

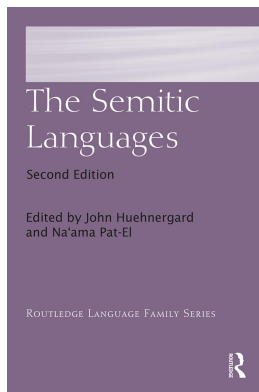
This article was downloaded by: 10.2.97.136

On: 31 May 2023

Access details: *subscription number*

Publisher: *Routledge*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: 5 Howick Place, London SW1P 1WG, UK



## The Semitic Languages

John Huehnergard, Na'ama Pat-El

### Proto-Semitic

Publication details

<https://test.routledgehandbooks.com/doi/10.4324/9780429025563-3>

John Huehnergard

**Published online on: 06 Mar 2019**

**How to cite :-** John Huehnergard. 06 Mar 2019, *Proto-Semitic from: The Semitic Languages*  
Routledge

Accessed on: 31 May 2023

<https://test.routledgehandbooks.com/doi/10.4324/9780429025563-3>

**PLEASE SCROLL DOWN FOR DOCUMENT**

Full terms and conditions of use: <https://test.routledgehandbooks.com/legal-notices/terms>

This Document PDF may be used for research, teaching and private study purposes. Any substantial or systematic reproductions, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The publisher shall not be liable for an loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

## CHAPTER 3

**PROTO-SEMITIC***John Huehnergard***1 INTRODUCTION**

This chapter presents, in cursory form, a reconstruction of Proto-Semitic (PS) phonology, morphology and syntax. As is well known, linguistic reconstruction is often necessarily speculative, and also something of an art form; and so, while the research of many scholars is taken into account in what follows, this summary must in the end be subjective and represent my own opinions, although I hope it portrays a consistent and coherent view of the ancestor of the Semitic languages. A guiding principle has been that a reconstructed PS form must normally be based on evidence from both East and West Semitic.

Proto-Semitic undoubtedly comprised dialects, like all languages, but such distinctions and their distribution are usually not recoverable, and so our reconstruction here is more monolithic than the language actually was. For the internal subgrouping of the Semitic language family and a survey of the individual Semitic languages, see Chapter 1, §2. As noted in §1 of Chapter 1, since there is evidence for the split between East and West Semitic already in the first half of the third millennium, Proto-Semitic dates to no later than the late fourth millennium.

NOTE: Throughout this chapter, a final hyphen on a form, as in *\*bajt-* ‘house’, denotes a noun base without a case ending (for which see §3.3.2.4).

**1.1 Writing**

As a reconstructed linguistic entity, of course, PS is unwritten. A brief overview of Semitic writing systems appears in Chapter 1, §3.

**2 PHONOLOGY****2.1 Consonants**

Proto-Semitic is traditionally reconstructed with 29 consonants, all of which are preserved in the inscriptional Ancient South Arabian languages such as Sabaic (see Chapter 13). There is good evidence, however, for a 30th consonant, a glottalic velar (or uvular) fricative, *\*x*’ (or *\*χ*’), which merged with *\*x* in East Semitic and with *\*h* in West Semitic (Huehnergard 2003). As can be seen in Table 3.1, many of the consonants occur in triads of a voiceless, a voiced and a third member. The reflexes of the third members of the triads are pharyngealized or uvularized in Arabic (and the reflex of *\*k*’ is the uvular *q*), but they are glottalic/ejective in the Ethiopian Semitic languages (see Chapters 6–10) and in Modern South Arabian languages such as Mehri (Chapter 11); there is also evidence that their reflexes were glottalic in some of the ancient languages, such as Akkadian and

**TABLE 3.1 THE PROTO-SEMITIC CONSONANTS; THE TRADITIONAL SEMITISTIC REPRESENTATIONS APPEAR IN PARENTHESES AFTER THE IPA**

	BILABIAL	(INTER-)DENTAL	DENTAL-AVEOLAR	PALATAL	VELAR/UVULAR <sup>1</sup>	PHARYNGEAL	GLOTTAL
Plosive	p (p) b (b)		t (t) d (d) t' (t')		k (k) g (g) k' (k'/q)		ʔ (' , ʔ)
Nasal	m (m)		n (n)				
Trill			r (r)				
Fricative		θ (θ) ð (ð) θ' (θ'/z)	s (s)		x/χ (h) ʕ/w (g/g)	ħ (ħ) ʕ (' , ʕ)	h (h)
Affricate <sup>2</sup>			ts (s) dz (z) ts' (s')		x'/χ' (x)		
Lateral			l (l) l' (l') l' (l'/ð)				
Approximant	w (w)			j (y)			

Hebrew (Cantineau 1951–52, Faber 1980, Steiner 1982, Kogan 2011a), and so it is likely that they were glottalic in the proto-language as well, and underwent pharyngealization in the history of Arabic (Zemánek 1996).

The PS triad of fricative laterals – \*l, \*l and \*(t)l' – is now well established (Steiner 1977; see also Voigt 1992). The PS consonants reconstructed as affricates are simple fricatives in most of the descendant languages, but, again, their affricated nature in the proto-language is suggested by features of Akkadian and Hebrew phonology (Steiner 1982; Faber 1985). The voiceless non-glottalic plosives were probably aspirated when syllable-initial. The fricative \*s may have had a palatalized allophone in some environments, since its reflex is a palatal [ʃ] in several of the languages (Babylonian Akkadian, Hebrew, Aramaic, Jibbāli), rather than [s] as in Assyrian Akkadian, Arabic and Ethiopian Semitic.<sup>3</sup>

The reflexes of the PS consonants in a representative sample of Semitic languages appear in Table 3.2.

All of the consonants could be geminated. This is also the case in some of the descendant languages, although in some, such as early Aramaic and Hebrew, the laryngeals and pharyngeals may not be geminated.

There is marked tendency for the consonants of Semitic verbal roots (§3.2) to remain phonologically consistent. Thus, conditioned sound changes that would affect only some forms of a root are often blocked by paradigmatic pressure, so that the root continues to exhibit the same consonant phonemes in all forms. Less frequent, but also well attested, is the opposite development, where a conditioned sound change spreads analogically to other forms of a root in which the conditioning factor is not operative (Huehnergard 2013). The following phonological processes involving the consonants may be observed in Proto-Semitic:

\*w assimilated to a following dental-alveolar stop: e.g., \*ja-t-wabal (3-RECP-carry. pcs) > \*jawtabal (metathesis; see §3.5.5) > \*jattabal 'he carried along'. Reanalysis of the product of this change occasionally resulted in byform roots in some languages, e.g., both waba:lum and taba:lum 'to carry' in Akkadian (Huehnergard 2006a, 2014a). For other changes involving \*w and the palatal glide \*j, see under Vowels (§2.2).

Regressive assimilatory voicing and devoicing of consonants occasionally resulted in byform roots and seemingly irregular correspondences among cognates. For example, the pcs forms (§3.5.2) of the PS roots \*b-k'-r 'to pierce, split' and \*p-k'-r 'to want, need, claim', viz., \*jabk'ur and \*japk'ur, could apparently be pronounced the

**TABLE 3.2 REFLEXES OF THE PROTO-SEMITIC CONSONANTS IN SOME OF THE MAIN DESCENDANT LANGUAGES; THE SEMITISTIC REPRESENTATIONS ARE GIVEN IN PARENTHESES**

PROTO-SEM.	AKKADIAN (BABYLONIAN)	GŌṢŌZ (CLASSICAL ETHIOPIC)	MEHRI	SABAIC	ARABIC (CLASSICAL)	UGARITIC	HEBREW (BIBLICAL)	ARAMAIC (SYRIAC)
ʔ	Ø/ʔ (Ø/ʔ)	ʔ (ʔ)	Ø	ʔ (ʔ)	ʔ (ʔ)	ʔ (ʔ)	ʔ (ʔ)	ʔ (ʔ)
ʕ	Ø/ʔ (Ø/ʔ)	ʕ (ʕ)	ʕ/ʔ (ʕ/ʔ)	ʕ (ʕ)	ʕ (ʕ)	ʕ (ʕ)	ʕ (ʕ)	ʕ (ʕ)
b	b (b)	b (b)	b (b)	b (b)	b (b)	b (b)	b (b)	b (b)
d	d (d)	d (d)	d (d)	d (d)	d (d)	d (d)	d (d)	d (d)
ð	ð/z (z)	z (z)	ð (ð)	ð (ð)	ð (ð)	d/ð (d/ð)	z (z)	d (d)
ḏ	ḏ/z (z)	z (z)	z (z)	z (z)	z (z)	z (z)	z (z)	z (z)
g	g (g)	g (g)	g (g)	g (g)	ǰ (ǰ,ǧ)	g (g)	g (g)	g (g)
ǰ/ǧ	Ø/ʔ/x (Ø/ʔ/h)	ʕ (ʕ)	ǰ (ǰ/ǧ)	ǰ (ǰ/ǧ)	ǰ (ǰ/ǧ)	ǰ (ǰ/ǧ)	ʕ (ʕ)	ʕ (ʕ)
h	Ø/ʔ (Ø/ʔ)	h (h)	h (h)	h (h)	h (h)	h (h)	h (h)	h (h)
ħ	Ø/ʔ (Ø/ʔ)	h (h)	h (h)	h (h)	h (h)	h (h)	h (h)	h (h)
j	Ø/ʔ/j (Ø/ʔ/y)	j (y)	j (y)	j (y)	j (y)	j (y)	j (y)	j (y)
k	k (k)	k (k)	k (k)	k (k)	k (k)	k (k)	k (k)	k (k)
kʔ	kʔ (q,k)	kʔ (q,k)	kʔ (k)	q (q,k)	q (q)	kʔ (q,k)	kʔ (q,k)	kʔ (q,k)
l	l (l)	l (l)	l (l)	l (l)	l (l)	l (l)	l (l)	l (l)
l̥	ʃ (ʃ)	l̥>s (ʃ>s)	l̥ (ʃ)	ʔ (ʃ,s²)	ç (ʃ)	ʃʔ (ʃ)	l̥ (ʃ)	s (s)
(t)lʔ	tsʔ/sʔ (s)	tlʔ>sʔ (dʔ>ʃ)	lʔ (z,ʃ)	dʔ (z)	(t)lʔ/(d)lʔʕ (d)	tsʔ/sʔʔ (s)	tsʔ/sʔ (s)	ʕ (ʃ)
m	m (m)	m (m)	m (m)	m (m)	m (m)	m (m)	m (m)	m (m)
n	n (n)	n (n)	n (n)	n (n)	n (n)	n (n)	n (n)	n (n)
p	p (p)	f (f)	f (f)	f (f)	f (f)	p (p)	p (p)	p (p)
r	r (r)	r (r)	r (r)	r (r)	r (r)	r (r)	r (r)	r (r)
s	ʃ (ʃ)	s (s)	h (h)	ʃ (s,sʔ)	s (s)	ʃʔ (ʃ)	ʃ (ʃ)	ʃ (ʃ)
t	t (t)	t (t)	t (t)	t (t)	t (t)	t (t)	t (t)	t (t)
tʔ	tʔ (t)	tʔ (t)	tʔ (t)	tʔ (t)	dʔ (t)	tʔ (t)	tʔ (t)	tʔ (t)
ts	ts/s (s)	s (s)	s (s)	s (ʃ,s²)	s (s)	sʔ (s)	s (s)	s (s)
tsʔ	tsʔ/sʔ (s)	sʔ (s)	tsʔ/sʔ (s)	sʔ (s)	(t)sʔ (s)	tsʔ/sʔʔ (s)	tsʔ/sʔ (s)	tsʔ/sʔ (s)
θ	ʃ (ʃ)	s (s)	θ (t)	θ (t)	θ (t)	θʔ (t)	ʃ (ʃ)	t (t)
θʔ	tsʔ/sʔ (s)	sʔ (s)	ðʔ (ð)	ðʔ (z)	ðʔ (z)	θʔ(z)/ʕ(ǰ/ǧ)	tsʔ/sʔ (s)	tʔ (t)
w	w (w)	w (w)	w (w)	w (w)	w (w)	w(w)/j(y)	w(w)/j(y)	w(w)/j(y)
x/χ	x (ħ)	x (ħ)	x (ħ)	χ (ħ)	x (ħ)	x (ħ)	h (ħ)	h (ħ)
xʔ/χʔ	x (ħ)	h (ħ)	h (ħ)	h (ħ)	h (ħ)	h (ħ)	h (ħ)	h (ħ)

same, [japkʔur]; reanalysis and the tendency for root integrity, noted above, yielded byforms, one with initial \*b and one with initial \*p, of both original roots, reflexes of which appear throughout the descendant languages (Huehnergard 2014b).<sup>4</sup>

After East Semitic broke away from the parent language, most of the remaining family underwent a change of prevocalic \*s > \*h in forms such as the 3rd-person pronouns, as in independent \*siʔa > \*hiʔa ‘she’ and suffixal \*-su > \*-hu ‘his’ (see §3.1.1); the adverbial ending \*-isa, as in \*bajt-isa > \*bajt-ih (house-DIR) ‘to the house’ (§3.3.2.4, end); and the causative marker \*s, as in \*tu-sa-ʕlij > \*tu-ha-ʕlij (2-CAUS-ascend.PCS) ‘you sent up’ (§3.5.5). This may be viewed as an incipient change affecting high-frequency, low-stress function words (and the close grammatical relatives of such words), which are known to undergo sound changes before other word classes do (Phillips 1983);<sup>5</sup> but further spread of the change was

blocked in most verbal and nominal roots, again because of the pressure, noted earlier, for roots to remain consistent across paradigms.<sup>6</sup>

Assimilation of *n* to a following consonant is a regular feature of several of the languages, such as Akkadian, Ugaritic and Hebrew, and is also attested in later Sabaic and in the earliest Gəʕez inscriptions (but not in later Ethiopian Semitic); it may therefore have been an ancient dialectal feature or an areal phenomenon (Sanmartin 1995, Steiner 2012: 380–1).

