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The Origin and Development of Nonconcatenative Morphology

by

Andrew Kingsbury Simpson

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in Linguistics

in the

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of the

University of California, Berkeley

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Abstract

The Origin and Development of Nonconcatenative Morphology

by

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Doctor of Philosophy in Linguistics

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Nonconcatenative morphology refers to a type of word formation involving modification of the internal structure of a word. This study includes a survey and detailed examination of the historical processes that have created and modified the nonconcatenative morphological alternations in the Semitic language family and discussion of the consequences these processes have for our understanding of morphological structure more generally.

This thesis argues that the developments and resulting patterns of Semitic morphology can be accounted for by reference to a small set of basic mechanisms of change. The most fundamental mechanism is reinterpretation, in which a listener interprets an input differently from that intended by a speaker. The frequency of a particular change is dependent on the likelihood of a reinterpretation due to inherent ambiguities and biases introduced by general human cognition, the physics and physiology of speech and contact between languages. Three main processes result in the creation or disruption of nonconcatenative morphology. The first and perhaps most important is the morphologization of previously phonological alternations. This includes alternations related to the long-distance influence of a vowel or consonant and those occasioned by the prosodic structure of a word, particularly stress placement. The other two processes are analogy and the reinterpretation of syntactic structures as morphological ones.

Nonconcatenative alternations are so prevalent in the Semitic languages that words can be analyzed as consisting of a “root” made up of consonants indicating the basic meaning and “patterns” that provide a more specific meaning or syntactic function. While the Semitic roots and patterns certainly have a psychological reality, they do not play a role in every domain. Unlike other morphological constituents, the patterns are not used in processes of analogical leveling nor do they appear to inhibit changes which make alternations more opaque. The historical processes that affect the morphology proceed largely without reference or regard to the existing roots and patterns.

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List of Symbols and Abbreviations

Grammatical Symbols

< ... >	orthographic representation
{ ... }	morphological representation
/ ... /	phonological representation
[...]	phonetic representation or textual reconstruction
[...]	partial reconstruction
(...)	optional element
-	morpheme boundary or symbol used to separate transcription of cuneiform signs in a single word
.	symbol used to mark meaning components of a single morpheme or a morpheme involving a nonconcatenative alternation
=	clitic boundary
*	reconstructed form

Grammatical Abbreviations

1	first person	INF.CONST	infinitive construct
2	second person	INT	interrogative
3	third person	IO	indirect object
ACC	accusative	JUSS	jussive
ACT.PART	active participle	M	masculine
COLL	collective	MDU	masculine dual
COMP	complementizer or complement	MSG	masculine singular
CONST	construct	MPL	masculine plural
CV	consecutive/converted imperfect	NEG	negation
DEF	definite	NOM	nominative
DEM	demonstrative	OBJ	object or object marker
DIR	directive	PASS.PART	passive participle
DIS	distal	PART	participle
DU	dual	PAST	past tense
EL	elative	PERF	perfect
ENCL	enclitic	PL	plural
F	feminine	PL.EX	exclusive plural
FDU	feminine dual	PL.IN	inclusive plural
FPL	feminine plural	POSS	possessive
FSG	feminine singular	PRET	preterite
GEN	genitive	PTCL	particle
GER	gerund or gerundive	REL	relativizer
IMP	imperative	SG	singular
IMPF	imperfect	SUBJ	subject or subjunctive
IND	independent	TMA	tense/mood/aspect
INDIC	indicative	VA	verbal adjective
INF	infinitive	VN	verbal noun

Language Abbreviations

Akk.	Akkadian	ONA	Old North Arabian
Amh.	Amharic	OSA	Old South Arabian
Ar.	Arabic	Pers.	Persian
Aram.	Aramaic	Ph.	Phoenician
Arg.	Argobba	PMSA	Proto-MSA
BA	Biblical Aramaic	Pu.	Punic
Byb.	Byblian	PS	Proto-Semitic
CA	Classical Arabic	PSS	Proto-South-Semitic
Eng.	English	PWS	Proto-West-Semitic
Ge.	Ge'ez	Qat.	Qatabanian
Har.	Harari	Rif.	Rifian Berber
Heb.	Hebrew	Sab.	Sabean
Ḥar.	Ḥarsūsi	Si.	Siwi Berber
IA	Imperial Aramaic	Sic.	Sicilian
It.	Italian	Soq.	Soqotri.
Jib.	Jibbāli	Tg.	Tigrinya
ME	Middle Egyptian	Tk.	Tamashek
Meh.	Mehri	Turk.	Turkish
MSA	Modern South Arabian	Tz.	Tamazight
NPu.	Neo-Punic		
OE	Old Egyptian		

Source Abbreviations

Biblical references follow the style of the Society of Biblical Literature. The conventions for naming early Hebrew inscriptions and documents follow Gogel 1998.

Aphr.	<i>The homilies of Aphraates</i> (Wright 1868)
Apost. Apocr.	<i>The apocryphal acts of the apostles</i> (Wright 1871)
BAP	Brooklyn Aramaic Papyri (Kraeling 1953)
BDB	A Hebrew and English lexicon of the Old Testament (Brown, Driver and Briggs 1907)
CIS	<i>Corpus inscriptionum semiticarum</i>
Cit.	Citadel of Ammon (Horn 1969)
D	Bir ed-Dreder (Goodchild 1954)
DA	Deir Alla (Hackett 1984)
DM	<i>A Mandaic dictionary</i> (Drower and Macuch 1963)
EA	El Amarna (Knudtzon 1964)
Ephr.	<i>S. Ephraem Syri Opera</i> (Roman Edition, see Nöldeke 1904)
Gy	<i>Ginza Yamina</i> (Petermann 1867)
IFSC	<i>Inscriptions from fifty Safaitic cairns</i> (Winnett and Harding 1978)
IRT	<i>Inscriptions of Roman Tripolitana</i> (Reynolds and Ward-Perkins 1952)
J	<i>Sabean Inscriptions from Maḥram Bilqīs (Mārib)</i> (Jamme 1962)
Jos. St.	<i>The chronicle of Joshua the Stylite</i> (Wright 1882)
KAI	<i>Kanaanäische und aramäische Inschriften</i> (Donner and Röllig 1973)

KL	Kâmid el-Lôz (see Sivan 2001)
KTU	Dietrich, Loretz and Sanmartín 1995
LM	Petermann 1867
Mart.	<i>Acta martyrum orientalium et occidentalium</i> (Assemani 1748)
NP	Neo-Punic Inscriptions (see Harris 1936:160-161)
Oxf.	Oxford liturgical collection in Lidzbarski [1920] 1962
Ov.	<i>S. Ephraemi Syri, Rabulae Episcopi Edesseni, Balaei Aliorumque Opera Selecta</i> (Overbeck 1865)
<i>Poen.</i>	Plautus' <i>Poenulus</i>
PRU III	<i>Le Palais royal d' Ugarit 3</i> (Nougayrol 1955)
RES	<i>Répertoire d'épigraphie semitique</i>
Sim.	<i>Life of St. Simeon Stylites</i> (Assemani 1748, Vol. 2)
TAD	<i>Textbook of Aramaic documents from Ancient Egypt</i> (Porten and Yardeni 1986-1999)
Umm- el-Awamid	Magnanini 1973

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Chapter 1. Approaching structure and change in the Semitic languages

1.1. Introduction

This dissertation focuses on the origins and development of the system of root and pattern morphology as found in the verbal system of the Semitic languages. The term *root and pattern morphology* refers to the complex set of nonconcatenative (or non-linear) alternations that characterize word structure in the Semitic languages. Words in Semitic languages can be described in terms of roots, typically consisting of three consonants, which lend the basic meaning (e.g. k-t-b ‘write’, q-b-r ‘bury’, ʔ-m-r ‘say’) and patterns which in some way modify the basic meaning, frequently situating the root in a particular grammatical context (e.g. C1aC2aC3 3MSG perfect ‘he X-ed’, C1āC2iC3 active participle ‘X-er or X-ing’). The patterns can for the most part be reduced to prosodic templates (i.e. specific syllable and foot structures to which word or specific morphological forms conform) and consonant and vowel alternations such as ablaut and consonant gemination.

The Semitic verbal system is an important key to understanding the genesis and persistence of the root and pattern morphology in the Semitic languages. It is in the verbal system and its derivatives that the root and pattern morphology is most clearly manifested and from which it is likely that root and pattern morphology has its origin. Following Bat-El (2003), I propose that the unique status of Semitic morphology is due to the appearance of several features which are not by themselves unique but which do not occur in the same combination or to the same degree elsewhere. Vocalic ablaut alternations and templatic restrictions on the prosodic shapes of words occur in many languages besides the Semitic ones, including Native American languages (particularly Yokuts) and also related Afroasiatic languages. What makes Semitic languages special is that extensive ablaut alternations and templatic restrictions are combined with an elaborate system of verb forms and derivatives. From the large set of related forms it is possible to isolate consonant roots and identify patterns. Once the elements of the root and pattern morphology have been isolated, it is possible that these units, taking on a life of their own, will influence later outcomes.

The Semitic family presents an exceptional opportunity for examining the development of nonconcatenative morphology and the root and pattern system because of the great diversity of varieties across places and periods. The Semitic family has one of the longest recorded histories of any language family. Attested almost continuously in use from the third millennium to today in hundreds of varieties, only the Indo-European language family can boast a greater diversity of well attested varieties across both time and place. This diversity is even greater when we consider the Semitic language family as a branch of the larger Afroasiatic family or phylum, including Ancient Egyptian, the Cushitic language family of East Africa, the Berber languages of North Africa and the Chadic language family of West Africa.

Because of the large sets of both synchronic and diachronic data, the Semitic family has great potential as an aid in understanding the processes of historic change and the structure of language. Unlike Indo-European comparative linguistics, which has long been informed by and in turn made important contributions to the most current understanding of the processes of historical change and the structure of language, those working with Semitic languages have been more removed from the main currents of modern linguistics. While there are notable exceptions to this generalization, including but not limited to Jerzy Kuryłowicz (1949, 1958, 1961, 1972), Zellig Harris (1939, 1941) and Robert Hetzron (1969, 1972, 1976b), in the tradition of

comparative Semitics represented by Brockelmann's *Grundriss der vergleichenden Grammatik der semitischen Sprachen* ([1913] 1961), Moscati, Spitaler, Ullendorff and Soden's *An Introduction to the Comparative Grammar of the Semitic Languages* (1964) and Lipiński's *Semitic Languages: Outline of a Comparative Grammar* (1997), comparative Semitic linguistics has favored a more descriptive approach, eschewing the techniques of comparative Indo-European and general linguistics. These three works, though each separated from the others by roughly half a century, show little influence from the developments elsewhere in the field of modern linguistics. Outside of the phonological inventory relatively little effort has been made to reconstruct the grammar of Proto-Semitic and outline the necessary changes needed to arrive at attested forms. The works of Brockelmann and Lipiński are valuable compendia of data from various Semitic and Afroasiatic languages, but hypotheses about the development of these languages from a common ancestor are left fairly vague, if attempted at all.

One of the central themes of this dissertation is that understanding the processes involved in linguistic change can help us to reconstruct the history of the languages and that understanding the history of the languages informs our understanding of the processes of language change. The root and pattern morphology of the Semitic languages has continued to develop in ways that can inform our understanding of earlier changes. Both the ancient and modern languages of the Semitic family provide us with valuable evidence about recurrent types of changes and the basic principles that the changes follow. Patterns that are apparent in the changes that created the ancient Semitic languages are often also apparent in the developments experienced in modern languages. The modern branches (Neo-Aramaic, Modern South Arabian, Ethiosemitic and the modern Arabic "dialects") constitute natural laboratories for examining changes in the morphology of the verbal system. The large number of varieties displays a subset of the possible outcomes, and comparisons between the branches can help us establish the nature of the change (i.e. whether the changes reflect a larger pattern or involve processes particular to a single branch or language). A concern only for the Classical Semitic languages and the reconstruction of Proto-Semitic excludes a large and relevant data set which can inform our understanding of the structure and development of the morphology of the Semitic languages. Our observation of changes in later stages is a necessary corrective for the assumptions we make about changes in the earliest stages. In turn, the types of changes that are observed to occur can inform our understanding of how structure might play a role in the changes.

1.1. Assumptions about linguistic change

The assumptions about linguistic change have both general theoretical and more practical methodological motivations. The data and analysis presented in this dissertation are used to argue for a particular view of how language changes works and how these changes can account for many of the patterns we find crosslinguistically. More practically, it is useful to have a framework which can be used to help make sense of the wide array of changes that have occurred. A major shortcoming of Semitic linguistics has been the lack of a clear framework for understanding the mechanisms of linguistic change. While modifications must be made in light of evidence, a more highly constrained conception of linguistic change and specifically of morphological change is a useful prerequisite for examining the comparative evidence available.

In this section, I will lay out the assumptions about language change and the methods proposed for this investigation. The basic underlying assumption of this research is that morphological patterns arise due to a combination of independently motivated sound changes and a reanalysis of the morphology and syntax due to existing ambiguities. Change is considered in this respect to be non-teleological. Change is neither seen as a form of deterioration or

perfection, but rather as a chance process where the likelihood of a particular change is ultimately determined by acoustic, physiological and/or cognitive factors. These ultimate causes are beyond the scope of the present study, which takes a more typological approach to language patterns. A large component of this study is a thorough description of observed patterns and changes in the system of nonconcatenative morphology. These observations provide an important empirical basis for our assumptions about linguistic change. While the observed changes most likely do not exhaust the possible changes, they do provide a more principled way of assessing hypotheses.

1.2.1. Emergence of grammar: explaining linguistic patterns

This dissertation takes a diachronic approach to explaining the patterns of language, conceiving of language as the result of a set of historical processes. The two main questions that such an approach raises concern (1) the nature of the mechanism of change and (2) the means of explaining the directionality of change. This type of approach places an emphasis on the typological study of changes and patterns across languages, which in turn provides a firmer empirical basis for claims about change.

The basic mechanism of change proposed here is that of reinterpretation. Change is considered to be listener-based with reinterpretation occurring when ambiguity is present. Ohala (1981, 1989, 1993) nicely illustrates a theory of listener-based sound change. Ohala describes three basic responses to what a listener hears. The most common response is for the listener to deduce correctly the intention of the speaker from the speech sounds produced. The two responses that lead to sound change are *hyper-correction* and *hypo-correction*. *Hyper-correction*, which is illustrated by dissimilation, involves incorrectly attributing some feature to the influence of another sound. For example, /l/ dissimilates to /r/ in suffixes attached to stems with /l/. A speaker who hears [famili-alis] might incorrectly assume that the [l] of the suffix represents a coarticulated form of /r/ thus deducing a new form /famili-aris/. The more common mechanism of change is *hypo-correction* in which the speaker fails to correct for an unintended feature of the utterance. In assimilation the coarticulation effects are interpreted as reflecting the speaker's intention, e.g. speaker produces [ʃi] for intended /si/ and listener interprets the speaker's intention as /ʃi/. Ohala also considers the confusion of acoustically similar sounds, such as common confusion between /θ/ and /f/ in dialectal English, as a case of *hypo-correction*.

Blevins (2004) presents a similar typology of "natural" sound change mechanisms within a listener-based framework. The three types described by Blevins are CHANGE, CHANCE and CHOICE, each describing a different type of listener-based reinterpretation. CHANGE involves the listener mishearing the phonetic signal due to perceptual similarities between the actual signal and the perceived signal, e.g. the actual signal is [anpa] but the hearer perceives [ampa]. CHANCE involves the listener reinterpreting a phonologically ambiguous signal differently from the intended signal, e.g. [ʔaʔ] for intended /aʔ/ is reinterpreted as reflecting /ʔa/ by the hearer. CHOICE involves cases where there are multiple phonetic variants of a phonological form and the hearer chooses a different phonological form than the intended form as the "prototype or best exemplar".

The theory of syntactic change proposed by Harris and Campbell (1995) shares a similar fundamental outlook with the listener-based approaches to sound change. Harris and Campbell present three basic mechanisms for syntactic change. The first mechanism is *reanalysis*, which fits comfortably into the basic mechanism of reinterpretation assumed in this work. Langaeker (1977:58) defines *reanalysis* "as change in structure of an expression or class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation." Just as in

the mechanisms of sound change, the results of *reanalysis* are not immediately apparent. Harris and Campbell propose a second mechanism, *extension*, which among other things helps to explain how reanalysis involving no direct surface change can have a surface impact. The discussion of *extension* as a mechanism for realizing the effects of reanalysis is greatly indebted to the concept of *actualization* in Timberlake (1977:141) described as “the gradual mapping out of the consequences of the reanalysis”. The third mechanism, *language contact*, falls outside the domain of natural changes, but is still of great importance as it can be seen in many processes in the Semitic languages. Heine and Kuteva (2005) argue that in addition to borrowing, contact situation can induce grammaticalization.

Reinterpretation, whether it involves phonological, morphological or syntactic structures, occurs when a listener imposes an interpretation different from that intended by the speaker. This study assumes that whether a reinterpretation occurs is ultimately a chance process, one of many possible paths a language can take or not. This however does not imply that all possible reinterpretations are equally likely. The likelihood of a particular reinterpretation depends on the existing linguistic structure as well as extralinguistic factors. Historical processes have their ultimate origin in extralinguistic domains. Language has two general domains from which changes largely originate, the phonetic domain and the cognitive domain. Phonological change is motivated by aspects of the production, propagation and perception of sound. The central role of phonetics to sound patterns and in sound change have been addressed in many works by Ohala (1971, 1974a, 1974b, 1975, 1981, 1983, 1989, 1993; Hombert, Ohala and Ewan 1979). Changes in the syntactic and semantic structure of language originate in discourse, pragmatics, usage and human cognition. There is a relatively large literature of works dealing with discourse, functional and cognitive explanations in syntax and syntactic change, with many also a part of the large grammaticalization literature (e.g. Bybee 1985, Bybee, Perkins and Pagliuca 1994, Givón 1977, 1984, Heine and Reh 1984, Heine, Claudi and Hünemeyer 1991, Hopper 1987, Hopper and Traugott 1993). Bybee (2007) and the papers in Bybee and Hopper (2001) examine role that frequency plays in linguistic change.

Following Ohala (1993:262), I assume that when reinterpretation takes place the listener is simply attempting (ultimately unsuccessfully) to interpret faithfully the intentions of the speaker. The cause of reinterpretation is ultimately the unavoidable ambiguities present in language generally and in specific linguistic subdomains. The directionality of changes is determined by how the phonetic and cognitive factors discussed above interact to create ambiguous situations where a reinterpretation is likely. Cognitive factors also play a role in determining which types of reanalysis are more likely. These extralinguistic factors define the common pathways of developments in phonology, morphology and syntax.

I reject the notion that language changes due to an inherent drive toward optimization. Langacker (1977:128) explicitly lays out this view in a study on syntactic reanalysis:

“Language change reflects the pressure to achieve linguistic optimality, but linguistic optimality has numerous dimensions reflecting the multi-faceted character of language, and the tendencies to achieve these different kinds of optimality are often in opposition to one another.”

The central conflict described by Langacker is between simplicity and transparency. This approach also requires there to be a tension between the drive toward optimization and the conservation of inherited structures; otherwise there would be no check on the processes of

language change. I prefer the non-teleological approach for its parsimony. This approach relies simply on a principle of cooperativeness on the part of the listener and extralinguistic explanations for the inventory and directionality of changes. The appearance of optimization is considered to be an epiphenomenal result of the changes, not the motivation for those changes.

Even without understanding the ultimate causes of changes, we can single out many recurrent types of change. Discovering the paths of change has been a major component in the grammaticalization literature and related scholarship. One of the more representative examples is Heine and Reh (1984) who describe many common pathways of change involved in the historical development of African languages, including word order changes that are discussed in Chapter 5. For phonology, Blevins (2004) lays out a theory of how “recurrent sound patterns” are explained by “recurrent phonetically based sound change”. Bybee, Perkins and Pagliuca (1994) propose several hypotheses concerning semantic change. They also assume general paths of development, which they consider to be determined by the original source material and by the processes of change such as unidirectional inferential mechanisms. For morphology, a related approach has been taken by Garrett (2008:143) examining the origin of paradigm of uniformity which he argues is “diachronically epiphenomenal”. In all cases we can separate to some extent the observed patterns from their ultimate causes. Identifying the recurrent changes and the specific mechanisms and conditions responsible for these changes are important components in understanding linguistic change.

The system of root-and-pattern morphology incorporates elements of phonology and syntax. Morphology in general holds a position between these two domains and as a result reflects the results of changes originating in both domains. The unique properties of Semitic morphology exhibit the results of changes from many different domains including morphologically specific ones. Understanding the processes in morphology, syntax and phonology and how they have contributed to this unusual system of word formation provides important insights into the patterns that occur and those that do not. While the patterns and configuration of Semitic morphology are unique, they reflect processes and underlying mechanisms which are not by themselves unusual. These changes rely on basic phonetic and cognitive mechanisms, as well as the inherent ambiguities in language and the opportunities these ambiguities present for reanalysis. This principle can be seen as underlying many of the changes in language and more specifically those encountered in this study. The results of reinterpretation may result in cross-linguistic patterns but these patterns are considered here to be the results of, not the driving forces behind, the changes.

1.2.2. Two guiding principles: parsimony and naturalness

Before examining the recurrent changes, it is necessary to establish certain methodological principles that will guide the examination and analysis of the available historical evidence. The methods of comparative and internal reconstruction developed by comparative linguists working on the Indo-European family provide an important starting point. Hock (1991) outlines several important principles of comparative and internal reconstruction: naturalness, priority of sound change and regular change, goodness of fit and parsimony. The two principles which will be addressed in the current context are parsimony and naturalness. In light of other approaches to the same set of data, it is important to clarify how these principles will be applied in evaluating rival hypotheses. It is also important to understand how these two principles interact.

The principle of parsimony is a general scientific principle. This principle, also known as “Occam’s Razor”, requires that the simplest solution be chosen when all else is equal. As a general principle, it has made its way into the comparative Semitic literature, but is at times

followed to the exclusion of other principles and evidence. Many analyses tend toward a degree of abstractness in which parsimony trumps every other consideration.

The reconstruction of verbal morphology in Lipiński (1997) is particularly representative of this type of approach. The developments proposed by Lipiński achieve a great degree of simplicity, but fall apart upon inspection of the assumed changes. All verbal forms are considered to be derived from two original forms. The types of changes needed to derive the existing Semitic forms are both unmotivated and unprecedented.

(1) Development of verb forms in Lipiński (1997:358)

		ya/i+CCvC+an(na) (energetic)
	ya/i+CCvC (jussive)	ya/i+CCvC+a (subjunctive-cohortative)
CCvC (imperative)		ya/i+CCvC+u (indicative imperfect)
	yá/i+CCvC (preterite)	
	CaCaC (a-stative)	ya/i+CtaCaC (perfective)
		ya/i+CaCCaC (imperfective)
CaCC (adjective)	CaCiC (i-stative)	ya/i+CtaCaC (perfective)
		ya/i+CaCCaC (imperfective)
	CaCuC (i-stative)	ya/i+CtaCaC (perfective)
		ya/i+CaCCaC (imperfective)

The changes neither have a convincing phonetic nor semantic motivation. The only motivation is to get from one to many forms as parsimoniously as possible regardless of other considerations. While Lipiński represents an extreme case, a similar overemphasis on parsimony and a resulting abstractness is characteristic of much of the research into the origins of the Semitic Verbal System, including the work of Haupt (1878), Wright (1890), Bauer (1914), Bergsträsser (1918-22, 1928, 1983), Driver (1936) and Thacker (1954).

There are many aspects of historical analysis to which a principle of parsimony can be applied, however in not every aspect should an appeal to parsimony carry as much weight. Approaches like those of Lipiński (1997) and Bergsträsser (1928) have weighed heavily in favor of achieving parsimony in the system of morphology proposed for a primitive stage. However, there is no reason to assume that the common language that gave rise to the attested Semitic languages would be any simpler or more systematic than the daughter languages. At the same time a variety of mechanisms are frequently needed to explain the development from a pristine and ordered earlier phase to the later observed phases. Instead of trying to achieve elegance in the reconstructed system of morphology, in my own approach to these questions I try to achieve greater simplicity in terms of the basic mechanisms of change. I make no assumptions about the organization of the original common Semitic morphological system except those based on the daughter languages. In general the approach taken in this dissertation is intended to be tightly constrained, assuming a set of fundamentally similar mechanisms and using general comparative linguistic methods.

Only a relatively few number of works in the comparative Semitic literature rigorously follow the methods of comparative linguistics.¹ This include adherence to a principle which prefers sound change over analogy and regular over irregular forms of analogy and the principle which prefers natural to unnatural explanations.

Of all the principles, naturalness is the principle which requires the most in terms of an empirical basis. The primary way of determining the naturalness of a linguistic change or system must be through empirical observation. Frequency of occurrence, though not a perfect measure, is one of the best metrics of naturalness available. Ideally, it should be possible to connect observed changes to a plausible phonetic or cognitive motivation, one which can be confirmed in the laboratory in a manner like that described by (Ohala 1995) in his discussion of “experimental phonology”.

Even given a relatively high frequency and plausible motivation, it is still difficult to determine the naturalness of a change in any particular context where multiple factors might be involved. Still, there are many potential changes that are unattested or extremely rare without a plausible motivation which can be eliminated from consideration with relative confidence. When there is a choice of scenarios, a scenario that involves a well-attested and motivated type of change should be preferred over an unattested or rarely attested change or one lacking a clear phonetic or cognitive motivation.

Another consequence of adherence to the principle of naturalness is that it requires us to reconsider analyses as the understanding of the relative frequencies of changes and mechanisms behind them become better understood. Even analyses which are methodologically sound, such as Kuryłowicz’s studies of apophony in the Semitic languages (1949, 1958, 1961, 1972), warrant reconsideration in light of several decades of subsequent research in synchronic and diachronic linguistics.

To exemplify such a method, let us reconsider Lipiński’s proposal for the proto-Semitic verbal system in (1). Hardly any of the developments proposed meet both the criteria of phonetic and syntactic/semantic plausibility suggested above. The suggested development of the energetic, cohortitive-subjunctive and indicative imperfect from an earlier jussive involves the

¹ The works of Hetzron (1969, 1972, 1976b) are some of the best examples of a methodologically rigorous approach to questions of the development and reconstruction of the Semitic languages.

addition of suffixal material. In none of the cases does Lipiński provide an origin for the affixal material in terms of the grammaticalization and morphologization of earlier associated independent material. In terms of the semantic development it is extremely unlikely that a subjunctive-cohortitive, an energetic or imperfect indicative would arise from a jussive form. In order for such a change to occur it is assumed that there must be contexts in which both meanings are possible.

Take for example the well-established shift of Semitic languages from an aspectual to a tense system. The perfect aspect in Semitic is used for actions that are seen as complete or contained. Since past actions are typically, although not exclusively, described using the perfect, it is quite reasonable for a speaker to reanalyze the perfect as indicating past tense. In contrast the contexts in which a jussive could be reanalyzed as imperfect indicative are not as common or clear. In general the motivation for the changes is assumed to be the need of speakers to make finer distinctions.

The more rigorous methodology proposed here will allow for a re-examination of the morphology of Proto-Semitic, not only as it relates to the reconstruction of the Semitic morphology but also in the ways it relates to larger questions of the nature of root-and-pattern morphology and the processes of historical change. In chapter 2, I will propose a reconstruction of the basic elements of the nonconcatenative morphology of the Semitic verbal system, in which the new proposals will be evaluated with respect to earlier proposals. In addition to following a more highly constrained methodology, the reconstruction will attempt to include a wide range of evidence, from both modern and ancient Semitic languages and related Afroasiatic languages. The observed changes in later Semitic languages will serve to enhance our understanding of the mechanisms and paths of change that have given rise to an elaborate and unusual system of morphology. Knowledge of the Semitic languages has greatly increased over the last century due to fieldwork and archeological discoveries. The aim of the present work is to give proper attention to the wide range of data currently available to us. While languages like Akkadian, Arabic and Hebrew rightly hold prominent positions within the comparative Semitic literature (because of their age and the size of their corpuses) other Semitic languages should be given due consideration, particularly as they can cast light on the general mechanisms of change.

1.3. Approaching structure

A special problem when looking at the historical development of the Semitic languages is the question of what role morphological structure plays in linguistic developments. As with the mechanisms of change, I take the position that a constrained view of morphological structure can be useful for examining historical developments. The fewer the assumptions that are held about change, the easier it is to isolate the important elements. It is simpler to assume that a language conforms to general linguistic patterns than to assume an active role for structures unique to either a single language or group of languages. Even if there is evidence for roots and patterns in other domains, they need not be considered as essential in the domains most relevant to historical change. The importance of roots and patterns to the development should not be assumed to play a role in historical developments unless it can be shown that such structures are necessary to account for the attested developments. In this thesis I argue that many changes involving the morphology of the verbal system proceed largely without reference to roots, patterns or other nonlinear structures.

1.3.1. Does Semitic morphology consist of roots and patterns?

The structure of words stands out as one of the most distinctive features of the Semitic languages. Elements of this morphological system are preserved in all Semitic languages from the earliest

varieties to those languages like Nubi and Maltese, which have undergone substantial contact-induced changes. What makes the Semitic languages so different from other languages and groups is the degree to which internal modifications permeate the morphological system and how these modifications have enabled the analysis of consonantal material as roots carrying basic lexical material. An example of the richness of forms related by “internal” modification is provided from the following Arabic words all related to writing and sharing the consonants /k/, /t/ and /b/:

(2) Related forms from the root k-t-b in Arabic (taken from Wehr 1960)

kataba	‘he wrote’	ku:tiba	‘he was corresponded with’
kutiba	‘it was written’	ʔiktataba	‘he copied’
yaktubu	‘he is writing’	ʔuktutiba	‘it was copied’
yuktabu	‘it is being written’	yaktatibu	‘he is copying’
ka:tib	‘writing (present participle)’	kita:b	‘book’
maktu:b	‘written (past participle)’	kutub	‘books’
kita:ba	‘writing (verbal noun)’	kutayyib	‘booklet’
katb	‘writing (verbal noun)’	ka:tib	‘writer’
kitba	‘writing (verbal noun)’	kutta:b	‘writers’
kattaba	‘he made (s.o.) write’	maktu:b	‘message, note’
kuttiba	‘he was made to write’	maka:ti:b	‘messages, notes’
yukattibu	‘he is making (s.o) write’	kati:ba	‘squadron; piece of writing’
ʔaktaba	‘he dictated’	kata:ʔib	‘squadrons; pieces of writing’
yuktibu	‘he is dictating’	mikta:b	‘typewriter’
ka:taba	‘he corresponded (with s.o.)’		

Classical Arabic can be singled out as the language in which the system of internal modification is particularly developed and thus serves well to illustrate the types of patterns that are attested. However, a richness of internal modification is found in almost all other Semitic languages. The same root k-t-b yields a number of different forms in Biblical Hebrew. Many are clearly cognate with the Arabic forms above.

(3) Related forms from the root k-t-b in Biblical Hebrew (taken from BDB)

kātab	‘he wrote’	yikkātēb	‘it is written’
yiktōb	‘he writes’	niktāb	‘written’
kātōb	‘to write’	kātāb	‘writing, letter’
kātōb	‘writing (INF.CONST)’	miktāb	‘handwriting’
kātēb	‘writing (ACT.PART)’	kātōbet	‘a writing of imprintment’
kātub	‘written (PASS.PART)’		

The same is also true of Ge‘ez. While there are relatively few forms for the root k-t-b, other roots, such as m-s-l ‘to be like’, do show a similar richness.

(4) Related forms from the root k-t-b in Ge‘ez (taken from Leslau 1989)

kətəbə	‘he wrote’	kitab	‘writing, document, amulet’
yiktib	‘may he write’	təkətbə	‘it was written’
kətabi	‘one who writes, scribe’		

One of the main ways that these forms are distinguished is by ablaut alternations, changes in vowel quality and quantity like those in the forms above. Additionally, Semitic words can be related to each other by the presence or absence of particular affixes as is common in many languages, e.g. Arabic *al-muslim-u* ‘the Muslim (nom.)’, *muslim-an* ‘a Muslim (acc.)’, *al-muslim-ūna* ‘the Muslims (nom.)’, Hebrew *yad* ‘hand’ *yad-ayim* ‘hands’, English *walk, walks, walked, walker*. Words can also be related by both “internal” and “external” morphology (e.g. Arabic *al-bayt-u* ‘the house (nom.)’ *al-buyūt-a* ‘the house (acc.)’, *ya-ktub* ‘he is writing’, *katab-a* ‘he wrote’). Following common convention in Semitics, a distinction is made between affixal and affirmative morphology. Affixal morphology generally has a clear semantic function and is relatively independent of the the patterns. Affirmative morphology occurs in conjunction with other alternations to indicate a single semantic function. Affirmatives can be considered as part of the template of a word along with the vocalic and prosodic alternations. This is exemplified best by the derived stems which are in some cases distinguished not only by internal alternations but also by the presence of a preformative element *t- or *š. In Ge‘ez perfect *kətəbə* is related to the corresponding passive/reflexive *təkətbə* by both the preformative {tə-} and change in syllable template from $C_1əC_2əC_3ə$ to $C_1əC_2C_3ə$. Similar alternations involving both internal and external morphology are found in derived forms for most Semitic languages.

The primary controversy concerning the structure of the Semitic languages revolves around whether the unusual morphology of the languages represents a radically different morphological organization or not. Semitic morphology is commonly analyzed as consisting of two elements, basic lexical morphemes consisting of discontinuous consonant phonemes and grammatical morphemes in the form of discontinuous vowel melodies or prosodically defined templates. The discontinuous consonant morphemes as the bearers of the basic lexical meanings are called “roots”. By reanalysis the term “root” has come to mean not just the basic lexical part of the word, but is used to describe abstractly this type of discontinuous morpheme. Thus is Semitic considered as having a “root structure”.

However, when we look at the individual elements, Semitic morphology does not appear qualitatively different from similar alternations in other languages such as the vowel alternations found in Indo-European languages (e.g. English *goose, geese, sing, sang, sung*) or the templatic morphology of Yawelmani (Archangeli 1991, Newman 1932). The perceived exceptional status of Semitic morphology arises not simply from the existence of these patterns of internal modification, but from their especially extensive use. Just how extensive the patterns are differs somewhat among the various Semitic languages and groups. Still internal patterns play a role in all Semitic languages, although the frequency and productivity varies greatly. Classical Arabic is often singled out as the language in which the system of internal modification is most fully developed and thus I will at times use it to illustrate the types of patterns that are found. Data from other Semitic languages will also be presented where relevant.

The unique quality of the system of Semitic morphology is not found in the details but in how these features come together to create a unique system. The extent of internal modifications enables an analysis of a consonantal root. The idea of the triconsonantal root has been a central

concern in the discussion of common features belonging to the Semitic language family (Huehnergrad 1995, Moscati, Spitaler, Ullendorf & Soden 1964, Driver 1936, Nöldeke 1911). The traditional analysis divides Semitic morphology units into two types: consonantal roots and (mainly vocalic) patterns or schemes. Bergsträsser (1928:6) expresses the special relationship between consonants and vowels as follows:

“The root-meaning adheres exclusively to the consonants of the root; the vowels, as well as consonant repetition or doubling and also certain additional consonants [afformatives], serve only to modify this root-meaning by forming various nominal and verbal stems and their inflection.”²

Goldenberg (1994) presents one of the best discussions of the history of the analysis of Semitic word structure dividing conceptions of root-and-pattern into two basic types. The first and the more traditional type conceives of roots and patterns as “implicit elements” defined by their paradigmatic relations. According to Goldenberg, this conception is represented by that of Cantineau (1950a, 1950b) and the medieval Arabic and Hebrew grammarians. Cantineau (1950a) describes Arabic words as belonging two separate sets. For example, *ʔabyaḍ* belongs both to the set {*bayḍāʔ-*, *bayyada*, *bīḍ-*, *bayāḍ*, *ibyaḍḍa*,...} and the set {*ʔaḥmar* ‘red’, *ʔazraq* ‘blue’, *ʔaswad* ‘black’, *ʔašfar* ‘yellow’,...}. According to Cantineau (75), a word is attached to a root (“racine”) and pattern (“scheme”) by “a psychological process of combinatory analysis”. The second type of analysis, which is preferred by Goldenberg, recognizes the root and pattern as “explicit discontinuous morphemes”.

