depending on the exact meaning and etymology of Old Assyrian *ḫamuš-t-*, referring to a period of time, the extension of **CaCŭC-* to count days, etc., could be Proto-Semitic as well; otherwise, it constitutes a shared innovation of West Semitic.

The **CaCŭC-* pattern does not regularly form ordinals in West Semitic. Instead, we mostly find **CāCiC-* (and the closely related **CāCC-āy* pattern). Crucially, those West Semitic clades that form the regular ordinals differently retain fossilised **CāCiC-* forms in certain temporal adverbs; as we have seen, this applies to both South Abyssinian and Northwest Semitic (specifically Aramaic). The use of the originally participial **CāCiC-* pattern to form ordinals can thus be reconstructed as a shared West Semitic innovation.

Within West Semitic, the **CāCC-āy* pattern and the irregular ordinal **qadāmi* (also **qadām-āy*) 'first' are limited to the 'North Abyssinian' languages: Ge'ez, Tigre, and Tigrinya. This could constitute evidence of shared North Abyssinian innovation, which is otherwise lacking. The remaining South Abyssinian languages, however, all share another innovation, further supporting the existence of this clade: the regular derivation of ordinals, including **ʾaḥad-ănnä* 'first', with the **-ănnä* suffix. It is thus possible that the apparent North Abyssinian innovations in the ordinals were in fact Proto-Abyssinian, later being lost in South Abyssinian. The coexistence of *CāCC-āy* (and, in Ge'ez, *CāCC-āwi*) with the inherited **CāCiC- > CāCəC* ordinals in Ge'ez and Tigre further suggests the possibility that the introduction of **CāCC-āy* was not a shared innovation, but either occurred several times in the separate languages or spread as a contact feature. This is supported by the apparent absence of **CāCC-āy* forms in South Abyssinian, speaking against their Proto-Abyssinian status.

As noted, the **CaCīC-īy/āy-* pattern is limited to Aramaic and Canaanite. Bearing in mind the possibility that Ugaritic attests its precursor, a **CaCīC-* ordinal pattern, this could reflect the same kind of independent addition of an adjectival suffix or spread through contact. In this case, **CaCīC-* can be taken as a shared Northwest Semitic innovation. The shared innovations in Aramaic and Canaanite ordinal formation probably go beyond the introduction of **CaCīC-īy/āy-* itself, however. The creation of Canaanite **šiššī-* 'sixth' was suggested above to have been motivated by the phonetically difficult shape of the expected form **šašīš-*. This form in turn goes back to an older reconstruction **saθīθ-āy/īy-*, with the same **s-θ-θ* root seen in Aramaic **šaθīθ-āy*. Ugaritic *ṯdṯ*, however, shows a different kind of assimilation that must independently go back to the inherited **s-d-θ* root. Moreover, the creation of an irregular derivation of 'two' seen in Aramaic **θiny-ān* suggests that we are not dealing with an ordinary case of an adjective like 'other' suppletively coming to mean 'second'; no morphological relationship with the cardinal would exist in that case.[20] Rather,

[20] Aramaic undergoes a sound change of **n* to **r* in the cardinal 'two' (Testen 1985), for example Biblical Aramaic *tər-ēn*. This would have made the derivational relationship with expected ***θanīy-āy* less transparent, but it can hardly have motivated the creation of **θiny-ān*, which also has **n* instead of **r* as its second radical.

the innovation of *θiny-ān may have been motivated by the irregular shape of *θan-īy-, as attested in Canaanite,[21] after this form contracted from the regular ordinal *θanīy-īy-. The shared anomalies seen in 'second' and 'sixth' thus suggests that the Aramaic and Canaanite ordinals underwent a post-Proto-Northwest Semitic stage of shared development. Evidence from the ordinals therefore supports the recent hypothesis of an Aramaeo-Canaanite clade within Northwest Semitic.