In Proto-Northwest Semitic, initial *\*w* > *\*j*: *\*warix-* > *\*jarix-* ‘month’; *\*waθab-ti* > *\*jaθab-ti* ‘you sat’ (sit.SC-2FSG).

## 2.2 Vowels

For PS a reconstruction of three short vowels, *\*a*, *\*i*, *\*u*, and three corresponding long vowels, *\*ā*, *\*ī*, *\*ū*, is uncontroversial. This system is preserved unchanged in Classical Arabic. In most of the other languages, various developments have obscured the original system to a greater or lesser extent. In Gəʕez, for example, the two short high vowels merged to a central ə (IPA [ɨ]), as in *bərk* ‘knee’ < *\*birk-*, *ʔəzn* ‘ear’ < *\*ʔuðn-*. In many dialects of Akkadian, a fourth vowel quality, short *e* and long *e*ː, achieved phonemic status, as in Old Babylonian *egrum* ‘twisted’ < *\*hagrūm* vs. *igrum* ‘hire’ < *\*ʔigrum* vs. *agrūm* ‘hired’ < *\*ʔagirum*. In Hebrew, the short vowels were sometimes preserved, sometimes reduced, sometimes lowered or backed, depending on syllable structure and word stress. In most of the languages, the long vowels remained largely unchanged, although a diagnostic feature of Canaanite languages is the change of *\*a*: to *\*o*ː.

There are no diphthongs in the usual sense of a sequence of two vowels (see the next section on syllable structure), but the sequences *\*aj* and *\*aw* are often referred to as diphthongs in Semitic studies, and often undergo simplification to long vowels (e.g., [eː] and [oː], respectively) in the descendant languages. The sequences *\*ij* and *\*uw* are generally equivalent phonetically to *\*i*ː and *\*u*ː, respectively, in the descendant languages and presumably so also in PS (thus, e.g., the Hebrew form *rūm* ‘height’ < *\*ru.m-* ~ *\*ruwm-* has the same historical pattern, *C<sub>1</sub>u<sub>2</sub>C<sub>3</sub>*, as *ʕōmeq* ‘depth’ < *\*ʕumk-*). The sequences *\*iw* and *\*uj* were unstable, also tending to become *\*i*ː and *\*u*ː, respectively (e.g., *\*tʕuːb-* ‘goodness’ < *\*tʕjb-*), unless preserved by paradigmatic pressure.

The sequences *V<sub>w</sub>V* and *V<sub>j</sub>V* were sometimes unstable, tending to reduce to a single vowel. The following developments, for example, may be posited already for PS: *\*awa*, *\*aja* > *a*ː/\_CV, but *\*wa* > *u* and *\*ja* > *i*ː/\_CC, as in *\*tʕjab-u* > *\*tʕaːb-u*: (good-3MPL) ‘they (M) are good’ but *\*tʕjab-ta* > *\*tʕib-ta* (good-2MSG) ‘you (MSG) are good’ (Huehnergard 2005: 176–8). It is likely that *C<sub>w</sub>V<sub>1</sub>* and *C<sub>j</sub>V<sub>1</sub>* > *CV<sub>1</sub>*: in PS (unless preserved by paradigmatic pressure), as in *\*ja-kwun-u* > *\*ja-kuːn-u*: (3-stable.PCS-MPL) ‘they (M) became stable’, *\*ja-tjim-u* > *\*ja-liːm-u*: (3-set.PCS-MPL) ‘they (M) set’.

## 2.3 Syllable structure and stress

PS has only three syllable types: short *CV*, and long *CV*ː and *CVC*. Thus, syllable-initial and syllable-final consonant clusters are not permitted, nor are sequences of vowels. Long vowels do not occur in closed syllables; when a long vowel would arise in a closed syllable through some phonological process, it is shortened; for example, the 3MSG form corresponding to 3MPL *\*jali.mu*: (see end of preceding paragraph) is *\*ja-lim* (3-set.PCS)

'he set', with short *i*. The restrictions on syllable types are overridden in various ways in most of the descendant languages, although Classical Arabic, for example, preserves the original syllable structure to a large extent (exceptions being long vowels before geminated consonants, as in the participial form *ma:d.dun* 'extending.MSG.NOM' < \**ma:di.dun*).

Classical Arabic and Akkadian exhibit essentially the same assignment of word stress, which may therefore also be posited for PS, and is non-phonemic: stress falls on the right-most long syllable other than the final syllable: \**'wa:θi.bum* 'sitting.MSG.NOM', \**'wa:θib.tum* 'sitting.FSG.NOM', \**'wa:θi.'ba:tum* 'sitting.FPL.NOM'. Words with no long syllables are stressed on the first syllable: \**'ʕa.pa.rum* 'dust.NOM'.<sup>7</sup> Bound form nominals ("construct forms"; §3.3.2.3) were morphosyntactically proclitic to their dependents and thus unstressed; a PS rule of vowel syncope probably affected such unstressed forms, e.g., nonbound \**'wa.ri.xum* vs. bound \**war.xu* 'month.NOM', though the effects of this rule are frequently diminished by analogical leveling (Steiner 2012). There is probably also a narrower PS rule of vowel syncope, *a > Ø/aC<sub>1</sub> - C<sub>1</sub>V*, as in \**k'alalum* > \**k'allum* 'small.NOM'.

### 3 MORPHOLOGY

#### 3.1 Pronouns

##### 3.1.1 Personal pronouns

In the Proto-Semitic personal pronouns, as in most of the early descendant languages, the 2nd and 3rd persons have singular, dual and plural forms (Table 3.3); the singular and plural have distinct masculine and feminine forms, while the dual forms are common gender. 1st person forms are common gender (glossed as 1C); a 1st person dual occurs in a few of the descendant languages (Ugaritic, Modern South Arabian) but cannot be reconstructed to PS.

For 1CSG, most of the descendant languages have only one of the forms shown in Table 3.3 (\**ʔana* in Gəʕəz, Arabic, Aramaic and others; \**ʔana:ku* in Akkadian, Phoenician, and others), but Ugaritic and ancient Hebrew attest both. The apparent base \**ʔan-* in 1CSG and the 2nd person forms is of uncertain origin and meaning. The endings of most of these forms (2MSG \*-*ta*, 1PL \*-*nu*, etc.) also appear on the base of verbal adjectives in a predicative construction, for which see §3.5.4.

The dual forms are obviously derived from the MPL forms, with the addition of endings that are also found on dual nominals (NOM \*-*a:*, GEN/ACC \*-*aj*) and dual verbs (marked with \*-*a:*).

TABLE 3.3 PROTO-SEMITIC INDEPENDENT PERSONAL PRONOUNS<sup>8</sup>

	SINGULAR	DUAL	PLURAL
1C	<i>ʔana, ʔana:ku</i>	–	<i>niħnu</i>
2M	<i>ʔanta</i>	<i>ʔantuma: /</i>	<i>ʔantum(±u:)</i>
2F	<i>ʔanti</i>	<i>ʔantumaj</i>	<i>ʔantin(±a:)</i>
3M	<i>suʔa</i>	<i>suma: /</i>	<i>sum(±u:)</i>
3F	<i>siʔa</i>	<i>sumaj</i>	<i>sin(±a:)</i>

TABLE 3.4 PROTO-SEMITIC GEN/ACC (OBL) 3RD PERSON PRONOUNS

	SINGULAR	DUAL	PLURAL
3M	<i>suʔa:ti:</i>	<i>suma:ti: /</i>	<i>sumu:ti:</i>
3F	<i>siʔa:ti:</i>	<i>sumaj:ti:</i>	<i>sina:ti:</i>

TABLE 3.5 PROTO-SEMITIC ENCLITIC PERSONAL PRONOUNS

	SINGULAR		DUAL	PLURAL	
	GEN	ACC		GEN	ACC
1C	<i>-i:/-ja</i>	<i>-ni:</i>	–	<i>-ni</i>	<i>-na</i>
	GEN/ACC		GEN/ACC	GEN/ACC	
2M	<i>-ka</i>		<i>-kuma: /</i>	<i>-kum(±u:)</i>	
2F	<i>-ki</i>		<i>-kumaj</i>	<i>-kin(±a:)</i>	
3M	<i>-su</i>		<i>-suma: /</i>	<i>-sum(±u:)</i>	
3F	<i>-sa</i>		<i>-sumaj</i>	<i>-sin(±a:)</i>	

In the 2/3PL forms, the optional endings *\*-u:/-a:* derive from predicative 3rd person endings (see §3.5.4). In Central Semitic languages, the 2/3FPL forms alternatively have *\*-na* instead of *\*-a:* (i.e., *\*ʔantin(na)* and *\*sin(na)*), where *\*-na* is borrowed from the 2/3FPL ending of the PS prefix conjugation verbs (§3.5.3).

The forms in Table 3.3 are nominative; they function as the subjects of verbless clauses, and to topicalize or contrast the subjects of verbal clauses. For the 3rd person, there is also a set of GEN/ACC (or OBL) forms, characterized by an enclitic *\*-ti:* (Table 3.4). The 3rd person forms probably originated as demonstratives (see §3.1.2).

Closely related to the independent personal pronouns is a set of enclitic pronouns that functioned as genitive when suffixed to nouns and prepositions and as accusative when suffixed to verbs (Table 3.5). Distinct genitive and accusative forms existed for the 1st person but not for the 2nd and 3rd.

### 3.1.2 Demonstratives

A base *\*ʔvl-* forms a remote demonstrative in Akkadian, but the plural of a proximal demonstrative throughout West Semitic; the former probably reflects the PS situation. The proximal demonstrative in Akkadian has a base *\*hanni-*, which is derived from a presentative particle *\*han* (see §3.10); this was replaced in West Semitic by a demonstrative derived from the relative marker *\*θv:* (see the following section). Throughout Semitic (apart from Arabic), the 3rd person pronouns, both NOM and GEN/ACC, also serve as anaphoric-distal demonstratives, which was probably their original function:

*\*ʔin bajt-im suʔa:ti:*  
 in house-GEN DEM.GEN/ACC  
 ‘in that house’.

Thus, PS probably exhibits a three-way contrast in deixis (Huehnergard and Pat-El 2018).

TABLE 3.6 THE PROTO-SEMITIC RELATIVE MARKER

	MSG	FSG
NOMINATIVE	<i>θu:</i>	<i>θa:tu</i>
GENITIVE	<i>θi:</i>	<i>θa:ti</i>
ACCUSATIVE	<i>θa:</i>	<i>θa:ta</i>
	MDU	FDU
NOMINATIVE	<i>θawa:</i>	<i>θ(aw)a:ta:</i>
GEN/ACC	<i>θawaj</i>	<i>θ(aw)a:taj</i>
	MPL	FPL
NOMINATIVE	<i>θawu:</i>	<i>θawa:tu</i>
GEN/ACC	<i>θawi:</i>	<i>θawa:ti</i>

Source: Huehnergard (2006b).

### 3.1.3 Relative marker

The PS relative marker (Table 3.6) is a bound form (§3.3.2.3) that can serve as the head of a noun phrase, a verb phrase or a prepositional phrase (Pat-El and Treiger 2006). It is declined for gender and number, agreeing with its antecedent in all features but state. (The initial consonant of the relative marker is voiceless \*θ in Akkadian, but voiced \*ð in West Semitic; the PS form probably had voiceless \*θ [Huehnergard and Pat-El 2018].)

\**ʔa-nθ'ur*      *baʕl-am*      *θa:*      *bajt-im*  
 1SG-protect.PCS    lord-ACC    REL.MSG.ACC.BND    house-GEN  
 'I protected the lord of the house.'

\**ta-mut*      *ʔimm-um*      *θ-a:t-u*      *ja-nθ'ur-u(-sa)*  
 3F-die.PCS    mother-NOM    REL-FSG-NOM.BND    3-protect.PCS-SBRD(-3FSG)  
 'The mother whom he protected died.'

\**ʕalaj*      *wa:θib-i:na*      *θawi:*      *ʔin*      *bajt-im*  
 against    sit.PTCP-MPL.GEN/ACC    REL.MPL.GEN/ACC.BND    in    house-GEN  
 'against the residents in the house'.

### 3.1.4 Interrogative and indefinite pronouns

For 'what?', East Semitic and Ethiopian Semitic indicate a base \**min-* (Akkadian *mi(:)n-um* 'what?-NOM'; Amharic *min*); the Central Semitic languages, however, have instead \**mah-*. For 'who?', most of the languages have a reflex of \**mann-* (Akkadian *mann-um* 'who?-NOM'; Amharic *mann-in* who?-ACC = 'whom?'), although Ugaritic and Canaanite exhibit \**mijj-*. These forms were probably declined like singular nominals, as they were in Akkadian and Eblaite. Another PS base, \**ʔajj-*, is adjectival, 'which?'.<sup>9</sup>

A common Semitic interrogative adverb is \**mataj* 'when?'.<sup>9</sup>

Indefinite pronouns may have been formed by adding an enclitic \*=*ma* (see §3.10) to the interrogatives (as in East Semitic, Amharic, Ugaritic); e.g., \**min-um=ma* (what?-NOM=ENCL) 'whatever, anything'.