McCarthy (1981, 1979) proposed an influential, if not revolutionary, analysis of Semitic morphology using the notation of autosegmental phonology (Goldsmith 1976, also see Goldsmith 1990). As Goldenberg remarks, the tiered approach is not substantially different from that of discontinuous root morphemes and vocalic schemes which have a deeper lineage. Earlier attempts to address Semitic structure within a formal linguistic framework include Harris’ long components (1941, 1951), Firth’s prosodies (1948) and Chomsky’s work on Hebrew (1951). More than anything McCarthy’s greatest contribution was offering a clear graphical approach to looking at discontinuous morphology. A relatively large body of work has been done within this framework (e.g. Farwaneh 1990; Haile and Mtenje 1988; Hayward 1988; Hoberman 1988, 1993; Idrissi 1997; Moore 1990; Ratcliffe 1990; Yip 1988).

Two main responses have developed within the linguistics literature to McCarthy’s original proposal. McCarthy’s own response (McCarthy and Prince 1988, 1990a, 1990b) was to introduce otherwise motivated prosodic constituents into the theory. The other response has to been to bring into question the status of the roots and patterns.

This claim may at first seem very counterintuitive. Roots and patterns have very obvious use in practical description and lexicography, as well as a strong basis in language acquisition (Badry 1983, 2005; Clark and Berman 1984; Berman 1985, 2003; Levy 1988; Ravid 1995, 2003; Ravid and Farah 1999) and psycholinguistic studies (Deutsch and Frost 2003, Ephratt 1997, Berent and Shimron 2003). Shimron (2003b) notes a disconnect between psycholinguistic and linguistic judgments about the role of roots in Semitic morphology in the introduction to the

² “Die Wurzelbedeutung haftet ausschließlich an den Konsonanten der Wurzel; die Vokale dienen, ebenso wie Konsonantenwiederholungen oder –Verdoppelungen und auch gewisse Zusatzkonsonanten, nur der Modifikation dieser Wurzelbedeutung durch Bildung verschiedener Nominal und Verbalstämme und deren Flexion.”

papers in Shimron 2003a. While recent linguistic works and particularly the contributions in this volume argue against the existence of the root in favor of a stem- or word-based conception, the psycholinguistic work supports the conception of roots as part of a speaker's mental lexicon and as a part of lexical decomposition. Shimron suggests that these results may not be as irreconcilable as they at first appear. Shimron argues that roots and templates as well as stems and words are representations that are available to people. While the role of roots and templates in certain processes is undeniable, they would appear to have a much more limited role in other domains including many of the historical processes described in this dissertation.

From a historical perspective, the system of ablaut and other internal changes involved in many types of word formation should be considered as the most distinctive and pervasive feature of the Semitic languages instead of the triconsonantal root. It is not clear that attempts to investigate the proto-Semitic consonantal root system do much to advance the understanding of the most basic historical processes involved in the development of the morphological system. If one considers the consonantal root to be a secondary phenomena created by the confluence of prosodic template requirements and widespread use of ablaut-type alternations (see Bat-El 2003), then it is best to examine how these components have individually developed, that is how this type of morphological system comes about and how it changes in part and as a whole. Several issues have led to a reexamination of the role of roots and patterns in the morphology of Semitic languages. Gelb (1969:160-165) argues that the root was not necessary for the description and reconstruction of Akkadian morphology, preferring instead to use the stem as the basic lexical unit.

More recently, there has been a trend toward examining Semitic languages in terms of stems and words and not roots and patterns. Heath (2003a) argues strongly against a root-based approach to derivation, arguing instead for a stem based approach. While the role of the root in derivation is rejected, Heath argues that the root likely does have a role in other domains such as parsing. Heath's analysis assumes certain underived stems, such as the simple noun and the imperfect form of simple verbs. Derived stems are produced by ablaut and affixation on the underived stems. Heath argues for a stem-based analysis based on a desire for uniformity (i.e. to eliminate the assumption that Semitic morphology is fundamentally different from that of other languages) and also to account for the frequent dependence of various derived forms on what Heath considers the underived stems. This dependence is described in depth for plurals of nouns in the work of Ratcliffe (1997, 1998), and also for verbs by Benmamoun (1999, 2000, 2003), who also argues for the underived status of the imperfect form of verbs. Heath relies on relationships between observable forms, eschewing the abstractness of the majority of formal analyses. Benmamoun (1999, 2003) similarly argues against roots and templates in favor of a word-to-word model of Arabic morphology which does not require fundamentally different representations from those in other languages. Benmamoun also argues for the basic role of the imperfect both in Arabic syntax as the default form of the verb and morphology as the basis of various word formations.

A few recent papers have also argued for the inadequacy of the root from an Optimality Theoretic (OT) point of view. Ussishkin (1999) argues within OT that the root is unnecessary to account for denominal verb formation in Modern Hebrew, an argument originally proposed by Bat-El (1994). Gafos (2003) presents an OT account of Arabic Morphology and specifically the class of doubled verbs and Greenberg's Asymmetry ($C_1 \neq C_2$). Like Ussishkin's, Gafos' analysis seeks to derive patterns from general phonological principles and the situation of the stem within paradigms using output-output faithfulness constraints within and between paradigms. Gafos

departs notably from traditional approaches in treating /madd-/ and /mudd-/ as the basic stems of the perfect and imperfect instead of /madad-/ and /mdud-/. I-w verbs are treated as biconsonantal with an epenthetic wāw in the perfect and in other forms.

The concern in this dissertation is mainly practical. The assumption that the root is unnecessary is preferred because it is simplest. The processes responsible for the formation of Semitic morphology are more easily described without the theoretical and formal complications of roots and patterns. Also, many of the changes that affect the existing structures appear to occur largely independent of roots and schemes. At the same time, a desire for simplicity should not obscure complexities inherent in the morphological system. The Semitic languages display a wide spectrum of regularity and productivity in their formation. The next section introduces and presents some of the great variety of internal morphological process with an eye to issues of regularity and productivity.

1.3.2. Regularity and productivity

While ablaut patterns are a part of the morphology of every Semitic language, the number and productivity of such patterns varies greatly. Thus, while Classical Arabic contains perhaps the most widespread and productive system of non-linear types of morphological patterns, Nubi (Heine 1982) and Maltese (Aquilina 1959, Borg 1978), two later varieties of Arabic which have had intense contact with non-Semitic languages, show a system with both fewer and less productive patterns. In fact modern Arabic dialects in general have experienced a general loss of morphological patterns such as the internal passive and several derived forms of the verb. From the history of Arabic it might seem that the system of ablaut patterns is characterized by a slow process of decay, whereby the system of non-linear morphology represents the oldest, or even the original, stage of the language with a subsequent break down of the system over time. However, once the Semitic family is considered as a whole, this scenario does not hold up so well. The history of the Semitic language family and its subfamilies includes many cases of patterns being lost, but also many cases of new patterns emerging. Many of the non-linear morphological patterns of Classical Arabic are likely innovations not originally found in Proto-Semitic.³ The modern history of most Semitic languages is characterized by both the loss of older ablaut patterns and the formation of new patterns, giving us a very dynamic picture of developments in the domain of ablaut patterns.

A number of distinctions between types of internal modification are useful for the discussion of Arabic and, more generally, Semitic morphology. A number of dimensions must be considered with respect to the types of internal modification attested. One of the most important dimensions is that of productivity. Productivity of a morphological form is difficult to gauge, particular with regard to historical data. Productivity is a measure of the potential a morphological form has for being used in creating novel forms. Productivity is closely related to the frequency of a form. Frequency is strongly associated with productivity, but they are by no means identical. Typically forms which are more frequent are also more productive and rare forms are less productive. However the relationship between frequency and productivity is complex. The relationship between frequency and productivity and the different notions and quantifications of each are discussed in Baayen (1992, 1993) and Hay (2001) It is even possible for productivity and frequency not to be correlated in some cases (Marcus et al. 1993, below).

³ See Haupt 1878 for an early articulation of this position and Goshen-Gottstein 1969 for a more recent discussion of the development of the system of derived verb stems.

For example, in Maltese the morphological patterns used with loan words are often the borrowed patterns of Sicilian and Italian even when the Semitic patterns are common. This is best illustrated by the forms of the participles, particularly the passive participle which is formed commonly for both native verbs and loan verbs. The active participle has fallen out of use and is found mainly as lexicalized forms with largely unpredictable meanings, although the relationship of Maltese forms to their original sources, whether native or loan, are unambiguous. The Maltese active participle *qitel* reflects Arabic active participle *qātil-* displaying common Maltese and North African shift of $\bar{a} > \bar{i}$, a change called *imāla* by Arab grammarians.

(5) Participle formation for basic stem verbs in Maltese and Arabic

Maltese participles (Data taken from Aquilina 1959, 1965)				cognate Arabic forms		
3SG perfect	gloss	participles		3SG perfect	participles	
		active	passive		active	passive
dahal	‘he entered’	dīhel		daḡal-a	dāḡil-	
rikeb	‘he rode’	rīkeb	mirkūb	rakab-a	rākib-	markūb-
harej	‘he went out’	hīrej	mahrūj	ḡaraj-a	ḡārij-	maḡrūj-
raʔad	‘he slept’	rīʔed		raqad-a	rāqid-	
nizel	‘he descended’	nīzel	minzūl	nazal-a	nāzil-	manzūl-
meša	‘he walked’	mīši		mašā	māši-	
ʔatel	‘he killed’		maqtūl	qatal-a	qātil-	maqtūl-
hataf	‘he snatched’		mahtūf	ḡat ^ʕ af-a	ḡāt ^ʕ if-	maḡt ^ʕ ūf-
kiser	‘he broke’		miksūr	kasar-a	kāsir-	maksūr-
habb	‘he loved’		mahbūb	ḡabb-a	ḡābb-	mahbūb-
temm	‘he completed’		mitmūm	tam-a	tāmm-	matmūm-
beda	‘he began’		mibdi	badaʔ-a	bādiʔ-	mabdūʔ
rema	‘he threw away’		mormi	ramā	rāmi-	marmīy-
wiled	‘he begat’		milūd	walad-a	wālid-	mawlūd-
ʔīs	‘he brought’		meʔyūs	qās-a	qāʔis-	maqīs-
zīd	‘he increased’	zeyyed	mizyūd	zād-a	zāʔid-	mazīd-
ʔām	‘he rose’		meʔyūm	qām-a	qāʔim-	maqūm-

The more common Maltese passive participle also can be transparently derived from the Arabic form *maqtūl* with various reflexes of the short vowel /a/ depending on the following consonant with the most common outcome being a short vowel /i/.

Beside the system of active and passive participle formation used for verbs of native origin there is a separate system used for loan verbs which is ultimately of Romance provenance. For Italian and Sicilian loans the form of the passive participle with either the suffix -āt, -ūt or īt is determined by the original Romance inflectional class. For English loans the Romance -āt suffix with an additional glide /y/ is attached to the stem. This extension of the -āt suffix to English can be construed as evidence that this form has become the productive way of forming new passive participle. However, the most common form of the passive participle would still appear to be the internally formed passive participle native to Arabic and Maltese. While the influx of loan words into Maltese from Sicilian, Italian and English has had an extensive and

profound influence on the character of the Maltese language (Aquilina 1959, 1971, 1978), verbs, particularly the most common verbs, are largely of Arabic origin (See Fenech 1978).

(6) Participle formation for basic stem verbs in Maltese and source languages

Maltese participles (Data Taken From Aquilina 1959, 1965)				cognate Italian and English forms		
3SG Perfect	gloss	active part.	passive part.	infinitive	active part.	passive part.
kanta	'he sang'	kantant	kantāt	cantare	cantand-	cantat-
čīda	'he ceded'		čedūt	cedere	cedend-	cedut-
stenda	'he extended'		stendūt	stendere	stendend-	stesut
impeda	'he impeded'		impedit	impedire	impedend-	impedit-
spella	'he spelled'		spellūt	spell	spelling	spelled
illawda	'he allowed'		illawdyāt	allow	allowing	allowed

A similar situation is also found in German where the plural form commonly used with borrowed and newly coined words is a suffix *-s* even though other forms are more common and this form is otherwise relatively rare (Marcus et al. 1993).

A further problem is disentangling the cause and effect relationships between frequency and productivity. It is reasonable to consider either leading to the other. High frequency could be the result of a productive form adding more and more new forms to a language. Conversely forms which are more frequent may more readily be extended to a new form given the greater base of models that can be used. A further possibility that both may be at work in a sort of "autocatalytic" process whereby the creation of new forms leads to higher frequency leading to further new forms and so on. Productivity and regularity also have a complicated relationship.

Regularity is a more difficult concept to define, although one might consider it as type of frequency measure. A form is regular if it is the most common form for expressing some morphological category. In English the suffix *-s* is both the productive and regular form for expressing plurality, while other suffixes (*oxen, alumni, data, etc.*), internal modification (*men, geese, women, etc.*) and suppletion (*people*) have limited productivity and are considered irregular. In many cases a regular form is also a productive form, but the German and Maltese cases described above show that this is not always the case.

There is a wide range of internal modification patterns which vary in both productivity and frequency. The most productive types of patterns will be examined first and the discussion will then proceed to the least productive forms. In addition to productivity and frequency the role of morphological and semantic transparency of the forms will be discussed. This discussion will serve secondarily to introduce the basic morphological structures of Arabic and other Semitic languages which will serve as a starting point for later discussions.

Certain patterns can be formed for all forms with an appropriate meaning and word class. Patterns of this type are illustrated by the participial forms of non-derived verbal forms, such as the general Semitic active participle **qātil* and the Arabic passive participle *maqūl*, discussed above in connection with Maltese. The forms are invariant for strong verbs, i.e. verbs with three 'root' consonants, and so are independent of the vocalization of other forms. The meanings of these forms are typically transparent and, even when the word has taken on a specialized meaning, the basic active participle meaning remains in use beside the more specialized one.

Like the forms of the participles, the passive forms of the verb, which can be formed both from basic verbs and derived ones, have invariable patterns. The vocalization of passive forms bears no relation to the vocalization of the corresponding active verbs in the way that the vocalization of the perfect and imperfect forms of basic stems are related. Passive forms in Classical Arabic involve the replacement of the vocalic melody of the active form with a different vocalic melody. In the perfect the melody *u-i* replaces one of the possible active melodies.

(7) Active and passive forms of the 3MSG perfect in Classical Arabic

daras-a	‘he studied’	duris-a	‘it was studied’
katab-a	‘he wrote’	kutib-a	‘it was written’
ḍarab-a	‘he struck’	ḍurib-a	‘he/it was struck’
šarib-a	‘he drank’	šurib-a	‘it was drunk’

In the imperfect the vowel of the person prefix changes to *u* and stem vowels are changed to *a*.

(8) Active and passive forms of the 3MSG perfect in Classical Arabic

ya-drus-u	‘he is studying’	yu-dras-u	‘it is being studied’
ya-ktub-u	‘he is writing’	yu-ktab-u	‘it is being written’
ya-ḍrib-u	‘he is striking’	yu-ḍrab-u	‘he/it is being struck’
ya-šrab-u	‘he is drinking’	yu-šrab-u	‘it is being drunk’

In other similar cases the patterns are productive and invariable except for the fact that a thematic vowel is determined either lexically or by membership in an inflectional class. This is the case for the forms of the imperfect and other prefix conjugations (Proto-Semitic **ya-qtu/a/il*) and the West Semitic perfect (**qata/i/ul-*) of the basic stem. The basic stem of the verb in the Semitic languages is CCvC for prefix forms like the West Semitic imperfect and CaCvC for the West Semitic perfect. In Arabic most active verbs have a thematic vowel **a* in the perfect and **u* in the imperfect (*katab-a* ‘he wrote’, *ya-ktub-u*, ‘he is writing’, *daras-a* ‘he studied’, *ya-drus-u* ‘he is studying’). These types of verbs belong to the a-u ablaut class. As the most common inflectional class for verbs, it is likely that the pattern is the most salient and thus is a potential model for a productive formation. This class and a number of other classes are found in most West Semitic languages. In Arabic and Hebrew the West Semitic ablaut classes are well preserved. In other languages, phonological mergers and morphological leveling has reduced the number of classes. For Example Ethiosemitic short high vowels /i, u/ have merged to /i/, reducing the number of possible thematic vowel contrasts. In Akkadian, ablaut patterns of this form are limited to prefix preterit forms with a thematic vowel **u* which have a thematic vowel **a* in the perfect forms. Otherwise thematic vowels are consistent throughout paradigms. The different ablaut classes are shown in the chart below.

(9) Ablaut classes in the Semitic languages

<i>classes</i>	Arabic	Hebrew	Akkadian
a-u	katab-a ~ ya-ktub-u	kātab ~ yi-ktōb	i-ptaras ~ i-prus
a-i	jalasa-a ~ ya-jlis-u	nātan ~ yiṭṭēn	
a-a	faʿal-a ~ ya-fʿal-u	rākab ~ yirkab	i-ṣṣabat ~ i-ṣbat
i-a	šarib-a ~ ya-šrab-u	kābēd ~ yikbad	
i-i	naʿim-a ~ ya-nʿim-u		i-štariq ~ i-šriq
i-u	ḥaḍir-a ~ ya-ḥdur-u		
u-u	ḥasun-u ~ ya-ḥsun-u		i-mtaqut ~ i-mqut
u-a		qāṭōn ~ yi-qṭan	

While the thematic vowel is in many cases unpredictable, the basic syllabic structure of these forms and the quality of non-thematic vowels occur regularly with all non-derived forms of the verb. The imperfect and perfect forms have a single basic form for non-derived verbs with a predictable meaning. Unlike the participles the imperfect and perfect forms have a single basic meaning and do not typically develop specialized senses.

The derived stems form an intermediate case. Derived forms are formed by a number of different modifications to the basic stem. The most common ways of forming derived stems involves affixation, in this cases most frequently prefixation but also more limitedly infixation. There are three primary affixes that occur alone or in conjunction with each other or various stem types formed by internal modification to be discussed below. The Š-stem forms with an affirmative beginning with /š/, /h/ or /ʔ/ has a causative function and is widely distributed in the family. The T-stem consisting of an affirmative involving a /t/ is an argument reducing operation and is often considered a passive or reflexive form. The T-stem is found in most Semitic varieties. The N-stem, which occurs in Arabic, Hebrew and Akkadian, is similarly an argument reducing operation. Depending on the form and the language in question other internal modifications accompany affixation. These internal modifications often reflect later changes limited to one branch or language as is the case with the long thematic vowel /ī/ of the Hebrew Š-stem. Other derived verb stems only involve internal modification, in most cases the lengthening of elements of the basic stem. The factitive or intensive D-stem involves a lengthening of the second root consonant. The Arabic and South Semitic L-stem expressing verbal plurality involves lengthening of the first vowel of the basic stem. A few rare stem types are excluded from the chart. This chart also lays out the terminology used to refer to the derived stems. In addition to the information in the chart, the basic, D- and the L-stems are often referred to in Etiosemitic as Type A, Type B and Type C, respectively.

(10) Derived stems in Semitic

	East Semitic	West Semitic			
	Akkadian	Hebrew	Aramaic	Arabic	Ge'ez
Basic Stem	G-stem i-prus i-parras	Qal qābar yi-qbōr	pəʕal qəbar yi-qbūr	Form I qabar-a ya-qbūr-u	qəbər-ə yī-qbīr yī-qəbbīr
T-stem	Gt-stem i-ptaras i-ptarras		hitpəʕel hitqəber yi-tqəber	Form VIII iqtabar-a ya-qtabir-u	təqəbr-ə yī-tqəbər yī-tqəbbər
D-stem	D-stem u-parris u-parras	Piel qibbēr yə-qabbēr	paʕʕel qabber yə-qabber	Form II qabbar-a yu-faʕʕil-u	qəbbər-ə yī-qəbbīr yī-qəbbīr
Dt-stem	Dt-stem u-ptarris u-ptarras	Hithpael hitqabbēr yi-tqabbēr	hitpaʕʕal hitqabbar yi-tqabbar	Form V taqabbar-a ya-taqabbar-u	təqəbbər-ə yī-tqəbbər yī-tqəbbər
N-stem	N-stem i-pparis i-pparras	Niphal niqbar yi-qqabēr		Form VII inqabar-a ya-nqabir-u	
Š-stem	Š-stem u-šapris u-šapras	Hiphil hiqbīr ya-qbīr	hapʕel haqber yə-haqber ya-qber	Form IV ʔaqbar-a yu-qbir-u	ʔəqbər-ə ya-qbər ya-qəbbīr
Št-stem	Št-stem u-štapris u-štaparras	(Hishtaphel) hištahāwā(h) yi-štahāwe(h)		Form X ištaqbar-a ya-štaqbir-a	ʔəstəqbər-ə ya-stəqbīr ya-stəqəbbīr
L-stem				Form III qābar-a yu-qābir-u	qabər-ə yī-qabīr yī-qab(b)īr
Lt-stem				Form VI taqābar-a ya-taqābar-u	təqabər-ə yī-tqabər yī-tqab(b)ər

In contrast to the basic stem, which can have one of three thematic vowels in both the perfect and the imperfect, the derived stems in West Semitic and East Semitic to a lesser degree are characterized by a single invariant thematic vowel independent of that of the basic stem. In Arabic /a/ is the thematic vowel for most derived forms in the perfect and /i/ is the thematic vowel in the imperfect, except for the cases of the Dt- and Lt-stems where /a/ is found in both perfect and imperfect forms. A similar although not identical situation obtains for the older West Semitic languages. Hebrew only retains ablaut alternation of the thematic vowel for derived forms in the *Qal* and *Niphal* forms. In Akkadian the thematic vowel of the basic stem, except in the case of a-u class preterite, also occurs in the simple T-stem (Akkadian Gt-stem). In the N stem there is a reduced contrast between i-class verbs and the remaining classes. For all D- and Š- stem forms a situation like that of West Semitic is found. The table below shows the ablaut patterns in Akkadian for TMA and derived stems.

(11) Derived forms and ablaut classes in Akkadian

class	tense	basic stem	T-stem	N-stem	D-stem	Š-stem
a-u	preterite	i-prus	i-ptaras	i-pparis	u-pparis	u-šapris
	durative	i-parras	i-ptarras	i-pparras	u-pparras	u-šapras
a	preterite	i-šbat	i-ššabat	i-ššabit	u-šabbīt	u-šašbit
	durative	i-šabbat	i-ššabbat	i-ššabbat	u-šabbat	u-šašbat
i	preterite	i-šriq	i-štariq	i-ššariq	u-šarriq	u-šašriq
	durative	i-šarriq	i-štarrīq	i-ššarriq	u-šarraq	u-šašraq
u	preterite	i-mqut	i-mtaqut	i-mmaqīt	u-maqqīt	u-šamqīt
	durative	i-maqqut	i-mtaqqut	i-mmaqqat	u-maqqat	u-šamqat

The thematic vowels according to tense and derived stem are abstracted below:

(12) Akkadian ablaut patterns

class	tense	basic stem	T-stem	N-stem	D-stem and Š-stem
a-u	preterite	u	a	i	i
	durative	a	a	a	a
a	preterite	a	a	i	i
	durative	a	a	a	a
i	preterite	i	i	i	i
	durative	i	i	i	a
u	preterite	u	u	i	i
	durative	u	u	a	a

There is great variation among varieties with regard to the frequency and productivity of the derived verbal forms. Subsequent changes have often complicated the situation. While the perfect form of the D-stem in Arabic and Ge'ez can be easily derived from the perfect form of the basic stem by the lengthening of the middle root consonant (Arabic *daras-a* 'he studied' vs. *darras-a* 'he taught'), various sound changes have yielded a more complex situation in Aramaic, Hebrew and various modern Arabic dialects. Changes in the system of stress have led to widespread reduction of the vowel in initial light syllables of the basic stem but not the initial heavy syllable of the D-stem in Aramaic (*bənas* 'he was angry', *kətab* 'he wrote', *rəbā* 'he grew great' vs. *qabbel* 'he received', *qaṭṭil* 'he slew', *rabbī* from BDB) and Moroccan Arabic (*lbis* 'he put on' vs. *libbis* 'he dressed (s.o.)', *χrij* 'he went out' vs. *χirrij* from Harrell 1962). Subsequent changes in Hebrew associated with changes in the system of stress have created complex relationships between basic stem and D-stem verbs including lengthening middle root consonant and complete replacement of the vocalic melody (*hāzaq* 'he was/grew strong' *hizzēq* 'he strengthened (s.o. or s.th.)', *qādaš* 'he/it was consecrated' vs. *qiddēš* 'he consecrated (s.o. or s.th.)', *lāmad* 'he learned' vs. *limmad* 'he taught' from BDB). In other cases stem leveling has reduced the ablaut patterns. The thematic vowel alternations in derived stems are frequently lost. Aramaic has invariant stems for derived forms that occur in both the perfect and imperfect conjugations. The D-stem has an invariant stem of the shape *qabber* in both the perfect *qabber* and imperfect *yə-qabber* and the Š-stem has an invariant stem of the shape *haqber* in both the

perfect *haqber* and imperfect *yə-haqber*. The T-stem and Dt-stem similarly lack the alternation of the theme vowel characteristic of the majority of forms in Arabic. The Aramaic T-stem has /e/ as the thematic vowel going back to proto-Semitic * i (perfect *hitqəber* with prosthetic /hi/ and imperfect *yi-tqəber*), while Arabic has /a/ as the thematic vowel of the perfect (*iqtabar-a* with prosthetic /i/ and metathesis of /t/ and first root consonant) and /i/ as the thematic vowel of the imperfect (*ya-qtabir-u* also with metathesis). Hebrew also has lost the thematic vowel alternations in all derived forms.

The history of the Semitic languages appears to be characterized by significant fluctuations in the productivity of derived forms. The Š- and D-stems, which are both argument augmenting operations, are two of the more productive patterns in the classical Semitic languages. This productivity is hinted at by the occurrence of these forms in every major branch of the Semitic language family. In terms of token frequency the Biblical Hebrew *Hiphil* (Š-stem) is by far the most common derived form accounting for about 13% of all verbal tokens in the Bible (Van Pelt and Pratico 2003:278). The only other derived forms with high token frequency are the *Piel* (D-stem), accounting for about 9% of all verbal tokens, and the *Niphal* (N-stem), accounting for about 6%. As for the remaining verbal tokens *Qal* (Basic Stem) accounts for 69%, the *Hithpael* (Dt-stem) for 1% and the remaining forms (*Pual*, *Hophal*, *Pilpel*, *Polel*, *Poel*, *Hithpolel*, *Histaphel*) each for less than 1%, combined accounting for only 2%. Despite the once productive character of Š-stem formation the form has become largely obsolete in modern dialects of Arabic, particularly outside the Bedouin dialects. The form is commonly replaced by D-stem forms in these dialects (Kaye and Rosenhouse 1997). This change is well illustrated by Maltese where Form II (D-stem) played an important role in the formation of denominative verbs from borrowed nouns.

(13) Denominative Form II verbs from Romance nouns (Mifsud 1995)

II /serrep/ ‘to zigzag’ < /serp/ ‘snake’ < It. *serpe* (dial. ?) < It. *serpente*
 II /werreč/ ‘to make s.o. squint’ < /werč/ ‘squint eyed’ < It. *guercio*
 II /baqqan/ ‘to work with a pickaxe’ < /baqqun/ ‘pickaxe’ < It. *piccuni*

Another important fluctuation involves the N-stem, while common in Hebrew, Phoenician, Ugaritic and Arabic, is absent in Aramaic. In Hebrew in contrast the *Niphal* has been extended replacing the internal passive of the basic stem.

The frequent lack of transparency in meaning also sets the morphology of derived forms off from other nonconcatenative patterns in the Semitic languages. There is a strong tendency for derived forms of the verb to acquire specialized senses. In fact the meanings of derived forms can be so various and unpredictable that it is often extremely difficult to propose a single or basic meaning for a form. In many cases there are derived forms which do not correspond to a basic stem verb form. These characteristics are discussed in Chapter 4.

In derived stems the vocalic melody of the active forms is replaced by a passive melody. Like the basic forms the patterns for derived forms are regular. The melody for the passive forms of the perfect is (u)-u-i. The passive of the imperfect takes the prefixes with *u* and has *a* vowels for the stem.

(14) Active and passive forms of Arabic derived forms

form	perfect		imperfect	
	active	passive	active	passive
II	faʕʕal-a	fuʕʕil-a	yu-faʕʕil-u	yu-faʕʕal-u
III	fāʕʕal-a	fūʕʕil-a	yu-fāʕʕil-u	yu-fāʕʕal-u
IV	?afʕʕal-a	?ufʕʕil-a	yu-fʕʕil-u	yu-fʕʕal-u
V	tafaʕʕal-a	tufuʕʕil-a	ya-tafaʕʕal-u	yu-tafaʕʕal-u
VI	tafāʕʕal-a	tufūʕʕil-a	ya-tafāʕʕal-u	yu-tafāʕʕal-u
VII	infaʕʕal-a	unfuʕʕil-a	ya-nfaʕʕil-u	yu-nfaʕʕal-u
VIII	iftaʕʕal-a	uftuʕʕil-a	ya-ftaʕʕil-u	yu-ftaʕʕal-u
X	istafʕʕal-a	ustufʕʕil-a	ya-stafʕʕil-u	ya-stafʕʕil-u

In all other Semitic varieties, including modern Arabic dialects, the system of internal passive marking is absent or much reduced. In many languages one of the derived stems of the verb, typically either the T-stem or N-stem, has become the primary way of expressing the passive. In Hebrew the *Niphal* (N-stem) expresses the passive of the *Qal* (basic stem), although evidence of internal passives of the basic stem is present in the Biblical text. The Masoretes, the group responsible for the standardization and vocalization of the Hebrew Bible, misanalyzed original *Qal* passives as *Pual* forms, the passives of the factitive *Piel* forms (D-stem).

Another class of forms is illustrated by plural and verbal noun formation in South Semitic. Unlike the patterns discussed so far where a particular pattern is associated with a single meaning or basic meaning, these types of formations involve a large number of basically unpredictable patterns associated with a single meaning such as plurality in nouns. The Arabic broken plural shows how this system works. A few examples of the types of patterns found in Arabic are shown below. Fischer (2002) lists 21 different patterns for triradicals which involve internal modifications with or without a feminine *-at* suffix.

(15) Examples of Arabic broken plurals

<i>singular</i>	<i>plural</i>
kitāb-un ‘book’	kutub-un ‘books’
kalb-un ‘dog’	kilāb-un ‘dogs’
qalb-un ‘heart’	qulūb-un ‘hearts’
ʕabd-un ‘slave’	ʕabīd-un ‘slaves’
ʕulām-un ‘lad’	ʕilm-at-un ‘lads’
ṭālib-un ‘student’	ṭalab-at-un, ṭullāb-un ‘students’
šāʕir-un ‘poet’	šūʕarāʕ-u ‘poets’
nahr-un ‘river’	?anhur-un ‘rivers’
qadam-un ‘foot’	?aqdām-un ‘feet’

Because of the relatively unpredictable and wide range of exponence, it does not appear that any of these forms should be considered as productive. In the case of plural formation, the productive, or at least default, forms would appear to be the so-called sound plurals involving suffixation, *-ūn* for masculine nouns and *-āt* for feminine nouns. Still the internal method of pluralization remains very common, even in varieties like Maltese which have been described as

basically concatenative (Hoberman and Aronoff 2003). There are even cases in Arabic of borrowings taking broken plurals, for example *bunūk* for *bank* and *ʔaflam* for *film*.

On the non-productive side are a number of nominal forms which share the same basic consonantal structure but differ in prosodic structure, including segment length, and vocalic melody. Included in this class are the large number of what can be considered as basic noun forms such as *rajul-* ‘man’, *qalb-* ‘heart’, *kalb-* ‘dog’, *qamar-* ‘moon’ and *jabīn-* ‘forehead’. While certain patterns are common for basic underived nouns (e.g. *qabr*, *qibr* and *qubr*), the patterns and vocalizations do not have any independent semantic value and are essentially unpredictable. Some nominal forms are undoubtedly derived from a pattern which was at some point productive, but either because of the obsolescence of the pattern, the obscuring of the original pattern due to a subsequent analogy, interference or sound change, or a drift in meaning which eliminates original transparency and precludes the analysis in terms of root and pattern.

Fox (2003) describes, classifies and reconstructs nominal patterns attested in Semitic languages. While such a project is certainly useful for understanding the historical processes that gave rise to attested word types and prosodic word shapes. A distinction which is not necessarily assumed in such an approach is between the word patterns in a language and the word patterns that are a part of the morphology proper. The former belongs to the domain of the lexicon and the latter, to the grammar. The distinction can be restated as between patterns for which the speaker need not be aware and those for which a speaker must have active knowledge.

The table below sums up the discussion, illustrating the array of internal morphological alternations in terms of both morphological and semantic regularity.

(16)

		morphological regularity		
		<i>single invariant form</i>	<i>few minimally different forms</i>	<i>multiple independent forms</i>
semantic regularity	<i>single invariant meaning</i>	Arabic internal passive	imperfect and perfect basic stem forms	Arabic and South Semitic internal plural forms
	<i>invariant meaning, alongside specialized meanings</i>	participial forms		Arabic and South Semitic verbal nouns
	<i>basic meaning for many forms, but widespread specialized meanings</i>	derived verbal forms	Akkadian Gt- and N-stems	

The current research distinguishes itself from other works by concentrating on morphological forms and processes and the dynamic processes of change that they undergo. The patterns of nouns and other words that are not used in a way that is either consistent or

productive can tell us something about the prehistory of the morphology and the process of morphological obsolescence. However, it is limited in what it can tell us about the mechanisms of creation, the primary concern of this investigation. Research into Semitic historical morphology has for the most part been concerned with Akkadian and the classical West Semitic languages (Biblical Hebrew, Aramaic, Syriac, Classical Arabic and Ge'ez) and the common origin of their respective morphological systems. Previous research has not focused on the actual change, except to derive one of the classical languages from Proto-Semitic. The observation of change over time is an important addition and hopefully a corrective to earlier approaches to Semitic morphology.

1.4. Review of assumptions

Several assumptions guide the analysis and the reconstruction of Proto-Semitic. The first and probably the most important is the assumption that the Semitic languages are not fundamentally different from other languages in their basic organization. The morphology of Semitic will be considered to be stem- or word-based (Bat-El 1994, 2003; Benmamoun 1999, 2003; Gafos 2003; Gelb 1969; Heath 2003a; Ratcliffe 1997, 1998), eschewing the root-based analyses which have long dominated the study of Semitic morphology. While the root may have a role in psycholinguistic processing or other domains (See Shimron 2003b), the working assumption is that a consonantal root has no, or at most a minimal, role in the historical processes involved in the introduction and loss of nonconcatenative morphology. A second set of assumptions concerns the nature of historical change. Morphological change is considered to be non-teleological, involving the reanalysis of existing forms and the extension of new forms by analogy. As concerns nonconcatenative morphology all patterns are assumed to have an ultimate origin in concatenative morphology. In practice the origins of particular patterns may not be recoverable, but still the Semitic Languages offer numerous instances of the formation and development of new patterns and the loss of old patterns. This chapter will lay the foundation for the examination of subsequent changes within the Semitic Language family by examining the earliest reconstructable stage of the Semitic family.

Chapter 2.

The structure and reconstruction of the Proto-Semitic verbal system

2.1. Introduction

Before continuing to the more general questions of historical change in the system of nonconcatenative morphology in the Semitic languages, it is useful to consider the Proto-Semitic verbal system. The reconstructions proposed and discussed in this chapter are guided by the principles of historical change described in the preceding section and the general tendencies to be described in later sections. The discussion and reconstruction of the verbal system and related forms serve as a foundation for understanding the changes in the Semitic family.

In this chapter, I seek to achieve three basic aims. First, I will tackle some auxiliary issues related to the reconstruction of the Semitic languages, particularly issues of classification and orthography. Second, I will provide a basic description of the character of Semitic morphology, continuing the more theoretical discussion begun in the first chapter. Finally, I will discuss the reconstruction of the Proto-Semitic verbal system as it relates to the system of nonconcatenative morphology and the assumptions that underlie different reconstructions. An emphasis will be placed on understanding the processes involved in the formation and development of ablaut and other internal modifications. Following the discussion of classification and Semitic writing systems, the discussion will be divided into two sections. The first will address the origin of verbal forms in non-verbal forms focusing on those nominal and adjectival forms that have been reanalyzed as verbal as well as the system of person marking in pronominal elements and verbal inflection. This discussion will focus both on the relationship between pronominal elements in the Semitic languages as well as the related Afroasiatic languages. The second section will turn to the specific verbal forms reflecting different tense, mood and aspect distinctions attested in the Semitic languages.

2.2. Preliminaries to reconstruction

Two main issues will be addressed. Both are necessary foundations for reconstruction. The first issue is establishing a provisional classification of the Semitic family. In order to make sense of the changes it is useful to have a working hypothesis for the development of and relations within the family. Second, the character of the various writing systems used to record Semitic languages needs to be addressed. A discussion of writing systems is particularly important given the wide range of writing systems used in different times and places in the history of the Semitic family. A basic understanding of the basic character, as well as some of the idiosyncrasies of the writing systems, is essential for understanding much of the data and analysis that is presented.