Finally, we may note that the most contentious clade in Huehnergard & Rubin's classification, Central Semitic, is also the only one without any associated innovation in the ordinals. At the same time, the diachrony of the ordinal numerals does not provide any support for the competing South Semitic hypothesis either.

5. Conclusion

Based exclusively on the evidence from ordinal formation discussed here, we could classify the Semitic languages as follows (leaving Ancient South Arabian out of consideration based on the lack of information on the ordinals' vowel pattern):

- Akkadian: *pan-i-* 'first' (retains Proto-Semitic **CaCŭC-* as *CaCuC-*)
  - Assyrian: *CaCiC-*
  - Babylonian: *maḫr-i-* 'first' *šani-* 'second'
- West Semitic: **CāCiC-*; Proto-Semitic **CaCŭC-* restricted to counting periods of time; **CāCiC-am* and **CāCiC-(a)t-am* for days, years (respectively)
  - Abyssinian: **qadāmi* 'first'
    - Tigre: *CāCəC/CāCC-āy* borrows *ʾawal(−āy)* 'first' from Arabic
    - Highland Abyssinian: **CāCC-a* and **CāCəC-t-a* for years, days (respectively)
      - Ge'ez: *bāʿəd*, *dāgəm*, *kāʿəb* (also *bāʿd-āy*, etc.) 'second' *CāCəC/CāCC-āy/CāCC-āwi*
      - Tigrinya: *CaCC-ay* (ordinal **CāCəC* lost)
      - South Abyssinian: **-äňňä*, including **ʔaḥad-äňňä* 'first'
  - Modern South Arabian: **məšɛġər* 'second'[22]
  - Arabic (including Maltese): **ʔawwal-* 'first'
  - Northwest Semitic (**CaCīC-*?)
    - Ugaritic: *prʿ* 'first'
    - Aramaeo-Canaanite: **CaCīC-īy/āy-*, including **θan-āy/īy-* 'second', **saθīθ-āy/īy-* 'sixth'
      - Aramaic: **qadm-āy* 'first' **θiny-ān* 'second' **CaCīC-āy*
      - Canaanite (Hebrew): **rīš-ōn* 'first' **šišš-īy* 'sixth' **CaCīC-īy*

As we have seen, practically all the subgroupings of Semitic languages that are widely accepted by current scholars show some characteristic innovation in the ordinals, sometimes several. This suggests that ordinal morphology can be a useful criterion for subclassification in other language families, too, especially where in-depth evidence from lexicon or morphology is otherwise lacking. At the same time, our investigation of the ordinals has provided new evidence supporting several recent proposals on Semitic subclassification. The use of **CāCC-a* and **CāCəC-t-a* forms deriving from ordinals to count years and days was found to occur in most branches of Abyssinian, but not Tigre, supporting the tentative suggestion by Bulakh & Kogan (2010, 2014) that these other languages form a clade to the exclusion of Tigre (if this lack of attestation is not due to chance). Lingering doubts about the genealogical unity of South Abyssinian as voiced by Hudson (2007, 2013) and Voigt (2009)

[21] Apart from Hebrew, Phoenician [phoe1238] (also Canaanite) attests 'second' as *šny* (Friedrich & Röllig 1999, 175). No data from other Canaanite languages are available.

[22] Reconstruction based on Hahn (2012); Dufour (2016, 2021).

are further challenged by the identification of the *-*ăn̆n̆ä* ordinal suffix and the formation of 'one-th' ordinals as shared innovations of this subgroup. The reality of the recently proposed Aramaeo-Canaanite clade (Pat-El & Wilson-Wright 2018) furthermore finds support in the shared Aramaic and Canaanite innovation of the *$CaC\bar{\imath}C$-$\bar{\imath}y/\bar{a}y$- pattern.