### 3.2 Nominal and verbal roots

Most nouns and verbs in PS exhibit nonconcatenative morphology; that is, they consist of roots comprising invariable sequences of consonants (called the radicals of a root), over which are laid patterns – templates – that furnish the morphology of words. The patterns may be simple vowel melodies, such as  $a \dots i$ , but they may also exhibit gemination of the second or third radical or a prefixal or suffixal element or a combination of these. Forms of the root  $*s-l-m$  ‘(to be) whole’ illustrate some of these possibilities:

- $*salim-at-um$  ‘whole-F-NOM’ (adjective)
- $*sala:m-um$  ‘wholeness-NOM’ (substantive; an infinitive pattern)
- $*ti-slam-i$ : (2-whole.PCS-FSG) ‘you became whole’
- $*nu-sallim$  (1PL-whole.FACT.PCS) ‘we made whole’

The vast majority of verbs in PS are based on roots of three consonants, like  $*s-l-m$ . Internal reconstruction on the basis of PS forms, however, indicates that roots of two consonants occurred at an earlier stage. For example, some forms of certain roots with first radical  $w$ , such as  $*w-r-d$  ‘to descend’, lack the initial  $w$ , as in  $*ja-rid$  (3-descend.PCS) ‘he descended’ and the verbal noun  $*rid-at-$  (descend.INF-F) ‘descent’.<sup>10</sup> Further, some roots exist as byforms, with the third radical either a glide or a reduplication of the second radical, as in  $*r-b-j \sim *r-b-b$  ‘(to be) great’. Finally, some of the languages exhibit roots with two radicals reduplicated, as in Arabic  $z-l-z-l$  ‘to shake’. (Biradical roots are more common in other Afro-Asiatic languages.)

A few roots with four discrete radicals occur in most of the descendant languages, such as Akkadian  $b-l-k-t$  ‘to jump’, Gəʕəz  $d-n-g-š$  ‘to be dismayed’; as in these examples, the second radical is frequently a sonorant. Most such roots are restricted to a single language or subgroup, and so it is difficult to reconstruct any of them to the proto-language.

There are certain phonological constraints on the constituents of a root: while roots with identical second and third radicals are common, such as  $*m-d-d$  ‘to measure’, roots with identical first and second radicals cannot be reconstructed to the proto-language (rare examples are found in some languages, but they are the result of later developments; e.g., Gəʕəz  $s-s-l$  ‘to recede’ <  $*s-l-s-l$ ), and roots with identical first and third radicals are rare.<sup>11</sup> Further, homorganic consonants are generally not found as adjacent radicals (Greenberg 1950).

### 3.3 Nominals

Across Semitic, most adjectives, like  $*salim-at-um$ , are associated with verbal roots. Many substantives, too, like  $*sala:m-um$ , may be said to derive from verbal roots. The patterns of such adjectives and substantives are sometimes salient.  $C_1aC_2VC_3$ , for example, as in  $*salim-$ , is a common verbal adjective that tends to be resultative:  $*na\theta'ir$  ‘guarded’ from  $*n-\theta'-r$  ‘to guard’;  $*wa\thetaib-$  ‘seated’ from  $*w-\theta-b$  ‘to sit’. The pattern  $C_1aC_2a:C_3$ , as in  $*sala:m-$ , is a common verbal substantive, used as an infinitive in several of the descendant languages. A listing of some of the reconstructible patterns is presented in §3.3.1. In the descendant languages, the semantic ranges of many patterns shifted, and some patterns were replaced by others, or merged; it is therefore often not possible to reconstruct whole deverbal noun forms to the proto-language with certainty, but rather only roots and patterns (Fox 2003: 68).

There are also, however, many substantives that are primary, not associated with a verbal root (although a root may be extracted from such substantives, to create a denominal verb), and not necessarily triradical. Unlike many deverbal nouns, primary nouns can be reconstructed to the proto-language in toto. Examples are parts of the body, such as \**raʔs*- ‘head’, \**ʕajn*- ‘eye’, \**ʔanp*- ‘nose’, \**jad*- ‘hand’; kinship terms, such as \**ʔabw*- ‘father’, \**ʔimm*- ‘mother’, \**bin*- ‘son’, \**ʔaxw*- ‘brother’;<sup>12</sup> features of the physical world, such as \**ʔarl*- ‘earth’, \**ʔabn*- ‘stone’, \**nahar*- ‘river’, \**tiha:m*- ‘sea’, \**ʕit*- ‘tree’, \**daθʔ*- ‘grass’, \**jawm*- ‘day’, \**warix*- ‘month’, \**san-at*- ‘year-FSG’; some color terms, such as \**laban*- ‘white’, \**waruk*- ‘yellow-green’. Extensive lists are provided in Fox (1998) and Kogan (2011b).

### 3.3.1 Deverbal noun patterns

The following list is not intended to be comprehensive. As noted in the preceding section, the semantic ranges of some patterns changed in the descendant languages, and so those posited for the proto-language are in some cases speculative.

$C_1VC_2C_3$  forms tend to be substantives.  $C_1aC_2C_3$  forms are extremely common, and not generally classifiable semantically (and many  $C_1aC_2C_3$  forms are primary substantives), e.g., \**kʾabr*- ‘burial, grave’ from \**kʾ-b-r* ‘to bury’.  $C_1iC_2C_3$  and  $C_1uC_2C_3$  forms are often substantives of action or result: \**ʔibh*- ‘sacrifice’ from \**ʔ-b-ḥ* ‘to sacrifice’; \**ʔurk*- ‘length’ from \**ʔ-r-k* ‘(to be) long’.

$C_1aC_2VC_3$ , with a short second vowel, is a productive verbal adjective, as noted above; besides \**salim*- ‘whole’, other examples are \**jasar*- ‘straight’ from \**j-s-r* ‘(to be) straight’; \**maliʔ*- ‘full’ from \**m-l-ʔ* ‘to fill’; \**kʾarub*- ‘near’ from \**kʾ-r-b* ‘to approach; (to be) near’ (see also §3.5.4). Other  $C_1aC_2VC_3$  forms are substantives, such as Gəʕəz *nägär* < \**nagar*- ‘speech’.

$C_1aC_2V:C_3$ . The pattern  $C_1aC_2a:C_3$ , as also noted previously, is a common verbal noun or infinitive in languages that are separated widely enough within the family that it can be reconstructed to PS.  $C_1aC_2i:C_3$  and  $C_1aC_2u:C_3$  forms are relatively rare in Akkadian; in West Semitic languages, however, they are common as verbal adjectives, forming the paradigmatic passive participle of the basic verb stem, for example, in Aramaic ( $C_1aC_2i:C_3$ ), in Hebrew ( $C_1aC_2ūC_3$ ) and in Gəʕəz ( $C_1əC_2uC_3$  < \* $C_1uC_2u:C_3$  < \* $C_1aC_2u:C_3$ ).

$C_1iC_2a(:)C_3$  and  $C_1uC_2a(:)C_3$  are uncommon patterns for substantives, such as Gəʕəz *ʕəbäy* < \**ʕibay*- ‘greatness’ and Hebrew *nēkār* < \**nikar*- ‘foreignness’; \**riha:b*- ‘wide area’ from \**r-ḥ-b* ‘(to be) wide’ is Proto-West Semitic, and \**ʔuna:s*- ‘person’ is Proto-Central Semitic (and may be a primary noun).

Patterns with two high vowels are not reconstructible, with the exception of two *u* vowels, i.e.,  $C_1uC_3(C_2)u(:)C_3$ .  $C_1uC_3u(:)C_3$  forms are substantival, e.g., \**lubu:s*- ‘clothing’ from \**l-b-s* ‘to wear’;  $C_1uC_2u(:)C_3$  is also a common pattern for plurals in Arabic (§3.3.2.2).

$C_1a:C_2iC_3$ , the active participle of the basic verb stem in PS (§3.5.4), is the only pattern reconstructible with a long vowel in the first syllable.

Patterns with gemination of the second radical are common. In Akkadian, e.g.,  $C_1aC_2CaC_3$  adjectives are marked for plurality or high salience, such as *kabbar*- ‘thick’ (cf. *kabar*- ‘thick’; Kouwenberg 1997: 49–58). But  $C_1aC_2Ca(:)C_3$  also forms

agent nouns throughout Semitic, such as *\*dajja(:)n-* ‘judge’ from *\*d-j-n* ‘to judge’ and *\*t’abba(:)x-* ‘butcher’ from *t’-b-x* ‘to slaughter’.  $C_1uC_2C_3u$  forms are often adjectival, as in Akkadian *gubbuḥ-* ‘bald’ and Hebrew *šikkōr* < *\*sukkur-* ‘drunk’. Patterns with a geminated third radical may also be reconstructed, viz.,  $C_1aC_2VC_3C_3$  ( $V =$  short  $a, i,$  or  $u$ ),  $C_1uC_2u$  and perhaps  $C_1iC_2aC_3C_3$ . In Hebrew,  $C_1aC_2u$  is common for color adjectives, such as *ʔādōm* < *\*ʔadumm-* ‘red’, while in Akkadian it is used for numinous qualities, as in *rašubb-* ‘awe-inspiring’; these are associated with a derived stem of the verb that also geminates the third radical (R stem; see §3.5.5).  $C_1uC_2u$  is more often substantival, especially for abstracts: Akkadian *hubull-* ‘debt’, Hebrew *ḥānukkā* < *\*ḥunukk-at-* ‘dedication-FSG’, Arabic *hubull* ‘company’. There are also patterns with prefixes, the most common of which is *\*ma-*. *\*maC\_1C\_2VC\_3* forms are generally substantives, with a wide range of meanings; examples are *\*majsar-* ‘equity’ from *\*j-s-r* ‘(to be) straight’; *\*maʕrab-* ‘entry’ from *\*ʕ-r-b* ‘to enter’. The prefix *\*mu-* marks the participles of most of the derived verb stems (see §3.5.5). Other pattern prefixes are *\*ta-*, as in *\*tarbij-t-* ‘increase-FSG’ from *\*r-b-j* ‘to be(come) large’; and *\*ʔa-*, which is common in plural forms (see §3.3.2.2) and also, in Central Semitic, as a comparative or augmentative, as in Arabic *ʔakbar-* ‘greater, very great’ from *\*k-b-r* ‘(to be) great’.

### 3.3.2 Noun inflection

#### 3.3.2.1 Gender

Nouns in all Semitic languages have two genders, masculine and feminine. In the singular, the masculine noun is generally unmarked, while most feminine nouns are specifically marked as such. The most common marker of the feminine is an ending *\*-at* added to the noun base: *\*t’a:b-* ‘good’, *\*t’a:b-at-* ‘good-F’; *\*baʕl-* ‘lord’, *\*baʕl-at-* (lord-F) ‘lady’. In most of the descendant languages there is also an allomorph *\*-t*, as in *\*bin-t-* (son-F) ‘daughter’, the result of a PS vowel syncope rule that operated on unstressed forms (§2.3); in some languages, such as Biblical Hebrew and Ugaritic, the resulting distribution of *\*-at* vs. *\*-t* became lexical in part (e.g., Hebrew *mēʔā* < *\*miʔ-at-* vs. Ugaritic /miʔ-t-/ ‘hundred’; Hebrew *šēt* < *\*(t)ʔiʔ-t-* vs. Ugaritic /ʔiʔ-at-/ ‘exit’; see Steiner 2012: 373–5).<sup>13</sup> Other, less common, markers of the feminine, such as *\*-aj* and *\*a:ʔ*, are attested in several of the languages. In Arabic and in some Ethiopian Semitic languages, some feminines are formed by pattern replacement, a feature that is more widely associated with the formation of plurals (see §3.3.2.2): e.g., Arabic *ʔat’raʕu* ‘deaf.M’, *t’arʕa:ʔu* ‘deaf.F’; Tigrinya *ʕ’əbbib* ‘narrow.M’, *ʕ’əbbab* ‘narrow.F’. Finally, some feminine substantives in all of the languages are unmarked. These include animate females, such as *\*ʔimm-* ‘mother’ and *\*ʔata:n-* ‘female donkey’; most paired parts of the body,<sup>14</sup> such as *\*ʔuḏn-* ‘ear’ and *\*jad-* ‘hand’; but also other substantives, such as *\*ʔart-* ‘earth’. Some nouns are of variable gender in some of the languages, e.g., *\*ʔurx-* ‘road’ (either M or F in Akkadian and Hebrew). A recent survey of gender in Semitic is Hasselbach (2014).

#### 3.3.2.2 Number

Semitic languages exhibit three numbers, singular, dual and plural.

In some languages, such as Old Akkadian, Ugaritic and various forms of Arabic, the dual is productive and used for ‘two’ of anything, with little or no restriction; in other

languages, such as Hebrew, it is restricted to naturally occurring pairs (i.e., ‘hands’ is hand-DU rather than hand-PL) and certain time words (such as ‘two days’); and in still other languages, such as Aramaic and Ethiopian languages, the dual is vestigial. Dual forms are marked with specific endings added to the singular base of the noun; see §3.3.2.4.

The plural can be formed either by external endings added to the singular base, or by pattern replacement, or by a combination of the two. The external endings originally appeared on adjectives, and incorporated plural markers of predication; e.g., *\*maliʔ-u:* (full-3MPL) ‘they (M) are full’ and *\*maliʔ-u:na* ‘full-MPL.NOM’; *\*maliʔ-a:* (full-3FPL) ‘they (F) are full’ and *\*maliʔ-a:-t-um* ‘full-FPL-F-NOM’. Plurals formed by pattern replacement (referred to as “broken plurals” or “internal plurals”) are especially common in (North) Ethiopian Semitic, Modern South Arabian, Ancient South Arabian and Arabic; it is generally not possible to reconstruct pairs of singular and plural patterns to PS: e.g., while SG ‘house’ is common Semitic *\*bajt-*, PL ‘houses’ is *bujut* in Qurʔanic Arabic, *ʔäbja* (< *\*ʔabja:t*) in Gəʕəz, and *bet* in Jibbāli; for other examples, see the individual language chapters. In Akkadian, only relics of such plurals remain, e.g., *šuharū* ‘lads’ < *\*šuyara:ʔu*, an old plural of the adjective *\*šayir-* ‘small, young’; otherwise, the external plurals have been leveled through all nouns. A shared innovation of the Northwest Semitic languages is the generalization of doubly marked plurals for singulars of the pattern *CVCC*; such plurals have the form {*CVCaC* + external PL}, as in *\*kalb-um* ‘dog. SG-NOM’, plural *\*kalab-u:na* (dog.PL-MPL.NOM); *\*ʕigl-at-um* ‘heifer’ (calf.SG-F-NOM), plural *\*ʕigal-a:-t-um* (calf.PL-FPL-F-NOM). On pattern replacement, see especially Ratcliffe (1998); on external plurals, see Hasselbach (2007).