2.2.1. Notes on classification

Reconstruction and classification are closely related, with each informing the other. A certain degree of circularity in argumentation is a risk given the relationship between these two types of analysis. In order to avoid any circularity, I will generally assume the classification scheme proposed by Hetzron (1976b) based on “shared morpholexical innovations” and developed and elaborated in other works particularly with respect to the classification of Ethiosemitic (1972, 1973, 1975). Hetzron’s classification (also see Faber 1997 and Huehnergard 1995) generally follows the traditional classification (Moscatti, Spitaler, Ullendorf & Soden 1964, Nöldeke 1911) which divided Semitic into two main branches, East Semitic with Akkadian and West Semitic containing all other Semitic varieties in two branches, Northwest Semitic and South Semitic.

The main difference between Hetzron’s and the more traditional classifications involves the position of Arabic. Traditionally, Arabic was grouped with Ethiosemitic and South Arabian

in South Semitic. However, Hetzron places Arabic in a “Central Semitic” branch with Northwest Semitic. Although Arabic has features in common with South Semitic such as the occurrence of internal plurals, convincing evidence points to common innovations shared by Arabic and Northwest Semitic. According to Hetzron (1976b), Central Semitic is distinguished from both South Semitic and East Semitic by what appears to be an innovative nonpast verb form *yaqtulu* which has replaced the east and South Semitic form with the stem $-C_1aC_2C_2vC_3$ (e.g. CA *yaqtulu*, Heb. *yiqṭōl*, Akk. *iqattal*, Ge‘ez *yiqattil* ‘he kills’, Mehri *yərūkəz* ‘he straightens’), by the replacement of the /k/ of the 1SG suffix conjugation marker with /t/ (e.g. CA *qataltu*, Heb. *qātálti* ‘I killed’, Akk. *maršāku* ‘I am sick’, Ge‘ez *qətalku* ‘I killed’, Mehri *rəkázk* ‘I straightened’).

Remaining controversies primarily revolve around the more recently discovered languages of the third and second millennia BCE. Ugaritic (ca. 14th century BCE) is generally considered as a separate branch of Northwest Semitic (see Goetze 1941, Faber 1997), although some see a closer relationship with the Canaanite languages. Of slightly greater consequence is the position of Eblaite, a language contemporary with Old Akkadian in the second half of the third millennium BCE. The language has been considered variously as belonging to either East or West Semitic. For the purposes of this study Eblaite will be considered an East Semitic language separate from Akkadian according to what Huehnergard (1995) characterizes as the “growing consensus among Semitists and Assyriologists”.

The following classification and labeling will be used throughout this work.

(1) Classification of the Semitic family (Hetzron 1972, 1976b and Faber 1997)

I. East Semitic

A. Akkadian (Assyrian, Babylonian)

B. Eblaite

II. West Semitic

A. Central Semitic

1. Northwest Semitic

a. Ugaritic

b. Canaanite (Phoenician, Ammonite, Edomite, Hebrew, Moabite, El-Amarna)

c. Deir Alla

d. Aramaic (see section 5.4.1. for discussion of Aramaic)

2. Arabic

B. South Semitic

1. Eastern (Modern South Arabian)

a. Soqotri

b. Mehri, Ḥarsūsi, Hobyot, Jibbāli

2. Western

a. Old South Arabian (Sabean, Qatabanian, Ḥadramitic, Minean)

b. Ethiosemitic

i. North Ethiosemitic (Ge‘ez, Tigré, Tigrinya)

ii. South Ethiosemitic

α. Transverse South Ethiosemitic (Amharic, Argobba, Harari, East Gurage)

β. Outer South Ethiosemitic (Gafat, Soddo, Goggot, Muher, Mäsqañ, Ezha, Chahah, Gura, Gyeto, Ennemor, Endegen)

In several cases, such as with Aramaic, Arabic and Outer South Ethiosemitic, further classification is possible and will be discussed at greater length where relevant.

Even after settling on a classification, an important question remains as to how much weight should be given to different languages and branches of the Semitic language family. This question has two components: how much weight should be given to each branch and how much weight should be given to individual languages within each branch. West Semitic as a branch contains a large number of languages both ancient and modern in several different sub-branches. While West Semitic has the advantage of including a wide variety of languages in several locales and periods, many of the languages and sub-branches are not attested at an early date and those that are attested are not nearly as well understood as Akkadian. East Semitic, in contrast, is attested very early, but consists only of Akkadian in its various dialects and stages and possibly Eblaite. Given the competing advantages of these two branches of Semitic, it is unclear that either branch should be given preeminence in reconstruction. In the end there are clear signs of both conservatism and innovation in both sets of languages which need to be considered on their own merits. Ultimately, the only reasonable approach to reconstruction involves extensive and painstaking comparison of languages from many places and periods.

A common pitfall has been relying too heavily on a particular language for reconstructing the proto-language due either to a bias based on the investigator's familiarity with the languages in question or on more principled grounds of relative antiquity and degree of attestation. The two languages which have most frequently been privileged in reconstruction are Arabic and Akkadian. Arabic has enjoyed an important position because of its central role in the development of indigenous linguistic traditions and modern Western Semitics, a large literature and the retention of a number of archaic features which have been lost in most other Semitic languages. Akkadian benefits both from being very early and very well attested, although it has experienced a significant loss of the Proto-Semitic consonant inventory and a number of clear morphological innovations. In the end, as Fleisch (1979) has already suggested, any attempt to derive the other Semitic languages from either Arabic or Akkadian is misguided. To a lesser extent the classic literary languages of Hebrew, Syriac and Ge'ez have also enjoyed similarly privileged positions in the reconstruction of Proto-Semitic, but even more so within their respective branches. Huehnergard (2002) advocates a greater emphasis on comparing reconstructed sub-branches instead of taking the earliest or most well understood language as representative of the branch, an approach largely taken in the comparative grammar of Moscati, Spitaler, Ullendorf and Soden (1964).

The problem of the latter approach is most pronounced with respect to the South Semitic languages. Partly due to a limited understanding of many of the modern languages until recently and partly to long ingrained attitudes toward modern languages within Semitics, Modern South Arabian and Modern Ethiosemitic have largely been ignored in favor of Ge'ez. Recent work by Appleyard (1996a, 2002) points to several ways in which a wider consideration of the South Semitic languages leads to a modified understanding of the relationship among the members of the branch and that of the branch to other branches, particularly with regard to the relationship between the Akkadian durative *iparras* and the Ge'ez imperfect *yəqattəl*.

2.2.2. Notes on writing systems

The variety of writing systems used to represent the Semitic languages and the often incomplete way in which these writing systems represent the languages present several problems for researchers. What can be known about the Semitic languages is dependent to a large degree on the nature of the writing system used.

The earliest attested Semitic languages are all written using the Cuneiform writing system developed by the Sumerians. The cuneiform writing system, used for Akkadian and Eblaite, uses a mixed system of symbols representing words, whole syllables and parts of syllables. This system allows for the representation of geminate consonants and long vowels, although such contrasts are not always consistently marked. There is also a significant degree of polyphony in the use of particular signs. The same sign is frequently used to represent a CV or VC sequence where the C can be either a voiced, voiceless or emphatic consonant at the same place of articulation, for example /di/, /ti/ or /ṭi/. These deficiencies in the writing system can make it difficult to determine what form is intended in a particular text, but in general provide a fairly clear picture of the phonological structure of the language which the writing system represents.

The next earliest writing system, from the second half of the second millennium BCE and the beginning of the first millennium BCE, is an alphabetic writing system representing only consonant morphemes. This type of writing system was used for Ugaritic (ca. 14th century BCE), Northwest Semitic languages from the early first millennium BCE (Phoenician, Hebrew and Aramaic) and Epigraphic South Arabian. This type of writing system does not indicate any information about the vowels (i.e. their quantity, quality or presence) nor about whether consonants are geminate or not. Ugaritic is however not completely consonantal, having three symbols which represent the sequence of /ʔ/ and one of the three vowels /a/, /i/ and /u/. These symbols (𐎗 ʔa, 𐎗𐎎 ʔi, 𐎗𐎎𐎎 ʔu), where a relevant lexical item exists, allow us to reconstruct the phonology of Ugaritic at least with respect to vowel quality.

In the later histories of a number of Semitic languages, symbols for consonants, especially those for the glides /w/ and /y/, were commonly used to indicate a vowel, most commonly a long vowel. The use of vowel letters, or *matres lectiones*, is of considerable help in determining the quality of vowels, although the use of the vowel letters is frequently inconsistent and limited to certain vowels in specific contexts. For example Hebrew uses <ו> to represent /ū/ and /ō/, <י> to represent /ī/ and /ē/ and <א> to represent /ā/ and less commonly /ō/ word finally. Even with a consistent use of vowel letters, the problem of vowel quality for short vowels and geminate consonants remains unresolved.

A final stage in the histories of the writing of the Semitic languages involves the development of systems to indicate more completely the phonological contrasts of the language. The Ethiopic script represents CV sequences by modifying the shape of the original consonantal symbol (ቤ bə ቡ bu ቢ bi ባ bā ቤ be ብ bi ቦ bo), capturing all seven vocalic contrasts in Ge‘ez. A somewhat different solution was devised for Syriac, Hebrew and Arabic. In a related set of developments in these languages (see Morag 1962) a system of diacritics that could be superimposed upon a preexisting consonantal text was employed in the middle of the 1st millennium CE. Languages written using diacritics offer a clear picture of the phonology, but save an exacting oral tradition only a clear picture of the phonology is found for a relatively late period, somewhat compromising the utility of these writings for reconstruction.

In addition to the native writing traditions there are also instances of Semitic languages written using other writing systems that reveal information about the phonology and specifically vowel quality that is not apparent elsewhere. Ugaritic is found written in Akkadian syllabic cuneiform (Huehnergard 1987). In the Hellenistic and Roman periods, there are many examples of Semitic written in Greek and Latin scripts. Some of the best examples occur in Greek bible translations where Hebrew and Aramaic personal and place names are rendered in Greek script. Punic, a late form of Phoenician, is found in Latin script in Plautus' *Poenulus* and elsewhere (See Adams 2003).

2.3. Nouns, adjectives and pronouns

In the first chapter, I addressed the central role of the verbal system in the creation of root-and-pattern morphology. Despite the emphasis placed on the verbal system and its position in the root-and-pattern system, non verbal forms have played an essential role in the development of the verbal system. A set of adjectival and nominal forms derived from verbal bases participate, although sometimes peripherally, in the Semitic verbal system. Deverbal adjectives and nouns are the most common sources of new verbal stems and pronominal forms are the main source of new person inflection on verbs (see Chapter 5). This section will look first at the deverbal forms that should be reconstructed for Proto-Semitic before turning to the relationship between person marking in verbal inflection and person marking in nominal forms.

2.3.1. Reconstruction of adjectival and nominal forms

With the exception of the verbal adjective, the adjectival and nominal forms of the verb present few problems for the reconstruction of Proto-Semitic. These forms are distinguished by changes in vowel length and quality, which attest to the antiquity of nonconcatenative morphology in Semitic. While the forms likely have their origin in forms which did not involve these types of non-linear alternations, the original form is difficult to determine from the available forms.

Of all the adjectival and nominal forms the active participle **qātil* has perhaps the clearest reconstruction in Proto-Semitic. Regular reflexes of this form are encountered in every branch of the Semitic language family. In East Semitic Akkadian retains this form unchanged as *pāris*. In West Semitic the active participle is retained unchanged in Arabic and early varieties of Aramaic as *qātil*. Ugaritic also almost certainly retains this form unchanged (*ʔaḥd* ‘seizing’, *šʔiy* ‘executioner’ from Segert 1984 and *sà-ki-in-ni* /*sākin*/ ‘prefect’ from Huehnergard 1987), In most other Semitic languages the active participle occurs with expected modifications as with Hebrew *qōtēl* and Tigré *qātil* (Raz 1983). Tigré is the only Ethiosemitic to have robust reflexives of the Proto-Semitic **qātil* (Hetzron 1972). Although reflexes of **qātil* are found in Ge‘ez, e.g. *kahin* ‘priest’, *radiʔ* ‘helper’ (< *rədʔə* ‘he gave help’), *šawiʕ* ‘idolatrous priest (lit. sacrificer)’ *xatiʔ* ‘sinner’ (Dillmann 1907:230; Leslau 1989), the active participle has generally been replaced by *qətāli* derived from the agentitive form *qattāl*. From the overwhelming evidence there can be little doubt of the existence of the form **qātil* in Proto-Semitic with the function of an active participle. Even so there is still a question of whether a pre-Proto-Semitic form can be reconstructed for the active participle. Other Afroasiatic languages offer little evidence for such a form.

While not as well represented in the daughter language, there is also good reason to assume the existence of a passive participle **qatīl* or **qatūl* in Proto-Semitic. In most languages one of the patterns is preferred in productive patterns although both may be present. In Hebrew the passive participle has the form *qātūl* < **qatūl*, although there are forms with the pattern *qātīl* such as *ʕānī* ‘afflicted’, *ʔāsīr* ‘prisoner’, *māšīāḥ* ‘anointed, Messiah’ *nāsīʔ* ‘prince (i.e. one lifted up)’ and *nāzīr* ‘consecrated’ (Jouön and Muraoka 2000). In Arabic the situation is very similar. The form of the productive passive participle is *maqātūl* < **ma-qatūl* consisting of the passive participle plus a common nominal preformative *ma-*, although both the forms **qatīl* and **qatūl* without a preformative and with a clear passive meaning occur as with *nasīj* ‘fabric (i.e. woven thing)’, *nahīr* ‘slaughtered’ and *rasūl* ‘envoy, one who is sent’. In South Semitic the situation appears to be the same. A passive participle *qətul* is found in Tigré, e.g. *ḥiruy* ‘chosen’, *šibuʕ* ‘caught’, *šibur* ‘broken’ (Raz 1983), although the form suggests original **qitūl* or **qutūl* and not **qatūl*. In contrast in Aramaic the **qatīl* form reflected as *qətīl* is clearly the productive form (Rosenthal 1995). Ugaritic probably contains both forms as in *ḥa-ri-mu* /*ḥarīmu*/ ‘desecrated’

(Huehnergard 1987) and *lʔuk* /laʔūku/ ‘sent, envoy’ (Sivan 1998), although since vowel quality can only be determined from words with a medial glottal stop or in syllabic cuneiform writing it is difficult to determine the general character of the passive participle in Ugaritic. It is also impossible to determine vowel quantity such that a form like *ḥa-ri-mu* may reflect the passive participle form *qatīl*, a form *qatil* cognate to the Akkadian verbal adjective *paris* or even the active participle *qātil*. Akkadian does not use either of these forms productively, but does have reflexes of *qatīl as in *kanīkum* ‘sealed document’ (Ungnad [1879] 1992). Given the wide distribution of these forms and their coexistence in a number of languages, both forms *qatīl and *qatūl should be reconstructed for Proto-Semitic as passive participles. However, it is unclear why both forms exist. They could represent an original lexical distinction or some unknown functional distinction. A more thorough lexical study is required to answer this question. Whichever is the case, daughter languages, at least as far as the productive morphology is concerned, have lost the original distinction in favor of one or the other form.

The agentive form *qattāl, which overlaps semantically with that of the active participle clearly also belongs to Proto-Semitic. While not as common as the active participle, the appearance of this form in a number of branches attests to its antiquity and thus warrants our attention. In East Semitic the form is retained without modification (Akkadian *šarrāq*- ‘thief’, *dayyān*- ‘judge’). In West Semitic the form is also very widely attested. Arabic uses the form commonly for occupations such as *najjār*- ‘carpenter’ and *mallāḥ*- ‘sailor’. Hebrew has *ṭabbāḥ* ‘butcher’, *gannāb* ‘thief’, *rakkāb* ‘charioteer’ and *ḥattāʔ* ‘sinner’, which as a pattern interestingly constitute exceptions to the Canaanite vowel shift of ā > ō. Sivan (2001) counts the *qattāl* form among the possible forms of Ugaritic on the basis of forms such as *šʔalm* /šaʔʔālūma/ ‘investigators’, ^{LŪ}*la-ʔba-ʔnu* /labbānu/ ‘brick maker’, ^{LŪ}*ga-la-b[u]* /gallābu/ ‘barber’ and *ḥnnm*/^{LŪ}*ša-na-nu-ma* /ḥannānūma/ ‘archers’. In Geʿez the **qattāl* form is a relatively productive form for deriving agents from verbal roots, e.g. *ḥarāsi* ‘husbandman, plowman’ (< *ḥarəsə* ‘he plowed’), *waladi* ‘parent, procreator’ (< *wələdə* ‘he gave birth’), *rəwəsi* ‘runner’ (< *rošə* ‘he ran’), *nəfawi* ‘hunter’, *rəʔayi* ‘seer’ (Dillmann 1907:250; Leslau 1989).

In Geʿez and other Ethiosemitic languages it is reasonable to consider the form as a part of the verbal system along with other verbal derivatives, although in other cases in other languages this form can clearly derive a noun from either a verb or another noun, e.g. CA *jammāl* ‘cameleer’ from *jamal* ‘camel’). It is not completely clear whether the situation in Geʿez (where the *qattāl* form is a productive way of creating verbal derivatives) or the situation in other Semitic languages (where this form is used for various professions derived from both verbal and non-verbal roots) is original. If, as seems likely based on its wider distribution, the situation in the majority of Semitic languages reflects the Proto-Semitic situation, then Geʿez offers a case of a previously unproductive pattern becoming more productive. Such a scenario also leaves open the possibility that both situations may in a sense be original with this pattern starting as productive in pre-Proto-Semitic, losing its productivity and spreading only by unsystematic analogy and then finally in Geʿez again becoming a productive pattern which can freely form derivatives based on verbal roots. Cases like this show that the system of nonconcatenative morphology in the Semitic family is a very dynamic system, consisting of the creation, expansion, loss and retraction of various patterns related partly to fluctuations in the productivity of patterns.

A final note should be made of the various ways of forming verbal nouns and infinitives in the Semitic languages. The formation of verbal nouns in Arabic is the most diverse and complex system found in the Semitic family and presents one of the most difficult problems in

the historical morphology. One possibility is that it is an ancient retention that has been uniformly lost in other Semitic languages. This is not entirely unreasonable given the complexity of the system. A second, proposition is that the system is innovative. However, this seems unlikely given the limited time in which this system would have had to develop and the difficulty of finding the impetus for the large set of changes required to form the elaborate system. A similar complex system is also found for noun plurals, a topic treated by Ratcliffe (1997, 1998) who argues for the antiquity of those patterns.

Assuming that these Arabic patterns are original, given their occurrence exclusively in Arabic, these patterns are often obscure from a historical perspective. Aside from Arabic, other deverbal noun forms are found in the Semitic languages. Multiple reflexes provide a solid basis for the reconstruction of the patterns in Proto-Semitic. The most robust pattern, **qatāl-*, is found in Akkadian, Hebrew, Aramaic and Arabic. In Akkadian this form is the basic pattern of the productive and widely used infinitive (*ḥalāq-um* ‘to perish’, *maḥāṣ-um* ‘to strike’, *marāṣ-um* ‘to become ill’). In Hebrew the form is preserved in the form of the infinitive absolute *qātōl* (< **qatāl*), a form with fairly restricted uses as opposed to the more common and widely used infinitive construct. The *qatāl-* form is also found in Syriac nominal forms, although not as the productive infinitive, in words such as *ʕəbādā* ‘action’ and *qerābā* ‘battle’ (Moscati, Spitaler, Ullendorf & Soden 1964). Arabic has the *qatāl* form as one of many possible verbal noun formations as with *fasād* for *fasada* ‘spoil’ and *halāk* for *halaka* ‘to perish’ (Fischer 2002).

The nominal and adjectival forms discussed in this section have for the most part a clear reconstruction in Proto-Semitic. However, these forms and their similarities leave the possibility of a common origin at some even more remote period. The most plausible explanations are those that make reference to the accentual system and the changes within it. Lengthening of vowels and gemination are commonly associated with the position of stress. The reconstruction of these forms, however, remains largely conjectural. In contrast, these forms have had a clear and important role in the development of the verbal systems of many later Semitic languages, developments which hand in hand with developments in the pronominal system.

2.3.2. Reconstructing the prehistory of Semitic (and Afroasiatic) pronouns and verbal inflection

The inflection of the West Semitic perfect, the Modern Aramaic present and perfect verb forms and the gerundive in Ethiosemitic all can ultimately be traced back to independent pronominal forms in Proto-Semitic or the earlier Proto-Afroasiatic. The inflection of the imperfect, which must be reconstructed for Proto-Semitic and many of the constituent branches of Afroasiatic, is probably also descended from independent pronouns of great antiquity. The many obvious similarities among the pronominal and inflectional elements encountered in the Semitic languages and the related Afroasiatic languages point to a common origin.

The similarities among all the pronominal and inflectional forms are, for example, particularly clear in the case of the 1PL. This may be largely due to the phonological stability of the component sounds, particularly the coronal nasal /n/. The table below displays four distinct but related pronominal forms: the possessive suffixes that occur with nouns, the subject markers of the prefix conjugation, the subject markers of the suffix conjugation and the independent pronouns. The object markers on verbs constitute a fifth series. Except for the forms of the 1SG suffix (possessive *-ya* or *-ī*, objective *-nī*), these suffixes are generally identical to those of the possessive suffixes on nouns and so they will not be discussed except where they deviate from the patterns of the possessive suffixes. As can be seen below, /na/ and phonologically related

forms occur widely in different markers of the 1PL in Semitic languages and related Afroasiatic languages.

(2) 1PL pronominal forms in Afroasiatic

	poss. suff.	prefix conj.	suffix conj.	independent
Akkadian	bēl- ni	ni -parras	šarr- ānu	nīnu
Arabic	abū- nā	na -qtul	qatal- nā	naḥnu
Ge'ez	abu- nə	ni -qəttil	qəṭəl- nə	nihənə
Middle Egyptian (Callender 1975)	<ḥnms- n >		<-wyn>	<inn>
Tamazight (Penchoen 1973)	- nnəx	n -nēγ		nukni
Beja (Appleyard 2007a)	-' n	ni -bīs	tam- ná	hinìn
Afar (Parker and Hayward 1985)		n -aaxigeh	ab- nah	nanu
Somali (Saeed 1999)	aabbáh- éen	ni -qiin	sug- nay	anná-ga (IN)
Iraqw (Mous 1993)			firiim- áan	atén
Mokilko (Jungraithmayr 2007)	- in	' in -		kinè (IN)

Although there is an obvious similarity between the suffix conjugations in these related languages, this does not necessarily imply that a single suffix conjugation gave rise to all similar forms in the daughter languages. It is possible that the suffix conjugations arose independently of each other but are similar because they share similar original inputs, such as related independent pronouns, and reflect common linguistic pathways of development. In fact, I argue for this scenario (see sections 5.4. and 5.5) based on both comparative evidence and the occurrence of similar, more easily established processes in later Semitic languages. It is also not necessarily the case that one of the existing independent forms is the form from which the bound forms originated. Although we may assume that bound forms typically originate in independent forms, it is possible that the original independent form has fallen out of use and that the current independent forms were originally complex forms. Caution should be used when drawing conclusions about the specific relatedness and the precedence of particular forms.

For person marking beyond the 1PL, there are both striking similarities and striking contrasts among the various inflectional affixes and pronominal forms in the Semitic family. The table below lays out the pronominal and inflectional forms of Akkadian, representing East Semitic, and Arabic, representing both West Semitic and more specifically Central Semitic.

(3) Person marking in Akkadian and Classical Arabic

	poss. suff.		prefix conj.		suffix conj.		independent	
	Akk.	CA	Akk.	CA	Akk.	CA	Akk.	CA
1SG	-ī, -ya	-ī, -ya	a-	ʔa-	-āku	-tu	anāku	ʔanā
2MSG	-ka	-ka	ta-	ta-	-āta	-ta	attā	ʔanta
2FSG	-ki	-ki	ta-	ta-	-āti	-ti	attī	ʔanti
3MSG	-šu	-hu	i-	ya-	-Ø	-a	šū	huwa
3FSG	-ša	-hā	ta-	ta-	-at	-at	šī	hiya
1PL	-ni	-nā	ni-	na-	-ānu	-nā	nīnu	naḥnu
2MPL	-kunu	-kum	ta-	ta-	-ātunu	-tum	attunu	ʔantum
2FPL	-kina	-kunna	ta-	ta-	-ātina	-tunna	attina	ʔantunna
3MPL	-šunu	-hum	i-	ya-	-ū	-ū	šunu	hum
3FPL	-šina	-hunna	i-	ta-	-ā	-ā	šina	hunna

The markers of the prefix conjugation stand out as the most distinct series, lacking many of the features shared by the person inflection of the suffix conjugation, the possessive suffixes, the independent pronouns and object suffixes⁴ for verbs. Based solely on the distribution of verbal forms in the Semitic languages known at the time, Haupt (1878) argues convincingly that the prefix conjugation represents the oldest Semitic verb form. In addition to Haupt's arguments, these markers have the least in common with the other pronominal forms in terms of structure and have likely cognate forms beyond the Semitic family among more distantly related Afroasiatic languages. Prefix conjugations are found in both Berber and Cushitic, which exhibit clear similarities to those of the Semitic family.

(4) Prefix conjugation in Afroasiatic⁵

	Semitic		Berber	Cushitic		
	Akkadian	Arabic	Tamazight	Beja	Awngi	Somali
1SG	a-prus	ʔa-ktub	nəq-q	ʔa-bís	á-nt-é	i-qin
2MSG	ta-prus	ta-ktub	θə-nɣ-əð	ti-bis-`a	tí-nt-é	ti-qiin
2FSG	ta-prus-ī	ta-ktub-ī	θə-nɣ-əð	ti-bis-`i		
3MSG	i-prus	ya-ktub	i-nəɣ	ʔi-bís	yí-nt-é	yi-qiin
3FSG	ta-prus	ta-ktub	θ-nəɣ	ti-bís	tí-nt-é	ti-qiin
1PL	ni-prus	na-ktub	n-nəɣ	ni-bís	á-nt-né	ni-qiin
2MPL	ta-prus-ā	ta-ktub-ū	θə-nɣ-i-m	ti-bis-`na	tí-nt-ánà	ti-qiin-een
2FPL		ta-ktub-na	θə-nɣ-i-mθ			
3MPL	i-prus-ū	ya-ktub-ū	nɣ-i-n	ʔi-bis-`na	yí-nt-ánà	yi-qiin-een
3FPL	i-prus-ā	ta-ktub-na	nɣ-i-nθ			

⁴ The object suffixes which are not shown above are generally identical to the possessive suffixes except in the 1SG which has instead the form <n>.

⁵ Data from Penchoen 1973 for Berber, Appleyard 2007a for Beja, Hetzron 1976a for Awngi, and Saeed 1999 for Somali.

Despite obvious similarities in form, the prefix conjugations have very different functions and distributions in the different branches of Afroasiatic and even in the different branches of the Semitic family. The prefix conjugation is used in later Semitic languages to describe either incomplete or non-past events. The earlier Semitic languages provide evidence of wider use of the prefix conjugation to express the full range of TMA functions. In Akkadian, only the prefix conjugation is used for active verbs. Berber, like Semitic, uses the prefix conjugation with all verbs but only uses it to indicate some verbal functions. A very different situation characterizes the Cushitic family, where the occurrence of the prefix conjugation is restricted to a small set of often high frequency verbs. The Cushitic conjugation is a proper conjugation like those in Latin where the distinctions are mainly lexical and formal. The prefix conjugation exists in the same set of TMA distinctions as the parallel suffix conjugations.

Prefix conjugation forms are preserved in only a few Cushitic languages and groups, including, along with Somali, Beja and Awngi, the other Sam languages, Rendille and Boni, (Heine 1978a for the Sam Group in general, Pillinger and Galboran 1999, Schlee 1978 and Heine 1976b for Rendille), Saho-Afar (Parker and Hayward 1985), Dhaasanac (Sasse 1976, Tosco 2001), Arbore (Hayward 1984), and perhaps Xamta⁶. Despite the paucity of languages with these morphological forms, the relevant languages represent several different subgroups within the Cushitic family. These languages represent three of the four branches proposed by Sasse (1979) and Hayward (2000) for Cushitic, North Cushitic (Beja), Central Cushitic (Awngi, Xamta) and East Cushitic (Somali, Rendille, Saho and Dhaasanac), only leaving out Southern Cushitic. Where these prefixes are preserved in Cushitic, they are generally almost identical to the same prefixes in Semitic languages. The Berber forms, like those of Tamazight above and Tamashek in Heath (2005), also display obvious affinities both with Semitic and Cushitic. Beside the obvious formal similarities some of the most convincing evidence for the antiquity of the prefix conjugation is provided by the consistent syncretism involving the feminine singular and the second person forms, t(V)-, and the distinction between the prefix forms of the first person, but not the second or third persons, in the singular (?) (V)- and in the plural n(V)-.

Although the person markers of the prefix conjugations stand apart from the other inflectional and pronominal series, they show greater affinities to some series than they do to others. The second person is consistently marked by t(V)- or a predictable reflex in the prefix conjugation. This feature of second person form is also typically characteristic of the suffix conjugation and the independent pronouns, while other types of pronouns have forms with /k/ for the second person.

2.3.3 Explaining the distribution of /t/ and /k/

The distribution of /t/ and /k/ in the first and second person markers presents two general problems for the reconstruction of pronouns and verbal subject-marking inflection. The first is the deeper problem and applies to the reconstruction of Proto-Afroasiatic. The second involves the generalization of either /t/ or /k/ in the first singular and second person forms of the West Semitic perfect. After these two problems are addressed, I will discuss the reconstruction of pronouns and related inflection.

⁶ Evidence for the prefix conjugation in Xamta is mixed. Hetzron (1976a) claims that the prefix conjugation is “partially” preserved in Xamta. Appleyard (1987b:473) does not record any examples of the prefix conjugations in the related Khamtanga and comments on the difficulty of interpreting the forms described in earlier work by Conti Rossini (1904). Both Conti Rossini and Appleyard also raise the possibility that the prefix forms of Xamta are of Semitic origin.

2.3.3.1. The distribution of /t/ and /k/ in second person forms in Afroasiatic

In the Semitic languages the second person forms of the prefix and suffix conjugations and the independent pronouns have /t/, while those of the possessive suffixes and the object suffixes have /k/. Based on comparisons with other Afroasiatic languages, this basic distribution appears to have a long history, which, if not going back to Proto-Afroasiatic, would appear to go back to at least an intermediate branch of the phylum.

The existence of both second person forms with /t/ and /k/ is also characteristic of a wide variety of Afroasiatic languages. The coexistence of forms with /t/ and /k/ occurs in Egyptian, Berber and widely in the internally diverse Cushitic family. In most cases the distribution is very similar to what we find in Semitic; the /t/ forms occur in the inflection of the verb and in subject and independent pronouns and the /k/ forms are restricted mainly to dependent forms, such as affixes and clitics attached to nouns indicating possession, to verbs as an object or to prepositions, e.g. Arabic *abū-ka* ‘your father’, *sa-yaqtulu-ka* ‘he will kill you’ or *la-ka* ‘to you’.

Cushitic

Of all the branches of Afroasiatic, the Cushitic languages most closely parallel the patterns involving person markers found in the Semitic languages. Drastic changes in specific languages and sub-branches of the Cushitic family have obscured the relationship between the forms in these two branches of Afroasiatic. However, well-preserved patterns in some languages and the retention of these patterns throughout the different branches and sub-branches strongly suggest the Proto-Cushitic origin of many of these patterns. The Cushitic languages have both prefix and suffix conjugations. The suffix conjugation has many surface similarities to the West Semitic perfect. As in Semitic, the Cushitic suffix conjugation and the independent pronouns have /t/ in the second person forms. The Cushitic languages also have dependent forms with /k/ which are frequently prefix or enclitic forms attached to nouns, verbs and postpositions. Only a few languages exhibit all of these features. In most languages, a subset of these features is retained with some of the older features being replaced by other existing or innovative constructions.

In Dahalo (Tosco 1991), a Southern Cushitic language, the independent pronouns and the forms of the suffix conjugation have a /t/, independent pronouns *ʔááta* (2SG) and *ʔatta* (2PL) and the perfective form endings *-ti* (2SG) and *-tín* (2PL), while the bound forms have /k/, object suffixes *-ku* (2MSG), *-ki* (2FSG), *-kunná* (2MPL), *-kinná* (2FPL) and possessive pronouns *ʔa-kuʔ-* (2MSG), *ʔa-kiʔ-* (2FSG), *ʔakunuʔ-* (2PL). Ehret (1980:65) reconstructs person markings for verbs which hew closely to those in Dahalo. In Iraqw (Mous 1993) the person marking is complicated by complex morphophonemic alternations in verb forms which obscure the underlying forms of the person markers. For some verbs a second person form is distinguished by the appearance of /t/, e.g. *a lóh* ‘I move’ vs. *a lót* ‘you move’ and *a eehár* ‘I follow’ and *a eehát* ‘you follow’. However for many other verbs very different surface alternations indicate the second person, e.g. *a firíim* ‘I ask’ vs. *a firíin* ‘you ask’, *a tláw* ‘I get up’ vs. *a tléer* ‘you get up’, *a láaw* ‘I go to cultivate’ vs. *a láb* ‘you go to cultivate’ and *a dóohl* ‘I cultivate’ vs. *a dóhl* ‘you cultivate’. While the underlying form (as proposed by Ehret) or, at least, the historical forms of the second person marking on verbs involves /t/ or /d/, all other second person pronominal forms have /k/, e.g. *kúung* ‘you’, *kuungáʔ* ‘you (PL)’, *kók(M)/tók(F)* ‘yours’ and *kohúng(M)/tohúng(F)* ‘yours (PL)’.

In East Cushitic⁷, the largest branch of the Cushitic family, a contrast between /t/ and /k/ in second person markers is common. As mentioned above, the prefix conjugation is preserved in a small number of Lowland East Cushitic languages, including the Sam Languages (Rendille, Boni, Somali), Saho-Afar and Dhaasanac. In the preserved prefix conjugation, /t/ is the marker of all second person forms. The Dhaasanac forms are somewhat of an outlier in two respects, the second person prefix has been palatalized, which has parallels in Western Neo-Aramaic, and more importantly there have been a series of mergers that have fundamentally changed the character of inflection in Dhaasanac.⁸

(5) Second person forms of the prefix conjugation in Cushitic

	2SG	2PL
Afar (Parker and Hayward 1985)	t-eexegeh	t-eexegee-nih
Rendille (Pillinger and Galboran 1999)	t-amiit	t-amiit-iin
Somali (Saeed 1999)	ti-qiin	ti-qiin-een
Boni (Heine 1977)	á-t-uhur-ü'	á-t-uhur-é
Arbore (Hayward 1984)	t-ek'ese	t-ek'ese
Dhaasanac (Tosco 2001)	c-imii ⁹	c-imii

Second person markers with /t/ or reflexes of *t are also found in the far more widespread suffix conjugations. For consistency, the following examples for the most part represent “past” or “perfective” verb forms, although other verbs would have equally demonstrated the existence of /t/ in second person suffixes. One exception below is the Dhaasanac form which is “imperfective”.

⁷ The classification of East Cushitic assumed here is based on Sasse (1979) and Hayward (2000).

East Cushitic

Highland East Cushitic

Burji

Sidamo Group

Lowland East Cushitic

Saho-Afar (Saho, Afar)

Macro-Oromo

Oromo

Konso-Gidole

Omo-Tana

Sam/Eastern Branch (Boni, Rendille, Somali)

Western Branch (Dhaasanac, Arbore, Elmolo)

Northern Branch (Baiso)

Dullay

Yaaku

⁸ In Dhaasanac (Sasse 1976, Tosco 2001) only two forms are distinguished in both the paradigms of the suffix conjugation verbs and prefix conjugation verbs. Sasse, and subsequently Tosco, label the two “form A” and “form B”. Form A is used for the 3MSG, 1SG and 1PL.IN. Form B is used for all second person forms, 3FSG and the 1PL.EX. In both the prefix and suffix conjugations the Form B markers have reflexes of *t, which is expected for both 3FSG and second person forms.

⁹ According to Sasse (1976:217) both Proto-East-Cushitic *t and *k are palatalized before /i/ and /e/.