In terms of Stolz & Veselinova's (2013) classification, most Semitic languages can be characterised as 'first, two-th, three-th'; Old Assyrian and Old Babylonian belong to a mixed 'first/one, two-th, three-th' type. South Abyssinian shows a mix of 'one-th, two-th, three-th' and 'first/one-th, two-th, three-th' languages. This is probably due to contact with Cushitic languages belonging to these types. This contact situation can also explain the shift from pattern-based derivation as seen in the rest of Semitic to suffixation of the cardinal base.

Modern South Arabian exemplifies the less common 'first, second, three-th' type, while the 'overabundance' (Stolz & Robbers 2016) of terms for 'second' in Ge'ez makes it a 'first, second/two-th, three-th' language.[23] Interestingly, both of these developments can be related to a change in the cardinal 'two': Modern South Arabian underwent a conditioned change of *$n > r$ (parallel to that in Aramaic, see Note 20; Testen 1985), as in Mehri *ṯr-oh*, while Ge'ez and Abyssinian as a whole replaced the inherited numeral with *$kəlʔ\text{-}\bar{e}$. The resulting mismatch with the root of the inherited ordinal *$\theta\bar{a}niy$- may have stimulated the use of suppletive 'second' ordinals. Aramaic stands out for employing a 'second' ordinal that is derived from 'two', but in a different way than 'third' and the higher ordinals; I have suggested that this is due to a formal peculiarity of the regular 'second' ordinal shared with Canaanite.

Typologically, the repeated grammaticalisation of derived numerals counting periods of time is also an interesting finding. We have encountered this process with Proto-Semitic or Proto-West-Semitic *$CaC\breve{u}C$-, for example Biblical Hebrew *ʕāśōr* 'ten(th) day(s)' and possibly Old Assyrian *ḫamuš-t-*, a period of time; Proto-West-Semitic *$C\bar{a}CiC$- for days as in Ge'ez *sānəy* 'the next day' and *$C\bar{a}CiC\text{-}(a)t$- for years as in Western Neo-Aramaic *ṯōlṯ-aṯ* '2 years ago'; and Highland Abyssinian *$C\bar{a}CC\text{-}a$ for years and *$C\bar{a}CəC\text{-}t\text{-}a$ for days, for example Ezha (Central West Gurage) *nabə* '3 years from now', *nabətə* 'three days from now'. This type of derived numeral is not mentioned by Veselinova (2020) and may constitute a cross-linguistic rarity; further research is needed to test this. That the reconstruction of these forms, and of the ordinals in general, depends so strongly on the evidence from South Abyssinian and Neo-Aramaic furthermore highlights the importance of giving languages from every historical period their due weight (cf. Mutzafi 2022), even in families with such a long attestation as that of Semitic.

Acknowledgments

I am very grateful to Marijn van Putten, Roey Schneider, Hilde Gunnink, Ivri Bunis, and the anonymous reviewers for their helpful comments on the topic and earlier drafts of this paper. All remaining errors and infelicities are mine.

Conflict of interest statement

The author declared no conflict of interest.

[23] Or 'first/firs-th, secon-th/two-th, three-th' (see Note 2).

Data availability statement

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

Correspondence
Benjamin D. Suchard
Leiden University Centre for Linguistics
Postbus 9515
2300 RA Leiden
The Netherlands
Email: b.d.suchard@hum.leidenuniv.nl

References

Bach, Xavier, 2021. 'Explaining patterns of suppletion in ordinal numerals', in Nabil Hathout, Fabio Montermini, & Juliette Thuilier (eds.), *Third International Symposium of Morphology (ISMo 2021): Program and Abstracts*. Toulouse: CLLE laboratory. 24–27.

Bauer, Hans & Pontus Leander, 1922. *Historische Grammatik der hebräischen Sprache des Alten Testaments*, Volume 1. Halle an der Saale: Max Niemeyer.

Berhanu Chamora & Robert Hetzron, 2000. *Inor* (Languages of the World/Materials, 118). Munich: Lincom Europa.