### 3.3.2.3 State and definiteness

In Semitic studies, the term “state” refers to whether a noun is bound, i.e., morphosyntactically proclitic (“in construct”), to a following dependent element, which may be (a) another noun, (b) a pronominal suffix or (c) a clause. In PS (and in several of the descendant languages), a noun *not* thus bound was specifically *marked* as such with an ending that followed the case vowel, whereas *bound* nouns *lacked* that ending. The marker of nonbound forms originally had two allomorphs, *\*-m* after short vowels and *\*-na* otherwise, as in both Akkadian and Sabaic, languages that are widely separated within the family. Throughout this chapter, bound forms (“construct forms”) are labeled BND.

<i>*ʕajn-u</i>	<i>ʔanθat-i-m</i>	<i>*ʕajn-a:</i>	<i>ʔanθat-i-m</i>
eye-NOM.BND	woman-GEN-NBND	eye-DU.NOM.BND	woman-GEN-NBND
‘the woman’s eye’		‘the woman’s eyes’	
<i>*ʕajn-u-sa</i>		<i>*ʕajn-a:-sa</i>	
eye-NOM.BND-3FSG		eye-DU.NOM.BND-3FSG	
‘her eye’		‘her eyes’	
<i>*ʕajn-u</i>	<i>ta-ʔmur-u</i>	<i>*ʕajn-a:</i>	<i>ja-ʔmur-a:-na</i>
eye-NOM.BND	3F-see.PCS-SBRD	eye-DU.NOM.BND	3-see.PCS-DU-SBRD
‘the eye that saw’		‘the eyes that saw’	

Neither definite nor indefinite articles can be reconstructed for PS. But 3rd person pronouns, which were anaphoric demonstratives originally (§3.1.2), could function to

indicate definiteness: *\*bajt-u-su* ‘his/that/the house’ (house-NOM.BND-3MSG/DEM; Huehnergard and Pat-El 2012). Several of the descendant languages exhibit no article otherwise (e.g., Akkadian, Gəʕəz, Ugaritic). In the Central Semitic languages, however, a definite article arose through the grammaticalization of one of two presentative particles, *\*han* and *\*hal* (both are reconstructible, and both were pressed into service as articles; Pat-El 2009, 2017: 449–52). While the eventual form of this new article differs across the languages, its syntax is the same: only the last member of a genitive chain may bear the article; attributive adjectives must bear the article if the head noun is definite (whereas an articulated noun and an unarticled adjective constitute a predication); the article does not appear on words with personal pronominal suffixes; and the article is used to substantivize adjectives (Huehnergard 2005: 184–6; Pat-El 2009: 25). In the Modern South Arabian languages, too, a definite article emerged; there, however, personal pronominal suffixes must be attached to nouns with the article (see Chapter 11). In South Ethio-Semitic languages such as Amharic, the 3SG pronominal suffixes became the normal definite article.

### 3.3.2.4 Case and declension

The case systems of several of the ancient languages are sufficiently similar that a reconstruction of PS as a three-case language is straightforward: nominative, for subjects and (optionally) for the predicates of verbless clauses; genitive, after bound forms, including all prepositions; and accusative, for objects but also for a wide range of other uses (including predicate marking). Hasselbach (2013), in a thorough review of case in Semitic, both refutes the occasional suggestion that Semitic was at one-time ergative, and argues persuasively “that Semitic was marked-NOM before it developed its well-known triptotic declension” (p. 327). The PS case system is illustrated in Table 3.7 with the adjective *\*t’a:b-* ‘good’.

As Table 3.7 shows, genitive and accusative constitute a single case in the dual and external plural endings (the resulting case sometimes referred to as OBL).

**TABLE 3.7 THE PROTO-SEMITIC CASE SYSTEM, ON *\*T’A:B-* ‘GOOD’**

SINGULAR	MASCULINE	FEMININE
NOM	<i>t’a:b-u-m</i>	<i>t’a:b-at-u-m</i>
GEN	<i>t’a:b-i-m</i>	<i>t’a:b-at-i-m</i>
ACC	<i>t’a:b-a-m</i>	<i>t’a:b-at-a-m</i>
<hr/>		
DUAL	MASCULINE	FEMININE
NOM	<i>t’a:b-a:-na</i>	<i>t’a:b-at-a:-na</i>
GEN/ACC	<i>t’a:b-aj-na</i>	<i>t’a:b-at-aj-na</i>
<hr/>		
PLURAL	MASCULINE	FEMININE
NOM	<i>t’a:b-u:-na</i>	<i>t’a:b-a:t-u-m</i>
GEN/ACC	<i>t’a:b-i:-na</i>	<i>t’a:b-a:t-i-m</i>

Note: Final *-m* and *-na* mark nonbound forms; they are absent in bound (“construct”) forms.

Two other endings can be reconstructed to PS, a locative *\*-u(m)* and a directional *\*-isa* (the latter > *\*-ah(a)* in West Semitic), as in *\*bajt-u(m)* ‘in the house’ and *\*bajt-isa* ‘to the house’. These endings are sometimes also considered case markers, but they do not really function as such and are better seen as adverbial endings (Hasselbach 2013: 20–2).

### 3.4 Numerals

#### 3.4.1 Cardinals

The reconstruction of the PS cardinal numbers is fairly clear-cut, although analogical changes in the descendant languages have made the precise forms of some of them less certain.

1	<i>*ʕast-</i>	6	<i>*sidθ-</i>
2	<i>*θin(a:)-</i>	7	<i>*sabʕ-</i>
3	<i>*θala:θ-</i>	8	<i>*θama:nij-</i>
4	<i>*ʔarbaʕ-</i>	9	<i>*tisʕ-</i>
5	<i>*xamis-</i>	10	<i>*ʕatar-</i>

For *\*ʕast-* as the PS form of ‘one’, see Wilson-Wright (2014), who shows that the usual West Semitic form for ‘one’, *\*wahad-/ʔahad-*, originally meant ‘lone’ (as in Akkadian). The F of ‘one’ is *\*ʕast-aj*; the F form of the other cardinals adds *\*-at* to the forms listed previously. A feature of Proto-Semitic numeral syntax is gender polarity (also termed “chiastic concord”): the cardinals from ‘3’ to ‘10’ exhibit the gender opposite that of their heads:

<i>*ʔarbaʕ-um</i>	<i>ʔanθ-a:-t-um</i>	<i>*sabʕ-at-um</i>	<i>ʔaxx-u:na</i>
four(.MSG)-NOM	woman-FPL-F-NOM	seven-FSG-NOM	brother.PL-MPL.NOM
‘four women’		‘seven brothers’	

‘Twenty’ is the dual of ‘10’; ‘30’ through ‘90’ are either duals of the corresponding units (Akkadian, Gəʕəz) or external plurals of the units (Central Semitic).

#### 3.4.2 Ordinals

While each Semitic language exhibits a consistent pattern for the ordinals, the patterns vary from language to language, and so a PS pattern cannot be reconstructed (e.g., *CaCiC* in Assyrian Akkadian but *CaCuC* in Babylonian Akkadian; *\*Ca:CiC* in Arabic and Gəʕəz; *\*CaCi:Ci:* in Hebrew).

### 3.5 Verbs

#### 3.5.1 Root

See §3.2 on nominal and verbal roots. In §§3.5.2–3.5.4, forms of the basic stem of the verb are illustrated by what Semitists call “sound triradical roots,” i.e., roots with three consonants that are not (generally) subject to phonological change, such as *\*θ-k-r* ‘to invoke’. Then §3.5.5 reviews the other (derived) verb stems, and §3.5.6 surveys “weak” roots.

### 3.5.2 Tense–aspect–mood system

Three finite verb forms can be posited for PS. The simplest is the imperative, with base  $C_1VC_2V_1C_3$ . The other two are both inflected with prefixes, and thus traditionally referred to as prefix conjugations; the semantic distinction between the two is essentially one of markedness (see especially Korchin 2008):<sup>15</sup>

PCS (short prefix conjugation) has the base  $C_1C_2V_1C_3$ ; it is unmarked for TAM categories.

PCL (long prefix conjugation) has a base with a geminated middle radical,  $C_1aC_2C_2V_2C_3$ ; it is marked for imperfectivity or non-anteriority; this form is lost in Central Semitic, replaced by a new form, originally the PCS with a set of endings indicating subordination (see §4.8).

The vowel before  $C_3$  in these forms, called the theme vowel, is lexical. For any given verb the same vowel appears in the imperative and the PCS; for some verbs the same vowel also appears in the PCL, but for most verbs, the theme vowel of the PCL differs from that of the imperative and PCS. Five pairs of theme vowels, or vowel classes, may be reconstructed for PS (Aro 1964). These five vowel classes are listed immediately below, with the vowel of the PCL base listed first, as is traditional;<sup>16</sup> examples are 3MSG, with prefix *\*ji-* or *\*ja-* (for which see §3.5.3):

- a ~ u*: a large class of mostly transitive verbs; e.g., *\*jiðakkar ~ \*jaðkur* ‘to invoke’;
- a ~ i*: a smaller class, also often transitive; e.g., *\*jisarrak’ ~ \*jasrik’* ‘to steal’;
- a ~ a*: a small class of transitive verbs; e.g., *\*jilammad ~ \*jilmad* ‘to learn’; in some of the languages, many verbs with “guttural” consonants (glottals, pharyngeals, and fricative velars/uvulars) as second or third radicals also join this class, e.g., *\*jipattah ~ \*jiptah* ‘to open’;
- i ~ a*: a large class, frequently intransitive and/or stative; e.g., *\*jisallim ~ \*jislam* ‘to be(come) whole’;
- u ~ u*: a smaller class, also frequently intransitive and/or stative; e.g., *\*jisaxxun ~ \*jasxun* ‘to be(come) warm’.

Both the short and the long prefix conjugations signify a variety of tenses and both indicative and injunctive moods. The PCL form may denote any tense, and nuances such as habitual, durative, conditional, potential, and more. The PCS form may denote, *inter alia*, indicative past (e.g., ‘he invoked’) or jussive (‘let him invoke’); the latter sense can be marked explicitly with the proclitic asseverative particle *\*la=* (i.e., *\*la=yaðkur*; see §3.10).

### 3.5.3 Inflection

Table 3.8 presents the probable PS forms of the short prefix conjugation (PCS) of the *a ~ u* verb *\*ð-k-r* ‘to invoke’.

Verbs with theme vowel *i* in the PCS have the same prefixes, as in *\*ʔasrik’*, *\*tasrik’*, *\*jasrik’*, etc., from *\*s-r-k’* ‘to steal’. Verbs with theme vowel *a* in the PCS, however, have *i* in the personal prefix, as in *\*ʔislam*, *\*tislam*, *\*jislam*, etc., from *\*s-l-m* ‘to be(come) whole’.<sup>17</sup> The long prefix conjugation has the same markers of person, but the vowel

TABLE 3.8 CONJUGATION OF THE SHORT PREFIX CONJUGATION (PCS) IN PS; \**Ḍ-K-R* ‘TO INVOKE’

	SINGULAR	DUAL <sup>18</sup>	PLURAL
1c	* <i>ḷaḏkur</i>		* <i>naḏkur</i>
2M	* <i>taḏkur</i>		* <i>taḏkuru:</i>
2F	* <i>taḏkuri:</i>		* <i>taḏkurna</i>
2c		* <i>taḏkura:</i>	
3M	* <i>jaḏkur</i>		* <i>jaḏkuru:</i>
3F	* <i>taḏkur</i>		* <i>jaḏkurna</i> <sup>19</sup>
3c		* <i>jaḏkura:</i>	

TABLE 3.9 CONJUGATION OF THE IMPERATIVE IN PS; \**Ḍ-K-R* ‘TO INVOKE’

	SINGULAR	DUAL	PLURAL
2M	* <i>ḏukur</i>		* <i>ḏukuru:</i>
2c		* <i>ḏukura:</i>	
2F	* <i>ḏukuri:</i>		* <i>ḏukurna</i>

of the prefixes, whether *a* or *i* or both, is uncertain: 3MSG \**jiḏakkar* or \**jaḏakkar*, 2FSG \**tiḏakkari:* or \**taḏakkari:*, etc.; for simplicity, these forms elsewhere in this chapter are written with \**ji-*, \**ti-*, etc.

The imperative occurs only in 2nd person forms; the forms of \**ḏ-k-r* appear in Table 3.9. As noted previously, it has the same theme vowel as the short prefix conjugation. A recent study reconstructs the MSG forms \**ḏukur*, \**sirik'*, *limad*, corresponding to the PCS 3MSG forms \**yaḏkur*, \**yasrik'* and *yilmad* noted in §3.5.2 (Bjørø forthc.).<sup>20</sup> The imperative may not be negated; negative commands are expressed by the prefix conjugations (see §3.9).

The West Semitic suffix conjugation (sc), as in \**ḏakar-a* (invoke.SC-3MSG) ‘he (has) invoked’, is an innovation based on the PS verbal adjective in a predicative construction, for which see the following section.