(6) Second person forms of the suffix conjugation in Cushitic

		2SG	2PL
Afar (Parker and Hayward 1985, Bliese 1976)		fak-te	fak-teenih
Rendille (Pillinger and Galboran 1999)		fur-ta	fur-taan
Somali (Saeed 2007)		sug-tay	sug-teen
Boni (Heine 1977)		á-kei-təʔ	á-kei-té
Arbore (Hayward 1984)		raf-te	raf-te
Elmolo (Heine 1976a)		ána-waa-te	ána-waa-ten
Dhaasanac (Sasse 1976)		leeði < /leet-ti/ ¹⁰	leeti < /leet-ti/
Bayso (Hayward 1978)		dub-té	dub-tén
Diraytata (Abire 2006)		he-p-pidd-ti	he-p-pidd-teni
Harar Oromo (Owens 1985)		deem-te	deem-tani
Oromo of Wellegga (Gragg 1976)		-te	-tan(i)
Boraana Oromo (Stroemer 1987)		dágee-te	dágee-tani
Highland East Cushitic (Hudson 2007)	Burji	-an-du	-an-čingu
	Gedeo	-tette	-tine
	Hadiyya	-titto	-takkoʔo
	Kambaata	-toonti	-teenta
	Sidaama	2MSG -itto, 2FSG -itta	-tiní
Gawwada (Tosco 2007)		ʕúg-tí	ʕúg-té(ngu)
Yaaku (Heine 1975)		aa-wáxá-t	aa-wáx-tìn

The second person independent pronouns also commonly have /t/ or a reflex of *t in East Cushitic languages. The pattern is particularly strong for the singular pronouns and is present, but less strongly so for the plural pronouns. In Gawwada and in Highland East Cushitic with the exception of Burji, the plural pronouns do not conform to this pattern. In the Western branch of Omo-Tana (Arbore, Elmolo and Dhaasanac) and Yaaku the second person singular independent pronoun has been replaced by a form with /k/.

¹⁰ The verb forms of Dhaasanac involve complex morphophonemic alternation. While it is fairly clear that the underlying forms have /t/, it is rarely realized as such.

(7) Second person forms of the independent pronouns in Cushitic

		2SG	2PL
Afar (Parker and Hayward 1985, Bliese 1976)		átu	ìsin
Rendille (Pillinger and Galboran 1999)		atí	atín
Somali (Saeed 2007)		adí-ga	idin-ga
Boni (Heine 1977)		adi	isan
Arbore (Hayward 1984)		ké	ʔín
Elmolo (Heine 1976a)		kesé, kééló	íinse
Dhaasanac (Tosco 2001)		kúúni	ʔitíni
Bayso (Hayward 1979)		áti	ísini
Diraytata (Abire 2006)		att-it, att-i	inn-at
Harar Oromo (Owens 1985)		ati	isini
Oromo of Welegga (Gragg 1976)		at(i)	isin(i)
Boraana Oromo (Stroemer 1987)		ati(i), atini(i), atuu	isani, isanuu
Highland East Cushitic (Hudson 2007)	Burji	aši <*ati	ašinu
	Gedeo	ati	haʔno
	Hadiyya	ati	kiʔne
	Kambaata	ati	aʔnaʔooti ¹¹
	Sidaama	ati	kiʔne
Gawwada (Tosco 2007)		áto	ħune
Yaaku (Heine 1975)		aáeuk	átín

Other pronominal forms, particularly bound forms, contain a /k/ in many East Cushitic languages. As in the Semitic languages, these bound forms include possessive pronouns and object forms for verbs and prepositions/postpositions. In Afar (Parker and Hayward 1985), there is a series of possessive determiners, including the 2SG form *ku*, and a series of “absolute” pronouns which indicate both objects of verbs and prepositions, including the 2SG forms *ko* and *koo*. In the Sam languages, the common 2SG object prefixes on verbs are *ki- and *ku- (Heine 1978a), with the form *ki-* for direct objects and *ki-* for indirect objects and benefactives in Rendille (Pillinger and Galboran 1999) and *ku-* with same basic functions in Somali (Saeed 1999). According to Heine, Jabarti, although more closely related to Somali¹², patterns with Rendille having a reflex of *ki-, while Boni patterns with Somali having the form *ku* (Heine 1977). The same pattern in the other Lowland East Cushitic languages also holds for Dhaasanac (Sasse 1976), which has a 2SG object pronoun *ko* and a 2SG possessive suffix *-ku* and 2PL suffix *-kicu*.

¹¹ The /t/ in this form does not mark the second person form, but is instead the part of an innovated plural marker found in other plural pronouns such as 1PL *naʔooti* and 3PL *issʔooti* (Hudson 2007:537).

¹² Heine (1978a:9) provides the following classification of the Sam languages:

Western
 Rendille
 Eastern (Dad)
 Boni
 Jabarti, Somali

In Central Cushitic, or the Agaw languages, there is further evidence of the general pattern found both in Southern and East Cushitic. The inflection of both the prefix conjugation, which exists only in Awngi and maybe Xamta, and the suffix conjugation has clear reflexes of *t in many Agaw languages. The clearest case is that of Awngi (Hetzron 1976a) where the paradigms of all verbs include second person forms with /t/.

(8) Verbal inflection in the Agaw languages (data from Hetzron 1976a)

	prefix conjugation	past		nonpast	
		definite	indefinite	definite	indefinite
1SG	ʔ-	-ɣ ^w à	-a	-áyá	-é
2SG	t-	-təɣ ^w à	-ta	-táyá	-té
3MSG	y-	-ɣ ^w à	-a	-áwí	-é
3FSG	t-	-təɣ ^w à	-ta	-tátí	-té
1PL	ʔ-	-ɣ ^w à	-na	-náyá	-né
2PL	t-	-túnà	-təka	-tányá	-tánà
3PL	y-	-únà	-ka	-ánk ^w í	-ánà

The second person markers in other Agaw languages exhibit less obvious reflexes of *t, such /r/, /d/ or /y/. These reflexes are also found for other occurrences of *t beside the second person, e.g. Kaĩliña *s'äyaq*, Kemant *sayay*, Khamtanga *s'aräw* 'white' and Kaĩliña *kiwu*, Kemant *kidəzəɣ^w*, Khamtanga *kəru* 'he died', Awngi *kəté* 'I die' (Appleyard 1996b, Hetzron 1976a for Awngi data).

(9) Forms displaying non-obvious reflexes of *t in the Agaw languages

	Bilin (Appleyard 2007b)	Khamtanga (Appleyard 1987b)		Kemant (Appleyard 1975)	Quara (Hetzron 1976a)
		Type I	Type II		
1SG	gäb-əx ^w ən	k'áb-un	qál-un	was-əɣ ^w	-û
2SG	gäb-rəx ^w	k'áb-ru	qál-du/dru	was-yəɣ ^w	-iû
3MSG	gäb-əx ^w	k'áb-u	qál-u	was-əɣ ^w	-äkū
3FSG	gäb-ti	k'áb-ič/či	qál-ič/či	was-(ə)t(i)	-(i)tī
1PL	gäb-nəx ^w ən	k'áb-nun	qál-nun	was-nəɣ ^w	-nû
2PL	gäb-dənəx ^w	k'áb-irnu	qál-dirnu	was-inəɣ ^w	-inû
3PL	gäb-nəx ^w	k'áb-uŋ	qál-uŋ	was-inəɣ ^w	(i)nû

In some contexts, the original /t/ is preserved. In Bilin (Appleyard 2007b) /t/ is found regularly in the future affirmative. In Kemant (Appleyard 1975) /t/ occurs in the second person forms of a small set of high-frequency verbs that end in /y/, *fäy-* 'go', *läy-* 'give', *šäy-* 'have' and *y-* 'say'. Quara (Hetzron 1976a) also has variants of the second person suffixes with /t/.

(10) Forms displaying /t/ reflex of *t in the Agaw languages

	future in Bilin (Appleyard 2007b)	imperfective in Kemant (Appleyard 1975)	Quara (Hetzron 1976a)
2SG	gāb-ta	fä-tāk ^w	-tû
2PL	gāb-təna	fä-tāk ^w ən	-tenû

The possessive and object/oblique forms of the second person prefixes have the expected forms with reflexes of *k in the Agaw languages, e.g. Kemant *ki aba* ‘your father’, *kušə läy-nəɣw* ‘they gave you’ (Appleyard 1975), Bilin *k^wə ʔəx^wina* ‘your wife’, *k^wət* ‘you (SG.OBJ)’ (Appleyard 2007b), Khamtanga *k-inya* ‘your mother’, *kít* ‘you (SG.OBJ)’, *kítat* ‘you (PL.OBJ)’ (Appleyard 1987a), Xamir *an küt eqanún* ‘I loved you’ and Awngi *án kowa ənkanúyà* ‘I loved’ (Hetzron 1976a). Bilin also has a series of object suffixes borrowed from Tigré, *-ka* (2MSG), *-ki* (2FSG) and *-kum* (2PL).

As was the case in East Cushitic, there is a split between languages which have what is assumed to be the original forms with reflexes of *t and those which have extended the object forms to the subject position. The second person subject pronouns with /k/ are restricted to the group Hetzron labels “Eastern Agaw” including Khamtanga, Kaĩliña and Xamta. The occurrence of independent pronouns with /k/ is also characteristic of Iraqw in Southern Cushitic and Arbore and Dhaasanac in East Cushitic.

(11) Independent pronouns in the Agaw languages

	/t/				/k/	
	Awngi (Hetzron 1976a)	Bilin (Appleyard 2007b)	Quara (Appleyard 1996b)	Kemant (Appleyard 1975)	Khamtanga (Appleyard 1987a)	Kaĩliña (Appleyard 1996b)
1SG	an	ʔan	ən	an	án	an
2SG	ənt	ʔənti	ənt	əntə	kít	kət
3MSG	ɲi	ni	ni	ni	ɲāɲ	əɲ
3FSG		nəri		niy	ɲí	ni
1PL	annóji	yən	anan	andiw ~ anniw	yín	yinántäy
2PL	əntóji	ʔəntən	entan	əntandiw ~ əntān(n)iw ~ əntāndiw	kítin	kətántäy
3PL	náji	naw	nai	naydiw	ɲáy	naytay

The second person independent pronouns with /t/ in Agaw are of particular interest because of their similarity with those in Semitic (2MSG *ʔantā, 2FSG *ʔantī, 2MPL *ʔantum(ū), 2FPL *ʔantin(n)a). While pronominal forms with /t/ are common in Cushitic, outside of Agaw they typically occur without /n/, e.g. Dahalo *ʔáata* (2SG) (Tosco 1991), Rendille *atí* (Pillinger and Galboran 1999) and Gawwada *áto* (Tosco 2007).

Beja (Hudson 1976, Appleyard 2007a), the sole representative of North Cushitic, also displays the same basic division between second person forms with /t/ used in verbal inflection and /k/ in other pronominal forms. Unlike many other Cushitic languages, the second person

independent pronouns do not have /t/, instead new independent pronouns have been formed by way of the root /bar/ with the typical nominal inflection and the possessive suffixes (Hudson, 112). Only the first person pronouns retain the original character of the independent pronouns.

(12) Beja independent pronouns (Appleyard 2007a)

	singular		plural	
	nominative	accusative	nominative	accusative
1	ʔanè	ʔaneè-b	hinìn	
2M	bar-uú-k	bar-oó-k	bar-aá-k	bar-eé-k
2F	ba[r]-t-uú-k	ba[r]-t-oó-k	ba[r]-t-aá-k	ba[r]-t-eé-k
3M	bar-uú	bar-oó	bar-aá	bar-eé
3F	ba[r]-t-uú	ba[r]-t-oó	ba[r]-t-aá	ba[r]-t-eé

Both the prefix and suffix conjugations follow the patterns already established for the other branches of the family with *ti-* as the second person prefix and, representing the suffix conjugation, the past affirmative suffixes *-taa-* (2MSG), *-taa-ì* (2FSG), and *-taàna* (2PL). As in other Cushitic languages, the dependent pronominal forms include the /k/ element, e.g. possessive suffixes *-’k* (2SG) and *-’kna* (2PL) and object suffixes *-hook* and *-hookna*.

Berber

In Berber, there is further evidence of this ancient distribution pattern of /t/ and /k/ in second person forms. In Berber languages, reflexes of /t/ are found in second person forms of the prefix conjugation verbs, although not in the independent pronoun forms. Siwi, the easternmost dialect of Berber, has lost the prefix forms for the second person but preserves them for the third person singular forms and the first person plural form.

(13) Second person forms in the the Berber prefix conjugation

	Tamazight (Penchoen 1973)	Rifian (Kossmann 2000)	Berber of Figuig (Kossmann 1997)	Tamashek (Heath 2005)	Siwi (Walker 1921)
2SG	θ-...-ð	θ-...-əð	t-...-əd	t-...-æd	-t
2MPL	θ-...-m	θ-...-əm	t-...əm	t-...-æm	-m
2FPL	θ-...-nθ	θ-...-əmt	t-...əmt	t-...-mæt	

Reflexes of *k are found in other second person forms, such as the independent pronouns, Tz. *šəgg* (2MSG), *šəmm* (2FSG), *k^wənni* (2MPL), *kwənimθi* (2FMPL), Rf. *šəkk* (2MSG), *šəm* (2FSG), *ənniw*, *kənniw* (2MPL), *ənnimti*, *kənnimti*, *ənninti*, *ənnint*, *kənnint* (2FPL), Si. *šik*¹³ (2MSG), *šim* (2FSG), *inkaynəm* (2PL), and Tk. *kəyy* (2MSG), *kəmm* (2FSG), *kəw-ə̀n-ə̀d* (2MPL), *kəw-ə̀m-ə̀d* (2FPL), and various dependent pronominal forms, object clitics Tz. *-aš*¹⁴ (2MSG), *-am*

¹³ Transcriptions are based on the descriptions given in Walker (1921). In some cases the descriptions are relatively vague and some errors may have entered because of this.

¹⁴ In the Tamazight of the Ayt Ndir (Penchoen 1973), /š/ is a regular reflex of *k. Comparison of the Tamazight forms with other Berber forms confirms this. Siwi and Tamashek have -(V)k for the object suffix, where Tamazight and Rifian have -(V)š.

(2FSG), *-wən* (2MPL), *-kwənθ* (2FPL), Rf. *-(i)š* (2MSG), *-(i)šəm* (2FSG), *-(i)kən* (2MPL), *-(i)kəmt* (2FPL) Si. *-(i)k* (2MSG), *-(a)m* (2FSG), *-(o)win* (2PL), and Tk. *-k/-kæy* (2MSG), *-m/-kæm* (2FSG), *-wæn/-kæwæn* (2MPL), *-kmæt/-kæmæt* (2FPL), inalienable possessive suffixes Tz. *-š* (2MSG), *-m* (2FSG), Ri. *-ε* (2MSG), *-m* (2FSG), *-θwən* (2MPL), *-εəmt* (2FPL), and Tk. *-k* (2MSG), *-m* (2FSG), *-(w)wæn* (2MPL), *-kmæt* (2FPL).

Egyptian and Chadic

Egyptian and the Chadic languages provide far more equivocal evidence for the ancient distribution pattern of /t/ and /k/ in second person forms. Some of the similarities we find among Cushitic, Berber and Semitic are missing in these other two branches. Neither Egyptian nor Chadic has the prefix conjugation forms found in the other three groups. However, both groups have evidence for /k/ in second person forms. Egyptian, while lacking a prefix conjugation, does have both /t/ and /k/ in second person markers and also has a suffix conjugation with interesting parallels to the West Semitic perfect.

Middle Egyptian (Callender 1975) has second person forms with /t/ only in the inflection of the “stative base” (*sədām). The following table provides the graphemic forms of the stative inflection along with the assumed phonemic form and the proposed origins provided by Callender (22).

(14) Middle Egyptian stative conjugation (Callender 1975)

	<i>singular</i>	<i>plural</i>
1	-kwi (/ku/)	-wyn (/uwʸn/ < *-nyū < *-nū ?)
2M	-t(i) (/t/ < *-ta)	-tywny (/tʸn/ < *-tun)
2F	-t(i) (/t/ < *-ti)	
3M	-(w) (/ə/ < *-a)	-(w) (/ū/)
3F	-t(i) (/t/ < *-at)	

The 2MSG possessive suffix <-k> follows the expected pattern established in the Afroasiatic groups so far discussed. The 2FSG and the 2PL forms have the sound <ṭ>, considered a palatalized stop /tʸ/. Parallel to the development described above in Beja, new independent pronouns have been created for all but the first person forms by attaching the possessive pronoun suffixes to a nominal root, in this case <njt> ‘essence, identity’ (18).

(15) Pronominal forms in Middle Egyptian (Callender 1975)

	possessive pronouns	independent pronouns	dependent subject pronouns
1SG	-i	ink	wi
2MSG	-k	nt-k	ṭw
2FSG	-ṭ	nt-ṭ	ṭn
3MSG	-f	nt-f	sw
3FSG	-s	nt-s	sy
1PL	-n	inn	n
2PL	-ṭn	nt-ṭn	ṭn
3PL	-sn	nt-sn	sn

In addition to the series of independent pronouns, there is also a set of dependent (perhaps enclitic) pronouns which indicate subjects of non-verbal predicates. All of these forms, irrespective of gender and number, have the palatal or palatalized stop <ɟ>, which, according to Loprieno (1995:64), developed from earlier forms with *k, ME 2MSG *ɟw* < OE kw, and ME 2FSG *ɟn* < OE *tn* < *km.

The relationship of Chadic to the other branches of Afroasiatic with respect to the system of person, gender and number marking is complicated by the size and internal diversity of the family. Second person forms of pronouns and inflection are found with /k/ or possible reflexes of *k, e.g. Hausa *kai* ‘you (MSG)’, *kē* ‘you (FSG)’, *kū* ‘you (PL)’, *kiná jī?* ‘are you (FSG) listening?’, *sai kà ragè mìn kudīn* ‘you (MSG) ought to lower the price for me’, Kanakuru *kàa nai mandai* ‘whom are you calling?’ (Newman 1974), Bade *gə gàyū* ‘you (SG) climbed (completive)’ (Schuh 2007), Glavda *kát-y* ‘you protected’ *dzam-ar-ák-k-ya* ‘they remembered you’ (Buba and Owens 2007), Wuzlam *k-ə-gəy-á may* ‘que fais-tu’, *n-ə-dám-ákw* ‘je te dirai’, (Colombel 1982), Mokilko *kii-ni-wólliyó* ‘you see me’ (Jungraithmayr 2007), *kùn-ò-ɣambù* ‘vous apportez pour moi (habituellement)’ (Jungraithmayr 1982), Vulum *kí yímá* ‘tu attrapes’ (Tourneux 1982), Podoko *dá də ka* ‘you will go’ (Jarvis 1989), Dghweđe *tákàrənàyrè ká skì* ‘you made him think of something’ (Frick 1978), Mandara *ká-sshà* ‘you will drink’ and *sh-àk-úushe* ‘you drank’ (Mirt 1971). Reflexes of second person forms with *t are missing in Chadic, as are both the prefix and suffix conjugation forms in which the *t is commonly preserved.

The examples above, which preserve the transcription of the original sources, demonstrate two important features of the Chadic family. First, there is a great degree of diversity in the structure of verb forms. Some of the differences might represent arbitrary decisions on the part of the investigators, particularly whether to represent subject pronouns as separate words or dependent forms (i.e. suffixes or clitics.) However, it is still clear that languages vary according to the placement of the subject marker and the presence and placement of other grammatical markers. The subject marker occurs before the verb in many Chadic languages, but follows in languages like Glavda and Podoko. Second, despite the diversity, there are still obvious connections among the Chadic languages and other Afroasiatic languages. The formal similarity of the second person markers points to a common origin, not only in Proto-Chadic, but also in Afroasiatic. Despite formal and typological similarities, the verbal forms mark an important discontinuity with the Afroasiatic prefix conjugation shared by members of the Semitic, Cushitic and Berber families. Though languages like Mokilko (Jungraithmayr 1987, 2007) and Hausa (Jaggar 2001) have verbal forms which are formally quite similar to verb forms with prefixal subject markers, the patterns do not necessarily reflect the same inherited form. As the table below shows, the dependent subject pronouns and the prefixes of other Afroasiatic languages are very similar, particular for the third person singular forms.

(16) Subject marking in Mokilko and Hausa verbs

	Mokilko (Jungraithmayr 2007)	Hausa (Jaggar 2001) ¹⁵	Akk.	CA	Tamashek (Heath 2005)	Somali (Saeed 1999)
1SG	ní-	ìn/nà	a-	ʔa-		i-
2MSG	kí-	kà	ta-	ta-	t-	ti-
2FSG	mí-	kì				
3MSG	yí-	yà	i-	ya-	i-	yi-
3FSG	tí-	tà	ta-	ta-	t-	ti-
1PL.IN	ʔín-	mù	ni-	na	n-	ni-
1PL.EX	ʔáy-					
2L	kûn-	kù	ta-	ta-	t-	ti-
3MPL	ʔân-	sù	i-	ya-		yi-
3FPL			ta-			

The fact that both subject markers precede the verb stem and that the forms of the markers are in some cases very similar to those of the Afroasiatic prefix conjugation does not imply that the forms in Mokilko or Hausa are descended from the same prefix conjugation verb form. According to Voigt (1989), the Hausa forms represent newer developments and not a continuation of the older Afroasiatic forms. This interpretation is undoubtedly the correct one. Despite similarities, the formal and distributional characteristics of the Chadic verbal subject marking strongly argue against a common origin with Semitic, Berber and Cushitic prefix conjugations. Beyond the third singular forms, the markers of other persons and numbers deviate substantially from those of the prefix conjugation. The forms of the second person markers in Mokilko and Hausa are closer to the other sets of pronominal forms in the related Afroasiatic families than they are to the markers of the prefix conjugation. The presence of /k/ in the second person forms has obvious parallels with pronominal forms in other Afroasiatic families. The /m/ element is found in markers of the 2FSG in both Berber and Egyptian, e.g. the dependent subject pronoun *tm* < *km in Old Egyptian (Loprieno 1995) or the independent pronoun *kàemm* in Tamashek (Heath 2005), as well as both independent and dependent pronominal forms in Tamashek and other Berber varieties (see above). Jungraithmayr (1978) reconstructs the second person subject pronouns as 2MSG *ka, 2FSG *ka-m and 2PL *ki for the Zime dialect cluster (Masa branch). The reflexes of these forms are displayed in the table below for Batna and Sorgia. In Sorgia and other dialects the subject markers are found with /nd/ element before original pronominal forms.

In addition to formal differences from other Afroasiatic verb inflection, the Chadic forms do not conform to the patterns of distinctions and syncretisms found in the prefix conjugation. The same prefix {t(V)-} is used for both the 3FSG and all the forms of the second person, while {t(V)-} is commonly used for both 3MSG and 3PL forms. Hausa and Mokilko, on the other hand, have unique markers for all the person, number and gender distinctions. The inflection of the verb in Hausa and Mokilko also displays characteristics which distinguish these forms from the

¹⁵ Subject pronouns are those found in the subjunctive.

prefix conjugation. These characteristics are brought into greater relief when we take into consideration the large variety of verb structures found in the Chadic family.

The positional distribution of Chadic subject markers provides further evidence of their more recent origin in independent pronominal forms and not an earlier common prefix conjugation. Unlike the prefix conjugation, the subject markers in Chadic show great diversity in form and great flexibility in terms of their position with respect to the verb stem.

(17) Subject markers in Chadic¹⁶

	West		Masa	Biu-Mandara		East	
	Hausa ¹⁷	Ngizim	Batna ¹⁸	Mandara ¹⁹	Vulum	Mokilko	Lele ²⁰
1SG	in/nà	na	naa	ya-/-an	mì	ní-	ŋ
2MSG	kà	ka	haa	ka-/-ak	kì	kí-	gi
2FSG	kì		háŋ			mí-	me
3MSG	yà		hòm	a-/-aa-	à	yí-	dí
3FSG	tà		ta		tì	tí-	dú
1PL.IN	mù	jà	namba	ma-/-aməy	kì	ʔín-	ni
1PL.EX		wà		ŋa-/-aŋər	mì	ʔây-	
2L	kù	kwa	hi	kwa-/-akwər	kì	kûn-	ngu
3PL	sù		handay	ta-/-ar	ì	ʔân-	gé

Many of the characteristics of the subject markers in Chadic follow from their original status as separate lexemes. Diakonoff (1965:103) considers the “[l]exical independence of the personal subject-element” as one of the isoglosses which distinguishes Chadic from the rest of the Afroasiatic branches. Schuh (1976) provides several types of evidence for this claim: (1) new subject markers have replaced the original markers in some languages such as Bolanci, a development we would not expect with bound forms, (2) within-word consonant lenitions do not occur between the subject markers in Kanakuru and the following verb but do occur between bound object pronouns and the preceding verb, and (3) different particles can be placed between the subject markers and the verb in Hausa. In line with (3), further support for the original or current independence of the subject pronouns is provided by the occurrence of elements between the subject marker and the verb stem in a variety of Chadic languages and by the position of the subject marker with respect to the verb stem. In some Chadic languages with complex verb forms, the subject prefix can be separated from the verb stem by various morphemes. For example, in Mokilko (Jungraithmayr 2007) not only do TMA markers come between the subject prefix and the verb stem, but unusually for Chadic so do the object markers.

¹⁶ Data from Jaggar 2001 for Hausa, Schuh 1981 for Ngizim, Jungraithmayr 1978 for Batna, Mirt 1971 for Mandara, Tourneux 1978 for Vulum, Jungraithmayr 2007 for Mokilko, and Frajzyngier 2001 for Lele.

¹⁷ Subject pronouns are those found for the subjunctive.

¹⁸ Subject pronouns are those found for the perfective.

¹⁹ Mandara has both suffixal and prefixal subject markers. The suffixal subject markers are clearly related to the object suffixes.

²⁰ First and second person forms occur preverbally, while third person forms occur postverbally.

(18) Mokilko verb forms (Jungraithmayr 2007)

- a. m-óò-ʔóttón múdú
 2FSG.SUBJ-1SG.IO-cook millet
 ‘you cook millet for me!’ (719)
- b. ʔán-dí-y-ílí
 3PL-TMA-3SG-let.PAST
 ‘they have let him’ (720)
- c. m-áy-t-òbì gúppé mê
 2FSG-1PL-TMA-pour soup that
 ‘you pour us that soup!’ (720)

In some Biu-Mandara languages like Podoko (Jarvis 1989) and Dghwedê (Frick 1978) the position of the subject marker after the verb stem follows from the dominant VSO word order of the languages. This mirroring of the basic word order contrasts with the reflexes of the prefix conjugation in the Semitic family where prefixes are maintained irrespective of the basic word order, which includes VSO, SVO and SOV orders.

In terms of verbal and pronominal forms, Chadic stands apart from the other parts of the Afroasiatic family and yet still shares strong connections with the other branches in these domains. Although the distinctive character of Chadic is clear, the reason for this distinctiveness is not. There are three possible scenarios that would account for the lack of the prefix conjugation in Chadic:

- (i) The prefix conjugation represents an original feature of Afroasiatic which has been lost in Chadic due to later innovative developments.
- (ii) The prefix conjugation did not exist in Afroasiatic but did in the common ancestor of Semitic, Beber and Cushitic. Chadic preserves a more archaic situation.
- (iii) The prefix conjugation did not exist in Afroasiatic, and in the families where it does appear it is the result of independent but parallel innovative developments.

The same basic scenarios may also account for the absence of the prefix conjugation in Egyptian. Chadic and Egyptian do not necessarily reflect the same scenario. Scenario (1) closely follows Diakonoff (1965) who divides the Afroasiatic languages into three stages, Ancient, Middle and New. These stages cut across language families and are largely chronological in nature, but not always strictly so. Instead they describe the degree to which the original morphological features have been maintained and the degree to which both phonological and morphological restructuring has occurred. The “Ancient stage” includes the earliest attested Afroasiatic languages such as Old Egyptian and Akkadian, Amorite and Ugaritic, as well as the later attested OSA languages and Classical Arabic. This stage is generally characterized by the preservation of the original phonological system and external inflection. The “Middle Stage” represents most of the “classical” Semitic languages in the first millennia BCE and CE, including varieties of Aramaic, Hebrew, Ge‘ez and Phoenician/Punic, as well as the Numidian-Libyan language in Berber. These languages are characterized by the simplification of the phonological inventory, the loss of some “external morphology” such as the case system and a degree of

morphological restructuring. The “New Stage” represents all Modern languages in Semitic, Berber, Chadic and Cushitic and Coptic, the last stage of Egyptian. These languages are characterized by significant phonological restructuring and the “complete reshaping of the system of morphology” (11). Schuh (1976:7) suggests scenario (2), raising the possibility that instead of Chadic being “a new stage” language, as Diakonoff suggests, it might instead represent “a pre-Archaic stage” in terms of subject marking on verbs. Scenario (3) seems unlikely in the case of the prefix conjugation given the degree of agreement between the prefix forms in the languages that preserve these verb forms.

The choice between the first two scenarios is complicated by the difficulty in determining the internal relationships between the different branches of Afroasiatic. Greenberg (1955) considers the five branches as coordinate members of the family. Diakonoff (1965) divides Afroasiatic into a Northern (Semitic, Berber and Egyptian) and a Southern (Chadic and Cushitic) branch on the basis of a set of lexical and grammatical isoglosses. In the Northern Branch, Egyptian is assumed to have branched off earliest. Based primarily on shared phonological innovations, Ehret (1995) provides a somewhat different classification. In Ehret’s scheme Cushitic forms a branch opposite the other Afroasiatic languages. The rest of the languages form the North Erythrean branch in which Chadic is set apart from the Boreafrasian branch consisting of Egyptian, Berber and Semitic.

Both scenarios (1) and (2) are consistent with the early separation of Chadic from the rest of Afroasiatic, a view present to some degree in Diakonoff. However, only scenario (2) is consistent with a later branching of Chadic. In contrast, Egyptian, which is more commonly considered to have close relationships with other branches of Afroasiatic, is more likely to have developed by way of the scenario (1) where the prefix conjugation has been lost.

The same scenarios that have been suggested for explaining the distribution of the prefix conjugation in Afroasiatic can also be applied to the suffix conjugations. Because the suffix conjugations have a number of characteristics which set them apart from that of the prefix conjugation, it is likely that the developments in these conjugations involved a different scenario. Unlike the prefix conjugation, the subject markers of the suffix conjugation vary considerably between the different branches of Afroasiatic. Whereas the third scenario was implausible for the prefix conjugations, which displayed a high degree of uniformity, it is plausible for much more heterogeneous suffix conjugations. A pathway for the formation of new suffix conjugations exists in which an originally nominal or adjectival form of the verb is reanalyzed as verbal and in which an enclitic pronoun is reanalyzed as verbal inflection. Evidence for this scenario is provided by obvious similarities between independent pronouns and the inflection of the perfect and parallel changes in later forms of Afroasiatic. The first piece of evidence will be examined in the following sections. The second piece will be addressed at length in this and later chapters.

2.3.3.2. The distribution of /t/ and /k/ in first and second person forms in Semitic

The second problem concerning the distribution of /t/ and /k/ is confined to the Semitic family. In order to address this issue we must examine the general problem of the relationship of the perfect inflection to other inflectional and pronominal forms. As already discussed, the prefix conjugation, while sharing some characteristics with other markers of person, gender and number, clearly stands apart from these other forms. On the other hand, the strong resemblances between the inflection of the perfect, the possessive and object suffixes and independent pronouns point to a strong relationship between these forms. There is likely a later common origin for all four sets. For example, similar forms are found for distinguishing between the different gender and

number forms of the second person, e.g. the 2MSG forms end in either a long or short /a/ (*antā, *-tā, *-kā) and the 2FSG forms in a long or short /i/ (*antī, *tī, *-kī). The second person plural forms also share strong resemblances in the Semitic languages, e.g. Arabic *daras-tum* ‘you (MPL) studied’, *ʔabū-kum* ‘your (MPL) father’, *ʔantum* ‘you (MPL)’, *daras-tunna* ‘you (FPL) studied’, *ʔabū-kunna* ‘your (FPL) father’, *ʔantunna* ‘you (FPL)’.

These sets of markers have a somewhat complex pattern of similarities and differences. The similarities between the first and the second person forms are strongest between the inflection of the perfect and the independent pronouns. This distinction partly owes to the distinction between second person forms with /t/ and /k/ established above for Afroasiatic. In both East Semitic and Central Semitic second person forms of independent pronouns share a common segment of /t/ with those of the suffix conjugation. Where the suffix conjugation and independent pronouns have /t/, the possessive and object suffixes have a /k/. The third person forms of the suffix conjugation, however, follow a very different pattern, closer to the gender and number inflection of nouns. The third person pronouns (independent, possessive, object) have forms that are clearly related to each other but bear no resemblance to either the inflection of the perfect or the imperfect.

(19) Third person markers in Akkadian and Classical Arabic

	possessive and object pronouns		independent pronouns		suffix conjugation inflection		prefix conjugation inflection	
	Akk.	CA	Akk	CA	Akk.	CA	Akk.	CA
3MSG	-šū	-hu	šū	huwa	-Ø	-a	i-	ya-
3FSG	-ša	-hā	šī	hiya	-at	-at	ta-	ta-
3MPL	-šunu	-hum	šunu	hum	-ū	-ū	i-	ya-
3FPL	-šina	-hunna	šina	hunna	-ā	-ā	i-	ta-

In the perfect, the inflection of the third person forms conforms more closely to the number and gender inflection of nouns and adjectives.

(20) Noun inflection and the inflection of the perfect in Akkadian and Classical Arabic

	suffix conjugation inflection		noun inflection	
	Akk.	CA	Akk	CA
MSG	-Ø	-a	-V{u, a, i} ²¹ m	-V{u, a, i}(n)
FSG	-at	-at	-(a)t-V{u, a, i}m	-at-V{u, a, i}(n)
MPL	-ū	-ū	-ū, -ī	-ū(na) ²² , ī(na)
FPL	-ā	-ā	-āt-V{u, a, i}m	-āt-V{u, a, i}(n)

²¹ Vowels represent the possible case endings.

²² The ending -ū and -ī are found for the plural in the construct state.

In addition, to the inherited distinctions between /t/ and /k/ in second person forms, the reflexes of the suffix conjugation inflection also create a puzzle for our reconstruction of the person markers in Semitic. The contrast between /k/ and /t/ in various first and second person forms presents one of the central problems for the reconstruction of the pronominal system of Proto-Semitic and offers the clearest insights into how the system must have developed. The three branches of the Semitic family (East, Central and South) each have a distinct pattern. In the possessive suffixes on nouns and the object suffixes on verbs a reflex of *k is consistently found in the second person. In contrast, both /t/ and /k/ occur in 1SG and the second person forms of the perfect. In Central Semitic both the 1SG and second person forms of the perfect contain /t/.

(21) Inflection of the perfect in Central Semitic

	1SG	2MSG	2FSG	2MPL	2FPL
Ugaritic (Sivan 2001)	<-t>	<-t>	<-t>	<-tm>	<-tn>
Amarna (Rainey 1996)	<-ti>	<-ta>	?	?	?
Phoenician (Krahmalkov 2001)	<-t>	<-t>	<-t>	?	?
Punic (Krahmalkov 2001)	<-te>, <-ti>	<-ta>	?	<-tim>	?
Epigraphic Hebrew (Gogel 1998)	<-t>, <-ty>	<-t>, <-th>	?	<-tm>	?
Biblical Hebrew	-tî	-tā	-t	-tem	-ten
Old Aramaic (Segert 1975)	<-t>	?	?	<-tm>	?
Biblical Aramaic (Rosenthal 1995)	-ēṭ	-tā ^(h) , -t	-tî	-tûn	-tēn
Syriac (Muraoka 1997)	-eṭ	-t	-t	-ton	-tēn
Classical Arabic	-tu	-ta	-ti	-tum	-tunna

In South Semitic /k/ occurs in the place of /t/ in the 1SG and second person forms of the perfect.