Bjørru, Øyvind & Na'ama Pat-El, 2021. 'The indicative markers in west Semitic and their relationship to the east Semitic subordinative', in Rebecca Hasselbach & Na'ama Pat-El (eds.), *Bēl Lišāni: Current Research in Akkadian Linguistics* (Explorations in Ancient near Eastern Civilizations, 8). University Park: Eisenbrauns. 41–69.

Bordreuil, Pierre & Dennis Pardee, 2009. *A Manual of Ugaritic*. Winona Lake: Eisenbrauns.

Bulakh, Maria & Leonid Kogan, 2010. 'The genealogical position of Tigre and the problem of north Ethio-Semitic unity', *Zeitschrift Der Deutschen Morgenländischen Gesellschaft* 160(2). 273–302.

Bulakh, Maria & Leonid Kogan, 2014. 'More on genealogical classification of Ethiopian Semitic', *Babel Und Bibel* 7. 599–608.

Cohen, Marcel, 1937. *Etudes d'éthiopien méridional*. Paris: Geuthner.

De Ridder, Jacob J., 2021. '"All is number": Verbs and nouns derived from the cardinal numbers in Akkadian', in Rebecca Hasselbach & Na'ama Pat-El (eds.), *Bēl Lišāni: Current Research in Akkadian Linguistics* (Explorations in Ancient near Eastern Civilizations, 8). University Park: Eisenbrauns. 160–200.

Dufour, Julien, 2016. *Recherches sur le verbe sudarabique moderne*. Paris: École pratique des hautes études habilitation thesis.

Dufour, Julien, 2021. 'Vowel quality as a history maker. Stress, metaphony and the renewal of proto-Semitic morphology in modern south Arabian', in Patience Epps, Danny Law, & Na'ama Pat-El (eds.), *Historical Linguistics and Endangered Languages. Exploring Diversity in Language Change*. London: Routledge. 56–100.

Elias, David L., 2014. *The Tigre Language of Ginda$^{\xi}$, Eritrea. Short Grammar and Texts* (Studies in Semitic Languages and Linguistics, 75). Leiden: Brill.

Endalew Assefa, 2022. *Descriptive Grammar of Ezha: A Gurage Language of Ethiopia (Ethio-Semitic)* (Aethiopistische Forschungen, 87). Wiesbaden: Harrassowitz.

Fekede Menuta & Sascha Völlmin, 2023. 'Chaha group', in Ronny Meyer, Bedilu Wakjira, & Zelealem Leyew (eds.), *The Oxford Handbook of Ethiopian Languages* (Oxford Handbooks in Linguistics). Oxford: Oxford University Press. 472–499.

Fox, Joshua, 2003. *Semitic Noun Patterns* (Harvard Semitic Studies, 52). Winona Lake: Eisenbrauns.

Fradin, Bernard, 2015. 'Denumeral categories', in Peter O. Muller, Ingeborg Ohnheiser, Susan Olsen, & Franz Rainer (eds.), *Handbook of Word-Formation*. Berlin: Mouton de Gruyter. 1515–1528.

Friedrich, Johannes & Wolfgang Röllig, 1999, in Amadasi Guzzo & Maria Giulia (eds.), *Phönizisch-Punische Grammatik (Analecta Orientalia, 55)* (3rd ed.). Roma: Pontificio Istituto Biblico.

Hahn, Michael, 2012. Proto-Modern South Arabian vowels – a first approximation https://www.academia.edu/12966895/Proto-Modern_South_Arabian_Vowels_A_First_Approximation (17 April, 2025)

Hetzron, Robert, 1972. Ethiopian Semitic. *Studies in Classification* (Journal of Semitic Studies Monograph, 2) Manchester: Manchester University Press.

Hetzron, Robert, 1976. 'Two principles of genetic reconstruction', *Lingua* 38(2). 89–108.

Hetzron, Robert, 1977. *The Gunnän-Gurage languages* (Ricerche. Studi Di Semitistica e Del Vicino Oriente Antico, 12). Naples: Istituto Orientale di Napoli.