### 3.5.4 Non-finite forms

A verbal adjective occurs for all verbs and denotes primarily the result of the verbal action. In the basic stem it has the pattern \**CaCVC* (see §3.3.1). The uninflected base of the verbal adjective can take enclitic forms of the 1st and 2nd person nominative pronouns (§3.1.1), creating a verbless predication: \**ḏabir-nu* (broken-1CPL) ‘we are/were broken’; \**k'arub-ti* (near-2FSG) ‘you are/were near’. 3rd person forms bear an unrelated set of endings, 3MSG \**-a*,<sup>21</sup> 3FSG \**-at*, 3MPL \**-u:*, 3FPL \**-a:*, as in \**mali?-at* (full-3FSG) ‘it (F) is/was full’, \**jasar-a:* (straight-3FPL) ‘they (F) are/were straight’. In Proto-West Semitic this construction evolved into an active, perfective verb for nonstative roots, often with *a* in the second syllable, as in \**ḏabar-nu* ‘we broke (TR)’, \**ḏabar-a* ‘he broke (TR)’, to a greater or lesser extent, this new West Semitic form eventually marginalized the earlier short prefix conjugation (PCS) form \**ja-ḏbir* as a past tense, although the latter remained in use as the normal jussive form.<sup>22</sup>



As also noted in §3.3.1, an active participle with the pattern *\*Ca.CiC* for the basic verb stem occurs in many of the descendant languages, and may therefore be reconstructed to PS as a productive form for fientic verbs. It is an adjective, unmarked for aspect, and is often substantivized; e.g., from *\*r-k-b* ‘to ride’: *\*ra:kib-* ‘riding, having ridden, (one) who rides/rode, rider (MSG)’.

Active participles of the derived stems (see the following section) may also be reconstructed; they have a prefix *\*mu-* before the base of the short prefix conjugation form of the verb. Passive participles of the derived stems seem to be a Central Semitic innovation; they also have prefix *\*mu-*, but the pattern of the base varies across the languages (as do the finite forms of the passive derived stems).

A verbal substantive with the pattern *\*CaCa:C* (in the basic stem) functions as an infinitive in Akkadian, Ugaritic and Hebrew, and may therefore be reconstructed as such for PS. In West Semitic, other patterns, such as *\*CiCC*, are also used as verbal nouns or infinitives, with greater or lesser regularity. Across Semitic, these nouns frequently occur after certain common prepositions, especially the LOC/INS preposition for circumstantials and the DAT/DIR preposition for purpose and result; e.g., *\*ʔin naθ'a:r-im* (in protect.INF-GEN) ‘while protecting’, West Semitic *\*la=naθ'a:r-im* (to=protect.INF-GEN) ‘for protecting, (in order) to protect’.

### 3.5.5 *Derived stems and voice*

The basic stem of the verb, exemplified by most of the forms cited in the preceding paragraphs, is often referred to in Semitic studies as the G stem, from German *Grundstamm*. (The scholarly traditions of the individual languages refer to this basic stem by other names.) Other stems, with broadly predictable semantic ranges, could be formed by the addition of prefixes or the doubling or reduplication of the second or third root consonant.<sup>23</sup> The following derived stems can be reconstructed to PS:

- 1 C, for “causative,” characterized in PS by a prefix *\*s(a)*. In the prefix conjugation forms, the pronominal prefixes have *\*u* rather than *\*a* or *\*i* as they do in the basic stem; the short prefix conjugation form (PCS) may be reconstructed as *\*ju-sa-C<sub>1</sub>C<sub>2</sub>iC<sub>3</sub>*, the long (PCL) as *\*ju-sa-C<sub>1</sub>aC<sub>2</sub>C<sub>2</sub>aC<sub>3</sub>*,<sup>24</sup> as in *\*ju-sa-smiʕ* (3-CAUS-hear.PCS) and *\*ju-sa-sammaʕ* (3-CAUS-hear.PCL) ‘he caused/causes (someone) to hear (something)’. While C forms of transitive verbs may be doubly transitive, as in these examples, one of the objects is usually omitted, thus, e.g., ‘he caused (someone) to obey’ or ‘he caused (something) to be heard, he proclaimed (something)’. The C stem is especially common with verbs of motion, e.g., from *\*ʕ-r-b* ‘to enter’, *\*tu-sa-ʕrib* (2-CAUS-enter.PCS) ‘you caused to enter, took in, sent in, brought in’. In most West Semitic languages an areal change of prevocalic *\*s* > *\*h* resulted in the C stem being characterized instead by *\*h*, as in *\*tu-ha-ʕrib*. (In a further development, causative *\*h* > *ʔ* in Arabic, in Ethiopic, and in Aramaic after the Old Aramaic period.) A causative stem in *\*s* is also found in most other branches of Afro-Asiatic.
- 2 D, characterized by doubling of the second radical. The D stem increases the transitivity of the verbal root (Kouwenberg 1997, Beckman 2015). It is especially common as a factitive of stative roots: G *\*ji-slam* (3-whole.PCS) ‘he became whole’, D *\*ju-sallim* (3-whole.FACT.PCS) ‘he made whole, completed, restored’. For transitive roots, the D may be pluralic or indicate increased effect on the object: *\*ju-θabbir* ‘he broke (something) up, apart; he broke (many)’. As the examples show, the pronominal prefix has *u* in the D stem, as in the C stem.

- 3 L, characterized by a long *a:* after the first radical. The function of this stem in PS is difficult to determine. In Classical Arabic this stem (“Form III”) denotes intent, as in *qa:tala* ‘he fought’, i.e., ‘he tried to kill’, vs. *qatala* ‘he killed’. In Ethiopian Semitic languages, however, it has become lexical, as in Gəʕəz *baräkä* < *\*ba:raka* ‘he blessed’. In the Modern South Arabian languages, the L stem has merged with the D stem, via regular phonological processes and the resulting stem is also frequently lexical. The L stem is vestigial in the Northwest Semitic languages, and lacking in East Semitic. But since a similar form is attested elsewhere in Afro-Asiatic (viz., in Cushitic), it may be reconstructed to PS.
- 4 N, characterized by a prefix *\*n*. This *\*n* was originally prefixed to the basic (G) verbal adjective, *\*CaCVC* (see §3.5.4), resulting in an ingressive verb. Since for transitive verbs that adjective was normally passive or resultative, N verbs are usually passive or middle: *\*θabir-* ‘broken’, *\*jV-n-θabir* (3-*n*-broken) ‘it got broken, it broke (INTR)’. Cognates of the N stem are attested in other Afro-Asiatic languages (Lieberman 1986).
- 5 R, characterized by reduplication of the third radical, as in the PCS form *\*jV-C<sub>1</sub>aC<sub>2</sub>C<sub>3</sub>iC<sub>3</sub>*. This stem is common in Arabic (“Form IX”) for roots denoting colors and physical characteristics, as in *jasʕfarir* ‘it turned yellow, became jaundiced’. It occurs in several other Semitic languages, and may therefore be reconstructed as a PS stem. Finite forms are rare and vestigial, however, and so its original semantic function is not entirely certain, although it seems generally to have been intensifying (Hartmann 1875, Whiting 1981): e.g., Akkadian (Old Babylonian) *ta-šḫarrar* ‘you (MSG) become still (PCL)’ (root *š-h-r*), Biblical Hebrew suffix conjugation *šaʔānan* ‘it (M) is at peace’ (root *š-ʔ-n*). R stem verbal adjectives are more commonly attested, e.g., with pattern *\*C<sub>1</sub>aC<sub>2</sub>uC<sub>3</sub>C<sub>3</sub>*, as in Akkadian *šahurr-* ‘still’, Hebrew *\*ʔadumm-* ‘red’ (see §3.3.1).
- 6 *t*-forms. Associated with each of the G, C, D and L stems is a stem with a prefixed or infix *t*. The Ct stem is marked by *s-t*, with *t* immediately after the causative *s*, as in *\*jV-s-t-aC<sub>1</sub>C<sub>2</sub>iC<sub>3</sub>* (since in this stem the *\*s* was not prevocalic, it remained even in the languages in which the C stem *\*s* became *\*h*). In the tG and tD stems, the *t* was probably prefixed to the base, thus tG *\*jV-t-C<sub>1</sub>aC<sub>2</sub>VC<sub>3</sub>* and tD *\*jV-t-C<sub>1</sub>aC<sub>2</sub>C<sub>2</sub>VC<sub>3</sub>*. In several of the languages, however, the *t* came to be infix, after the first root consonant; this was especially true of the tG (*\*jV-C<sub>1</sub>-t-aC<sub>2</sub>VC<sub>3</sub>*), which may already have undergone the metathesis, perhaps optionally, in the proto-language. The *t* stems are medio-passive, reflexive, and reciprocal in meaning. Other Afro-Asiatic languages also attest medio-passive verbs marked with *\*t* (Voigt 1987).
- 7 Internal passives. In the Central Semitic languages and the Modern South Arabian languages, the G, C, D and L stems exhibit passive verbs that are characterized by a change of vowel melodies vis-à-vis the active form (termed “internal passives” or “ablaut passives”).<sup>25</sup> The short prefix conjugation (PCS) form of the G passive may be reconstructed as *\*ju-C<sub>1</sub>C<sub>2</sub>aC<sub>3</sub>* (with *\*u* in the prefix), as in *\*ju-ḏkar* ‘he was invoked’, vs. *\*ja-ḏkur* ‘he invoked’; but the other stems show varying melodies, e.g., Hebrew D passive *\*ju-C<sub>1</sub>uC<sub>2</sub>C<sub>2</sub>aC<sub>3</sub>* vs. Arabic *\*ju-C<sub>1</sub>aC<sub>2</sub>C<sub>2</sub>aC<sub>3</sub>*. Ethiopian Semitic does not have such forms, while in Akkadian, passives with distinctive vowel melodies are simply the verbal adjectives of the relevant stems, as in the Assyrian D stem adjective *šallum-* ‘made whole’, and prefix conjugation forms do not occur. Thus it is likely that these internal passives are the result either of an innovation in a common ancestor of Central Semitic and the Modern South Arabian languages or of an areal diffusion.

### 3.5.6 “Weak” roots

Verbal roots with the glides *w* or *j* as their first or second radical underwent developments already in PS. As noted in §3.2, in some roots with *w* as first radical, the *w* is lacking in the short prefix conjugation base and related forms, such as the imperative; e.g., from the root *\*w-θ-b*, *\*ja-θib* (3-sit.PCS) ‘he sat’, *\*θib* ‘sit.IMP!’. Other verbs I–*w* were regular, however; e.g., from the root *\*w-ṣ-p*, *\*ja-wṣup* (3-add.PCS) ‘he added’ (see Huehnergard 2006a). Verbs I–*j*, such as *\*j-b-s* ‘(to be) dry’, were also regular, as in *\*ji-jbas* (3-dry.PCS) ‘it became dry’.

In roots with *w* or *j* as the second radical, a number of forms underwent phonological changes in PS. Expected PCS forms such as *\*ja-kwun-u*: (3-stable.PCS-MPL) ‘they (M) became stable’ and *\*ja-ljim-u*: (3-set.PCS-MPL) ‘they (M) set’ are not usually attested; instead, as noted in §2.2, the glide and the following vowel yielded a long vowel: *\*ja-ku.n-u*.; *\*ja-li.m-u*.; in closed syllables, the new long vowel was shortened: *\*ja-kun* ‘it became stable’, *\*ja-lim* ‘he set’. See §2.2 as well for developments in the verbal adjectives of these roots. The PCL forms of these roots were regular: *\*ji-kawwan*, *\*ji-lajjam*.

Verbs with *w* and *j* as the third radical are essentially regular in Gəṣəz and in the earliest Akkadian dialects, and thus were probably inflected normally in PS as well, e.g., *\*ji-xdaw-u*: (3-rejoice.PCS-MPL) ‘they (M) rejoiced’, *\*ta-bnij-u*: (2-build.PCS-MPL) ‘you (MPL) built’.

In stative roots with identical second and third radicals (traditionally called “geminate roots”), the verbal adjective has the form  $*C_1aC_2C_2$ , e.g., *\*ḥamm-um* ‘hot-NOM’; since adjectives with the pattern  $*C_1aC_2C_3$  cannot be reconstructed in PS, it is likely that the former are the result of a PS syncope rule (viz., *\*ḥamm-um* < *\*ḥamam-um*; see §2.3, end). In Central Semitic, PCS forms of these roots show metathesis of the theme-vowel and the second radical: *\*ja-mudd-u*: < *\*ja-mdud-u*: (3-measure.PCS-MPL) ‘they (M) measured’; it is uncertain whether this is a Central Semitic innovation or, less likely, a PS feature that was independently leveled out of the various non-Central Semitic languages.

## 3.6 Prepositions

A number of words that function as prepositions can be reconstructed to PS. Some of these are originally substantives, used adverbially as bound forms, as in *\*wist'-a bajt-im* interior-ACC.BND house-GEN ‘within the house’. A substantival origin of other prepositions, however, is not evident; some of these are simple CV forms, which were probably proclitic, such as *\*ka* = ‘like’, while others are CVC forms, such as *\*ʔin* ‘in’ (Voigt 1999). These invariably govern the GEN as well: *\*ka=kalb-im* (like=dog-GEN) ‘like a dog’, *\*ʔin libb-i-ja* (in heart-GEN.BND-1CSG) ‘in my heart’. Several forms have an optional ending *-aj*, e.g., *\*wist'aj* ‘in, with’. The prepositions *\*ʕal(aj)* ‘on, against’ and *\*ʕad(aj)* ‘up to, until’ are associated with verbal roots, respectively *\*ʕ-l-j* ‘to go up’ and (West Semitic) *\*ʕ-d-w* ‘to cross, traverse’; but whether the prepositions or the verbal roots are primary is uncertain.

Since prepositions are bound forms, and since bound forms can govern clauses (see §3.3.2.3), some prepositions are also common as subordinating conjunctions (with or without a relative marker): *\*ʕad(aj) ʔi-smaʕ-u* (until 1CSG-hear.PCS-SBRD) ‘until I heard’.

A list of probable PS prepositions follows; forms ending with =, such as *\*bi=*, are usually proclitic.