(22) Inflection of the perfect in South Semitic

	1SG	2MSG	2FSG	2MPL	2FPL
OSA (Kogan and Korotayev 1997)	?	<-k>	?	<-kmw>	?
Mehri (Johnstone 1987)	-k	-k	-š	-kəm	-kən
Jibbali (Johnstone 1981)	-k	-k	-š	-kum	-kən
Soqotri (Leslau 1938, Bittner 1913)	-i	-k	-š	-kən	-kən
Ge'ez (Dillmann 1907)	-ku	kə	-ki	-kiṃu	-kiṃ
Tigrinya (Leslau 1941)	-ku	-ka	-ki	-kum	-kiṃ
Tigré (Raz 1983)	-ko	-ka	-ki	-kum	-kiṃ
Amharic (Leslau 2000)	-k ^w , -h ^w	-k, -h	-š	-aččuh	
Argobba (Leslau 1997b)	-ku	-k	-č(i)	-kum	
Gafat (Leslau 1956)	-h ^w (- ^u h)	-əhə	-š	-hu ^w m (-h ^w iṃ)	
Harari (Leslau 1958, Cerulli 1936)	-k <u>u</u>	-k <u>i</u>	-š <u>i</u>	-k <u>u</u>	
Silt'i (Gutt 1986)	-ku, -hu/w	-ka, -ha/ā	-š(i)	-kumu, -mmu	
Zway (Leslau 1999)	-hu, -uh	-ih	-iš	-hum	
Soddo (Leslau 1968)	-k ^w	-kə	-š	-kiṃu	-kiṃa
Chaha (Leslau 1950)	-k <u>u</u>	-kə	-x	-k <u>u</u>	-k <u>i</u> ma
Muher (Leslau 1981)	-x ^w	-xə	x'	-xiṃ ^w	-xiṃa

The key to reconstruction would appear to be the stative “conjugation” in Akkadian and the system of independent pronouns. In Akkadian /k/ occurs in the 1SG and /t/ occurs in all second person forms in the stative “conjugation”.

(23) Inflection of the “stative” conjugation in Akkadian

1SG	2MSG	2FSG	2MPL	2FPL
-āku	-āta	-āti	-atunu	-ātina

This same contrast between /k/ in the 1SG and /t/ in the second person forms is also found in the independent pronouns in some Semitic languages. In West Semitic there is both a long and a short form of the 1SG independent pronoun. The long form, which is relatively rare and cognate with the Akkadian form, contains a reflex of *k. In most languages, even some very early varieties like Eblaite, only the short form survives, e.g. Eblaite <an-na>, <a-na> (Gordon 1997), BA *ʔanā^h* (Rosenthal 1995), CA *ʔanā*, OSA <ʔn> (Kogan and Korotayev 1997), ONA <ʔn> (Winnett 1937, Caskel 1954, Winnett and Reed 1970, Winnett and Harding 1978; JS 84, 150, 637, IFSC 3625), Ge., Tg. *ʔana* (Dillmann 1907, Leslau 1941), Har. *ān* (Cohen 1931, Wagner 1997). Beside Akkadian, the long form is preserved in several West Semitic languages, particularly in the older varieties, such as Ugaritic, the West Semitic language of the Amarna letters, and some Northwest Semitic languages from the end of the second millennium BCE

through the first half of the second millennium BCE, such as Phoenician, Moabite, Samalian and Hebrew. In many of these varieties both the long and the short form occur beside each other.

(24) 1SG and second person forms of the independent pronouns in Semitic

	1SG	2MSG	2FSG	2MPL	2FPL
Akkadian	anāku	attā	attī	attunu	attina
Amarna (Rainey 1996)	<a-na-ku>, <a-nu-ki>	<at-ta>, <at-tá>	?	<at-tu-nu>	?
Ugaritic (Segert 1984)	<ʔank>, <ʔan> <a-na-ku>	<ʔat>	<ʔat>	<ʔatm>	?
Hebrew	ʔānōkî, ʔānî	ʔattā ^h	ʔatt	ʔattem	ʔattēnnā ^h
Phoenician (Krahmalkov 2001)	<ʔnky>, <ʔnk>, <ʔn>	<ʔt>	<ʔt>	<ʔtm>	?
Punic (Krahmalkov 2001)	<anec>, <anic>, <anech>	<ath>	?	?	?
Samalian (Segert 1975)	<ʔnk>	<ʔt>	?	?	?
Moabite (Garr 1985)	<ʔnk>	?	?	?	?

In languages containing both the long and short forms, the distribution of the two forms of the 1SG pronoun is often quite complex, possibly reflecting linguistic diversity related to a variety of factors, but most likely to geography and literary convention. Both long and short forms occur in Ugaritic. According to Segert (1984:48), the short form is found in literary texts, while the long form has a wide distribution in texts of all types. In Aramaic, the short form is the only form present in all but Samalian (<ʔnk> in KAI 214.1 and <ʔnky> in KAI 215.19), an older and frequently Archaic form of Aramaic. The long form is also attested in Moabite, a language closely related to Hebrew but also seen as somewhat of a transitional dialect between Hebrew and Aramaic. The Moabite of the Mesha Stele (KAI 181) opens with the form <ʔnk>.

- (25) ʔnk mšṢ bn kmš[yt] mlk mʔb h-dybny
 I MŠṢ son KMSYT king Moab the-Dibonite
 “I am Mesha son of Kemoshyatti, the king of Moab, the Dibonite.” (KAI 214.1-2)

The absence of short forms in Samalian and Moabite does not preclude their existence in those languages, given the extremely small corpora involved.

Hebrew and Phoenician provide an interesting contrast illustrating two very different possible developments for the 1SG pronouns. Hebrew exhibits a particularly unusual distribution for the two forms. Although the long form is usually considered the older form, the earliest Epigraphic texts in Hebrew only has clear cases of the short form <ʔny> (Gogel 1998, Garr 1985; Arad 88:1). In Biblical Hebrew the distribution of the two forms has most commonly been characterized in terms of periodization with *ʔānōkî* occurring more frequently in Early Biblical Hebrew and *ʔānî* occurring in Late (Kutscher 1982:30, Joüon and Muraoka 2000:119-120, Sáenz-Badillos 1993:117). Both Kutscher and Sáenz-Badillos point out instructive comparisons between Late Biblical Hebrew in Chronicles and the source of some passages in Early Biblical Hebrew passages in Kings showing how the short form consistently replaces the long form in the

later variety. In Mishnaic Hebrew the long form has fallen almost completely out of use (Segal 1927:39; Kutscher, 123; Sáenz-Badillos, 184; Pérez Fernández 1999:18). The same situation occurs in Modern Hebrew with *ʔānōkī* used mainly in literary contexts (Schwarzwald 2001).

In contrast, in Phoenician and its descendants the long form has been retained and the short form has fallen out of use. The short form <ʔn> is attested in an inscription from Nora in Sardinia (CIS 145.1) and with less certainty in two other inscriptions (see Krahmalkov 2001:38-40 for a discussion of the evidence for 1SG independent pronouns). The short form might also be found in a single Neo-Punic inscription, although here too the evidence is not completely convincing (Krahmalkov, 40). In contrast, the evidence for the long form in Phoenician, Byblian, Punic and Neo-Punic is overwhelming. In the older varieties and those written with a Semitic consonantary, the most common form is <ʔnk> (Ph. KAI 13.1, 5; 14.3; 24.1, 9, et passim, Byb. KAI 9 A 4; 10.1, 2; 11; 12.2 Pu. KAI 79.8, CIS 6000; NPu.160.3 NP 86.4), however <ʔnky> is also found, although more rarely (Ph. KAI 49.6, 13, Pu.89.2). Examples of the long form are also found in Roman script, e.g. *anec*, *anech* and *anic* (Krahmalkov 2001:38).

Whereas the short form has won out in Hebrew, the opposite has happened in Phoenician and its descendant forms. The long form *anāku is generally considered the older of the two first person forms with the short form *anā generally considered as an innovation of West Semitic (Garr 1985, Gelb 1969). Both of these claims rest upon the absence of the short form in Akkadian. However, the existence of the short form in Eblaite casts doubt on both of these claims. As the Eblaite texts are as old as Akkadian ones (Gordon 1997), neither the long form nor the short form have a claim to greater antiquity based on attestation. Also, unless we assume that the Eblaite is a form of West Semitic, the idea that the short form is an innovation of West Semitic is suspect.

The evidence concerning the 1SG forms in West Semitic is mixed. It is true that the long form is more common in older varieties of Semitic, but this distribution might simply reflect a geographical distribution. North West Semitic, where the long form is more common, is better represented in earlier periods. In contrast, languages like Arabic and the South Semitic languages, where the short form is universal, are better attested in later periods. Many of the Northwest Semitic languages containing the long form (such as Ugaritic, the language of the Tel Amarna letters, Moabite and Samalian) do not have descendants in later periods. Counter to expectation, in Ugaritic the short form is confined to literary contexts, a distribution which we might expect to find for an archaic form. This is unexpected because the short form is typically assumed to be younger. Only Hebrew and Phoenician contain the long form and also have descendent forms in later periods. The developments in Hebrew conform to what we would expect if the long form is the older one; the long form is eventually replaced by the innovative form. In Phoenician, however, only the long form survives in later periods. Segal (1927:39) claims that “𐤏𐤍 [ʔānī], being the shorter of the two, gradually came to be employed more frequently”, yet this inverts the more typical logic of grammaticalization where frequency of use leads to simplification and relies solely on the limited case of Hebrew while ignoring the developments in Phoenician and its descendants. While the long form may ultimately be the older form, which is suggested by the inflection of the perfect, the two forms seem to have coexisted at the oldest stages of the Semitic family.

2.3.4. Proposed reconstruction of pronouns and inflection in Proto-Semitic

The evidence for a common origin for pronominal and inflectional affixes in the Semitic and Afroasiatic languages is convincing. The reconstructions proposed here assume three common pathways of change. First, subject agreement on verbs typically has its origin in independent

pronouns (see Hopper and Traugott 1993:16-17). Second, new third person pronouns commonly derive from demonstratives (see Diessel 1999). A relationship between demonstratives and the third person pronouns is clear in Hebrew where the 3MSG independent pronouns *hūʔ* and *hīʔ* also function as the distal demonstratives. Finally, new independent pronouns are often created from earlier complex forms combining noun forms and pronominal forms. Rubin (2005:23-24) describes innovative independent forms in a number of modern Ethiosemitic languages which follow this path of development, e.g. Amharic *irsu* ‘he’ (Ge‘ez *riʔsu* ‘his head; himself’), *irs^wa* ‘she’ (Ge‘ez *riʔsa* ‘her head; herself’), Tigrinya *nəssu* < *nafsu-hu ‘his soul, himself’, *nəssəka* < *nafsu-ka ‘your MSG soul; yourself’. These processes can account for much of the similarity between the pronouns and inflectional affixes found in the Semitic languages and the other Afroasiatic languages. These processes can also be observed occurring in later Semitic languages. The inflection of verbs in Modern Aramaic (see section 5.4.) derives from independent pronouns of earlier Aramaic. Parallel processes in modern Semitic languages and other languages provide an empirical support for assuming the same processes in the formation of inflectional pronominal patterns in the earliest Semitic languages, as well as Proto-Semitic and Proto-Afroasiatic.

The three processes above can account for many of the similarities and differences that exist between pronominal and inflectional forms, although phonetic changes and analogical changes across and within paradigms have also influenced the inherited forms.

(26) Reconstructed Proto-Semitic person markers

	poss. suff.	indp. pro.	suff. conj.	pref. conj.
1SG	*ī, *-ya	*ʔanā(ku)	*-ku	*ʔa
2MSG	*-ka	*ʔantā	*-ta	*ta-
2FSG	*-ki	*ʔantī	*-ti	*ta-
3MSG	*-šu	*šuwa	*-a	*ya-
3FSG	*-ša	*šiya	*-at	*ta-
1PL	*-ni/*-nā	*naḥnu	*-na	*na-
2MPL	*-kumū	*ʔantumū	*-tumū	*ta-
2FPL	*-kinna	*ʔantinna	*-tinna	*ta-
3MPL	*-šumū	*šumū	*-ū	*ya-
3FPL	*-šinna	*šinna	*-ā	*ta-

The independent pronoun forms in Proto-Semitic reflect two of the developments described above. First, the first and second person forms appear to reflect compound forms consisting of a combination of *ʔan- and personal forms similar to the suffix and prefix forms.

Similar complex forms are also found in Cushitic, Egyptian and Berber. An initial nasal element is a feature of many of the independent pronominal forms in these branches, although not necessarily throughout the paradigm. The first person singular forms exhibit the clearest case of a cognate set. The second person forms in Cushitic, particularly in the Agaw (Central Cushitic) languages, also share very similar forms to those in the Semitic family. Just as the Semitic pronouns have developed novel forms for the third person forms, innovations have also led to the replacement of other pronoun forms in other branches of Afroasiatic. For example, the independent second and third person pronouns in Egyptian reflect a similar but innovative

reanalysis of complex forms consisting of the noun form <nt> and the possessive suffixes as independent pronouns.

(27) Independent pronouns in Egyptian, Cushitic, and Berber²³

	Egyptian	Cushitic				Berber		
	Middle Egyptian	Kemant	Bilin	Rendille	Iraqw	Rifian	Kabyle	Siwi
1SG	<ink>	an	ʔan	ani	aníng	nəʃ	nek	neesh
2MSG	<ntk>	əntə	ʔənti	ati	kúung	ʃəkk	keč	shik
2FSG	<ntt>				kiing	ʃəm	kem	shim
3MSG	<ntf>	ni	ni	usu	inós	nətta	netta	nîta
3FSG	<nts>	niy	nəri	ice		nəttaʔ	nettaʔ	untààtit
1PL	<inn> ²⁴	andiw	yən	ino	atén	nəʃin	nekni	inchînee
2MPL	<ntn>	əntāndiw	ʔəntən	atin	kuungáʔ	ḵənniw	kunwi	inkînum
2FPL						ḵənnimti	ḵuntit	
3MPL	<ntsn>	naydiw	naw	ico	inoʔin	nəhnin	nuhni	intînum
3FPL			nəhninti	nuhentit				

Only in Chadic are there no clear parallels to the Semitic independent forms. The pronominal forms do, however, have striking similarities to the Semitic person marking on verbs (see discussion of Chadic in section 2.3.3.1).

The third person pronouns do not conform to the general pattern observed for both first and second pronouns. These pronouns appear to have their origin in demonstrative pronouns. The occurrence of *š and *h in various deictic forms is common throughout Semitic, e.g. Ugaritic <hlm>, <hlny>, <hny> ‘here, hither’, <hnd> ‘this (M or F), these’, <hnx> ‘that (M?)’ <hnkt> ‘that (F?)’ (Sivan 2001). Moreover, the independent pronoun also functions as a demonstrative adjective in many Semitic languages, e.g. Akkadian *šī* ‘she’, *sinništum šī* ‘that woman’ (Ungnad [1879] 1992) *šū* ‘he’, *wardum šū* ‘dieser Sklave’ (Soden 1969), Hebrew *hūʔ* ‘he’, *hīʔ* ‘she’, *hēm* ‘they (M)’, *hēnnāʰ*, *bay-yāmīm* *hā-hēm* ‘in those days’ (Joüon and Muraoka 2000), Phoenician <hʔ> *hū* ‘he’ (KTU 13.6), <hʔ> *hī* ‘she’ (40.2), <hmt> ‘they’ (14.11), <hdbʔ> *hʔ* ‘that act’ (13.6), <whʔdmm hmt> ‘and those persons’ (14.22; Krahmalkov 2001), Ugaritic <hwt> ‘him (OBL)’, *hyt* ‘her (OBL)’, <mlk hwt> ‘that king’ <hwt hyt> ‘that land’ (Pardee 1997), Sabaic <hʔ> or <hwʔ> ‘he’, <hmw> ‘they’, <hmt ʔhmrn> ‘those Himyarites (OBL)’ (J 576:10), Qatabanian <s¹w> ‘he’, <s¹m> ‘they’, <s¹w ʔns¹n> ‘this man’ (RES 3868, Ricks 1989). The forms of the third person possessive and object pronouns, which are very close in form to the independent pronouns, appear to have the same origin in an earlier demonstrative pronoun.

The inflection of both the prefix and suffix conjugations appear generally to have their origin in the same basic source, but at different points in the history of Semitic and Afroasiatic. The prefix conjugation has a clear origin early in the development of Afroasiatic, with only Chadic lacking clear cognate forms. The suffix conjugation, in contrast, cannot be so clearly reconstructed for an early stage and might represent independent but parallel developments. Both conjugations do reflect the subject form of the second person pronouns with /t/. While it is

²³ Data from Callender 1975 for Middle Egyptian, Appleyard 1975 for Kemant, Appleyard 2007b for Bilin, Heine 1976b for Rendille, Mous 1993 for Iraqw, Kossmann 2000 for Rifian Beber, Rabdi 2004 for Kabyle, and Walker 2001 for Siwi Berber.

²⁴ According to Callender the 1PL pronoun is not attested until Late Egyptian.

not difficult to reconstruct, the inflection of the prefix and suffix conjugations, the reconstruction of the associated templatic patterns is harder and perhaps insurmountable. While ablaut and other non-linear alternations are common in all Afroasiatic branches, the instability and mutability of vowels make a reconstruction of these patterns exceedingly difficult in the Afroasiatic languages. As such, the following section will concentrate specifically on the development of these patterns in the Semitic languages.

2.4. The basic tense, aspect and mood distinctions of Semitic

Both Kuryłowicz (1949) and Fleisch (1979) identify reconciling seemingly irreducible differences between East Semitic and West Semitic as the chief difficulty in reconstructing the verbal system of Proto-Semitic. Akkadian has two basic verb forms, the preterite *i-prus* and the durative *i-parras*, while Arabic representing West Semitic has two different verb forms, the imperfect *ya-qtul-u* and perfect *qatal-a*. In each language there is a verb form with a root of the shape $C_1C_2VC_3$ where $V=\{i, a, u\}$. Akkadian uses this form for the most part to describe actions in the past, while Arabic uses the same primarily to describe non-past actions. The other two forms, the Akkadian durative and the Arabic perfect, share a basic disyllabic shape and similar vowel melodies for the roots, but are used with very different tense/aspect values.

Some of the difficulties presented by the Akkadian and Arabic verbal systems are resolved by examining forms beyond this small set. The verbal forms of Proto-Semitic most likely were not restricted to merely two forms, but probably contained a wide variety of forms. An unfortunate assumption that pervades much of the early scholarship of the Semitic languages is that Proto-Semitic must have been a primitive language befitting the primitive condition of its speakers. Guided by this assumption many early analysts derived all verb forms from a single original verb form, such as the Akkadian *iprus* (Bauer 1914, Bergsträsser 1918-22, 1928, 1983), the Akkadian *iparras* (Haupt 1878) or the West Semitic perfect *qatal-a* or the formally similar Akkadian verbal adjective (Wright 1890, Driver 1936, Thacker 1954). The changes proposed for deriving all other forms from these original forms often suffer considerably from being vague, implausible or both. While the attempt to establish a single original form for the verb stem is reasonable and desirable, it is questionable whether any particular form in any attested language should be equated with that original form. Instead, except where the development of a particular form is transparently related to another form by well-attested historical processes (i.e. sound change, analogy and grammaticalization), the forms of the verbs should be seen as equally reflecting the original stem. Furthermore, all morphology that can not be easily explained should at the very least be considered as features of possible antiquity. There are no *a priori* reasons for excluding any feature found in recorded languages from Proto-Semitic. There is no reason to assume that the system for distinguishing tense and aspect in Proto-Semitic was in any way more primitive than that which we find in any of the daughter languages. In fact it is probably safe to assume that the system of TMA distinctions in Proto-Semitic was at least as complex as that of the least complex system found among the daughter languages. This implies at the very least a single distinction between past/complete and non-past/incomplete and several modal distinctions probably including indicative, imperative, jussive and volitive moods.

In the light of the discussion above the first question that needs to be asked is what forms and categories of the verb can be reconstructed without reservation. This requires that the form have reflexes in both East and West Semitic and ideally be attested in several West Semitic languages as well.

2.4.1. Imperative, jussive and perfect

Two of the clearest examples of forms that must be reconstructed for Proto-Semitic are the imperative $*C_1C_2VC_3$ and the so-called “short imperfect” $*ya-C_1C_2VC_3$ which has both past/perfect and jussive functions and has the same base as the imperative. The term “short imperfect” is used in order to contrast it with the imperfect form of Central Semitic $*ya-qtul-u$. The form is in fact not imperfect in any sense and most likely reflects two different forms in Proto-Semitic, a perfect and a jussive, distinguished by the placement of accent.

The Proto-Semitic imperative can be reconstructed as $*qtul$, $*qtil$ and $*qtal$. The daughter languages have resolved the initial cluster in a number of ways. In Arabic a prosthetic vowel is sometimes added, /u/ for verbs with the theme vowel /u/ and /i/ for those with theme vowels of /a/ and /i/, giving forms like (*u*)*ktub* ‘write!’, (*i*)*nzil* ‘come down!’ and (*i*)*ftaḥ* ‘open!’. In Akkadian a copy vowel is inserted to break up the consonant cluster, *purus* ‘divide!’, *ṣabat* ‘seize!’ and *širiq* ‘steal!’. In most other varieties of Semitic [ə] is inserted. Biblical Hebrew has the forms *qəṭōl* < $*qtul$ ‘kill!’, *tēn* ‘give!’ < $*ntin$ and *qərab* ‘approach!’ < $*qrab$. In Syriac and other varieties of Aramaic both $*qtul$ and $*qtal$ are well represented, although $*qtil$ forms are rare as they are in Hebrew: Syriac *k(ə)toḅ* ‘write!’, *q(ə)rab* ‘approach!’. In many other varieties the contrasts have been lost or are not well represented for orthographic reasons. In Ge‘ez and other South Semitic languages short /e/ and /i/ have become /ə/ merging original $*qtul$ and $*qtil$: Ge‘ez *nəgər* ‘say!’ and *ləbas* ‘dress!’, Jibbāli *k’dér* ‘be able!’ and *fḏór* ‘shiver with fear!’ (Johnstone 1981), Mehri *fiāḥ* ‘open!’ and *lhōd* ‘support yourself!’ (Bergsträsser 1928). Ugaritic appears to have reflexes of $*qtul$, $*qtal$ or $*qtil$ as the forms *lʔak* ‘send!’, *šū-ub* ‘come back!’ and *sʔid* ‘serve!’ (Segert 1984). It is, however, impossible to tell whether there is an epenthetic vowel and what the quality of that vowel is. The written form *lʔak* could potentially represent *lʔak*, *ləʔak* or *laʔak*.

The forms of the so-called “short imperfect” show even less variety in the daughter languages than the imperative. The forms of the “short imperfect” are distinguished from those of the West Semitic imperfect by the absence of a final vowel form in the 1PL and the absence of /n/ in the MPL forms: 3SG $*ya-qtul$, $*ya-qtal$ and $*ya-qtil$ and 3PL $*ya-qtul-ū$, $*ya-qtal-ū$ and $*ya-qtil-ū$. The Arabic jussive and the Akkadian preterite faithfully reflect the Proto-Semitic forms, Arabic *li-ya-ktub* ‘let him write’, *li-ya-ktub-ū* ‘let them write’, *li-ya-ḏhab* ‘let him go’ *li-ya-ḏhab-ū* ‘let them go’, *li-ya-šrab* ‘let him drink’ and *li-ya-šrab-ū* ‘let him drink’ and Akkadian *i-prus* ‘he divided’, *i-prus-ū* ‘they divided’, *i-šbat* ‘he seized’, *i-šbat-ū* ‘they seized’, *i-šriq* ‘he stole’ *i-šriq-ū* and ‘they stole’. In Ethiosemitic Ge‘ez has a jussive with predictable vocalic changes which merge $*ya-qtul$ and $*ya-qtil$, for example *yə-ngər* ‘may he speak’ *yə-ngər-u* ‘may they speak’, *yə-labs* ‘let him wear’ and *yə-labs-u* ‘let them wear’. Chaha, a Southern Ethiosemitic language of the Western Gurage group, also exhibits the two types of vocalization, *yə-sβər* ‘let him break’ and *yə-rkaβ* ‘let him find’ (Hetzron 1997a). Similar jussive forms are also found throughout Ethiosemitic as in Tigré, *li-qnaš* ‘let him get up’ (Raz 1997), Tigrinya, *yə-ngar* ‘let him speak’ (Kogan 1997), Amharic *yə-ngar* ‘let him speak’ (Hudson 1997), Harari *ya-ktab* ‘let him write’ (Wagner 1997) and East Gurage *ya-msak* ‘let him guide’. In Modern South Arabian Jibbāli has two reflexes of the original ‘short imperfect’ forms illustrated by *yə-k’dər* ‘may he be able’ (< $*ya-qtul$ and $*ya-qtil$) and *yə-fḏór* ‘may he shiver with fear’ (Johnstone 1981).²⁵ The remaining Modern South Arabian languages also have regular reflexes of the “short imperfect”, although Mehri has merged the original $*ya-qtal$ with the imperfect (Simeone-Senelle 1997).

²⁵ This form called the subjunctive (Simeone-Senelle 1997, Johnstone 1981) occurs mainly in subordinate clauses, but also is used as a jussive or as a polite imperative, especially with negation.

Reflexes of the “short imperfect” occur in Amorite and Ugaritic, but are retained for only a limited set of forms in later varieties of Northwest Semitic. Rainey (1990) argues for the existence of a contrast between the Central Semitic imperfect **ya-qtVI-u* and **ya-qtVI* with both perfect and jussive uses. Ugaritic also faithfully reflects **ya-qtVI* and **ya-qtul-ū*, *tšʔi /ta-šiʔ/* ‘may it go forth’, *ʔal tšʔu /ta-šiʔ-ū/* ‘do not go forth (MPL)’ (Sivan 1998, Sivan 2001). In Aramaic and Hebrew, due to apocope of the final *-u* of the imperfect, imperfect and “short imperfect” forms have merged for the most part, **ya-qtul-u* and **yaqtul* > **yaqtul*. In Hebrew only forms of II-y/w ‘hollow verbs’, III-y/w ‘weak verbs’ and the *Hiphil* derived conjugation maintain a contrast between jussive and imperfect (*yā-qūm* ‘he is standing up’ vs *yā-qōm* ‘may he stand up’, *yi-bne* ‘he is building’ vs. *yi-ben* ‘may he build’). In Aramaic the contrast is only found for MPL forms like *yē-(ʔ)bad-ū* (Jer 10:11).

Bauer (1914) and Bergsträsser (1918-22, 1928, 1983) consider this verb form to be the original Semitic verb form with an original universal character not indicating tense or aspect. This is based on the occurrence of the “short imperfect” in both branches of Semitic with the same somewhat unusual set of meanings. Bauer argues for the antiquity of the form based on its similarity to the imperative form, which he argues preserves the primitive form of the verb. Bergsträsser argues that in the evolution of the system the original meaning was jussive, given its close relationship to the imperative. Later expression of the past tense fell upon this form, the only available declarative verb form. While it is very clear that the **ya-qtVI* must be reconstructed, the other claims of both Bauer and Bergsträsser remain largely unsubstantiated. The **ya-qtVI* form is not the only form that can reasonably be reconstructed for Proto-Semitic. The view that **ya-qtVI* represents a primitive universal verb reflects the discredited view that the complexity of a language and a society are directly correlated. Bergsträsser also fails to explain adequately the mechanism that would account for the expansion of a jussive to the expression of the past tense. There are not many, if any, contexts in which a jussive form could be mistaken for a past tense form, so explanation in terms of reanalysis is unlikely.

A more likely scenario is that the jussive and the perfect reflect separate proto-forms which have formally merged in most languages. This view, espoused by Kuryłowicz (1949), nicely accounts for the semantic range of the *yaqtul* form in the Semitic languages. Neither the jussive nor the perfect meaning can be easily derived from the other. It also accounts for the distribution of the two forms in a variety of languages. Both uses are retained to some extent in most major branches, although often one or both forms have become very restricted in their use. In Akkadian the most common use of the *i-prus* form is as a perfect. The reflexes of the jussive form are found in the precativum which follows the particle *lū* and often contracts with the personal prefix of the verb as in the third person forms *libluṭ* ‘may he live!’ (< **lū ibluṭ*), and in the vetitive which occurs with the particle *ai/ē*, *ai ṭrubū* ‘let them not enter!’ (Ungnad [1879] 1992). In West Semitic **ya-qtul* forms most commonly reflect the original jussive as is clear from the forms given above. Still a number of examples of the original perfect remain in what are typically bound forms, having been replaced by the suffix perfect *qatVI-a* in most contexts. The perfect uses of this form in West Semitic are discussed in Kuryłowicz (1949). In Arabic reflexes of the **ya-qtul* perfect occur in the negation of the perfect with *lam*, *lam yaqtul* ‘he did not kill’. In Hebrew and other languages the **yaqtul* perfect is retained after the conjunction *wa-*, as in the *wāw*-consecutive construction in Hebrew *way-yiqṭōl* ‘(and) he killed’. Lipiński (1997:341-2) provides possible cases of a similar construction in languages such as Aramaic, Moabite, Phoenician, South Arabian and Arabic. In Ge‘ez, as Hetzron (1969) discusses, the

original perfect is preserved in the irregular past tense of the verb ‘to speak’, *yəbe* ‘he said’ and *yəbəl* ‘he says’. Thus we can easily trace the two meanings to a putative ancestor.

This leaves the question of how these forms might have been distinguished in Proto-Semitic. Both Driver (1936) and Fleisch (1947-8) conclude that the two forms were distinguished by accent with the jussive accented on the final syllable **ya-qtúl* and the perfect accented on the prefix **yá-qtul*. Hetzron (1969) offers several arguments for the original distinctive placement of stress, a theory found in an undeveloped form in Bauer and Leander (1965). The reconstructed accent provides an elegant account of the contraction facts in Akkadian (preterite **lū iprus > lū iprus* but jussive **lū iprús > liprus*), the accentuation of certain forms in Hebrew (*wāw*-consecutive *wa-yyāqom* vs. jussive *yāqōm*) and the separate development of the Ge‘ez jussive *yə-bal* < Proto-Ethiopic **yə-bál* and past tense *yə-be* < Proto-Ethiopic **yá-bal*.

It is clear that the perfect forms **yá-qtul*, **yá-qtal* and **yá-qtíl* and jussive forms **ya-qtúl*, **ya-qtál* and **ya-qtíl* should be reconstructed for Proto-Semitic. The question, however, still remains whether an earlier form can be discerned. In the following sections I will suggest as a possibility that perfect forms **yá-qatul*, **yá-qatal* and **yá-qatil* and jussive forms **ya-qatúl*, **ya-qatál* and **ya-qatíl* be reconstructed for Proto-Semitic.

2.4.2. Imperfect

The reconstruction of the imperfect forms of the verb presents a different set of difficulties from those encountered with the perfect and jussive. First, the verbal stem of the imperfect in Central Semitic **qtVl* is identical to that of the jussive and perfect forms, not the imperfect forms of Akkadian and South Semitic. Second, the Akkadian forms and the forms of various South Semitic languages are difficult to reconcile. The thematic vowel of the Akkadian imperfect is related to that of the Akkadian perfect/jussive, while the South Semitic imperfect consistently has /ə/ as the thematic vowel regardless of the vowel of the perfect. The gemination of the second radical in the imperfect is found consistently in Akkadian *iparras* and Ge‘ez *yəqattəl*, but not consistently in Tigré and Tigrinya (3MS *yəqattəl* but 3MPL *yəqatlu*) and not at all in South Ethiopic (Amharic *yənagr* ‘she says’) and Modern South Arabian (Ḥarsūsi *yəlobəd*²⁶ ‘he strikes’ and *yəkódər* ‘he is able’). Finally, a final suffix *-u* is found with the imperfect forms in Arabic and Second Millennium Central Semitic, but not in Akkadian, Ge‘ez and many other languages.

The reconstruction of the Central Semitic imperfect as **ya-qtul-u*, **ya-qtal-u* and **ya-qtíl-u* for 3MS and **ya-qtul-ūn(a)*, **ya-qtal-ūn(a)* and **ya-qtíl-ūn(a)* for 3MPL is very secure. Arabic has forms like *ya-qtul-u* ‘he kills’, *ya-qtul-ūna* ‘they kill’, *ya-šrab-u* ‘he drinks’, *ya-šrab-ūna* ‘they drink’, *ya-ḍrib-u* ‘he strikes’ and *ya-ḍrib-ūna* ‘they strike’. In Ugaritic there is ample evidence of the occurrence of /n/ at the end of masculine plural forms and some for the final *-u*, e.g. *tmṯrn* /ta-mṯur-ūna/ ‘they rain down’, *tlḥmn* /ti-lḥam-ūna/ ‘they eat’, *yml?u* /yi-mla?-u/ ‘it is filled’ and *tbky* /ta-bkiy-u/ ‘she cries’ (Sivan 1998). In Amorite as well both forms are found, *ti-il-qú-na* /tilqūna/ ‘they were taking’ *ʾiṣ-šú-ru* /i-ššur-u/ ‘I am guarding’ (Rainey 1990). Because of widespread apocope the final *-u* has been lost in later varieties of Northwest Semitic and Arabic, e.g. Hebrew *yi-ktōb* ‘he will write’, Aramaic *yi-ktub* ‘he writes’, Gulf Arabic *ya-ktib* ‘he writes’ (Kaye and Rosenhouse 1997). The final *-n(a)* has been lost in most languages either due to gradual loss of segmental material at the word’s edge or due to analogy with the *-ū* of the

²⁶ The /ō/ is the regular reflex of short /a/ in stressed syllables, not compensatory lengthening due to the loss of gemination (*kəṭōb* ‘he wrote’ < **katáb*)

suffix conjugation *katab-ū ‘they wrote’ or the perfect/jussive *ya-ktub-ū* ‘they wrote’ or ‘may they write’. A final *-n(a)* is found in Aramaic (*yi-ktub-ūn* ‘he writes’) and some Arabic dialects (Gulf Arabic *ya-ktāb-ūn* ‘they write’, but is lost in other languages (Hebrew *yiktābū* ‘they will write’, Maltese *yi-ktb-u* ‘they will write’).

Having established **ya-qtVI-u* and **ya-qtVI-ūn(a)* as belonging to Proto-Semitic, it is time to consider how these forms relate to jussive and perfect forms and how they relate to the imperfect forms of East Semitic and South Semitic. The most common explanation for the Central Semitic imperfect is that it represents an independent Central Semitic development of the perfect or jussive (Bauer 1914, Bergsträsser 1918-22, 1928, 1983, Huehnergard 1995, Lipiński 1997). Bergsträsser and Hetzron (1969) argue that the **yaqtul-u* form is derived from the jussive, but do not give any explanation of the origin of the *-u*. In Bergsträsser’s view the development of the form was occasioned by the needs of speakers to express a present tense, which they lacked.

Like Bergsträsser (1918-22, 1928, 1983), Bauer (1914) assumes a universal verb of the form **yaqtul* in Proto-Semitic which does not indicate time or aspect, but explicitly argues that West Semitic **ya-qtul-u* developed from a form of the verb which occurs in subordinate clauses, as the Akkadian subjunctive *i-qtul-u* does. This form itself is considered to have arisen through the reanalysis of a resumptive pronoun *-hu* in relative clauses. Driver (1936) dismisses this reanalysis as implausible. First of all, the 3SG enclitic pronoun in Akkadian has the form *-šu* not *-hu*. Furthermore, even if we consider the development of *-šu* > *-u* as plausible, the likelihood of the resumptive pronoun, which would only occur in relative clauses involving 3MS object, being generalized as a marker of a verb in a subordinate clause is probably not great. Lipiński (1997) also consider the Central Semitic imperfect as being related to the Akkadian subjunctive. Lipiński argues for the origin of the Akkadian subjunctive in an analogy with the “ergative-instrumental” case *-u*, the nominative case of Arabic and Akkadian. It seems somewhat suspect to make much of a correspondence between suffixes consisting only of a single short vowel in a language with only three short vowel phonemes /a/, /i/ and /u/. It is also hard to imagine the circumstances under which case morphology could be extended to a verbal form. Huehnergard (1995) also suggests a possible relationship between the Central Semitic imperfect and the Akkadian subjunctive.

On top of the problem concerning the origin of the final *-u* of the Akkadian subjunctive is the problem of how the subjunctive could come to serve as an imperfect. While it is not impossible for the verb of a subordinate clause to be reanalyzed as the main verb (cf. Harris and Campbell 1995), what is difficult to explain is how a perfect form in a subordinate clause could be reanalyzed as an imperfect form in a main clause as is assumed in the derivations. If we are to assume that Central Semitic imperfect **ya-qtul-u* comes from a subjunctive form, it must have come from the subjunctive perfect **ya-qtul-u* and not the subjunctive form of the imperfect **ya-qattal-u*.

A possibility not considered in the works cited above is that the *-u* of the Akkadian subjunctive may rather have been originally a marker of the imperfect. If we assume that the Akkadian imperfect originally ended in an *-u*, it is possible to conceive a scenario whereby the final vowel would be lost in main clauses where the verb was commonly utterance final, but retained in subordinate clauses where the verb was not usually at the end of an utterance. By such a scenario the original imperfect marker could be reanalyzed as a marker of subordination and could then be extended to other verb forms beside the imperfect, a type of extension that has occurred with the stative conjugation in Middle Babylonian, e.g. Middle Babylonian *ša marṣ-at-*

u ‘(she) who is sick’ vs. Old Babylonian *ša balṭ-at* ‘she who lives’ (Ungnad [1879] 1992). This would give us a Proto-Akkadian form of **ya-qtul-u* for the imperfect, leaving the question of its relationship with the Central Semitic **ya-qtul-u* unresolved.