Hudson, Grover, 2007. 'North and south Ethiopian Semitic', in Rainer M. Voigt (ed.), *'From beyond the mediterranean': Akten des 7. Internationalen Semitohamitistenkongresses (VII. ISHaK), Berlin 13. bis 15.* September 2004 (Semitica et Semitohamitica Berolinensia, 5). Aachen: Shaker. 339–348.

HUDSON, GROVER, 2013. *Northeast African Semitic: Lexical Comparisons and Analysis* (Porta Linguarum Orientalium, 26). Wiesbaden: Harrassowitz.
HUEHNERGARD, JOHN, 2005. 'Features of central Semitic', in Agustinus Gianto (ed.), *Biblical and Oriental Essays in Memory of William L. Moran* (Biblica et Orientalia, 48). Rome: Pontificio Istituto Biblico. 155–203.
HUEHNERGARD, JOHN, 2006. 'Proto-Semitic and proto-Akkadian', in Guy Deutscher & N. J. C. Kouwenberg (eds.), *The Akkadian Language and its Semitic Context. Studies in the Akkadian of the Third and Second Millennium BC*. Leiden: Nederlands Instituut voor het Nabije Oosten. 1–18.
HUEHNERGARD, JOHN, 2011. *A Grammar of Akkadian* (Harvard Semitic Studies, 45) (3rd ed.). Winona Lake: Eisenbrauns.
HUEHNERGARD, JOHN & NA'AMA PAT-EL, 2019. 'Introduction to the Semitic languages and their history', in John Huehnergard & Na'ama Pat-El (eds.), *The Semitic Languages* (Routledge Language Family Series) (2nd ed.). London: Routledge. 1–21.
HUEHNERGARD, JOHN & AARON D. RUBIN, 2011. 'Phyla and waves: Models of classification of the Semitic languages', in Stefan Weninger (ed.), *The Semitic Languages: An International Handbook* (Handbooks of Linguistics and Communication Science, 36.). Berlin: De Gruyter Mouton. 259–278.
KANE, THOMAS L., 2000. *Tigrinya-English Dictionary*. Springfield: Dunwoody.
KAWACHI, KAZUHIRO, 2023. 'Sidaama', in Ronny Meyer, Bedilu Wakjira, & Zelealem Leyew (eds.), *The Oxford Handbook of Ethiopian Languages* (Oxford Handbooks in Linguistics). Oxford: Oxford University Press. 320–343.
KITCHEN, ANDREW, CHRISTOPHER EHRET, SHIFERAW ASSEFA & CONNIE J. MULLIGAN, 2009. 'Bayesian phylogenetic analysis of Semitic languages identifies an early bronze age origin of Semitic in the near east', *Proceedings. Biological sciences* 276(1668). 2703–2710.
KOGAN, LEONID, 2015. *Genealogical Classification of Semitic: The Lexical Isoglosses*. Boston: De Gruyter.
KOUWENBERG, N. J. C., 2010. *The Akkadian Verb and its Semitic Background* (Languages of the Ancient near East, 2). Winona Lake: Eisenbrauns.
KOUWENBERG, N. J. C., 2017. *A Grammar of Old Assyrian* (Handbook of Oriental Studies. Section 1, the Near and Middle East, 118). Leiden: Brill.
LESLAU, WOLF, 1956. *Étude descriptive et comparative du gafat (Éthiopien méridional)* (Collection linguistique publiée par la société de linguistique de Paris, 57). Paris: Klicksieck.
LESLAU, WOLF, 1963. *Etymological Dictionary of Harari* (University of California Publications near Eastern Studies, 1). Berkely: University of California Press.