- *\*ʔin* ‘in’ in East Semitic, but in West Semitic of restricted occurrence, e.g., Gəʕəz *ʔən-bälä* ‘without’ (=Akkadian *in(a) balu*), and in a form extended with (F) *\*-t*, *\*ʔin-tV* (also *\*ʔin-t-aj*), meaning ‘at, via’ (Gəʕəz *ʔəntä*) and ‘with’ (Babylonian Akkadian *itti*, Hebrew *ʔet*); note also Gəʕəz *ʔən-zä* (in-REL) ‘while’
- *\*ʕad(aj)* ‘up to, until’; cf. the West Semitic verbal root *\*ʕ-d-w* ‘to cross, traverse’
- *\*ʕal(aj)* ‘on, against’; cf. the PS verbal root *\*ʕ-l-j* ‘to go up’
- *\*bajn(-aj)* ‘between’ (lost in Akkadian, but present in Eblaite)
- *\*bal* ‘without, non-’ (Pat-El 2013)
- *\*bi=* West Semitic, ‘in, with’ (LOC/INS)
- *\*ha=* ‘to, for’; in West Semitic, found only in Modern South Arabian languages (e.g., Jibbāli *he=f* ‘to him’) and in the Ancient South Arabian language Ḥaḍramitic; in East Semitic, it is extended with enclitic *\*=na*, as *\*ha=na* > Akkadian *ana*, Eblaite *ʔa<sub>3</sub>-na/hana/* (Tonietti 2013: 51)
- *\*ka=* also *\*ki:* (and *\*kaj* ?) ‘like, as’
- *\*la=* West Semitic ‘to, for’ (DAT/DIR); apparently lost in East Semitic, unless the preposition is the same as the asseverative particle *\*la=*, for which see §3.10
- *\*min(V)* ‘from’; in Ethiopian, Tigre has *min*, but in Gəʕəz the form has become *ʔəm* and *ʔəmənnä* via an obscure set of developments; lost in Akkadian, but Eblaite has two distinct prepositions, *min* ‘in’ and *minu* ‘from’ (Tonietti 2013: 82–8)
- *\*sin* or *\*tsin* ‘toward, at’? Only in Eblaite (and one early Akkadian text), where the spelling *si-in* indicates initial *\*s* or *\*t* (Tonietti 2013: 90–3), and in Ancient South Arabian, where the usual writing *s<sup>3</sup>n* indicates initial *\*ṣ* (in Minaic, Qatabanic, and early Sabaic; but later Sabaic texts have *s<sup>1</sup>n*, with *\*s*)
- *\*wist’(aj)* or *\*wast’(aj)* ‘in, at’; as noted above, derived from a substantive *\*wi/ast’-* ‘interior’

As in many other languages, prepositional phrases, comprising a preposition and a bound-form substantive, are common; examples found across Semitic (albeit with varying lexemes) are {to face.BND} = ‘toward’, {in hand.BND} = ‘through the agency of’, {in middle.BND} = ‘within’, {like mouth.BND} ‘according to’.

### 3.7 Conjunctions

PS coordinating conjunctions are *\*wa* ‘and’, *\*pa/ʔap* ‘and then, and so’ (these two are proclitic in some languages) and *\*ʔaw* ‘or’. For subordinating conjunctions, see §4.8.

### 3.8 Adverbs

Only a few true adverbs may be reconstructed, e.g., interrogative *\*mataj* ‘when?’. Most words used as adverbs are demonstratives, substantives, and adjectives, often in the accusative case, e.g., *\*jawm-am(=ma)* (day-ACC(=TOP) ‘today’ or ‘daily’). For the adverbial endings *\*-u(m)* and *\*-isa*, see §3.3.2.4, end.

### 3.9 Negation markers

Pat-El (2012) and Sjörs (2018) plausibly reconstruct two PS negators, both of which are attested in East and West Semitic: *\*la*: is the standard negator, while *\*ʔal* is a marked form (both [+NEG] and [+VOL]) restricted originally to negating the short prefix conjugation *\*jV-C<sub>1</sub>C<sub>2</sub>VC<sub>3</sub>*, when used with injunctive modal force, as in *\*ʔal ja-ḏkur* (NEG 3-invoke.PCS) ‘may he not invoke’. This original system is preserved intact only in the Northwest Semitic languages.

### 3.10 Other particles

Two presentative particles, *\*han* and *\*hal* ‘here is . . .’, may be reconstructed to PS (Hasselbach 2007, Pat-El 2009).

An existential particle in Central Semitic is *\*jiθ-* ‘there is/are’; the cognate in East Semitic, however, is a finite verb, *\*j-θ-w*, which in Akkadian came to signify ‘to have’ (Bar-Asher Siegal 2011). A negative counterpart, *\*ʔajn-* ‘there is/are not’, appears in Northwest Semitic, perhaps related to a negative *ʔin* in Arabic and Ethiopic.<sup>26</sup>

Proclitic *\*la=* marks asseveration or affirmation, and could be prefixed to virtually any form, with the exception of imperatives (Huehnergard 1983); e.g., Ugaritic:

<lbsl. npl>, i.e., /la=baʕl-u napal-a/  
 la=Baal-NOM fall.SC-3MSG  
 ‘Baal has indeed fallen.’

Asseverative *\*la=* marks the short prefix conjugation verb specifically as injunctive: *\*la=jaḏkur* (la=3.invoke.PCS) ‘may he invoke’.

The particle *\*law* introduces hypotheticals: *\*law jaḏkur* ‘would that he had invoked’. Enclitic *=ma* is a topicalizing particle:

*\*ja-mut dajja(:)n-um=ma*  
 3-die.PCS judge-NOM=TOP  
 ‘It was the judge who died.’

In Akkadian, *=ma* also topicalized whole clauses, and became the most common clause connector:

Old Babylonian *ileqqû=ma izuzzû*  
 receive.PCL.3MPL=TOP divide.PCL.3MPL  
 ‘They will receive and then divide.’

## 4 SYNTAX

### 4.1 Word order

The ancient West Semitic languages such as Biblical Hebrew, Old Aramaic, Classical Arabic and Gəʕəz are predominantly VSO. Akkadian prose, conversely, is SOV. But there are exceptions in Akkadian; for example, Old Assyrian has a few examples of SVO and even VSO (Kouwenberg 2017: 698–703); further, Akkadian names with verbal elements



The other construction employs the relative marker, itself a bound form in apposition to the (nonbound) head noun (see §3.1.3):

<i>*ʔanθ-at-u-m</i>	<i>θa:t-u</i>	<i>bajt-i-m</i>
woman-F-NOM-NBND	REL.F-NOM.NBND	house-GEN-NBND

‘woman of the house’.

This second type became rare in some West Semitic languages, such as ancient Hebrew and Arabic (Pat-El 2010).

In both types of construction, a clause could stand in the position of the genitive noun. For example, either of the following was possible. The first type became less common in West Semitic.

<i>*ʔanθ-at-u</i>	<i>ta-δkur-u</i>
woman-F-NOM.NBND	2-invoke.PCS-SBRD

‘the woman you (MSG) invoked’.

or

<i>*ʔanθ-at-u-m</i>	<i>θa:t-u</i>	<i>ta-δkur-u</i>
woman-F-NOM-NBND	REL.F-NOM.NBND	2-invoke.PCS-SBRD

‘the woman whom you (MSG) invoked’.

Only the first type of construction was used for pronominal possession in PS:

<i>*ʔanθ-at-u-su</i>
woman-F-NOM.NBND-3MSG

‘his wife’.

#### 4.4 Definite article

See §3.3.2.3.

#### 4.5 Agreement

Rules of agreement in PS are difficult to reconstruct with confidence. In most Semitic languages, attributive adjectives agree with their head nouns in gender and number (and case, if applicable), though not necessarily in boundness. In some Ethiopian Semitic languages such as Gəʕəz, however, the concord is less strict for inanimates (see Chapter 6). In Arabic, broken plurals (§3.3.2.2) of inanimates are construed with FSG adjectives and verbs. In Akkadian, agreement in the plural depends on the morphology of the head noun; e.g., Old Babylonian *bīt-um labir-um* (house-NOM old.MSG-NOM) ‘old house’, but plural *bīt-āt-um labir-āt-um* ‘old houses’ (house-FPL-NOM old-FPL-NOM). This contrasts with a West Semitic agreement pattern such as that of Biblical Hebrew, where the gender of the noun in the singular determines the gender of the adjective in the plural: *ʔārāy-ōt šōʔāg-īm* ‘roaring lions’ (lion.M-FPL roaring-MPL) (see Huehnergard 2006c: 17).

Verbs agree strictly with their subjects in Akkadian. In Classical Arabic, verbs are singular when they precede plural subjects; sporadic instances of this are also found in Biblical Hebrew. In Gəʕəz, again, agreement of the verb with a F OR PL inanimate subject is optional.

#### 4.6 Negation

See §3.9.

#### 4.7 Interrogative sentences

Interrogative sentences are marked variously in the descendant languages – e.g., intonation or stress in Akkadian, proclitic particles in Arabic and Hebrew, enclitic particles in Ethiopic – and so it is difficult to reconstruct the PS situation.

#### 4.8 Subordination

A common Semitic subordinating conjunction is *\*ki*, with a wide semantic range, introducing temporal, causal, comparative and object clauses (‘when, because, as, that’). As noted in §3.6, certain prepositions also function as subordinating conjunctions, as do bound form nouns, such as *\*jawm-a* (day-ACC.BND) ‘when’. Relative clauses occupy the slot of attributives, and are introduced either by the relative marker or by a bound form; see §4.3 for examples. The syntactic role of the head noun in the relative sentence may be filled by a resumptive pronoun:

*\*ʔanθ-at-um*    *θa:t-u*            *ta-ʔmur-u*            *bajt-a-sa*  
 woman-F-NOM    REL.F-NOM.BND    2-see.PCS-SBRD    house-ACC.BND-3FSG  
 ‘the woman REL you saw her house’, i.e., ‘the woman whose house you saw’.

In East Semitic, finite verbs in subordinate clauses, both relative and other types, are obligatorily marked with a final *\*-u* if the verb has no other ending,<sup>29</sup> as in the following Old Assyrian examples:

*kutān-um*    *ša*    *ekall-um*    *i-lqe-u*  
 textile-NOM    REL    palace-NOM    3-take.PCS-SBRD  
 ‘the textile that the palace took’.

*kīma*    *aḥ-um*            *ana*    *aḥ-em*            *i-ddun-u*  
 as    brother-NOM    to    brother-GEN    3-give.PCL-SBRD  
 ‘as brother gives to brother’.

Other subordination markers, *-na* and *-ni*, are also attested in Akkadian, both probably deriving from *\*-na* (with dissimilation to *-ni* after *a*:). It is likely that this feature, in which finite verbs are marked as nominalized, was inherited from PS (Hasselbach 2012), with allomorphs *\*-u* after consonants and *\*-na* after vowels. The feature is lost in Ethiopian Semitic and in Modern South Arabian. But in a diagnostic development that characterizes Central Semitic, the PS short prefix conjugation form with the subordination marker



\*-u/\*-na, e.g., 3MSG \**jaḏkur-u*, 3MPL \**jaḏkuru:-na*, was reanalyzed as a new marked imperfective form, a form that completely replaced the inherited PS form \**jiḏakkar* (see Chapter 1, §2.2.3).<sup>30</sup>

For ‘if’, we may posit PS \**sin*(=*ma*) (> Akkadian *šumma*, Aramaic *hin*, Gəḏəz *ʔammä*, Arabic *ʔin*). The apodosis of a conditional sentence could be introduced by the coordinating conjunction \**wa* ‘and’. Both protases and apodoses of conditional sentences exhibit a rather perplexing range of verb forms across the Semitic languages.

## 5 LEXICON

An extensive set of pronouns, primary nouns, numerals, verbal roots and particles can be reconstructed to PS. A complete dictionary of common Semitic vocabulary is not yet available. The *Dictionnaire des racines sémitiques* (Cohen et al. 1970–) runs to nearly 1,300 pages as of the most recent fascicle (2012), but is still only 40% complete; it is in the order of the Hebrew alphabet. The *Semitic Etymological Dictionary*, by Militarev and Kogan, is arranged by semantic field; two volumes have appeared, “Anatomy of Man and Animals” (2000) and “Animal Names” (2005). Fronzaroli (1964–71) and Kogan (2011b) are monograph-length overviews of the PS lexicon; in a much larger work, Kogan 2015 uses a comprehensive survey of Semitic vocabulary to examine issues of subgrouping. A Leipzig-Jakarta list of Proto-Semitic words is presented by Wilson-Wright (forthc.). Lists of common Semitic vocabulary and roots may also be found in Bennett (1998) and Huehnergard (2011).

Beyond Semitic itself, a few PS words and roots have cognates in other Afro-Asiatic languages; examples are (PS) \**sim*- ‘name’, \**lis(a.n)*- ‘tongue’, and the roots \**m-w-t* ‘to die’ and \**p-r-r* ‘to flee, fly’. But it has been notoriously difficult to compile extensive Afro-Asiatic cognate sets.

Common Semitic words that are, or may be, loans include \**hajkal*- ‘temple, palace’, from Sumerian *é-gal* ‘house-big’, and probably \**ṭawr*- ‘bull’ and \**k’arn*- ‘horn’ from Indo-European \**tauro*- and \**k’-n-*, and the deity name \**ʕaṭtar*- ‘morning/evening star’ from I-E \**h<sub>2</sub>ste:r-* ‘star’.<sup>31</sup> Other words are of uncertain origin, e.g., \**marr*- ‘spade, shovel’, also in Sumerian *mar*, Egyptian *mr* and perhaps elsewhere in Afro-Asiatic, as well as, e.g., Latin (Salonen 1952: 9).