Support for a final *-u* in the imperfect of East Semitic and South Semitic is provided by Muher, a Gurage language, where a final *-u* occurs as a marker of the imperfect in the main clause. The distribution of the *-u* in the singular corresponds partially to that of *-u* in Arabic. The markers of the plural are excluded from consideration because they show clear analogical developments based on the inflection of the suffix perfect.

(28) Muher imperfect (Leslau 1981)

	Muher imperfect		Arabic imperfect
	main clause	subordinate clause	
3MS	yi-səbr-u	yi-səbir	ya-qtul-u
3FS	tī-səbr-i	tī-səbir	ta-qtul-u
2MS	tī-səbr-u	tī-səbir	ta-qtul-u
2FS	tī-səbr-ət	tī-səbir	ta-qtul-ī
1S	a-səbr-u	a-səbir	?a-qtul-u

Before this question can be resolved, it is necessary to examine the forms of the imperfect outside Central Semitic. The Akkadian durative or present has the forms *iparras*, *iparris* and *iparrus*. The thematic vowel is systematically related to that of the Akkadian preterite/perfect and jussive. The vowel is the same for three classes of verbs, but is different for the largest class of verbs including most active verbs. In the class of active verbs with a preterite having the thematic vowel /u/, the durative has the thematic vowel /a/.

(29) Akkadian thematic vowels in the preterite and durative

<i>Preterite</i>	<i>Durative</i>
i-prus	i-parras
i-šbat	i-šabbat
i-šriq	i-šarriq
i-mqut	i-maqqut

The imperfect in South Semitic like the Akkadian durative has a bisyllabic stem and in a few languages also shares the doubling of the middle radical. Unlike the Akkadian durative the South Semitic imperfect has /i/ as a thematic vowel regardless of the vocalization of the jussive. The North Ethiosemitic languages, Ge‘ez, Tigré and Tigrinya, are the only South Semitic languages which double the middle radical in the imperfect and Ge‘ez is the only language which has the medial radical doubled throughout the paradigm like Akkadian.

(30) The inflection of the imperfect in Akkadian and North Ethiosemitic

	Akkadian	Ge'ez	Tigré (Raz 1997)	Tigrinya (Kogan 1997)
3MS	i-parras	yi-qəttil	li-qattil	yi-qəttil
3FS		ti-qəttil	ti-qattil	ti-qəttil
2MS	ta-parras	i-qəttil	ti-qattil	ti-qəttil
2FS	ta-parras-i	ti-qəttil-i	ti-qattil	ti-qəttil-i
1S	a-parras	i-qəttil	?i-qattil	?i-qəttil
3MP	i-parras-ū	yi-qəttil-u	li-qatl-o	yi-qəttil-u
3FP	i-parras-ā	yi-qəttil-a	li-qatl-a	yi-qəttil-a
2MP	ta-parras-ā	ti-qəttil-u	ti-qatl-o	ti-qəttil-u
2FP		ti-qəttil-a	ti-qatl-a	ti-qəttil-a
1P	ni-parras	nə-qattəl	?in-qattəl	ni-qəttil

Forms with a vowel suffix in Tigré and Tigrinya lose the thematic vowel schwa and the gemination of the middle radical. In South Ethiosemitic and Modern South Arabian the gemination of the middle radical is absent in all forms.

(31) Inflection of the imperfect in South Ethiosemitic and Modern South Arabian²⁷

	Argobba	Gafat	Zway	Jibbāli	Ḥarsūsi
3MS	yi-səkir	yi-qərb-(i)	yi-dəbil	y-k'ódər	yə-lōbəd
3FS	ti-səkir	ti-qərb-(i)	ti-dəbil	t-k'ódər	tə-lōbəd
2MS	ti-səkir		ti-dəbil	t-k'ódər	yə-lōbəd
2FS	ti-səkr-i	ti-qərb-i	ti-debil	t-kídər	tə-lībəd
1S	il-səkir	i-qərb-(i)	yi-dəbl-in	ə-k'ódər	ə-lōbəd
3MP	yi-səkr-u	yi-qərb-u	yi-dobul	y-k'ódər	yə-lōbəd-əm
3FP		yi-qərb-a		t-k'ódər-ən	tə-lōbəd-ən
2MP	ti-səkr-u	not attested	ti-dobul	t-k'ódər	tə-lōbəd-əm
2FP				t-k'ódər-ən	tə-lōbəd-ən
1P	il-səkr-in	ini-qərb-(i)	yi-dobil	nə-k'ódər	nə-lōbəd

In some languages the absence of gemination could be the result of a general loss of gemination. This is true for many Gurage languages and Modern South Arabian, but not Amharic, Argobba or Muher. In Amharic and Argobba the imperfect contrasts with the imperfect of the D-Stem, a derived form of the verb which involves the doubling of the middle radical (Akkadian *u-parras*, Arabic *yu-faʿʿil-u*, Hebrew *yə-dabbēr* <Proto-Hebrew **yu-dabbir*).

²⁷ Data is from Leslau 1997 for Argobba, Leslau 1945 for Gafat, Leslau 1999 for Zway, Johnstone 1981 for Jibbāli and Simeone-Senelle 1997 for Ḥarsūsi.

(32) Argobba and Amharic Type A (G-Stem) and Type B (D-Stem) verbs

	Argobba (Leslau 1997b)		Amharic	
	Type A (Akk. i-parras)	Type B (Akk. u-parras)	Type A (Akk. i-parras)	Type B (Akk. u-parras)
3MS	yi-səkir	yi-neggid	yi-səbr	yi-fəllig
3FS	ti-səkir	ti-neggid	ti-səbr	ti-fəllig
2MS	ti-səkir	ti-neggid	ti-səbr	ti-fəllig
2FS	ti-səkr-i	ti-neggid-i	ti-səbr-i	ti-fəllig-i
1S	il-səkir	il-neggid	i-səbr	i-fəllig
3P	yi-səkr-u	yi-neggid-u	yi-səbr-u	yi-fəllig-u
2P	ti-səkr-u	tə-neggəd-u	ti-səbr-u	ti-fəllig-u
1P	il-səkr-in	il-neggid-in	inni-səbr	inni-fəllig

The same is true for Muher which has *yi-səbr-u* ‘he breaks’ for type A verbs but *yi-nəkk’is-u* ‘he limps’ for type B. In other Gurage languages where gemination has been lost the imperfect forms of type A and type B are often distinguished vocally as with Zway type A *yi-dəbil* ‘he repeats’ and *yi-mīzin* ‘he weighs’ (Leslau 1999). A vowel /i/ or /e/ occurs as the first vowel of type B verbs in several, including Argobba *yi-neggid* ‘he trades’ and Chaha *yi-besir* ‘he observes’ (1983). Based on the forms described above there is no evidence outside of comparative evidence for the imperfect having an original geminate.

In Modern South Arabian, the imperfect of the G-stem and the D-stem (Modern South Arabian Intensive-Conative) also have different reflexes. In the comparison below, the jussive is also shown for Mehri because it better reflects Proto-Semitic.

(33) Modern South Arabian forms in the G-stem and intensive-conative stem

	Mehri (Johnstone 1987)			Jibbāli (Johnstone 1981)	
	G-stem imperfect *ya-qattl-u	intensive-conative		G-stem	intensive- conative imperfect
		imperfect *yu-qattil-u	jussive *yu-qattil		
3MS	yə-rūkəz	ya-rákb-ən	ya-rōkəb	y-kódər	(d-)igódəl-ən
3FS	tə-rūkəz	ta-rákb-ən	ta-rōkəb	t-kódər	(də-)gódəl-ən
2MS	tə-rūkəz	ta-rákb-ən	ta-rōkəb	t-kódər	(də-)gódəl-ən
2FS	tə-rēkəz	ta-rákb-ən	ta-rēkəb	t-kídər	(di-)gúdəl-ən
1S	ə-rūkəz	a-rákb-ən	l-a-rōkəb	ə-kódər	(d-)əgódəl
3MP	yə-rókz-em	ya-rákb-ən	ya-rákb-ən	y-kódər	(d-)igódəl-ən
3FP	tə-rókz-en	ta-rákb-ən	ta-rákb-ən	t-kódər-ən	(də-)gódəl-ən
2MP	tə-rókz-em	ta-rákb-ən	ta-rákb-ən	t-kódər	(də-)gódəl-ən
2FP	tə-rókz-en	ta-rákb-ən	ta-rákb-ən	t-kódər-ən	(də-)gódəl-ən
1P	ə-rūkəz	na-rákb-ən	na-rōkəb	n-kódər	n-gódəl

Lipiński (1997:340) claims that the loss of the geminate is compensated for by the lengthening of the preceding vowel as in a form like Mehri *yə-rūkəz*. While the vowel in these forms is long, the length is not due to compensatory lengthening. The Modern South Arabian

languages do not exhibit any clear traces of a geminate in the imperfect of the G-stem. Based on the data in Johnstone (1987), short /a/ has the reflex /ū/ in open and final closed stressed syllables and /ə/ in unstressed syllables and non-final closed and final doubly closed syllables. Long /ā/ and /a/ that occurs before originally geminate consonants have the reflexes /ō/ in open and final closed stressed syllables and /a/ in non-final closed and final doubly closed stressed syllables. Unstressed syllables generally become /ə/. The following derivations show these reflexes clearly.

(34) Derivation of Mehri forms from Proto-MSA and Proto-West-Semitic

G-Stem Perfect

3MSG PWS *qátal-a > PMSA *qatál > qətūl
 3FSG PWS *qátal-at > PMSA *qatal-át > qətəl-ūt
 1MSG PWS *qátal-ku > PMSA *qatál-k > qətól-k
 3MDU PWS *qátal-ā > PMSA *qatal-ā > qətəl-ō

G-Stem Imperfect

3MSG PWS ya-qátal-u > PMSA ya-qátal > yə-qūtél
 3MPL PWS ya-qátal-ūn > PMSA ya-qátal-um (w/ syncope) > yə-qátal-əm

D-Stem Perfect

3MSG PWS qáttala > PMSA (a)qátal > (a)qōtəl

D-Stem Imperfect

3MSG PWS yu-qátal-u > PMSA yu-qátal-Vn > yə-qátal-ən

D-Stem Jussive

3MSG PWS yu-qátal > PMSA yu-qátal > yə-qōtəl
 3MPL PWS yu-qátal-ū > PMSA yu-qátal-um > yə-qátal-əm

The length is accounted for by regular sound changes not compensatory lengthening.

Haupt (1878), Hetzron (1975) and Huehnergard (1995) reconstruct a Proto-Semitic imperfect *ya-qattVl. Haupt assumes that the gemination is original because as the fuller form it would be more likely that other forms would be derived from it. The chief evidence for this reconstruction comes from the Akkadian *i-parrVs* and the Ge'ez *yə-qattəl* imperfect forms. Given the doubling of the middle radical and the absence of a final vowel in these two older languages, these two features are usually assumed in the proto-form *ya-qattVl.

There are a number of problems with this hypothesis and the comparison used to support it. Unlike the Akkadian forms which can take /i, a, u/ as a theme vowel, Ge'ez can only take /ə/, a vowel which can reflect Proto-Semitic *i and *u, but not the most common theme vowel in Akkadian *a. One possible solution to this problem is provided the final -u of the imperfect indicative. It is possible that the unstressed theme vowel in South Semitic assimilated to the final -u and became morphologized as a form of ablaut when the final vowel was lost. This type of change is well attested in South Semitic when later -u marking the plural and -i marking the second person singular were lost.

(35) Cases of the loss of final vowel leading to new ablaut patterns

Muher (Leslau 1981)

2FSG imperfect *tə-sabər-i > tə-sabir

Zway (Leslau 1999)

2FSG imperfect *tə-dabəl-i > tə-debil

3PL imperfect *ye-dabəl-u > yə-dobul

2PL imperfect *tə-dabəl-u > tə-dobul

3PL perfect *dabal-u > dobol

Mehri (Johnstone 1987)

2FSG perfect *rakáz-ki > *rakáz-ši > *rikíz-š

2FSG imperfect *tə-rakəz-i > *tə-rikəz

The other possibility involves the generalization of the thematic vowel. This possibility will be considered in subsequent chapters.

Another problem involves what is being compared. In his review of comparative Semitic linguistics Huehnergard (2002) cautions against comparing individual languages instead of sub-branches, but does just that in his reconstruction (1995) of the Proto-Semitic verbal system. While Ge'ez, the oldest Ethiosemitic language, the other North Ethiosemitic languages (Tigré and Tigrinya), and Akkadian have a geminated middle radical in the imperfect, Modern South Arabian and South Ethiosemitic have no trace of gemination in this form. If we take the Akkadian forms as faithfully reflecting the Proto-Semitic forms *ya-qattVI and *yu-qattal, it is difficult to explain the different treatment of the G-Stem and D-Stem imperfect forms in Argobba, Muher, Mehri and other South Semitic languages. It is impossible to derive the two forms by regular sound change. It is necessary to assume, if we want to hold on to the reconstructions, that either the relevant changes applied only to the Type A forms or were somehow blocked in Type B forms.

This is the approach taken by Hetzron (1972) who appeals to paradigmatic effects in explaining the different treatment of type A (G-Stem) and type B (D-Stem). Gemination in type B was retained because gemination was found in all forms of the verb, while gemination was lost in type A where the gemination only occurred in the imperfect and not other forms of the verb. The loss of gemination in the imperfect is seen as a way of reducing variation in the stem. Another problem is that, if we are to assume a PS G-stem imperfect *ya-qattVI-u with the middle geminate, the loss of the gemination in the G-stem imperfect must have preceded the loss of gemination in general in both Modern South Arabian and in South Ethiosemitic. Assuming the standard grouping with a Western (Ethiosemitic) and an Eastern branch, the loss of gemination in the two branches would represent independent but parallel developments. Thus the choice of a proto-form with gemination or not depends on whether one prefers the independent loss of geminates in South Ethiosemitic and Modern South Arabian or the independent creation of geminates in Akkadian.

Leslau (1953) argues against the gemination in the Ge'ez imperfect being a part of Proto-South-Semitic. He argues that the geminate form, which is only found in North Ethiosemitic and not in South Ethiosemitic or South Arabian, is an innovation, possibly formed to eliminate final consonant clusters. The reconstructed form Leslau provides for Proto-

Ethiosemitic is *yə-qatəl-u, with the final -u of the imperfect indicative. Appleyard (1996a, 2002) comes to the same conclusion with regard to the Modern South Arabian (MSA) imperfect form which is reconstructed as *yəqátəl.

The reconstruction of the form as ya-qatVl with a singleton consonant allows us to reconstruct a single invariable verb stem for Proto-Semitic. It is also consistent with data from Modern South Arabian and South Ethiosemitic where there is no evidence of the original gemination of this form. Finally, the objection of Haupt that the fuller form must be reconstructed in this case is not necessarily justified given the well documented path of stress-induced geminate development (Blevins 2004:170-178).

2.4.3. Modal suffixes

Another issue that should be resolved is the question of short vowel modal suffixes. In Akkadian final short vowel suffixes do not occur with prefix conjugation verbs, except in subordinate clause where -u occurs. In West Semitic a number of closely related verbal forms are distinguished primarily by the presence or absence of particular vowel endings and accent. These forms share a basic stem of the form -qtu/a/il- with various personal prefixes and vowel endings. Because of widespread apocope final vowels are not preserved fully intact in most West Semitic languages. Final vowels are only consistently preserved in Classical Arabic and West Semitic languages of the second millennium BCE. The classical Arabic forms are provided below:

(36) Arabic modal suffixes

indicative	yaqbVr-u
jussive	yaqbVr
preterite	yaqbur
subjunctive	yaqbVr-a
energetic	yaqbVr-an(na)

Rainey (1990) presents a synchronic analysis of the verbal system of the Northwest Semitic language reflected in the El Amarna letters of the 14th century BCE. Rainey divides the verbal system into two separate modes for the prefix conjugation, an indicative mode and an injunctive mode. The indicative has a preterite ending in -Ø, an imperfect ending in -u and an energetic form ending in -un(n)a, while the injunctive has a jussive ending in -Ø, a volitive ending in -a and -an(n)a. While Rainey recognizes the importance for the development of the verb in Northwest Semitic, he does not explicitly state what the implications might be. The system shows clear parallels with the system of Classical Arabic. Based on the strong similarities, a reconstruction of Central and possibly West Semitic verbal suffixes conforming to Arabic and Amorite can be proposed.

(37) Rainey's theory of the Northwest Semitic verbal system

indicative		injunctive	
<i>preterite</i>	yaqtul, taqtulû	<i>jussive</i>	yaqtul, taqtulû
<i>imperfect</i>	yaqtulu, taqtulûn	<i>volitive</i>	yaqtula, taqtulû
<i>energetic</i>	yaqtulun(n)a	<i>energetic</i>	yaqtulan(n)a

Sivan (1998, 2001) analyzes Ugaritic along much the same lines as Rainey does for Amorite. Verbs ending in glottal stops, which distinguish final vowels, reveal system of short vowel suffixes.

(38) Evidence of Ugaritic modal suffixes (Sivan 1998, 2001, Segert 1984)

indicative	yaqbur-u (tb'u, yml'u), taqbur-ūn (tlḥmn)
preterite	yaqbur, taqbur-ū (tš'u)
jussive	yaqbur (tš'i), taqbur-ū (tš'u)
volitive	yaqbur-a (yqr'a)

In other West Semitic languages short vowel suffixes are retained to varying degrees. In Hebrew the distinction between indicative and jussive is only preserved in particular weak stems (III-w/y of the G-stem and II-w/y and III of Š/H-stem). The volitive is retained only in a limited cohortative use.

(39) Hebrew reflexes of modal suffixes

indicative	yiqbōr < *yaqbur-u yibne ^h < *yabniy-u
jussive/preterite	yiben < *yabniy yebk < *yabkiy
cohortative energetic	yiqbōrā ^h < *yaqbur-a yiqbōrānni

In Aramaic the jussive and indicative are only distinguished in plural forms where the presence of /n/ indicates an indicative form and its absence a jussive form. The other modal suffixes are not retained in Aramaic.

(40) Aramaic

indicative	yiqbur
jussive	yiqburū vs. yiqburūn (only distinguished in second and third plural forms)

Finally, Leslau (1953) points to vowel final verbal forms in Muher, Goggot and Aymallal in Ethiosemitic as also preserving these original vowel suffixes. These are described for Muher above.

2.4.4. The Akkadian *iptaras* perfect

The Akkadian perfect is worth noting because it appears to have as its base forms of the type *paras*, *paris* and *parus* with the vocalization of the Akkadian durative (imperfect).

(41) Relation of the vocalization of the Akkadian perfect to other tenses

vowel class	Akkadian perfect (Akkadian innovation)	Akkadian durative (PS imperfect)	Akkadian preterite (PS perfect)
a-u	<i>iptaras</i>	<i>iparras</i>	<i>iprus</i>
a	<i>iššabat</i> < <i>*ištābat</i>	<i>išabbat</i>	<i>išbat</i>
i	<i>ištariq</i>	<i>išarriq</i>	<i>išriq</i>
u	<i>imtaqut</i>	<i>imaqqut</i>	<i>imqut</i>

Forms of this type are easily incorporated into the reconstruction proposed here. A new stem is not required, as would be the case in many other proposed reconstructions.

2.4.5. Summary of reconstruction

The reconstructions proposed here assume an originally invariable form of the stem (**qatil*, **qatul*, **qatal*). The vocalization should be seen primarily as lexical. Although certain vocalizations are associated to various degrees with different semantic classes (situation, voice, transitivity) and also sometimes with different consonant types, none of the theories, either semantic or phonetic, can fully account for the distribution of the thematic vowels.

The original set of verbal forms found in Semitic had personal prefixes and were distinguished in TMA by a combination of modal suffixes and stress. The jussive and imperative forms were both marked by final stress, perhaps due to the influence of intonational patterns associated with commands. At a very early stage the pre-tonic short vowels in open syllables were lost.

(42) Jussive and imperative (final stress) **CaCVC*

**ya-qatúl* > **yaqtúl*

**ya-qatíl* > **yaqtíl*

**ya-qatál* > **yaqtál*

**qatúl* > **qtul*

**qatíl* > **qtil*

**qatál* > **qtal*

With the imperative forms the initial consonant cluster is resolved by the insertion of either a prosthetic or epenthetic vowel with either a neutral quality /ə/ or the same quality as the following vowel. A few examples are Arabic *iqtul*, Akkadian *qutul* and Aramaic *qətul*.

The remaining forms follow the general Semitic stress rule which places accent on the penult if it is heavy and otherwise places it on the antepenult. Thus in the perfect, which does not have a vowel suffix, the accent falls on the antepenult which happens to be the personal prefix. Subsequently the initial vowel of the stem is lost through syncope.

(43) Perfect (general stress rule) *CáCvC

*yá-qatul > *yáqtul

*yá-qatil > *yáqtil

*yá-qatal > *yáqtal

In the imperfect, because of the final vowel suffix, the accent falls on the initial syllable of the stem, thus preserving this vowel in East and South Semitic.

(44) Imperfect (general stress rule) *CáCvC

*ya-qátul-u > *ya-qátal-u

*ya-qátul-u

*ya-qátal-u

In at least Akkadian there appears to have been a change of original *u > a. This change may either be a general change for /u/ in a post-tonic syllable or an example of dissimilation with respect to the *-u* suffix. The Central Semitic forms *yá-qtul-u, *yá-qtil-u and *yá-qtal-u are most simply explained as a case of leveling involving the perfect form eliminating the stem alternations. The Akkadian and North Ethiosemitic forms with the gemination of the middle radical can be explained as cases of post-tonic gemination which is a well-attested pathway for geminate formation. The neutralization of the theme vowel in South Semitic is possibly a case of the unstressed vowel assimilating to the modal suffix *-u*.

Based on the forms so far reconstructed, a possible volitive may also be reconstructed with stress on the first syllable of the stem which would be the penult.

(45) Possible volitive

*ya-qátul-a

*ya-qátul-a

*ya-qátal-a

The volitive, however, is only found in Central Semitic with the Perfect type stem.

The discussion of the reconstruction serves as a foundation for the discussion of changes in the remaining chapters.

Chapter 3.

The phonological origins of new morphological alternations

3.1. Introduction

The history of the morphology of the Semitic languages does not simply represent the progressive decay of an earlier, more elaborate system. While many patterns characteristic of the earliest varieties have been lost or become obsolete, there are at the same time a number of new patterns and newly productive forms found in many Semitic languages. The types of processes that introduce new alternations or expand the use of existing patterns are proposed to be essentially the same in non-Semitic languages as they are both in the earliest stages of the Semitic and Afroasiatic families and in later varieties of Semitic.

The phonological origins of nonconcatenative morphology are not difficult to find. The processes by which nonlinear alternations arise are attested in many languages. Even though the ultimate origins of the nonlinear alternations in Semitic morphology are fairly obscure, it is likely that the processes that created these alternations are similar to those observed in other languages. While numerous nonlinear alternations and a basic root and pattern morphology must be reconstructed for Proto-Semitic, the processes described above have served to enrich the nonlinear morphological systems of many Semitic languages during the long history of this family and probably played a central role in the original genesis of the system of root-and-pattern morphology.

In this chapter I will examine one of the ways in which a new alternation can enter into the verbal system. This chapter will deal with the morphologization of phonological alternations in the formation of nonlinear morphology. I will provide well-supported cases of morphologization in later Semitic languages and cross-linguistically and discuss the consequences this has for our understanding of the early history of the Semitic family.

3.2. Typology of alternations

The types of nonlinear morphological alternations are partly restricted by the types of conditioned phonological alternations that occur. Predictable phonologically conditioned alternations can be morphologized when the original conditioning is lost. The types of alternations can be divided into two basic classes, segmentally conditioned and prosodically conditioned. Cases of both types are supported by evidence from Semitic languages.

3.2.1. Segmentally conditioned alternations

When an alternation is triggered by the presence of a particular vowel or consonant, the alternation can be described as segmentally conditioned. When a consonant or vowel in an affix triggers an alternation in the base form, there is a possibility that if the affix is lost the conditioned alternation can be re-analyzed as morphologically expressing the meaning of the lost affix. The types of morphological alternations that are possible are at least as rich as the set of phonological ones that can occur. The most common types of alternations involve cases of assimilation, although cases of dissimilation are also possible. Assimilation covers a wide range of different phenomena including various degrees of assimilation from partial to complete, progressive and regressive assimilation and local and long-distance assimilation. Ablaut, also called “apophony” or “vowel gradation”, has as one source the morphologization of a vowel alternation due to an original long distance vocalic assimilation.

Ablaut in Germanic languages can have two origins: older ablaut patterns attributed to Proto-Indo-European and the morphologization of earlier umlaut patterns (Harbert 2007). Among the latter are the Modern English nouns *foot*, *goose*, *mouse* and *tooth* with the ablaut

plurals *feet*, *geese*, *mice* and *teeth*. In German all these pairs involve a short vowel suffix and umlaut, e.g. *Fuß* (SG) and *Füß-e* (PL), *Gans* (SG) and *Gäns-e* (PL), *Maus* (SG) and *Mäus-e* (PL), *Zahn* (SG) and *Zähn-e*. Assuming German reflects the older situation, a shift from umlaut to ablaut alternation has occurred in Old English. The assumed prehistory is reconstructed below.

(1) English plural ablaut

primitive form	*fōt-i ²⁸	*gōs-i	*mūs	*tōθ-i	processes
	*fōt-i	*gōs-i	*mȳs-i	*tōð-i	umlaut
	*fōt	*gōs	*mȳs	*tōð	apocope
Old English	fēt	gēs	(*mīs)	tēð	loss of rounding
Modern English	feet	geese	mice	teeth	vowel shift
	[fijt]	[gijs]	[maj̥s]	[tijθ]	

In some Italian dialects, similar ablaut alternations have developed for certain pairs of singular and plural nouns. Both umlaut and ablaut patterns are frequently associated with the plural suffix {-i} (Rohlf's 1972, 2:68). Umlaut is found in forms in many dialects where the plural suffix is associated with modifications of the stem vowel. Umlaut is found in older northern dialects, e.g. Old Venetian *cavelo* vs. *cavili* 'horse', *maestro* vs. *maistri* 'master', Old Lombardian *negro* vs. *nigri* 'black', *pesce* vs. *pisci* 'fish', *rosso* vs. *russi* 'red'. In modern dialects in the same area ablaut patterns occur in distinguishing singular from plural, e.g. dialect of Ticino (Tessin) in Switzerland *gat* vs. *ghèt* 'cat', *gal* vs. *ghèl* 'cock', *bò* vs *bō* 'ox', dialect of Rueglio in Piedmont *bras* vs. *bräs*, *lark* vs. *lärk*, *rus* vs. *rüs* 'red'. Ablaut is also found in the dialect of Bellante in Abruzzo (Lepschy and Lepschy 1977) and dialects of Romagna (Gregor 1972).

(2) Ablaut in the dialects of Abruzzo and Romagna

Romagna (Gregor 1972)		Bellante (Lepschy and Lepschy 1977)		Standard Italian		
SG	PL	SG	PL	SG	PL	gloss
gall	gell	γell	γill	gallo	galli	'cock'
gatt	gett	γatt	γitt	gatto	gatti	'cat'
kan	ken	ken	kin	cane	cani	'dog'
pezz	pezz			pezzo	pezzi	'piece'
ball	bell			ballo	balli	'dance'
mes	mis			mese	mesi	'month'
okk	okk			occhio	occhi	'eye'
nvød	nvud			nipote	nipoti	'nephew'
ort	urt			orto	orti	'garden'

Not only do Italian dialects distinguish singular and plural forms by Ablaut, but some dialects can also distinguish forms by morphological palatalization. In modern Lombardian (Rohlf's 1972:68) plural forms can be distinguished both by the palatalization of the final

²⁸ Masculine nominative plural is derived from *fōt-iz in Pokorny 1959 and Lehmann 1986.

consonant and ablaut, e.g. *bell* vs. *běj* ‘beautiful’, *sol* vs. *soj*, *tant* vs. *tanč*, *dent* vs. *dinč*, *nüt* vs. *nüč* ‘nude’.

Outside Indo-European, the Arawakan languages (Aikhenvald 1999) provide a case of the development of a nonlinear alternation. In Terena and closely related languages the 1SG person subject or a possessive is marked by a nasal prosody on verbs (Ek Dahl and Grimes 1964) and nouns (Eastlack 1968) which is realized by nasalized vowels and prenasalized stops which occur up to the first voiceless obstruent.

(3) 1SG nasalization prosody in Terena²⁹

	1SG		3SG	
	form	gloss	form	gloss
Nouns (Eastlack 1968)	óvõ ^ŋ gu	‘my dwelling’	óvoku	‘his dwelling’
	â ⁿ ža	‘my desire’	âhha	‘his desire’
	ⁿ dâki	‘my arm’	tâki	‘his arm’
	^m bâho	‘my mouth’	pâho	‘his mouth’
Verbs (Ek Dahl and Grimes 1964)	õ- ⁿ dópi-k-o-a	‘I chop it’	o-tópi-k-o-a	‘he chops it’
	^ŋ gi-š-ó-pi	‘I told you’	ki-š-ó-nu	‘he told me’

According to Aikhenvald the nasalization prosody is a reflex of an original prefix. For verbs the 1SG prefix is reconstructed as *nu-. These prefix have more obvious reflexes in other Arawakan languages like Piro (Matteson 1965).

(4) 1SG marking in Piro (data from Matteson 1965)

	1SG		3PL or unmarked	
	form	gloss	form	gloss
nouns	no-hapo	‘my footprint’	hapo	‘footprint’
	n-wuhene	‘my child’	wuhene	‘child’
	n-axiro	‘my grandmother’	haxiro	‘grandmother’
verbs	n-omkahit-na	‘I follow them’	r-omkahit-nona	‘they follow me’
	n-tomha-na	‘I call them’	Ø-tomha-nona	‘they call me’

With the loss of the nasal prefix, the nasalization appears to have been reanalyzed as the exponent of the 1SG.

These examples of a phonological alternation being reanalyzed as a morphological one with the loss of the original conditioning affix likely account for many but not all cases of ablaut.

3.2.2. Prosodically conditioned alternations

The second set of alternations, which is of equal if not greater importance, is triggered by alternations in the prosodic properties of words and the morphologization of these properties when the original conditioning is lost. The complex interplay between stress, syllable structure and vowel quantity and quality is particularly fertile for the creation of new nonlinear

²⁹ Transcription of sources is modified to reflect nasalization.

morphological alternations. Phonological alternations due to prosodic characteristic of words include a great number of very different types of alternations, including the loss or reduction of vowels in certain prosodic contexts or changes in vowel quality and quantity due to the placement of stress. Several languages, including Hebrew, Maltese and the Modern South Arabian languages, have undergone drastic changes due to prosodic changes.

The history of English provides an illustrative case where nominal and verbal forms have diverged. Verbal and non-verbal forms typically occur in very different morphological and syntactic contexts that can give rise to the divergent development of the same basic stem in both word classes. In modern English many related noun and verb forms are distinguished by the placement of stress and the subsequent effects the presence or absence of stress has on the vowels, *condúct* (v.) vs. *cónduct* (n.), *prodúce* (v.) vs. *próduce* (n.), *conflict* (v.) vs. *cónflict* (n.), etc. We can see similar changes for roots in compounds where the lack of stress has led to different development, the old English root *gōs* ‘goose’ has become [guws] due to the fact that the great vowel shift affected stressed syllables but is [gas] in the formation *goshawk* from Old English *gōshafoc*. These changes illustrate some of the complex interactions that stress and vowel quality and quantity can have in a language.

3.3. The segmental origin of non-linear alternations in Semitic languages: the case of the 2FSG suffix and other suffixes in the Semitic languages

The creation of new non-linear alternations is not restricted to Proto-Semitic, but is attested several times in the more recent history of the Semitic family. One of the most common sources of new non-linear alternations has been the 2FSG suffix {-ī(na)} with its long high front vowel. This suffix is also the source of related palatalization processes found in the Ethiosemitic languages. New non-linear morphological alternations have arisen in South Ethiosemitic, Modern South Arabian and the Neo-Aramaic languages where gender distinctions for some second person verb forms have come to be indicated partially or wholly by internal alternations. In addition to the 2FSG suffix, other person marking suffixes have also had a role in the creation of new morphological alternations. These will also be addressed in this section.

3.3.1. The forms and development of 2FSG suffixes in the Semitic family

Before continuing on to the discussion of the creation of new ablaut alternations, I will first address the reconstruction and subsequent development of the 2FSG suffixes and related suffixes which gave rise to these alternations. The {-ī(na)} suffix is found in the imperative and prefix conjugation forms (imperfect, jussive, preterite, volitive) where it generally co-occurs with the second person subject prefix {tV-}. The morphological correspondences shown in the table below leave little question as to the correct reconstruction of the 2FSG suffix.

(5) 2nd person imperfect, jussive/preterite and imperative forms in Semitic

	imperfect		jussive/preterite		imperative	
	2MSG	2FSG	2MSG	2FSG	2MSG	2FSG
Akkadian	ta-parras	ta-parras-ī	ta-prus	ta-prus-ī	purus	purs-ī
Arabic	ta-qbur-u	ta-qbur-īna	ta-qbur	ta-qbur-ī	ʔiqbur	ʔiqbur-ī
Ugaritic	ta-qbur-u	ta-qbur-īna	ta-qbur	ta-qbur-ī	qubur	qubur-ī
Hebrew	ti-qbōr	ti-qbār-ī	ti-qbōr	ti-qbār-ī	qəbōr	qibr-ī
Aramaic	ti-qbur	ti-qbār-īn	ti-qbur	ti-qbūr-ī	qəbur	qəbur-ī
Mehri	tə-rōkəz	tə-rēkəz	tə-rkēz	tə-rkēz-i		
Ge'ez	ti-qəbbir	ti-qəbbir-i	ti-qbir/ ti-qbər	ti-qbir-i/ ti-qbər-i	qibir	qibir-i
Tigré	ti-qanniṣ	ti-qanṣ-i	ti-qaniṣ	ti-qnaṣ-i	qinaṣ	qinaṣ-i
Amharic	ti-nəgr-alləh	ti-nəgr-i-alləš	ti-ngər	ti-ngər-i	nigər	nigər-i
Harari	ti-səgd-aḥ	ti-səgd-aš	a-t-sigəd	a-t-sigəj-i	sigəd	sigəj-i
Wolane	ti-səfr-an	ti-səfr-i-aš			sifər	sifər-i
Gafat	ti-fərik	ti-fərk-i	a-ti-ltəm	a-ti-ltəm-i	litəm	litəm-i
Muher	ti-zənf-u	ti-zənf-it			zənf	zənf

The suffix *-ī should clearly be reconstructed for 2FSG of jussive, preterite and imperative forms as well as the closely related volitive form. The short /i/ of Ethiosemitic can be explained by the independently supported shortening of long vowels, including *ī > /i/, in this branch.

3.3.1.1. Imperfect indicative suffixes {-īn(a)} and {-ūn(a)}

A long front vowel *ī must also be reconstructed for the imperfect indicative form, although the form of the suffix has an additional nasal element in some Semitic languages. The feminine singular suffix for the imperfect indicative is in many languages {īna} or {īn}. The precise functional distribution of the suffixes with and without a nasal is a matter of some debate (see Greenstein 2006). The additional nasal element, which also occurs in the 3MPL {-ūn(a)}, 2MPL {-ūn(a)}, dual {-ān(i)} and sometimes 3FPL {-ān} imperfect indicative forms, is most clearly supported in the Central Semitic languages. In most cases the nasal element either occurs in all relevant suffixes or does not; split systems are relatively rare, e.g. cases where the nasal element occurs in the 2FSG suffix but not the MPL suffixes. Because in many cases the corpora of various early Semitic languages are small and are limited in terms of genres and subject matters, many forms including the 2FSG forms frequently are either poorly or simply not attested. In these cases the only evidence for the possible existence of the 2FSG suffix {-īna} or {-īn} is the existence of the parallel MPL forms {-ūna} and {-ūn}. While this assumption may provide false results in some cases, it is likely not so in most cases.