LESLAU, WOLF, 1995. *Reference Grammar of Amharic*. Wiesbaden: Harrassowitz.
LESLAU, WOLF, 2006. *Comparative Dictionary of Geʿez*. Wiesbaden: Harrassowitz.
LIPIŃSKI, EDWARD, 2001. *Semitic Languages: Outline of a Comparative Grammar*. (Orientalia Lovaniensia Analecta, 80) (2nd ed.). Leuven: Peeters.
MEYER, RONNY, 2005. *Das Zay: deskriptive Grammatik einer Ostguragesprache (Äthiosemitisch)* (Grammatische Analysen afrikanischer Sprachen, 25). Cologne: Köppe.
MEYER, RONNY, 2006. *Wolane. Descriptive Grammar of an East Gurage Language (Ethiosemitic) (Grammatical Analyses of African Languages, 31)*. Cologne: Köppe.
MEYER, RONNY, 2018. 'On the internal classification of Ethiosemitic', *Zeitschrift Der Deutschen Morgenländischen Gesellschaft* 168(1). 93–124.
MUTZAFI, HEZY, 2014. *Comparative Lexical Studies in Neo-Mandaic* (Studies in Semitic Languages and Linguistics, 73). Leiden: Brill.
MUTZAFI, HEZY, 2022. 'Neo-Aramaic as a source of hitherto unattested Aramaic words and meanings', *Brill's Journal of Afroasiatic Languages and Linguistics* 14(1). 1–32.
NILSSON, MORGAN, 2023. 'Somali', in Ronny Meyer, Bedilu Wakjira, & Zelealem Leyew (eds.), *The Oxford Handbook of Ethiopian Languages* (Oxford Handbooks in Linguistics). Oxford: Oxford University Press. 344–373.
NOORLANDER, PAUL M., 2016. 'The problem of classifying Ugaritic', *Kleine Untersuchungen zur Sprache des Alten Testaments und seiner Umwelt* 20. 51–92.
PAT-EL, NA'AMA & AREN WILSON-WRIGHT, 2018. 'Features of Aramaeo-Canaanite', *Journal of the American Oriental Society* 138(4). 781–806.
QAFISHEH, HAMDI A., 1992. *Yemeni Arabic reference grammar*. Kensington: Dunwoody.
OUSMAN SHAFI & RONNY MEYER, 2023. 'Mesqan', in Ronny Meyer, Bedilu Wakjira, & Zelealem Leyew (eds.), *The Oxford Handbook of Ethiopian Languages* (Oxford Handbooks in Linguistics). Oxford: Oxford University Press. 580–606.
RUBIN, AARON D., 2014. *The Jibbali (Shahri) Language of Oman: Grammar and Texts* (Studies in Semitic Languages and Linguistics, 72). Leiden: Brill.
RUBIN, AARON D., 2018. *Omani Mehri: A New Grammar with Texts* (Studies in Semitic Languages and Linguistics, 93). Leiden: Brill.
RUBIN, AARON D., 2023. 'Adverbs related to "year" in Semitic', *Journal of Semitic Studies* 68(2). 771–794.
RUBIN, AARON D., 2024a. 'Yesterday and the day before in Semitic', *Journal of Semitic Studies* 69(1). 671–686.
RUBIN, AARON D., 2024b. 'Tomorrow and the day after in Semitic', *Journal of Semitic Studies* 69(2). 1075–1106.
RUDOLF, STEFANIE & MICHAEL WALTISBERG, 2020. 'Phonologie und Transkription des Syrischen', *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 170(1). 19–46.
STOLZ, THOMAS & MAJA ROBBERS, 2016. 'Unorderly ordinals. On suppletion and related issues of ordinals in Europe and Mesoamerica', *STUF – Language Typology and Universals* 69(4). 565–594.