## NOTES

- 1 The velar/uvular fricatives will be represented simply as velars (x, ɣ, x’) elsewhere in this chapter.
- 2 Throughout this chapter, affricates are transcribed as ligatures (tʃ, dʒ) rather than with a tie-bar (tʃ̄, dʒ̄).
- 3 Further, a conditioned change \**s* > \**h* occurred in early West Semitic, for which see the third of the set of phonological processes presented following Table 3.2; cross-linguistically, [s] > [h] is much more common than [ʃ] > [h].
- 4 In some instances the two byforms of a single original root have reflexes in an individual language; e.g., Arabic has both *b-q-r* ‘to split, slit’ and *f-q-r* ‘to pierce, slit’ (with some semantic disambiguation) from the PS root \**b-k’-r*, in addition to *f-q-r* ‘to be needy, poor’ from the PS root \**p-k’-r*.
- 5 The change \**s* > \**h* was not a Proto-West Semitic phenomenon, but occurred after the appearance of subbranches of West Semitic and then spread to most albeit not

- all of the languages; the change is not found in several of the Ancient South Arabian languages, at the geographical periphery.
- 6 Thus, e.g., for the root *\*s-l-m* ‘(to be) whole’, while *\*salim-at* ‘she is whole’ (whole-3FSG) would have become *\*\*halim-at*, the form *\*ti-slam* ‘she became whole’ (3F-whole.PCS) would have remained unaffected by the rule, and so all forms of the root retained the original *\*s*.
  - 7 In some of the descendant languages, sound changes and movement of stress resulted in occasional minimal pairs distinguished by stress: e.g., Gəʕəz *'səḥ.tāt* ‘error’ vs. *səḥ.'tāt* (err.SC.3FSG) ‘she erred’; Biblical Hebrew *'bā.nū* (in.1CPL) ‘among us’ vs. *bā.'nū* (build.SC.3MPL) ‘they (M) built’.
  - 8 The final vowels of many of these forms, and also of the pronominal suffixes presented in Table 3.5 are often reconstructed with variable length, e.g., 1CSG *\*ʔana* or *\*ʔana:* (in Semitic scholarship, called “anceps vowels,” and written, e.g., *ā*). See Hasselbach (2004a) for arguments that these vowels are originally short.
  - 9 The element *\*ʔajj-* is also a component in a wide variety of forms in the descendant languages, and so a recent study analyzes it as “an abstract general constituent-question marker” (Cohen forthc.).
  - 10 Egyptian exhibits similar alternations in forms of roots with first radical *w*, as in *wšḥ* ‘(to be) broad’ and *šḥw* ‘breadth’.
  - 11 There are exceptions, such as common Semitic *\*n-t-n* ‘to give’, Akkadian *ḫ-ṣ-ḫ* ‘to need’; roots of the form  $C_1-w-C_1$  and  $C_1-j-C_1$  are also found, e.g., *\*ḏ-w-ḏ* ‘to stand’.
  - 12 For the proto-forms of ‘father’ and ‘brother’, see Wilson-Wright (2016b).
  - 13 Hebrew in fact exhibits byforms of some words, one showing the reflex of *\*-t* and the other the reflex of *\*-at*; e.g., *lēḏēt* < *\*lid-t-* and *lēḏā* < *\*lid-at-*, both attested as INF of the root *y-l-d* ‘to give birth’; *mašṣebet* < *\*mants'ib-t-* and *mašṣēbā* < *\*mants'ib-at-* ‘memorial stone’.
  - 14 Paired parts of the body are presumably F because the marker of the NOM DUAL, *\*-a:*, was also a marker of FPL; see §3.2.2.
  - 15 Essentially the same system of forms and functions has recently been reconstructed for an ancestral Proto-Berber-Semitic (Kossmann and Suchard 2018).
  - 16 The vowel of the PCL eventually also appears in the West Semitic suffix conjugation, for which see §3.5.4.
  - 17 Hasselbach (2004b) proposes instead that the distribution *\*jaḏkur*, *\*jantin* vs. *\*jislam* is a Central Semitic innovation, and that in PS, for all verb classes, the vowels of the person prefixes were partly homorganic with the consonants (as, for the most part, in Akkadian), viz.: 1SG *\*ʔa-*, 2SG/2PL/3FSG *\*ta-*, 3MSG/3PL *\*ji-*, 1CPL *\*ni-*. Bar-Asher (2008) offers counter-arguments; see also Testen (1992). Kossmann and Suchard (2018) posit a Proto-Berber-Semitic distinction between perfective *\*ja-C\_1C\_2uC\_3*, *\*ja-C\_1C\_2jC\_3* and stative *\*ji-C\_1C\_2aC\_3*.
  - 18 The Modern South Arabian languages and (rarely) Akkadian exhibit a first-person dual form, *\*ʔaḏkura:*, i.e., the 1CSG with the dual ending *\*-a:*. It is more likely that these are independent innovations on the ready analogy of the more widely attested 2nd- and 3rd-person duals than that they reflect inheritance from PS. For Akkadian, see Kouwenberg (2005: 100–1, 2017: 485); for Modern South Arabian, see Rubin (2014: 141, 2018: 165).
  - 19 The 3FPL may instead have had *t-*, like the 3FSG.
  - 20 See also Bar-Asher (2008), who reconstructs *\*ḏakur*, *\*sarik* and *\*limad*.

- 21 It is likely that 3<sub>MSG</sub> \*-a is originally the same as the ACC case, which *inter alia* marked nominal predicates; see Hasselbach (2012).
- 22 Another West Semitic development is the frequent lengthening of the second vowel in \*CaCVC adjectives, especially as \*CaCi:C and \*CaCu:C, which then serve as paradigmatic passive participles of the basic verb stem (see again §3.3.1; Huehnergard 2006c: 10).
- 23 On the relationships of the stems to valency and transitivity, and the interrelationships among the stems, see Bjøru (2014).
- 24 This form is found in Akkadian, though only marginally, for example, in verbs in which the first radical was originally a laryngeal, pharyngeal, or glide, such as Old Babylonian *uṣahḥaz* < \*ju-sa-ḥaxxad (3-CAUS-seize.PCL) ‘he incites’, and in the stem called the ŠD, which is restricted to poetry, as in Old Babylonian *uṣnarrat* < \*ju-sa-narrat’ (3-CAUS-tremble.PCL) ‘she makes (people) tremble’. Otherwise in Akkadian, \*ju-sa-C<sub>1</sub>aC<sub>2</sub>C<sub>2</sub>aC<sub>3</sub> has been replaced by \*ju-sa-C<sub>1</sub>C<sub>2</sub>aC<sub>3</sub>, via an analogy with the D stem (Tropper 1997: 189–93). In Gəṣəz, PS \*ju-sa-C<sub>1</sub>aC<sub>2</sub>C<sub>2</sub>aC<sub>3</sub> > \*ju-ha-C<sub>1</sub>aC<sub>2</sub>C<sub>2</sub>aC<sub>3</sub> > \*ju-ḥa-C<sub>1</sub>aC<sub>2</sub>C<sub>2</sub>aC<sub>3</sub> > \*ja:-C<sub>1</sub>aC<sub>2</sub>C<sub>2</sub>aC<sub>3</sub> → jaC<sub>1</sub>äC<sub>2</sub>C<sub>2</sub>äC<sub>3</sub> (e.g., *jawärrad* ‘he brings down’, from *w-r-d* ‘to descend’), with the theme vowel leveled to ä as in other Gəṣəz PCL forms.
- 25 The N stem and *t* stems also have internal passives in Classical Arabic; such forms also occur rarely in Hebrew.
- 26 Middle Babylonian Akkadian *yānu* ‘there is/are not’ derives from the interrogative adverb *ayyānu* ‘where?’.
- 27 In most modern Ethiopian Semitic languages, which are SOV as a result of Cushitic influence, heads follow modifiers; see Leslau (1945), Gensler (1997).
- 28 But the construction that predicates a verbal adjective with an enclitic subject pronoun is fixed as P – S, e.g., \*k’arub-ti (near-2FSG) ‘you (FSG) are/were near’; see §3.5.4.
- 29 For the subordination marker -u in Eblaite, see Catagnoti (2012: 136–7).
- 30 For a plausible analysis of the process, see Hamori (1973).
- 31 On the last, see Wilson-Wright (2016a: 23–5).

## BIBLIOGRAPHY

### General bibliography on the Semitic language family

#### *Further reading: overviews, comparative grammars, and textbooks*

- Bennett, Patrick R. *Comparative Semitic Linguistics: A Manual*. Winona Lake, IN: Eisenbrauns, 1998.
- Bergsträsser, Gotthelf. *Einführung in die semitischen Sprachen: Sprachproben und grammatische Skizzen*. München: Max Hueber, 1928. Translated with Notes and Bibliography and an Appendix on the Scripts by Peter T. Daniels, as *Introduction to the Semitic Languages. Text Specimens and Grammatical Sketches*. Winona Lake, IN: Eisenbrauns, 1983.
- Brockelmann, Carl. *Grundriss der vergleichenden Grammatik der semitischen Sprachen*. 2 vol. Berlin: von Reuther, 1908–13.
- Goldenberg, Gideon. *Studies in Semitic Linguistics*. Jerusalem: Magnes, 1998.
- Goldenberg, Gideon. *Semitic Languages: Features, Structures, Relations, Processes*. Oxford: Oxford University Press, 2013.
- Hetzron, Robert (ed.). *The Semitic Languages*. London/New York: Routledge, 1997.

- Huehnergard, John. "Semitic Languages." In *Civilizations of the Ancient Near East*, edited by Jack M. Sasson, 4.2117–34. New York: Scribners, 1995.
- Huehnergard, John. "Afro-Asiatic." In *The Cambridge Encyclopedia of the World's Ancient Languages*, edited by Roger D. Woodard, 138–59. Cambridge: Cambridge University Press, 2004.
- Huehnergard, John. "Proto-Semitic Language and Culture." In *The American Heritage Dictionary of the English Language*, 5th edition, 2066–78. Boston/New York: Houghton Mifflin Harcourt, 2011.
- Izre'el, Shlomo (ed.). *Semitic Linguistics: The State of the Art at the Turn of the 21st Century*. Israel Oriental Studies 20. Winona Lake, IN: Eisenbrauns, 2002.
- Kienast, Burkhard. *Historische semitische Sprachwissenschaft*. Wiesbaden: Harrassowitz, 2001.
- Kogan, Leonid. *Genealogical Classification of Semitic: The Lexical Isoglosses*. Boston/Berlin: de Gruyter, 2015.
- Lipiński, Edward. *Semitic Languages: Outline of a Comparative Grammar*. Orientalia Lovaniensia Analecta 80. Leuven: Peeters/Departement Oosterse Studies, 1997.
- Moscatti, Sabatino (ed.). *An Introduction to the Comparative Grammar of the Semitic Languages: Phonology and Morphology*. Wiesbaden: Harrassowitz, 1964.
- Rubin, Aaron D. *A Brief Introduction to the Semitic Languages*. Piscataway, NJ: Gorgias, 2010.
- Weninger, Stefan (ed.). *The Semitic Languages: An International Handbook*. Handbücher zur Sprach- und Kommunikationswissenschaft 36. Berlin: de Gruyter Mouton, 2011.

### Dictionaries

- Cohen, David, et al. *Dictionnaire des racines sémitiques ou attestées dans les langues sémitiques*. Paris/The Hague: Mouton/Leuven: Peeters, 1970–.
- Militarev, Alexander, and Leonid Kogan. *Semitic Etymological Dictionary. Vol. 1: Anatomy of Man and Animals*. Münster: Ugarit, 2000.
- Militarev, Alexander, and Leonid Kogan. *Semitic Etymological Dictionary. Vol. 2: Animal Names*. Münster: Ugarit, 2005.

### Additional references

- Aro, Jussi. *Die Vokalisierung des Grundstammes im semitischen Verbum*. Studia Orientalia 31. Helsinki: Societas Orientalis Fennica, 1964.
- Bar-Asher, Elitzur A. "The Imperative Forms of Proto-Semitic and a New Perspective on Barth's Law." *Journal of the American Oriental Society* 128 (2008): 233–55.
- Bar-Asher Siegal, Elitzur A. "From Typology to Diachrony: Synchronic and Diachronic Aspects of Predicative Possessive Constructions in Akkadian." *Folia Linguistica Historica* 32 (2011): 43–88.
- Beckman, John Charles. *Toward the Meaning of the Biblical Hebrew Piel Stem*. Ph.D. dissertation, Harvard University, 2015.
- Bjørn, Øyvind. "Transitivity and the Binyanim." In *Proceedings of the Oslo – Austin Workshop in Semitic Linguistics, Oslo, May 23 and 24, 2013*, edited by Lutz Edzard and John Huehnergard, 48–63. *Abhandlungen für die Kunde des Morgenlandes* 88. Wiesbaden: Harrassowitz, 2014.
- Bjørn, Øyvind. "The Morphology of the G-Stem Imperative in Semitic." Forthcoming in *Journal of the American Oriental Society*.