The general absence of the forms with /n/ in South Semitic and Akkadian is a problem for reconstruction. In contrast to the prefix stem form C₁C₂vC₃, the East and South Semitic languages have the stem C₁vC₂(C₂)vC₃ in the imperfect. These languages also share similar suffixal patterns in the prefix conjugation. Akkadian has 2FSG {-ī} 3MPL {-ū}, 3FPL and 2FPL {-ā} in all tense, mood and aspect forms. The limited evidence from Eblaite also follows this pattern (Diakonoff 1990). In Ethiosemitic in cases where the person distinctions are maintained and new morphology has not replaced the original endings, the morphology reflects endings similar to those found in Akkadian. The North Ethiosemitic languages most clearly exhibit these forms with the expected shift of long to short vowels, Tigrinya 2FSG {-i}, 3MPL and 2MPL {-u} and 3FPL

and 2FPL {-a} (Kogan 1997) and Tigré 2FSG {-i}, 3MPL and 2MPL {-o} and 3FPL and 2FPL {-a} (Raz 1983). The Modern South Arabian languages also do not exhibit a contrast between a nasal and non-nasal forms of the 2FSG suffix or any other prefix conjugation suffix. In general where a distinction between the 2FSG and 2MSG are marked in the Modern South Arabian languages it is done by means of an ablaut alternation. In the few cases where a suffix occurs with the 2FSG, it occurs simply as {-i} as in Mehri, e.g. subjunctive 2FSG *tarkēz-i* vs. 2MSG *tarkēz* ‘to straighten’, imperfect 2FSG *tədláy-i* vs. 2MSG *tədlūl* ‘to know’, imperfect and subjunctive 2FSG *təθbáyr-i* vs. 2MSG *təθbōr* ‘to be broken’ (Johnstone 1987).

The plural suffix markers also do not have different forms for imperfect and jussive (subjunctive) forms, although unlike the FSG these markers commonly include a nasal element. The MPL suffix in both the imperfect and the subjunctive is typically {-əm} where it exists (Johnstone 1975, Simeone-Senelle 1997). The Modern South Arabian languages, unlike both Akkadian and the other South Semitic languages, have FPL forms more akin to Central Semitic, for example Mehri *yə-rakz-ən* ‘they FPL are standing upright’, Ḥarsūsi *tə-lōbəd-ən* ‘you FPL are shooting’ and Jibbali *yə-rəfs-ən* ‘they FPL are kicking’ compared to Arabic *ya-ktub-na* ‘they FPL are writing’ and Hebrew *yi-ktōb-nā*.

There are a few possible traces of a Central Semitic type system in Ethiosemitic. In the Northern Gurage group, either a final {-u} or the /n/ element are found in the imperfect of main verbs.

(6) Imperfect of main verbs in Northern Gurage

	Goggot (Hetzron 1972)	Soddo (Leslau 1968, Cohen 1931)	Muher (Hetzron 1972, Cohen 1931)
3MSG	yi-səbr- u	yi-bədr- u	yi-səbr- u
3FSG	ti-səbr- u	ti-bədr- i	ti-səbr- u
2MSG	ti-səbr- u	ti-bədr- u	ti-səbr- u
2FSG	ti-sebr- in	yi-b ^y edr- in	ti-sebr- itt
1SG	ə-səbr- u	ə-bədr- u	ə-səbr- u
3MPL	yi-səbr- imun	yi-bədr- imun	yi-səbr- im^witt
3FPL	yi-səbr- iman	yi-bədr- iman	yi-səbr- imatt
2MPL	ti-səbr- imun	ti-bədr- imun	ti-səbr- im^witt
2FPL	ti-səbr- iman	ti-bədr- iman	ti-səbr- imatt
1PL	ni-səbr- ino	ni-bədr- u	ni-səbr- ino

Hetzron (1968, 1972) argues that the Muher forms with doubled /tt/ originally were *nt incorporating the indicative /n/ element. Goggot and Soddo thus have patterns similar to those found in Arabic and other Central Semitic languages; main imperfect forms are marked by a suffix {-in} <*-in, while other prefix conjugation forms are marked by an ablaut derived most likely from earlier *-i and ultimately *-in.

In contrast to the situation in both East and South Semitic where evidence is thin, the evidence from the prefix conjugations in the Cushitic family appears to support the antiquity of the nasal element in the plural suffix of the prefix conjugation, although no modal distinction is signaled by its presence or absence. The Cushitic prefix conjugation differs from the cognate forms in Semitic in lacking gender distinctions in all but the 3SG forms. Because of the lack of a

2FSG form, in all but Beja, it is necessary to look to the 2PL and 3PL forms with respect to the existence of the nasal element. The table below displays the singular and plural forms of the second person and the third person. As is the case in Semitic, the distinction between the singular and the plural in these persons is generally marked by the addition of a suffix in the prefix conjugations.

(7) Prefix conjugation inflection in Cushitic

	2SG	2PL	3MSG	3PL
Somali (Saeed 1999)	t-iqiin	t-iqiinn-een	y-iqiin	y-iqiinn-een
Rendille (Heine 1976b)	t-'úmhum	t-'úmħ-en	y-'úmhum	y-'úmħ-en
Boni (Heine 1977)	'á-t-uhuŋ- ^u	'á-t-uhuŋ-é	'á-y-uhuŋ- ^u	á-yu-huŋ-é
Afar (Parker and Hayward 1985)	t-eexegeh	teexegee-nih	y-eexegeh	y-eexegee-nih
Dhaasanac (Tosco 2001)	č-imii	č-imii	y-imii	č-imii
Arbore (Hayward 1984)	t-énḃete	t-énḃete	y-énḃete	y-énḃete
Awngi (Hetzron 1976a)	t-ínté	t-ínt-áná	y-ínté	y-ínt-áná
Beja (Appleyard 2007a)	M ti-bis-`a F ti-bis-`i	ti-bis-`na	ʔi-bís	ʔi-bis-`na

The nasal /n/ is found in the plural suffix forms in all languages except Boni, Dhaasanac and Arbore. Heine (1978a) reconstructs a nasal for Proto-Sam from which Somali, Rendille and Boni are descended. If we follow Heine, the nasal has simply been lost in Boni. The other exceptions, Dhaasanac and Arbore, belong to the Western branch of Omo-Tana according to the classification of Sasse (1979) and Hayward (2000). The languages which have the nasal element represent three of the main branches of Cushitic (North, Central and East Cushitic) and within East Cushitic represent two separate branches within East Cushitic (Omo-Tana and Saho-Afar). The distribution leaves little doubt of the original provenance of the nasal.

Logically, the Central Semitic 2FSG forms {-ín(a)} and {-ūn(a)} represent either an innovative feature or a conservative one. There are two scenarios that could account for the distribution of the nasal element. In the first scenario, the suffixes are an innovation of Central Semitic. The distribution of the nasal feature in the branches of the Semitic family would appear to support this scenario. There are, however, two main problems with this scenario. First, other Afroasiatic languages offer some evidence that the nasal elements found in certain prefix conjugation suffixes are of Afroasiatic, not Central Semitic, origin. Second, in order to entertain this scenario there needs to be a reasonable scenario for the origin of the morphology. This scenario should be accompanied by some evidence of the source material both in the languages which do not have the suffixes with a nasal element and those that do. Robust evidence is generally lacking. In the alternative scenario, the Central Semitic situation represents something close to the original situation with a longer form with a nasal and a shorter form without. This scenario assumes that the element has generally been lost in East and South Semitic. The loss of the same element in Hebrew and many Arab dialects provides potentially parallel cases of the widespread loss of suffixes with the nasal element.

3.3.1.2. The original contrast in Central Semitic

Classical Arabic nicely exhibits the original Central Semitic distribution of the nasal element, although the regularity of the system need not be interpreted as evidence that the Arabic system is more original. Evidence from other Central Semitic languages does generally support the assumption that the Arabic patterns, to a large degree, are those of Central Semitic more generally. The Arabic subjunctive (*ya-qtul-a*), the cognate forms of which are known as the cohortative in Hebrew (*yi-qtəl-ā*) and the volitive in other languages, is distinguished from the imperfect indicative by the appearance of the final vowel /a/ in Arabic and Ugaritic and /ā/ in Hebrew for forms otherwise without a suffix. The jussive mood (*ya-qtul*), which continues both the original jussive and preterite forms, is distinguished from both the indicative and the subjunctive by the lack of a final vowel in all other forms. Both the subjunctive and volitive forms lack the /n/ element in 2FSG, MPL and dual forms making these forms identical in these two moods.

(8) Suffixes in the prefix conjugations in Classical Arabic

	<i>imperfect</i>	<i>jussive/subjunctive</i>	<i>imperative</i>
2FSG	ya-qtul-īna	ya-qtul-ī	?i-qtul-ī
2MPL	ta-qtul-ūna	ta-qtul-ū	?i-qtul-ū
2DU	ta-qtul-āni	ta-qtul-ā	?i-qtul-ā
3MDU	ya-qtul-āni	ya-qtul-ā	
3FDU	ta-qtul-āni	ta-qtul-ā	
3MPL	ya-qtul-ūna	ya-qtul-ū	

The other Central Semitic languages also distinguish imperfect forms from other verbal forms by means of the presence or absence of /n/. Ugaritic, one of the earliest attested West Semitic languages, supports the distinction between suffixes with and without a nasal, possibly indicating a modal distinction. Although the nature of the Ugaritic writing system makes it impossible in most cases to distinguish the mood of any particular verb in a text, the glottal stop symbols, which also indicate the associated vowel phoneme and the occurrence of semivowels, have been put forward as evidence for a system of modal endings generally not preserved in the written language. Thus Segert (1997), Sivan (2001) and Pardee (1997, 2007) generally assume a system of personal and modal suffixes for the prefix conjugations which closely mirrors that found in Classical Arabic (for a dissenting view see Greenstein 2006). While some suffixes like the volitive {-a} are not particularly well supported for Ugaritic (see Segert), the existence of a distinction between imperfect and other verb forms of the type {-īna} vs. {-ī} is more solidly grounded. In Ugaritic, following Sivan in terms of the interpretation and reconstruction of phonological forms, we find a contrast between imperfect indicative forms with the ending {-īna}, <tθbrn> /ta-θbur-īna/ ‘you FM will break’ (KTU 2.72, 16), <t?ikn> /tu-la??ik-īna/ or /ta-la??ik-īna/ ‘you FM will dispatch’ (2.72, 10; Sivan 2001 discusses the possibility that this form may be a basic stem or N-stem verb), <tšdn> /ta-šūd-īna/ ‘you are hunting’ (1.17 VI, 40), and imperative and other prefix conjugation verbs with the ending {-ī}, jussive <?al tdhl> /?al ti-dhal-ī/ ‘do not FSG be afraid’ (2.30, 21), <tmχs> /ti-mχas-ī/ ‘may you smite’ (1.19 IV, 39), imperative <lhm> /laḥam-ī/ ‘FSG eat!’ (1.4 IV, 35), <kbd> /kabbid-ī/ ‘honor’ (1.17 V, 20), <ššqy> /šašqiy-ī/ ‘serve drinks’ (1.17 V, 19).

3.3.1.3. Two developmental paths for the 2FSG and related suffixes in Northwest Semitic

The situation in the later Northwest Semitic languages is more mixed, presenting us with a wide range of outcomes that can help us to understand the mechanisms involved in developments concerning the 2FSG suffixes and the system of moods. Two separate but interrelated trends have shaped the range of forms in later Semitic varieties.

The first is a general trend is toward the loss of the final short vowels used to indicate modal distinctions, a trend also found generally in the development of Modern Arabic dialects. The final short vowel markers used to distinguish indicative, jussive and volitive forms are almost universally lost. This development is clear in those Northwest Semitic languages with a well-preserved tradition of vocalized texts and reading traditions such as Biblical Hebrew, Biblical Aramaic and Syriac as well as most modern Semitic varieties. In the earliest Northwest Semitic texts, the potential existence of a set of short final vowels marking modality is obscured by the consonantal nature of the writing system, leaving the question of final vowels mostly to speculation.

The second general trend involves subsequent restructuring prompted by the earlier loss of final short vowels. In languages where the modal distinctions have largely been effaced by apocope, distinctions would still be maintained for both 2FSG and MPL forms as well as some weak verbs. Special jussive forms for weak verbs in Biblical Hebrew and in early Aramaic, Deir Alla, Moabite and Hebrew inscriptions (Garr 1985) serve not only as a remnant of the older system but offers important clues to the original character of the contrast. The initial loss of final vowels creates a situation which is inherently unstable and has led in most cases to some sort of restructuring. The formal jussive has fared very poorly over time. With respect to the 2FSG and MPL suffixes, three basic outcomes are found in the Northwest Semitic branch. The most conservative situation is when a distinction is maintained for these suffixes, {-īn} and {-ūn} in the imperfect indicative and {-ī} and {-ū} in jussive forms. More commonly the jussive has simply been eliminated. In certain cases this has been achieved by the replacement of the original imperfect suffixes with the jussive endings {-ū} and {-ī}, bringing the imperfect endings in line not only with the jussive but also the 3MPL perfect suffix and the imperative suffixes. In other languages the imperfect indicative suffixes have persisted while the jussive forms have simply slipped into obsolescence. In this last type of language there remains a distinction between the suffixes of the imperfect indicative and the imperative, which is also distinguished by the lack of personal prefixes. A schematic presentation of the different outcomes is provided below showing the suffixes of the second person verbal forms.

(9) Three outcomes for plural endings in Semitic

	PWS	Type 1	Type 2	Type 3
IMPF INDIC 2MSG	*ta-ktub-u	ta-ktub	ta-ktub	ta-ktub
JUSS 2MSG	*ta-ktub			
IMPF INDIC 2FSG	*ta-ktub-īna	ta-ktub-īn	ta-ktub-ī	ta-ktub-īn
JUSS 2FSG	*ta-ktub-ī	ta-ktub-ī		
IMPF INDIC 2MPL	*ta-ktub-ūna	ta-ktub-ūn	ta-ktub-ū	ta-ktub-ūn
JUSS 2MPL	*ta-ktub-ū	ta-ktub-ū		
IMP 2MSG	*ktub-u	ktub	ktub	ktub
IMP 2FSG	*ktub-ī	ktub-ī	ktub-ī	ktub-ī
IMP 2MPL	*ktub-ū	ktub-ū	ktub-ū	ktub-ū

In Aramaic, Phoenician and perhaps Ammonite the distinction is maintained in the 2FSG and MPL forms, conforming to Type 1 described above. Biblical Aramaic has forms like *yēʔbādū* ‘let them perish’ (Jer 10:11) and *ʔal yištannū* ‘let them not be changed’ (Dan 5:10) contrasting with indicative forms like *lāʔ yəhōbādūn* ‘they will not destroy’ (2:18) *yityahābūn* ‘they will be given (into the hands)’ (7:25) and *yəqūmūn* ‘they will arise’ (7:10, 17, 24). While the distinction between jussive and imperfect is lost in later forms of Aramaic, the MPL suffix with a nasal {-ūn} is preserved in the imperfect in Palestinian Aramaic (Fassberg 1990, Stevenson 1924), Syriac (Muraoka 1997, 2007), Classical Mandaic (Voigt 2007b, Macuch 1965) and even Western Neo-Aramaic (Jastrow 1997). These later forms of Aramaic fall into the Type 3 pattern. Phoenician (a Canaanite language closely related to Hebrew) and its later form Punic clearly distinguish imperfect indicative 2FSG and MPL forms from jussive forms as seen in the imperfect forms <timlacun> ‘you (PL) rule’ (Poen. 940P), <thymlachun> ‘you (pl) rule’ (931), <ydbn> ‘they shall say’ (KAI 14.6), <ysgrn> ‘they shall lock up’ (14.9, 21) and the jussive or preterite forms <tbrk> ‘may you (PL) bless’ (48.3), <ttn> ‘may you (PL) give’ (48.4), <yld> ‘may they bear’ (26 A III 9), <y lk> ‘they went’ (CIS i 5510.9). In Ammonite, like Aramaic and Phoenician, the forms of the 3MPL imperfect have the suffix {-ūn}, <ymtn> /ya-mūt-ūn/ ‘they will die’ (Cit. 2) and <ylnn> /ya-līn-ūn/ ‘they will lodge’ (Cit. 4).

In Hebrew, representing Type 2, the distinction between the indicative and jussive for prefix conjugation forms has been eliminated in favor of the non-indicative endings {-ū} and {-ī}. In Samalian and Deir Alla, like Hebrew, both indicative imperfect, volitive and jussive forms have {-ū} in MPL forms, Samalian <ytnw> /yattinū/ ‘they give’ (KAI 214.4), <yqḥw> /yiqqaḥū/ ‘they take’ (12), <thrgw> /tahruḡū/ ‘you MPL kill’ (KAI 215.5) and jussive with a preformative <l-> <ltgmrw> /lītgamirū/ ‘may they be destroyed’ (KAI 214.30) and Deir Alla <wyʔmrw> /wayaʔmurū/ ‘and they said’ (DA I 2) and <yḥzw> /yaḥzū/ ‘they will see’ (DA II 3).

However, even in Biblical Hebrew there is evidence of earlier {-ūn} and {-īn} in forms of the so-called “paragogic nun” which like many other conservative features frequently occur in pausal positions. There are hundreds of examples of the “paragogic nun” in Biblical texts (see Joüon and Muraoka 2000), including several 2FSG forms, *taʕāšīn* “you FSG will do” (Ruth 3:4), *tēdāʕīn*, “you (FSG) know” (Ruth 3.18), *tidabbāqīn* “cling (FSG) to” (Ruth 2:8, 21). It is not surprising that the suffix {-ū} has won out given its occurrence both in the MPL imperative and the 3MPL perfect. In Hebrew the distinction between the imperfect indicative and the jussive is generally lost in the basic stem, being preserved in a few weak verb types and more generally in the *Hiphil* (Š-stem).

3.3.1.4. Jussive function vs. jussive form in Biblical Hebrew

For the 2FSG, 2MPL and 3MPL in Biblical Hebrew there is never a distinction between the imperfect indicative, the jussive and the cohortative. The same form can have various meanings based on context. In the creation account of Genesis 1, the repetitive structure provides a simple way to compare verbs with both a jussive form and function to verbs which are only jussive in function. The verb “to be” (הָיָה) occurs several times in a jussive form *yəhī* which contrasts with an imperfect *yihye* which occurs once in the passage.

(10) Jussive and imperfect forms of הָיָה ‘to be’

wayyōmer	ʔelōhīm	yəhī	ʔōr
say.3MSG.CV	God	be.3MSG.JUSS	light
“God said let there be light”			(Gen 1:3)

wayyōmer ʔelōhīm **yāhī** rāqīaʕ bəʔōk hammāyim
 say.3MSG.CV God be.3MSG.JUSS firmament in.midst.of the.waters
 “God said let there be a firmament in the midst of the waters” (Gen 1:6)

wayyōmer ʔelōhīm **yāhī** məʔōrōt birqīaʕ haššamāyim
 say.3MSG.CV God be.3MSG.JUSS light.PL in.firmament the.heavens
 “God said let there be lights in the firmament of the heavens...” Gen 1:14)

lākem **yihye** ləʔoklā
 to.2MPL be.3MSG.IMPF for.food
 “to you it will be for food” (Gen 1:29)

In each case above we find that the jussive form occurs in the same context following *wayyōmer ʔelōhīm* in a speech act of creation. In the same context we also find the jussive of a *Hiphil* verb form *tadšēʔ* ‘cause to sprout’.

(11) wayyōmer ʔelōhīm **tadšēʔ** hāʔārets dešeʔ ʕēšeb
 say.3MSG.CV God make.sprout.3FSG.JUSS the.earth grass grass
 “God said let the earth sprout grass” (Gen 1:11)

In the remaining cases of parallel structure, the verbs are formally identical to the imperfect, but have a clearly jussive function. The 3MPL forms *yiqqāwū* and *yīšrətsū* are clearly jussive in function given that they occur in contexts almost identical to the formally jussive forms discussed above, and yet there is no formal indication of jussive modality.

(12) wayyōmer ʔelōhīm **yiqqāwū** hammayim
 say.3MSG.CV God be.collected.3MPL.IMPF the.water
 “God said let the water be collected ...” (Gen 1:9)

wayyōmer ʔelōhīm **yīšrətsū** hammayim
 say.3MSG.CV God swarm.3MSG.IMPF the.water
 “God said let the water swarm...” (Gen 1:20)

wayyōmer ʔelōhīm **tōtsēʔ** hāʕārets nepeš ʔayyā
 say.3MSG.CV God bring.forth.3FSG.IMPF the.earth being.COLL living
 “God said let the earth bring forth living beings...” (Gen 1:24)

The feminine endings {-na} in Arabic and {-nā} in Hebrew do not follow the same pattern. Instead, they are retained in all moods. However, a similar alternation involving the loss of the nasal element is present for the analogically restructured feminine form in Aramaic, e.g. Palestinian Jewish Aramaic *tiktābān* ‘you FSG write’ and *kəʔubāʔ* ‘write FSG’ (Stevenson 1924).

In Hebrew the /-na/ ending has been lost in 2FSG and MPL forms, making these forms indistinguishable in the imperfect indicative and cohortative forms. Since the cohortative occurs

mainly, but not exclusively in the first person (e.g. *yāḥīšā* ‘may he hasten’ Is 5:19), the distinction in the 2FSG and MPL forms in these two moods is not so important.

3.3.1.5. Parallel developments in the modern Arabic dialects

The situation in the modern Arabic dialects mirrors that of the Northwest Semitic languages with a split between languages that have retained forms with a nasal for the MPL and 2FSG suffixes of the imperfect indicative (Type 3) and those that have lost the distinction (Type 2). In the Modern Arabic dialects there is typically no longer a distinction made between the suffixes of the imperfect indicative and jussive, but there is for the suffixes of the imperfect indicative and the imperative. The suffixes {-ūn} and {-īn} are preserved, although without the final vowel of Classical Arabic {-ūna} and {-īna}, in Northern and Eastern Arabian dialects (Johnstone 1967, Prochazka 1988, Ingham 1994), some Bedouin dialects (de Jong 2000, Rosenhouse 1984) and most Iraqi dialects (Erwin 1963, Malaika 1963, Blanc 1964, Abu-Haidar 1991). The imperfect indicative suffixes contrast with the suffixes of the imperative as they do in Classical Arabic. A representative sample of dialects is displayed below.

(13) Imperfect and imperative suffixes in Arabic dialects with a contrast³⁰

	imperfect			imperative	
	2FSG	3MPL	2MPL	2FSG	2MPL
Abu Dhabi	taktəbīn	yaktəbūn	taktəbūn	iktibi	iktibu
Kuwaiti	taktəbīn	yaktəbūn	taktəbūn	(i)ktībi kitbi	(i)ktību kitbu
Saudi	tiktubīn tuktubīn tuktūn	yiktubūn yuktubūn yuktūn	tiktubūn tuktubūn tuktūn	ʔuktubi ʔiktubi ʔaktubi	ʔuktubu ʔiktubu ʔaktubu
Najdi	taktibīn	yaktibūn	taktibīn	ikitbi	ikitbu
Dwēgriy, Northern Sinai Bedouin	tikitbīn	yikitbūn	tikitbūn	ikitbiy	ikitbuw
Muslim Baghdadi	t(i)kitbīn	y(i)kitbūn	t(i)ktibūn	(i)kitbi	(i)kitbu
Christian Baghdadi	təkt(ə)bīn	yəkt(ə)būn	təkt(ə)būn	ktəbi	ktəbu

In most other Arabic dialects the contrast has been lost with both the imperfect and the imperative having the same set of suffixes, for example 2FSG {-i} and MPL {-u}. This is true of all Western (Maghrebi) dialects (Grand’Henry 1972, Cohen 1975a, Marçais 1977), including Maltese (Borg 1978) and Andalusian Arabic (Corriente 1977), the sedentary Levantine dialects (Grotzfeld 1965, Cowell 1964, Shahin 2000, Jiha 1964, Arnold 2004, Tsiapera 1969), Egyptian, Sudanese and Chadian dialects (Woidich 2006, Nishio 1994, Reichmuth 1983, Kaye 1976) and a number of other dialects including Yemeni dialects (Diem 1973), many Bedouin dialects (de Jong 2000, Rosenhouse 1984) and Dargözü Arabic (Jastrow 1973).

Classical Arabic and Christian Baghdadi Arabic

The functions of the CA jussive have typically been replaced in modern dialects by analytic constructions involving either the basic imperfect or perfect tense. Two separate mechanisms

³⁰ Data from Johnstone 1967 for Abu Dhabi and Kuwaiti dialects, Prochazka 1988 for various Saudi dialects, Ingham 1994 for Najdi dialect, de Jong 2000 for Sinai Bedouin dialect, Malaika 1963 for Muslim Baghdadi dialect, and Abu-Haidar 1991 for Christian Baghdadi dialect.

can lead to the loss of a morphological form like that of the jussive. The first mechanism involves a new or existing construction supplanting an earlier construction using another form. In this scenario the loss of the jussive form occurs indirectly because of the loss of the construction. The second mechanism involves the direct replacement of the original form by analogy. In this case the construction remains, but in a modified form.

The Classical Arabic jussive has a range of uses owing to its origins in both the PS jussive and preterite. The main uses are with *lam* ‘not’ or *lamma* ‘not yet’ to negate the perfect tense, with *li* to indicate a true jussive or cohortative, or *la* to indicate a negative imperative or jussive.

(14) Uses of the jussive in Classical Arabic

lam yaktubū	“they MSG didn’t write”
lam taḏhabī	“you FSG didn’t go”
li-yaktub	“let him write”
li-yadrusū	“let them study”
la taktubī	“don’t write!”
la yaqtulū	“don’t let them kill”

Christian Baghdadi Arabic (CBA), a dialect which preserves distinctions between the endings of the imperfect {-īn} and {-ūn} and the imperative {-ī} and {-ū}, illustrates the typical replacement of jussive forms. Instead of the negation of the perfect with *lam* and the jussive form, the perfect form preceded by the particle *mā* is used. This is the case in most Arabic dialects, though this construction is more restricted in use in Classical Arabic. All examples of CBA provided below are from Abu-Haidar 1991.

(15) mā ġado šē
“they did not want anything”

The jussive function in CBA is filled by a new construction consisting of particle *xalli* with pronominal suffixes followed by the appropriate form of the imperfect verb. It is clear that the verb reflects the CA imperfect because the suffix contains /n/.

(16) xalləyəm yəjōn
“let them come”

In both of the cases above the constructions involve the replacement of the original constructions by other constructions. This can not be so clearly said of the negation of the imperative. The negative imperatives of CBA are formed like those of Classical Arabic using the particle *lā*, which is often shortened to *la*; however, unlike Classical Arabic, CBA uses the imperfect endings {-īn} and {-ūn} in this case. A new construction has not replaced the original construction with a jussive, but rather the imperfect form has replaced the jussive in a preexisting construction.

(17) latəftahēn əš-šəbbak
“don’t open FSG the window!”

- (18) *latəṣaġġafīn taṣaġġuf banāt bala taġbəyi*
 “don’t behave FSG like girls with no manners!”

In a further case of simplification the negative particle *mā* has also been extended to the negation of imperative forms. This change is likely due to analogical extension of the negative particle.

- (19) *matəṣṣābūn wəski*
 “don’t drink PL whisy!”
- (20) *matġōḥēn wəyyānu*
 “don’t go FSG with him!”

The developments have in general made the syntax and morphology more transparent. This does not necessarily imply that the motivation for the changes was to achieve this transparency. The transparency is rather a secondary result of changes whose motivations can be conceptualized in terms of reanalysis as described in Chapter 1. The jussive in Classical Arabic has a distribution, which from a synchronic point of view, is fairly unpredictable. The jussive occurs in a number of contexts, many of which are relatively infrequent. The situation is further complicated by the loss of final vowels, which has neutralized the contrast in most persons. The loss of contrast between indicative and jussive forms created a situation in which the replacement of the distinctive jussive form for the relatively infrequent MPL forms would be even more likely. The changes in dialects like Christian Baghdadi Arabic have eliminated a form with a fairly idiosyncratic set of functions through both the extension of other constructions and the analogical extension of the more common indicative verb forms in the existing constructions involving the jussive.

3.3.2. Palatalization in the Semitic languages

The developments attested in Northwest Semitic and the Arabic dialects are only the beginning. The South Ethiosemitic languages and other Semitic languages have developed new sets of alternations affecting the forms of verbal bases, which sometimes have given rise to new non-linear morphological alternations. The most widespread new alternations involve the palatalization or labio-velarization of consonants and vowels. These sound alternations in many languages remain morphophonemic, with a change in the base accompanying suffixes possessing certain phonological characteristics. In some languages the original suffixes have become lost and have transformed the morphophonemic alternations of the base into morphologically distinctive ones, thus creating new nonconcatenative morphological patterns. In the case of vowels new ablaut alternations have emerged obscuring to some extent the original patterns. The developments in the Ethiosemitic languages are of particular interest because they present a rich view of some of the processes involved in the creation of new non-linear alternations.

3.3.2.1. Basic facts of palatalization in the Ethiosemitic languages

The source of palatalization in Ethiosemitic is clearly the original suffixes with either an initial front vowel /i/ or /e/ or a palatal glide /y/. The same set of suffixes is also responsible for the vowel alternations which often accompany palatalization. One noteworthy example of such a suffix is the Semitic 2FSG suffix *-ī(na). In the Ethiosemitic branch {-i} occurs almost exclusively as the reflex of this common Semitic form, reflecting the general shortening of long vowels. Palatalization accompanies the 2FSG and other suffixes in some form in all the South Ethiosemitic languages and also occurs, although only in nominal forms, in Tigré, a Northern

Ethiosemitic language. The character of the alternations varies considerably depending on the set of consonants that are affected and whether or not the original suffix has been lost. South Ethiosemitic languages have either retained the suffix with form {-i}, which serves as the primary exponent of the 2FSG, or have lost the suffix, transferring the primary exponence of the 2FSG to the morphophonemic alternations in the base.

While the historical and often current synchronic source of palatalization is known, it is not so obvious why the elaborate set of alternations involving palatalization is found in Ethiosemitic but not in other branches of the Semitic family. The answer to this question is most likely found in the distinct inventories of sounds found in the Ethiosemitic languages and ultimately in the history of language contact experienced by these Semitic languages. The origin of palatalization as a morphologically significant feature in South Ethiosemitic would appear to be closely connected to the existence of a large inventory of (alveo)-palatal consonants. The existence of a series of “palatal” consonants sets the Ethiosemitic languages apart from other Semitic languages where such consonants are comparatively rare. Because there are few direct parallels to the large inventory of palatals or the process of palatalization outside Ethiosemitic, these features most likely represent an independent development of the branch due to contact with non-Semitic Ethiopian languages which have a similarly large inventory and existing morphonemic alternations involving palatalization.

The phonological class of palatal consonants consists of a set of consonants which are independent and distinctive and which alternate with the series of dental consonants in specific morphological contexts. Ethiosemitic languages typically have a set of affricates /č, ǰ, čʻ/ which have dental stop counterparts /t, d, tʻ/, a set of fricatives /š, ž/ which have dental fricative counterparts /s, z/, the nasal /ñ/ which has a dental nasal counterpart /n/ and /y/ which has the liquid /l/ as a counterpart. The only dental consonants that are not neatly paired are the ejective fricative /sʻ/, which is lost in many languages and where retained alternates with the ejective affricate /čʻ/ like the ejective stop /tʻ/, and /r/ which generally has no palatal counterpart.

The development of the palatal inventory and the associated morphological functions of palatalization would appear to belong to the early stages of South Ethiosemitic given the general uniformity of patterns in the modern languages of this branch and the lack of clear parallels outside the Modern Ethiosemitic languages. Palatalization of the form found in the South Ethiosemitic branch is not found in either Geʻez, the earliest attested Ethiosemitic language, the South Arabian members of the South Semitic branch or the Semitic family more generally. The prevailing reconstruction of Proto-Semitic (see Moscati, Spitaler, Ullendorf, & Soden 1964) posits a palatal glide *y and an alveopalatal fricative *š. However, the alveopalatal fricative /š/ in Ethiosemitic is a reflex of PS *š [ʃ] and not *š, which some even posit as originally alveolar (see Huehnergard 1995).

The development of the extensive palatal inventory and the wide morphological use of palatalization can not easily be reduced to common processes in the Semitic family and language more generally. The origin of these features can most likely be attributed to language contact and areal pressures. Ferguson (1976) proposes that Ethiopia constitutes a language area akin to those described for the Balkans (Sandfeld 1930, Joseph 1983) and South Asia (Emeneau 1956, 1965, 1971). Ferguson (65-66) includes palatalization among the features which might define the linguistic area, giving the definition of this feature that “[t]here is a series of palatal consonants...which occur independently, that is they are lexically distinctive, and there is a common grammatical process in at least one major word class, such as nouns and verbs, by which dental consonants are replaced by the corresponding palatal consonants”. Palatalization as

defined by Ferguson is found in all Modern Ethiosemitic languages, although tellingly not in Ge‘ez, and in Oromo, Somali, Hadiyya and Sidamo (East Cushitic) and Welamo, Janjera and Kefa (Omotic), although not in Beja (North Cushitic), Awnji (Central Cushitic) and Afar (East Cushitic), which are spoken in the Northern range of the Ethiosemitic languages. Leslau (1945b) attributes palatalization, among other features in South Ethiosemitic, to a Cushitic substratum, while attributing the same feature in North Ethiosemitic to the adstratal influence of Amharic. This accounts for the fact that the South Ethiosemitic languages are spoken in areas where Cushitic and Omotic languages with palatalization likely used to be or are still spoken, while the Northern Ethiosemitic are in areas where palatalization is not found in the neighboring and likely original Cushitic languages. This scenario based on the geographic distribution of languages and palatalization accounts well for the relatively limited use of palatalization in the North Ethiosemitic languages in comparison with the related South Ethiosemitic languages.

3.3.2.2. Palatalization across the Semitic family: the palatalization of velars

While other Semitic languages have developed more extensive inventories of palatal consonants, the developments typically involve the palatalization of velar consonants, a process also widely attested in Ethiosemitic but peripheral to the more widespread palatalization of coronal consonants. Even in cases where coronal consonants are palatalized, there is nothing like the systematic palatalization of Ethiosemitic. The cases of palatalization outside Ethiosemitic are clearly independent and not connected to the development of palatalization in that branch, except insofar as they might represent a common and recurrent type of sound change.

Arabic

An example of a palatal reflex of a velar consonant is found as early as Classical Arabic, where Proto-Semitic *g, CA ج, is realized as a palatal consonant. Outside Arabic PS *g generally retains a velar articulation. Cantineau (1941:56) proposed a set of stages to explain the various development of PS *g in Arabic.

(21) Cantineau’s proposal for the evolution of PS *g

$$g \rightarrow g^y \rightarrow d^y \begin{array}{l} \rightarrow \check{j} [dʒ] \\ \searrow \\ y \end{array} \rightarrow \check{z} [ʒ]$$

Although each step is plausible, it is probably unnecessary to assume so many intermediate stages. Cantineau’s scheme does however encompass much of the variety of reflexes of PS *g in Arabic and points to the fundamental difficulty of determining the character of the reflex in Classical Arabic by comparative means. Based on the descriptions of the Arab grammarians, Cantineau (58) concludes that PS *g was most likely g^y in Classical Arabic. With the exception of the dialects of Cairo and Lower Egypt (Woidich 2006) and Oman (Cantineau 1941), which have /g/ as a reflex, the reflexes of PS *g almost universally have either a primary or secondary palatal or alveo-palatal articulation. The possible reflexes of PS *g in Arabic include /j/, ž, ʒ, g^y , d^y , y/. The most common reflexes are the voiced alveopalatal affricate /j/ and the voiced alveopalatal fricative /ž/. The affricate reflex is found in most Bedouin dialects and many rural dialects of the Levant and Iraq, while the fricative reflex is found in the urban dialects of the Levant, in the dialects of Lebanon and throughout North Africa (Cantineau 1941, Fischer and Jastrow 1980). Yet there are many exceptions to the general geographic distribution of these two sounds. For example, /j/ is found instead of the expected /ž/ in the dialect of Aleppo (Cowell 1964), Maltese (Aquilina 1959, Borg 1978) and some Algerian dialects (Cantineau 1941,

Grand'Henry 1972), while /ž/ is found instead of expected /j/ in the Saudi Arabian dialect of Ghāmid (Prochazka 1988). Less common reflexes include the voiced palatal stop /j/ found in some dialects of the Arabian peninsula (Johnstone 1967) and Upper Egypt (Fischer and Jastrow 1980), a palatalized velar stop found in the dialect of al-Maḥābšeh in Yemen (Diem 1973) and some North Arabian dialects (Cantineau 1941) and as a positional variant in Upper Egyptian dialect of Qiṭ (Nishio 1994), and the palatalized coronal stop in South Western Yemeni dialects and the palatal approximant /y/ in the dialects of the Syrian desert, Southern Iraq, Khuzistan and the Gulf (Fischer and Jastrow 1980) and many Gulf dialects (Johnstone 1967, Ingham 1982).