STOLZ, THOMAS & LJUBA N. VESELINOVA, 2013. 'Ordinal numerals', in Matthew S. Dryer & Martin Haspelmath (eds.), *WALS Online (V2020.3)* http://wals.info/chapter/53 (17 April, 2025)
STRECK, MICHAEL P., 2022. *Old Babylonian Grammar* (Handbook of Oriental Studies. Section 1, the Near and Middle East, 168), Volume 1. Leiden: Brill.
SUCHARD, BENJAMIN D., 2019. 'Sound changes in the (pre-)Masoretic reading tradition and the original pronunciation of Biblical Aramaic', *Studia Orientalia Electronica* 7. 52–65.
SUCHARD, BENJAMIN D., 2020. *The Development of the Biblical Hebrew Vowels* (Studies in Semitic Languages and Linguistics, 99). Leiden: Brill.
SUCHARD, BENJAMIN D., 2021. 'The reconstruction of the Proto-Semitic genitive ending and a suggestion on its origin', *Studia Orientalia Electronica* 9(1). 66–82.
SUCHARD, BENJAMIN D., 2022. 'Historical (in)accuracy and linguistic archaism in Daniel 5', *Biblica* 103(2). 213–226.
SUCHARD, BENJAMIN D., 2023a. 'Two more contexts for Ge'ez *$u > u$ and three for *$a > ə$', *Afrika und Übersee* 96. 96–110.
SUCHARD, BENJAMIN D., 2023b. 'What can Nabataean Aramaic tell us about pre-Islamic Arabic?', *Arabian Archaeology and Epigraphy* 34(1). 158–172.
SUCHARD, BENJAMIN D., 2024. 'The old Aramaic "feminine" suffix *-t* as an accusative case marker', *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 174(1). 53–76.
SUCHARD, BENJAMIN D., 2025. 'The shape of the teen numerals in Central Semitic', in Aaron D. Hornkohl, Nadia Vidro, Janet C. E. Watson, Eleanor Coghill, Magdalen M. Connolly, & Benjamin M. Outhwaite (eds.), *Interconnected Traditions. Semitic Languages, Literatures and Cultures: A Festschrift for Geoffrey Khan* (Cambridge Semitic Languages and Cultures, 35), Volume 1. Cambridge: Open Book. 611–629.
TESTEN, DAVID, 1985. 'The significance of Aramaic $r <$ *n', *Journal of Near Eastern Studies* 44(2). 143–146.
TROPPER, JOSEF, 2012. *Ugaritische Grammatik* (Alter Orient und Altes Testament, 273) (2nd ed.). Münster: Ugarit-Verlag.
VESELINOVA, LJUBA, 1997. 'Suppletion in the derivation of ordinal numerals: A case study', in Benjamin Bruening (ed.), *Proceedings of the Eighth Student Conference in Linguistics (MIT Working Papers in Linguistics, 31)*. Cambridge, MA: MITWPL. 429–447.
VESELINOVA, LJUBA, 2004. 'Cross-linguistic distribution of numeral derivatives.' Presented at the Workshop on Numerals in the World's Languages, Max Planck Institute for Evolutionary Anthropology, Leipzig, March 29. https://www.diva-portal.org/smash/get/diva2:1313560/FULLTEXT01.pdf (17 April, 2025)
VESELINOVA, LJUBA, 2020. 'Numerals in morphology', in Rochelle Lieber (ed.), *The Oxford Encyclopedia of Morphology*. Oxford: Oxford University Press.
VOIGT, RAINER, 2009. 'North vs. South Ethiopian Semitic', in Svein Ege, Harald Aspen, Birhanu Teferra, & Shiferaw Bekele (eds.), *Proceedings of the 16th International Conference of Ethiopian Studies*. Trondheim: Norwegian University of Science and Technology. 1375–1387.
WILSON-WRIGHT, AREN, 2014. 'The word for "one" in Proto-Semitic', *Journal of Semitic Studies* 59(1). 1–13.
ZELEALEM LEYEW & ALLENE YAREGAL, 2023. 'Awngi', in Ronny Meyer, Bedilu Wakjira, & Zelealem Leyew (eds.), *The Oxford Handbook of Ethiopian Languages* (Oxford Handbooks in Linguistics). Oxford: Oxford University Press. 146–164.

ABBREVIATIONS

acc.: accusative
f.: feminine
m.: masculine