- Cantineau, Jean. "Le consonantisme du sémitique." *Semitica* 4 (1951–52): 79–94.
- Catagnoti, Amalia. *La grammatica della lingua di Ebla*. Quaderni di Semitistica 29. Firenze: Dipartimento di Scienze dell'Antichità, Medioevo e Rinascimento e Linguistica, 2012.
- Cohen, Eran. "The Interrogative Element \*'ayy- in Semitic." Forthcoming in *Zeitschrift der Deutschen Morgenländischen Gesellschaft*.
- Faber, Alice. *Genetic Subgrouping of the Semitic Languages*. Ph.D. dissertation, The University of Texas at Austin, 1980.
- Faber, Alice. "Semitic Sibilants in an Afro-Asiatic Context." *Journal of Semitic Studies* 29 (1984): 189–224.
- Faber, Alice. "Akkadian Evidence for Proto-Semitic Affricates." *Journal of Cuneiform Studies* 37 (1985): 101–7.
- Fox, Joshua. "Isolated Nouns in the Semitic Languages." *Zeitschrift für Althebraistik* 11 (1998): 1–31.
- Fox, Joshua. *Semitic Noun Patterns*. Harvard Semitic Studies 52. Winona Lake, IN: Eisenbrauns, 2003.
- Fronzaroli, Pelio. "Studie sul lessico commune semitico." *Rendiconti della Accademia Nazionale dei Lincei* 19 (1964): 155–72 (I), 243–80 (II); 20 (1965): 135–50 (III), 246–69 (IV); 23 (1968): 267–303 (V); 24 (1969): 285–320 (VI); 26 (1971): 603–42 (VII).
- Gensler, Orin D. "Mari Akkadian *iš* 'to, for' and Preposition-Hopping in the Light of Comparative Semitic Syntax." *Orientalia* 66 (1997): 129–56.
- Greenberg, Joseph H. "The Patterning of Root Morphemes in Semitic." *Word* 6 (1950): 162–81.
- Hamori, Andras. "A Note on *Yaqṭulu* in East and West Semitic." *Archiv Orientalni* 41 (1973): 319–24.
- Hartmann, Martin. *Die Pluriliteralbildungen in den semitischen Sprachen. Mit besonderer Berücksichtigung des Hebräischen, Chaldäischen und Neusyrischen. Part 1: Bildung durch Wiederholung des letzten Radicales am Schluss und des Ersten nach des Zweiten*. Halle: Waisenhaus, 1875.
- Hasselbach, Rebecca. "Final Vowels on Pronominal Suffixes and Independent Personal Pronouns in Semitic." *Journal of Semitic Studies* 49 (2004a): 1–20.
- Hasselbach, Rebecca. "The Markers of Person, Gender, and Number in the Prefixes of G-Preformative Conjugations in Semitic." *Journal of the American Oriental Society* 124 (2004b): 23–35.
- Hasselbach, Rebecca. "Demonstratives in Semitic." *Journal of the American Oriental Society* 127 (2007): 1–27.
- Hasselbach, Rebecca. "External Plural Markers in Semitic: A New Assessment." In *Studies in Semitic and Afroasiatic Languages Presented to Gene B. Gragg*, edited by Cynthia Miller, 123–38. *Studies in Ancient Oriental Civilization* 60. Chicago: Oriental Institute, 2009.
- Hasselbach, Rebecca. "The Verbal Endings *-u* and *-a*: A Note on Their Functional Derivation." In *Language and Nature: Papers Presented to John Huehnergard on the Occasion of His Sixtieth Birthday*, edited by Rebecca Hasselbach and Na'ama Pat-El, 119–36. *Studies in Ancient Oriental Civilization* 67. Chicago: Oriental Institute, 2012.
- Hasselbach, Rebecca. *Case in Semitic: Roles, Relations, and Reconstruction*. Oxford Studies in Diachronic & Historical Linguistics 3. Oxford: Oxford University Press, 2013.

- Hasselbach, Rebecca. "Agreement and the Development of Gender in Semitic." *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 164 (2014): 33–64, 319–44.
- Huehnergard, John. "Asseverative \*la- and Hypothetical \*lū/law in Semitic." *Journal of the American Oriental Society* 103 (1983): 569–93.
- Huehnergard, John. "Akkadian *h* and West Semitic \**h*." In *Studia Semitica*, edited by Leonid Kogan, 102–19. Orientalia: Papers of the Oriental Institute, 3 (Alexander Militarev volume). Moscow: Russian State University for the Humanities, 2003.
- Huehnergard, John. "Features of Central Semitic." In *Biblical and Oriental Essays in Memory of William L. Moran*, edited by Agustinus Gianto, 155–203. *Biblica et Orientalia* 48. Rome: Pontificio Istituto Biblico, 2005.
- Huehnergard, John. "Hebrew Verbs I–w/y and a Proto-Semitic Sound Rule." In *Memoriae Igor M. Diakonoff*, edited by L. Kogan, N. Koslova, S. Loesov, and S. Tishchenko = *Babel und Bibel* 2 (2006a): 459–74.
- Huehnergard, John. "On the Etymology of the Hebrew Relative *šē-*." In *Biblical Hebrew in Its Northwest Semitic Setting: Typological and Historical Perspectives*, edited by Steven E. Fassberg and Avi Hurvitz, 103–25. Winona Lake, IN: Eisenbrauns, 2006b.
- Huehnergard, John. "Proto-Semitic and Proto-Akkadian." In *The Akkadian Language in its Semitic Context: Studies in the Akkadian of the Third and Second Millennium BC*, edited by Guy Deutscher and N. J. C. Kouwenberg, 1–18. Leiden: NINO, 2006c.
- Huehnergard, John. "Akkadian *e* and Semitic Root Integrity." *Babel und Bibel* 7 (2013): 445–75.
- Huehnergard, John. "Reanalysis and New Roots: An Akkadian Perspective." In *Proceedings of the Oslo–Austin Workshop in Semitic Linguistics, Oslo, May 23 and 24, 2013*, edited by Lutz Edzard and John Huehnergard, 9–27. *Abhandlungen für die Kunde des Morgenlandes* 88. Wiesbaden: Harrassowitz, 2014a.
- Huehnergard, John. "The Semitic Background of Arabic *faqīr* 'poor'." In *No Tapping around Philology: Festschrift in Honor of Wheeler McIntosh Thackston's 70th Birthday*, edited by Alireza Korangy and Daniel Sheffield, 243–54. Wiesbaden: Harrassowitz, 2014b.
- Huehnergard, John and Na'ama Pat-El. "Third Person Possessive Suffixes as Definite Articles in Semitic." *Journal of Historical Linguistics* 2 (2012): 25–51.
- Huehnergard, John and Na'ama Pat-El. "The Origin of the Semitic Relative Marker." *Bulletin of the School of Oriental and African Studies* 81 (2018): 191–204.
- Khan, Geoffrey A. *Studies in Semitic Syntax*. London Oriental Studies 38. Oxford: Oxford University, 1988.
- Kogan, Leonid. "Proto-Semitic Phonetics and Phonology." In *Semitic Languages: An International Handbook*, edited by Stefan Weninger et al., pp. 54–151. *Handbücher zur Sprach- und Kommunikationswissenschaft* 36. Berlin: de Gruyter Mouton, 2011a.
- Kogan, Leonid. "Proto-Semitic Lexicon." In *The Semitic Languages: An International Handbook*, edited by Stefan Weninger et al., 179–258. *Handbücher zur Sprach- und Kommunikationswissenschaft* 36. Berlin: de Gruyter Mouton, 2011b.
- Korchin, Paul D. *Markedness in Canaanite and Hebrew Verbs*. Harvard Semitic Studies 58. Winona Lake, IN: Eisenbrauns, 2008.
- Kossmann, Maarten, and Benjamin D. Suchard. "A Reconstruction of the System of Verb Aspects in Proto-Berbero-Semitic." *Bulletin of the School of Oriental and African Studies* 81 (2018): 41–56.
- Kouwenberg, N. J. C. *Gemination in the Akkadian Verb*. *Studia Semitica Neerlandica*. Leiden: Van Gorcum, 1997.

- Kouwenberg, N. J. C. "Reflections on the Gt-stem in Akkadian." *Zeitschrift für Assyriologie* 95 (2005): 77–103.
- Kouwenberg, N. J. C. *A Grammar of Old Assyrian*. Leiden: Brill, 2017.
- Leslau, Wolf. "The Influence of Cushitic on the Semitic Languages of Ethiopia: A Problem of Substratum." *Word* 1 (1945): 59–82.
- Lieberman, Stephen J. "The Afro-Asiatic Background of the Semitic N-Stem: Toward the Origins of the Semitic and Afro-Asiatic Verb." *Bibliotheca Orientalis* 43 (1986): 577–628.
- Pat-El, Na'ama. "The Development of the Semitic Definite Article: A Syntactic Approach." *Journal of Semitic Studies* 54 (2009): 19–50.
- Pat-El, Na'ama. "On Periphrastic Genitive Constructions in Biblical Hebrew." *Hebrew Studies* 51 (2010): 43–8.
- Pat-El, Na'ama. "On Verbal Negation in Semitic." *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 162 (2012): 17–45.
- Pat-El, Na'ama. "On Negation in Phoenician." In *Linguistic Studies in Phoenician in Memory of Brian J. Peckham*, edited by Robert D. Holmstedt and Aaron Schade, 47–67. Winona Lake, IN: Eisenbrauns, 2013.
- Pat-El, Na'ama. "Digging Up Archaic Features: 'Neo-Arabic' and Comparative Semitic in the Quest for Proto Arabic." In *Arabic in Context: Celebrating 400 Years of Arabic at Leiden University*, edited by Ahmad Al-Jallad, 441–75. Studies in Semitic Languages and Linguistics 89. Leiden: Brill, 2017.
- Pat-El, Na'ama and Alexander Treiger. "On Adnominalization of Prepositional Phrases and Adverbs in Semitic." *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 158 (2006): 265–82.
- Phillips, Betty S. "Lexical Diffusion and Function Words." *Linguistics* 21 (1983): 487–99.
- Ratcliffe, Robert R. *The 'Broken' Plural Problem in Arabic and Comparative Semitic: Allomorphy and Analogy in Non-concatenative Morphology*. Amsterdam: Benjamins, 1998.
- Rubin, Aaron D. *The Jibbali (Shahri) Language of Oman: Grammar and Texts*. Studies in Semitic Languages and Linguistics 72. Leiden: Brill, 2014.
- Rubin, Aaron D. *Omani Mehri: A New Grammar with Texts*. Studies in Semitic Languages and Linguistics 93. Leiden: Brill, 2018.
- Salonen, Armas. "Alte Substrat- und Kulturwörter im Arabischen." *Studia Orientalia* 17/2 (1952): 1–12.
- Sanmartín, Joaquín. "Über Regeln und Ausnahmen: Verhalten des vorkonsonantischen /n/ im 'Altsemitischen.'" In *Vom Alten Orient zum Alten Testament: Festschrift für Wolfram Freiherrn von Soden*, edited by Manfred Dietrich and Oswald Loretz, 433–66. Alter Orient und Altes Testament 240. Kevelaer: Butzon and Bercker; Neukirchen-Vluyn: Neukirchener, 1995.
- Sjörs, Ambjörn. *Historical Aspects of Standard Negation in Semitic*. Studies in Semitic Languages and Linguistics 91. Leiden: Brill, 2018.
- Steiner, Richard C. *The Case for Fricative-Laterals in Proto-Semitic*. American Oriental Series 59. New Haven: American Oriental Society, 1977.
- Steiner, Richard C. *Affricated Šade in the Semitic Languages*. New York: American Academy for Jewish Research, 1982.
- Steiner, Richard C. *Early Northwest Semitic Serpent Spells in the Pyramid Texts*. Harvard Semitic Studies 61. Winona Lake, IN: Eisenbrauns, 2011.

- Steiner, Richard C. "Vowel Syncope and Syllable Repair Processes in Proto-Semitic Construct Forms." In *Language and Nature: Papers Presented to John Huehnergard on the Occasion of His Sixtieth Birthday*, edited by Rebecca Hasselbach and Na'ama Pat-El, 365–90. Studies in Ancient Oriental Civilization 67. Chicago: Oriental Institute, 2012.
- Testen, David. "A Trace of Barth's Preradical \*i in Akkadian." *Journal of Near Eastern Studies* 51 (1992): 131–3.
- Tonietti, Maria Vittoria. *Aspetti del sistema preposizionale dell'Eblaíta*. Antichistica 2, Studi orientali 1. Venezia: Ca' Foscari, 2013.
- Tropper, Josef. "Probleme des akkadischen Verbalparadigmas." *Altorientalische Forschungen* 24 (1997): 189–210.
- Voigt, Rainer. "Derivatives und flektives t im Semitohamitischen." In *Proceedings of the Fourth International Hamito-Semitic Congress, Marburg, 20–22 September, 1983*, edited by Herrmann Jungraithmayr and Walter W. Müller, 85–107. Amsterdam/Philadelphia: Benjamins, 1987.
- Voigt, Rainer. "Die Lateraleihe /š š ž/ im Semitischen. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 142 (1992): 37–52.
- Voigt, Rainer. "Die Präpositionen im Semitischen – Über Morphologisierungprozesse im Semitischen." In *Tradition and Innovation: Norm and Deviation in Arabic and Semitic Languages*, edited by Lutz Edzard and Mohammed Nekroumi, 22–43. Wiesbaden: Harrassowitz, 1999.
- Whiting, Robert M. "The R Stem(s) in Akkadian." *Orientalia* 50 (1981): 1–39.
- Wilson-Wright, Aren. "The Word for 'One' in Proto-Semitic." *Journal of Semitic Studies* 59 (2014): 1–13.
- Wilson-Wright, Aren. *Athtart: The Transmission and Transformation of a Goddess in the Late Bronze Age*. Tübingen: Mohr Siebeck, 2016a.
- Wilson-Wright, Aren. "Father, Brother, and Father-in-Law as III-w Nouns in Semitic." *Bulletin of the School of Oriental and African Studies* 79 (2016b): 23–32.
- Wilson-Wright, Aren. "Rethinking the Relationship between Egyptian and Semitic: The Phonological and Morphological Evidence." In *Rethinking the Origins: The Departure of Ancient Egyptian as a Branch from the Afroasiatic Family?*, edited by Victoria Almansa-Villatoro and Silvia Štubňová. Wilbour Studies in Egyptology and Assyriology. Providence, RI: Brown University Press, forthcoming.
- Zemánek, Petr. *The Origins of Pharyngealization in Semitic*. Praha: Enigma, 1996.