(22) Merger of /j/ and /y/ in S. Iraqi Dialects (Ingham 1982)

Central Najd	S. Iraq	<i>gloss</i>
yōm	yōm	‘day’
yimīn	yimīn	‘right’
yamm-	yam-	‘beside’
jāb	yāb	‘he brought’
jimal	yimal	‘camel’
jibal	yibal	‘mountain’

The later history of Arabic is filled with many similar cases of palatalization affecting dorsal consonants. Reflexives of the velar and uvular consonants in a selection of Arabic dialects are presented below.

(23) Reflexes of velar and uvular stops in Arabic

dialect	source	*g	*k	*q
Syrian	Grotzfeld 1965	ž	k	‘
	Cowell 1964	ž (j in Aleppo, some rural dialects)	k (č in some rural dialects)	‘ (q in some rural dialects)
Upper Egypt	Nishio 1994	j (g ^y before l)	k	g
Libyan	Owens 1984	ž	k	g
Yemen	Diem 1973	j (g ^y in al-Maḥābšeh and d ^l in South West)	k (in Southern dialect ki > š)	g (q in southwest)
Saudi	Prochazka 1988	j, ž in Ghāmid, g ^y	k, č (alveolar and dental), k ^y	g, j (alveolar and dental), g ^y
Christian Baghdadi	Abu-Haidar 1991	j	k	q
Moroccan	Marçais 1977	ž	k	g
Jewish Tunisian	Cohen 1975a	ž	k	g
Cherchell (Algerian)	Grand'Henry 1972	j	k	q/g

PS *k, Classical Arabic <ك>, and PS *q, Classical Arabic <ق> are frequently realized as alveopalatal affricates /č/ and /j/ in modern dialects. In a few dialects of Southern Syria, central Palestine and Algeria (Cantineau 1941), PS *k has undergone a seemingly unconditioned shift to /č/. More commonly there is a conditioned shift of k > č or g (<*q) > j before front vowels /i, e, a/. Alveopalatal affricates are found mainly in the Bedouin dialects of Iraq and the Levant (Rosenhouse 1984) and the Arabian Peninsula (Johnstone 1967). In a large area of the central Arabian Peninsula the affricates /ts/ and /dz/ are found instead of the palatal affricates (see Johnstone).

In Muslim Baghdadi Arabic (Blanc 1964) the conditioned shift of k > č has brought about a limited set of predictable morphophonemic alternations in verbs (note: long /ā/ is a low front vowel).

(24) Morphophonemic k ~ č alternations in Muslim Baghdadi Arabic

<i>root</i>	<i>k-forms</i>	<i>gloss</i>	<i>č-forms</i>	<i>gloss</i>
k-w-n	ykūn	‘he will be’	čān	‘he was’
k-b-r	kbār	‘big (pl.)’	čebīr	‘big (sg.)’

Besides internal processes, Arabic has also had palatal consonant inventories expanded through contact. Two of the most common sources have been contact with Turkish and Persian. The list below exhibits a number of Turkish, Persian and European loanwords in the Arabic dialect of Christians in Baghdad.

(25) /č/ in loanwords in Christian Baghdadi Arabic (Abu-Haidar 1991)

<i>loanword</i>	<i>gloss</i>	<i>possible etymologies</i>
čágəx	‘wheel’	Pers. چرخ <i>čarx</i> ‘wheel’
čādəg	‘tent’	Pers. چادر <i>čādar</i> ‘tent’
čāga	‘remedy’	Pers. چاره <i>čāra</i> ‘remedy’
čámča	‘ladle’	Pers. چمچه <i>čamča</i> ‘spoon, ladle’
čōl	‘desert’	Pers. چول <i>čūl</i> ‘desert’
čəgčəf	‘bed sheet’	Turk. <i>çarşaf</i> ‘sheet’ < Pers. چادرشب <i>čādari šab</i> ‘bed sheets’
čəwīt	‘indigo’	Turk. <i>çivit</i> ‘indigo’
kalabča	‘handcuffs’	Turk. <i>kelepçe</i> ‘handcuffs’
pačata	‘napkin’	Turk. <i>peçete</i> ‘napkin’ < It. <i>pezzetto</i>
qačəg	‘contraband’	Turk. <i>kaçak</i> ‘contraband’
hīč	‘not’	Turk. <i>hiç</i> ‘no, not at all, never’ < Pers. هیچ <i>heč</i> ‘nothing’
čáyyak	‘to check’	Eng. <i>Check</i> [čɛk]
pánčəg	‘puncture’	Eng. <i>puncture</i> [pʌŋkčə]

Many other languages have likewise had an impact on the phonological inventories of Arabic dialects. One of the most striking examples is the heavy borrowing of both Romance and English vocabulary in Maltese. In most cases the borrowings are most likely Sicilian as they reflect the Sicilian merger of /o/ and /u/ > /u/ and /e/ and /i/ > /i/, the shift /pl/ clusters to /ky/ (see Rohlfs 1972, Mazzola 1976 and Ruffino 1997 for discussion of developments in the Sicilian

dialects) and the resolution of both Latin /pl/ and /kl/ clusters as /č/ as is the case in the Southeastern Sicilian dialects (see Ruffino 1997:367).

(26) Romance and English loanwords in Maltese³¹

čipp	‘fettors, stocks’	Sic. <i>cippi</i> , It. <i>ceppi</i> ‘fettors’
čkala, čikala	‘crawfish, crayfish’	It. <i>cicala</i> ‘cicada’?
čavetta	‘latch key, little key’	It. <i>chiavetta</i> ‘key dim. of It. <i>chiave</i> ’, Sic. <i>chiavi</i> , SE Sic. [čavi]
čana	‘plane’	Sic. <i>chiana</i> , It. <i>piana</i> ‘plane’
čurkett	‘ring, small circle’	It. <i>cerchietto</i> ‘small circle, hoop’
člampu	‘humidity, moisture’	
červ	‘deer, hart, buck’	Sic. <i>cervu</i> , It. <i>cervo</i> ‘deer’
čar	‘clear, pure’	Sic. <i>chiaru</i> , It. <i>chiaro</i> ‘clear’
čangjer	‘money exchanger’	Eng. <i>changer</i> ‘money changer’
čičri	‘chickpeas, chick’	Sic. <i>ciciru</i> , It. <i>cece</i> ‘chickpea’
čomb	‘lead’	Sic. <i>ciummu</i> , SE Sic. [čummu], It. <i>piombo</i> ‘lead’
čpar	‘fog, mist’	It. <i>coprire</i> ‘to mist (over)’ ?
beččun	‘pigeon’	Sic. <i>picciuni</i> , It. <i>piccione</i> ‘pigeon’
faččol	‘double faced man, hypocrite’	Sic. <i>facciolu</i> ‘sly, deceitful, false’
kabočča	‘cabbage’	Eng. <i>cabbage</i>
kačča	‘game; hunting, chasing, shooting’	Sic., It. <i>caccia</i> ‘hunting, chasing; game’, <i>caccia grossa</i> ‘big game’
lanča	‘a steam launch, a launch, ferryboat’	Sic., It. <i>lancia</i> ‘small boat, launch’
perniči	‘partridge’	It. <i>pernice</i> ‘partridge’
ponč	‘punch (drink)’	Eng. <i>punch</i>

Aramaic

Modern Aramaic languages have also been characterized by the expansion of palatal consonants through both contact and internal changes. As in Arabic the most common internal source of new palatal consonants has been the velar stops /k/ and /g/, e.g. in Christian Urmi and other Northeastern Neo-Aramaic varieties these phonemes have become either palatal stops /c/ and /j/ or affricate /č/ and /j/, while in Ğubb‘addin, a village where a variety of Western Neo-Aramaic is spoken, both Middle Aramaic /k/ and /g/ have become /č/ (Jastrow 1997). In all Western Neo-Aramaic varieties, Middle Aramaic /t/ has also served as a source of palatal consonants with palatal stop /c/ in Bax‘a and palatal affricate /č/ in Ma‘lūla and Ğubb‘addin. The main external source of palatal consonants is loan words from Arabic, Turkish and Kurdish depending on the linguistic situation of the Neo-Aramaic variety. Western Neo-Aramaic spoken in Syria and in a primarily Arabic-speaking matrix have borrowed either /ž/ or /j/ both representing PS *g in Arabic loans. In Ťuroyo, an Eastern Neo-Aramaic variety, spoken in an area of significant overlap between Arabs, Kurds and Turks, the source of palatal consonants /č/, /j/ and /ž/ is,

³¹ Sicilian data from Mortillaro (1853) and Traina (1868), Maltese Data from Busuttill (1971).

according to Jastrow, through borrowings from Turkish, Kurdish and Arabic. Even in the varieties of Arabic and Aramaic with large palatal inventories, the morphological function of these borrowings is fairly limited.

Modern South Arabian

In Modern South Arabian languages the velar consonants also have served as a primary source for palato-alveolar consonants. The Modern South Arabian languages have a series of alveopalatal sibilants /š/, /ž/ and /š'/, of which only /š/ has a clear Semitic origin. In Central Jibbali a series of labialized alveopalatal sibilants occur /ṣ̌/, /ẓ̌/ and /ṣ̌'/ in addition to or instead of the plain alveopalatal sibilants (Johnstone 1981). Johnstone (1984:389) describes these sounds as being produced “with the blade of the tongue on the hard palate and the lips protruded”. The voiceless alveopalatal sibilant /š/ (or /ṣ̌/ in Central Jibbali) occurs as one of the reflexes of PS *k in all Modern South Arabian languages, although the palatal reflexes are most common in Jibbali.

(27) Palatal reflexes of PS *k in MSA (Johnstone 1975, 1981 for Central Jibbali)

Jibbali (Central Jibbali)	gloss	MSA	Semitic languages
šubdet (šubdét)	‘liver’	Meh./Ḥar. šəbde:t Soq. šəbdəh	Akk. <i>kabittu</i> Heb. <i>kābēd</i> Ar. <i>kabid</i>
šurś (šírś)	‘belly’		Akk. <i>karšu(m)</i> Heb. <i>kārēś</i> Ar. <i>kariš, kirš</i>
šini:t (šínít)	‘louse’	Meh./Ḥar. kənəmo:t Soq. kanum	
dhaš (daháš)	‘to skin’	Meh./Ḥar. dəha:k	
ršəb	‘riding camel’	Meh. ri:ko:b Ḥar. rəke:b	Akk. <i>rakābu(m)</i> ‘to ride’ Heb. <i>rākab</i> ‘he rode’ Ar. <i>rakaba</i> ‘he rode’
-š (- ṣ̌)	2FSG (perfect suffix)		Akk. <i>-ki</i> Heb. <i>-tī</i> Ar. <i>-ti</i> Ge. <i>-ki</i>

Like its voiceless counterpart, /g/ in Jibbali and Soqotri is sometimes realized as /ž/. In contrast, Mehri and Ḥarsūsi lack the sound /ž/ and the accompanying type of palatalization.

(28) /ž/ in Jibbali and Soqotri (Johnstone 1975, 1981)

Jibbali (Central Jibbali)	Soqotri	gloss	MSA
žirīt	žireməh, gireməh	‘dōm fruit’	Meh. gi:re:mo:t
fəgr	fəžhər	‘desert; Bedouin country’	
žid (žéd)	žid	‘nerve’	
žirit		‘slave (F)’	Meh. gərə:t
γuži, γoži	ṣaygi	‘two men’	Meh. γawgi

In Jibbali the alveo-palatal ejective /š'/ (/š/ in Central Jibbali) corresponds to ejective /k'/ in other MSA and South Semitic languages and /q/ in other Semitic languages (Johnstone 1975).

(29) /š'/ in Jibbali (Johnstone 1975)

Jibbali	gloss	MSA	Semitic languages
š'iret	‘town’		Heb. <i>qiryā</i> Ar. <i>qaryat-</i>
məš'hayrer	‘shin-bone’	Meh. <i>mək'hayrər</i> Soq. <i>kəḥayhor</i>	
š'ε:n	‘scorpion’	Meh./Ḥar. <i>k'əbayn</i>	
šuš'i	‘to drink’	Meh. <i>tək'</i>	Akk. <i>šaḳû(m)</i> ‘to give drink to, irrigate’ Heb. <i>hišqā</i> (š-stem) ‘he irrigated; he gave drink to’
š'efaf	‘elbow’	Meh./Ḥar. <i>š'affəy</i>	
mənš'irət	‘a rude gesture’	Meh. <i>mənk'ərə:t</i>	
ḥayš'	‘coast’	Meh. <i>ḥayk'</i>	

In Ḥarsūsi (Johnstone 1977), as well as Mehri (Johnstone 1975), the ejective /š'/ is most commonly a reflex of /s'/.

(30) /š'/ in Ḥarsūsi (Data from Johnstone 1977)

Ḥarsūsi	gloss	MSA	Semitic languages
haš'báʔ	'finger'		Heb. ʔešbaʕ Ar. ʔiṣbaʕ
š'efdáyṭ (šefdáyt & s'efdeʔēt)	'frog'	Meh. šefdēt, Jib. šafdēt	Heb. šəpardeʕ Ar. šifdiʕ Omani Arabic šafdağ
š'eferōṭ	'sandpiper'		
š'erōm	'he slapped'	Meh. š'erōm, Jib. š'úrúm	
k'eš'ōb	'he cut, cut off'	Meh. k'eš'āwb, Jib. kéšaʕ (?)	Heb. qāṣab 'he cut off' Ar. qaṣab
k'eš'áwl	'he/it broke, snapped'	Meh. k'eš'áwl, Jib. kéšaʕ ?	Ar. qaṣal

The palatalization of velars, as is the case in some Arabic dialects, has given rise to some morphophonemic alternations in Jibbali. Although based on the descriptions and data in Johnstone (1975, 1981) these alternations are far from regular, reflecting the fairly irregular occurrence of palatalization in the first place. Palatalized and non-palatalized sounds frequently occur in identical or nearly identical synchronic contexts giving a phonemic contrast and obscuring the synchronic motivations for palatalization, for example *mək'arét* 'store or hiding place for stolen goods' vs. *məš'arét* 'kiss' (Johnstone 1981:150) or the pair of related derived forms *ník'i* 'he was pure; found innocent', *enúk'i* 'he selected' and *enk'é* 'he made clean, cleansed' vs. *níš'i* 'he won at a palm-turning game, or heads or tails', *enúš'i* 'he won consistently at heads or tails' and *enš'é* 'he won at heads or tails' (191). In many cases the alternations occur among forms sharing the same root, i.e. between forms sharing a derivational relationship. In the set below the verbs would seem to be derived from the noun, although only it, not the seemingly derived verbal forms, has the palatalized variant.

(31) Forms with the root ḥ-n-k' (Johnstone 1981:113)

k'	hónúk'	'he fed a baby from a feeding-jug'
	yhínk'	'he feeds a baby from a feeding-jug'
	ahténík'	'he (a baby) accepted to be fed from a feeding-jug'
	šhenik'	'he (a baby) accepted to be fed from a feeding-jug'
š'	hanš'ét	'feeding jug (for a baby)'
	hénúš'tə	'feeding jugs (for a baby)'

In many other cases, the alternations occur across categories that are more commonly viewed as inflectional. Several forms have different variants (non-palatalized/palatalized) in singular and plural forms. There are examples illustrating all the possible alternations, both cases where the singular is palatalized and the plural is not and the other way around.

(32) Singular and Plural forms in Jibbali (Johnstone 1981)

	<i>singular</i>	<i>plural</i>	
k~š	erkíb	yuršób	‘riding camel’
g~ž	šəgərət	šír	‘long area of flat ground at the front of the Jebel’ (fertile mountain area), area reached first after leaving Gerbéb (coastal plain)’
k’~š’	šek’əf	šés’óf	‘camel with milk but no young’
	mizélš’ót	mizəlk’	‘coconut shell used as a receptacle for Ghee’
š~k	šírš	ekrész	‘belly’
	iršét	érék	‘hip, hip bone and flesh’
ž~g	fížžér	əfgért	‘small tobacco pipe’
	žénúzt	génez	‘corpse body’
	miržém	mirébgəm	‘cover, lid’
	túžur, túžurt	tógór, tégórta	‘rich (person)’
š’~k’	š’éréb	k’érób, š’érób	‘wound’
	miš’órfót	mok’óruf, moš’óruf	‘shoulder-blade’
	k’əhbét	š’əhóbtə	‘whore, harlot, prostitute; loose or immoral woman’

Alternations are also found in diminutive and dual forms of nouns. The diminutive form of *šírš* ‘belly’ is *kéršót* which like the plural form has the non-palatalized variant. The forms of the Jibbali word for ‘man’ have the non-palatalized variant in both the singular *gég* and plural *gég*, but the palatalized variant in both the dual *goži* and diminutive *gižég*.

The types of morphophonemic alternations that are found in nominal forms are largely missing in verbal forms. The palatalized variants /š, ž, š’/ which are relatively rare in general are also rare in verbal forms with only a few verbs like *níš’i* ‘he won at a palm-turning game, or heads or tails’ having a palatalized variant in all inflectional and derivational forms of the verb. This does not include cases of /š/ which come from an earlier *š which are more numerous; thus it is necessary to distinguish palatalized consonant, those which have undergone a process of palatalization, from palatal consonants in which no such process is known to have occurred. One of the few cases of a verbal form exhibiting alternations between the palatalized and non-palatalized forms are those with the root š-k’-y ‘to drink’, which is found in the cognate form *hišqā* ‘to give to drink’ in Hebrew.

(33) Forms with the root š-k’-y in Central Jibbali (Johnstone 1981:262)

basic verb stem

<i>perfect</i>	<i>imperfect</i>	<i>subjunctive</i>	<i>verbal noun</i>	<i>basic gloss</i>
šúš’i	yəšték’ə	yəštík’	šés’ó	‘to drink’

derived verbal stems

šek’é	‘he irrigated, gave a drink’
eššók’i	‘he gave ground water, irrigated’
šútk’i	‘it (3MSG) was irrigated’
šəšk’é	‘it was watered, given water’

derived nominal forms

šék'ó? 'irrigation'
 šuš'ét 'water-system'

Both the perfect and verbal noun forms of this root have the palatalized variant, while both prefix conjugation forms, imperfect and subjunctive, have the non-palatalized variant. This variant is also found in all but one of the other derivatives associated with this root. The one exception *šuš'ét* 'water-system' also exhibits the shift of š > ṣ̌.

A final note should be made of the phonemic and morphemic contrast found in the second person singular subject markers for suffix conjugation forms. In Proto-South-Semitic the form of 2FSG suffix is {-ki}, the 2MSG is {-ka} and the 1SG is {-ku}. This contrasts with Central Semitic which has /t/ in the place of /k/ giving {-ti}, {-ta} and {-tu}. These two different systems most likely represent the occurrence of leveling in two separate directions from a system where originally /t/ was found in the second person forms and /k/ in the first person singular form (see Section 2.3.3.2 for a more in-depth discussion of the distribution of /t/ and /k/).

(34) Suffix Conjugations in MSA (Johnstone 1975) and Yemeni dialects (Diem 1973)

	MSA					
	Mehri		Jibbali		Soqotri	
	SG	PL	SG	PL	SG	PL
1	kətəbk	kəto:bən	kətəbk	kəto:n	kətəbk	kətəbən
2M	kətəbk	kətəbkəm	kətəbk	kətəbkum	kətəbk	kətəbkən
2F	kətəbš	kətəbkən	kətəbš	kətəbkən	kətəbš	kətəbkən
3M	kəto:b	kətawb	kətəb	kətəb	kətəb	kətəb
3F	kətəbo:t	kəto:b	kətiət	kətəb	kətəboh	kətəb
	Yemeni Arabic dialects					
	al-Hadīyeh		al-Mahall		Qafir	
	SG	PL	SG	PL	SG	PL
1	katabk	katabna	katabk	katabna	katabk	katabna
2M	katabk	katabkum	katabk	katabkum	katabk	katabkum
2F	?	?	katabš	katabkun	katabš	katabkin
3M	katab	katabu	katab	katabu	katab	katabu
3F	katabat	katabēn	katabat	katabain	katabah	katabain
	al-ḡudain		Giblah			
	SG	PL	SG	PL		
1	katabku	katabna	katabk	katabna		
2M	katabk	katabkum	katabk	katabkum		
2F	katabki	katabkēn	katabki	katabkan		
3M	katab	katabu	katab	katabum		
3F	katabah/t	katabēn	katabah	katabēn		

In the South Semitic languages the leveling may have been aided by the existence of sets of possessive and object pronominal suffixes which have /k/ in the forms of the second person (e.g. CA 2MSG *-ka*, 2FSG *-ki*, 2DU *-kumā*, 2MPL *-kum(u)*, 2FPL *-kunna*). Ge'ez, the oldest South Semitic language with reliable information about vowels, has the forms *-kə* for 2MSG, *-ki* for the

2FSG and *-ku* for the 1SG. In all the Modern South Arabian languages the 2MSG suffix is *-k* while the 2FSG suffix is *-š* (*-ṣ̌* in Central Jibbali). The Arabic dialects of the southern mountain range in Yemen (Diem 1973) are also characterized by the existence of /k/ instead of /t/ in first and second person suffixes of the suffix conjugation, probably due to substratal or adstratal influences from one or more South Arabian languages on these Arabic dialects. In the southern group of these dialects the 2FSG suffix is *-ki*, while in the northern group the suffix has lost the final vowel and become palatalized as *-ṣ̌* giving a paradigm very similar to that found in the MSA languages.

Ethiosemitic

Like the branches described above, velars have served as an important source of new palatal consonants in the Ethiosemitic languages. The impact of the palatalization of velars is unlike the palatalization of dentals and the sibilants. The palatalization of velars has been irregular, occurring before /i/ or /e/ in some cases but not in others, and has not led to the formation of new morphophonemic alternations. The ultimate velar origin of palatal consonants is often only recoverable by comparison with other Semitic languages.

One of the most common cases of palatalization involves the form of the second person markers of the suffix conjugation. In the northern branch of Ethiosemitic, the forms of the suffixes, 2MSG {-ka} and 2FSG {-ki}, correspond closely to the proposed Proto-South-Semitic (PSS) forms. In the southern branch the forms, though clearly reflecting the proposed PSS forms, have undergone a variety of other changes. Many of the 2MSG forms are realized with /h/ or /x/ due to the common spirantization of velars. The original /k/ of the 2FSG suffix has been palatalized in all varieties of South Ethiosemitic (see Leslau 1956:97). The most common reflex of /k/ in the 2FSG suffix is the alveopalatal sibilant /ṣ̌/ which is found in Amharic, Harari, Zway, Silt'i, Wolane, Gafat, Soddo, Masqan and Ennemor, while Argobba has the alveopalatal affricate /č/ and Muher and Chaha have a velar fricative with secondary palatalization /x^y/.

(35) Second person singular suffixes in Ethiosemitic

		2MSG	2FSG
	PSS	-ka	-ki
North Ethiosemitic	Ge'ez (Voigt 2007a)	-kə (-ka-)	-ki
	Tigrinya (Kogan 2007)	-ka	-ki
	Tigré (Raz 1983)	-ka	-ki
South Ethiosemitic	Amharic (Leslau 2000)	-k/-h	-ṣ̌
	Argobba (Leslau 1997b)	-k	-č(i)
	Harari (Leslau 1958, Cerulli 1936)	-xi	-ši
	Zway (Leslau 1999)	-ih	-iṣ̌
	Silt'i (Gutt 1986)	-ka/ha	-ṣ̌(i)
	Wolane (Cohen 1931)	-k	-ṣ̌
	Gafat (Leslau 1956)	-əhə	-ṣ̌
	Soddo (Leslau 1968)	-kə	-ṣ̌
	Muher (Leslau 1981)	-xa	-x ^y
	Masqan (Leslau 1956)	-hə	-ṣ̌
	Chaha (Rose 2007)	-xə	-x ^y
	Ennemor (Leslau 1996)	-xə	-ṣ̌
	Endegeñ (Leslau 1971)	-əhə	-əši

Palatalization has also affected a number of individual lexical items. Ullendorff (1955:66-74) describes this phonological process in the Ethiosemitic languages in some detail and delineates the ways in which this process differs from the more widespread and morphologically significant palatalization of coronals. Unlike coronals, the palatalization of velars occurs with similar frequencies in both North and South Ethiosemitic and does not figure prominently in morphological alternations and occurs fairly sporadically. Ullendorff (72) also outlines several different scenarios involving the palatalization of velars:

- (i) sometimes both forms coexist in the same region without any noticeable difference in meaning (*'əng'era* and *'əndera*; *dägäzmati* and *dädazmí* in Tña);
- (ii) or each form is indicative now of a regional and dialectal difference *k'es*, *kidan* (Shoa) and *t'äs*, *tadan* (Gojjam), though the former forms can also be heard in the latter region, but the tendency towards palatalization is most marked in the Gojjam province;
- (iii) or the palatalized version alone survives as in the case of *dämmärä*; and, finally,
- (iv) the two forms have acquired a specialized nuance of the basic root meaning, e.g. *Gə'əz k'äläwä* "to dry", to warm up", Tña *k'äläwä* "to toast cereals", *t'äläwä* 'to put cereals into the sun for drying'.

The far more important palatalization of coronals will be addressed in the following sections.

3.3.2.3. Scope and character of palatal inventories and palatalization in Ethiosemitic

The inventory of palatal consonants is fairly uniform across Ethiosemitic (excluding Ge'ez), with only minor differences from variety to variety. Despite the similarities between the inventories of North and South Ethiosemitic, the morphological functions of palatalization are very different in these two main branches. Tigrinya, a North Ethiosemitic language, has the palatal consonant inventory /č, j, č', š, ž, ñ, y/. According to Kogan (1997), while palatals do occur in words that cannot be construed as borrowings from Amharic, nevertheless many instances of palatals do occur in borrowings, particularly /č/ and /ñ/ which occur mainly in Amharic borrowings. Also /ž/ is rare and appears to be in free variation with /j/. Unlike in South Ethiosemitic, palatalization does not occur in morphophonemic alternations in Tigrinya. Tigré has a smaller palatal consonant inventory consisting of the independent phonemes /č, j, č', š/ and [ž] as the palatalized variant of /z/ but not an independent phoneme (Raz 1983). Morphophonemic palatalization with optional gemination occurs in Tigré with the 1SG possessive pronominal suffix {-ye}.

(36) Tigré 1SG possessive forms (Raz 1983)

<i>changes</i>	<i>base</i>	<i>1SG possessed form</i>	<i>gloss</i>
t > č	warāt	warāčče	'my work'
	masānit	masāničče	'my friends'
d > j	ʕad	ʕajje	'my village'
s > š	raʔas	raʔašše	'my head'
	nos	noše	'myself'
s' > č'	gas'	gačč'e	'my face'
z > ž	gizāz	gizāžže	'my glass'

The South Ethiosemitic languages display a greater degree of uniformity with respect to both palatal inventories and the morphological functions of palatalization. The basic palatal

inventory /č, ǰ, č', š, ž, ñ, y/ is found in most South Ethiosemitic languages with generally small variations. Amharic (Leslau 2000), Argobba (Leslau 1997b), East Gurage (Gutt 1986, 1997), Gafat (Leslau 1945b, 1956), Soddo (Leslau 1968) and Muher (Leslau 1981) have this inventory without significant modification. Harari (Leslau 1958, Wagner 1997) only lacks the phoneme /ž/. Cohen (1931) describes [ž] as occurring as a palatalized variant of /z/, but being in general rare because in most cases /ž/ becomes /j/, a development also found in Argobba, (Leslau 1997b). Chaha (Leslau 1950) and the rest of Central West Gurage do not have /ñ/.

3.3.3. Palatalization, labialization and ablaut in the morphology of Ethiosemitic

The palatalization of the verb stem occurs both in cases where the original {-i(na)} suffix has been retained and in cases where it has been lost. The same is true for vowel alternations, giving us cases of both *umlaut*, where the alternation still appears to be phonologically conditioned by the suffix, and *ablaut*, where the alternation appears to be morphologically conditioned. An additional alternation was triggered by original suffixes with /u/ or /ū/. This latter alternation is restricted to the tt-group of Outer South Ethiosemitic (Hetzron 1977).

Transverse South Ethiosemitic

In Harari, while the ending still occurs, the palatalization is no longer strictly phonological because the 2FSG suffix {-i} is associated with palatalization but the otherwise identical ending {-i} attached to the imperfect in the compound durative is not. The palatalization is associated with the 2FSG but not other phonologically identical suffixes. At the same time the palatalization associated with the 2FSG suffix does not occur in all cases where the suffix is expected, as is the case in other related languages. In the table below the relevant forms in Harari are given using the verb *səgədə* ‘he prayed’ (cf. Arabic *sajada* ‘he bowed down’).

(37) Imperative and prefix conjugation forms in Harari (Cohen 1931)

	Imperfect with conjunction -le	Compound Durative	Compound Imperfect	Prohibitive (Negative Jussive)	Imperative and Jussive
3MSG	yi-səgd-i-le	yi-səgd-i nar	yi-səgd-al	a-y-sigəd	yə-sgəd
3FSG	ti-səgd-i-le	ti-səgd-i nar-ti	ti-səgd-at	a-t-sigəd	tə-sgəd
2MSG	ti-səgd-i-le	ti-səgd-i nar-ħi	ti-səgd-aħ	a-t-sigəd	sigəd
2FSG	ti-səgǰ-i-le	ti-səgd-i nar-ši	ti-səgd-aš	a-t-sigəǰ-i	sigəǰ-i
1SG	i-səgd-i-le	i-səgd-i nar-ħu	i-səgd-aħ		
3PL	yi-səgd-u-le	yi-səgd-i nar-u	yi-səgd-alu		yə-sgəd-u
2PL	ti-səgd-u-le	ti-səgd-i nar-ħu	ti-səgd-aħu	a-t-sigəd-u	sigəd-u
1PL	ni-səgd-i-le	ni-səgd-i nar-na	ni-səgd-anə		

In the forms where the 2FSG is retained, although not in every case actually pronounced (Cohen 1931), such as the simple imperfect with the postposed conjunction {-le}, the imperative and the prohibitive, the coronals /d, t, t', s, z, n, l/ can be palatalized as /ǰ, č, č', š, ž, ñ, y/. According to Wagner (1997), the 2FSG triggers the palatalization of the final stem consonant but can also affect other stem consonants and even the prefix consonant. One particularly illustrative case in Cohen involves the 2FSG form of the negative relative form *žacšigəǰ* ‘you FSG who do not pray’ (zatsigəd ‘you MSG who do not pray’) where all possible consonants are palatalized and the suffix is not present. In the compound forms (including the compound imperfect and compound

durative above) as well as the relative imperfect described by Cohen, the 2FSG forms do not exhibit any palatalization of the verb stem. While the person prefixes are maintained in the compound verb forms, the suffixes are not used and number and gender are indicated by the auxiliary verb.

Besides Harari, the other members of the Transverse branch of South Ethiosemitic (Amharic, Argobba, East Gurage) have the same type of alternation with the 2FSG suffix {-i}. Examples are provided below. Most use the system of transliteration adopted here, while others are transcribed according to the source material (these cases are indicated by the use of angle brackets <>). The original vowel of the suffix is often dropped after the palatalized consonant; this occurs even when the palatalization is original, not derived (Amharic *ti-təññ-alləš* ‘you are going to bed’ </ti-təññ-i-alləš/).

(38) 2FSG forms in Transverse South Ethiosemitic

Amharic (Leslau 2000)			
	2FSG	2MSG	gloss
simple imperfect (with -nna ‘and’)	ti-dərš-i-nna	tī-dərs-(i)nna	‘you arrive and’
negative imperfect	at-ti-hej-i-m	at-ti-hed-(i)m	‘you don’t go’
compound imperfect	ti-kafč-alləš < /ti-kaft-i-alləš/	tī-kaft-alləh	‘you open’
imperative	hiji	hid	‘go!’
	č’ərriš	č’ərris	‘finish!’
Argobba (Leslau 1997b)			
	2FSG	2MSG	gloss
simple imperfect	ti-wərš-i	tī-wəris	‘you inherit’
	ti-wərj-i	tī-wərid	‘you go down’
compound imperfect	tīniggij-əllih< /tī-niggid-i-əllih/	tī-niggid-əllah	‘you trade’
imperative	wirəj	wirəd	‘go down’
Silt’e (Cohen 1931:194-6)			
	2FSG	2MSG	gloss
imperfect	<tewaddjiach>	<tewaddeax>	‘you love’
	<teudjich>	<teudax>	‘you speak’
imperative	<eudji>	<eod>	‘speak!’

In Amharic (Hudson 1997) in addition to the 2FSG suffix palatalization is also associated with the homophonous agentive suffix {-i}, the instrumental suffix {-iya} and the 1SG suffix {-e} of the conjunctive (gerundive) verb form. The set of consonants that can be palatalized in Amharic and Argobba, /d, t, t’, s, s’, z, n, l/, differs from Harari and East Gurage (Gutt 1997, Cohen 1931) only in terms of the original consonant inventory; Harari and East Gurage lack the coronal ejective /s’/.

Zway, which is classified by Hetzron (1972) as East Gurage, generally follows the patterns of other Transverse languages, but has additional alternations that merit this language special attention. Zway will be discussed at the end of this section.

Outer South Ethiosemitic

The Outer South Ethiosemitic languages provide even richer array of types of internal alternations. Both major branches of South Ethiosemitic share what Hetzron (1977) calls “end palatalization” where the final stem consonant is palatalized in 2FSG forms with an original {-i} suffix.

Gafat (Leslau 1945a, 1956) has patterns closely resembling those of Transverse South Ethiosemitic. The 2FSG is marked by the suffix {-i} and the palatalization of the preceding coronal ($d > j$, $t > č$, $ṭ > č̣$, $s > š$, $n > ñ$, $l > y$). The suffix {-i} is often lost when the preceding consonant is palatalized. Hetzron (1977) describes this type of loss of the suffix in terms of its “absorption” by the palatalization.

(39) 2FSG forms with palatalization in Gafat (Leslau 1956)

	2FSG	<i>gloss</i>
<i>imperfect</i>	ti-gəlj-i < *ti-gəld-i	‘tu te ceins’
	ti-sibbič-(i) < *ti-sibbit-i	‘tu choisís’
	ti-qərs̄ < *ti-qərs-i	‘tu commences’
<i>negative jussive</i>	a-ti-gləj < *a-ti-gləd-i	‘ne te ceins pas
<i>imperative</i>	təč < *tətt-i	‘bois!’
	qaññi < *qann-i	‘fais!’

Different patterns are observed in other Outer South Ethiopic branches, both in Gafat’s own n-group and the larger tt-group. In both groups there are examples of alternations involving not only consonants but also vowels and in some languages there has been an expansion in the set of consonants that undergo palatalization.

In Soddo (Leslau 1968) and Goggot (Hetzron 1977), which together with Gafat comprise the n-group of Outer South Ethiopic, the 2FSG of several verb forms is indicated by vowel alternations in addition to the suffix forms and palatalization. Vocalic alternations are found in prefix conjugations and the related imperative. The 2MSG and 2FSG show the relevant alternations. In the prefix conjugations The Semitic origin of the morphology of the Soddo and Goggot imperfect is clear from comparisons with other Semitic language. The feminine singular form in all languages is indicated by a suffix with a reflex of *ī and with the possible addition of /n/ as is seen in Soddo and Goggot as well as Arabic. The 2FSG forms with a nasal, which are also found Aramaic (ti-ktəb-īn) and Ugaritic (ta-ktub-īna), are discussed in section 3.3.1.1. The 2FSG forms in Soddo and Goggot below also involve a vowel change.

(40) 2nd person imperfect main verbs in Soddo and Goggot (Hetzron 1972)

	Soddo	Goggot	Amharic	Ge‘ez	Arabic
2MSG	ti-bədr-u	ti-səbr-u	ti-səbr	ti-nəggir	ta-ktub-u
2FSG	ti-b ^y edr-in	ti-sebr-in	ti-səbr-i	ti-nəggir-i	ta-ktub-īna
2MPL	ti-bədr-īmun	ti-səbr-īmun	ti-səbr-u	ti-nəggir-u	ta-ktub-ūna
2FPL	ti-bədr-īman	ti-səbr-īman		ti-nəggir-a	ta-ktub-na

In Soddo, according to Leslau (1968), the 2FSG suffix with its high front vowel triggers the palatalization of the final consonant of the imperfect base if the final consonant is a dental

stop, sibilant, nasal or the liquid /l/ and the raising and fronting of /ə/ to /e/ (which in turn can cause the palatalization of the preceding consonant).

(41) Vowel alternations in 2SG imperfect forms (Leslau 1968)

2FSG	2MSG (assumed forms, not in Leslau)
tīwedʒin ‘you (f.) love’	tīwəddu ‘you (m.) love’
tīkefl ^y in ‘you (f.) pay’	tīkəklu ‘you (m.) pay’
tīlebšin ‘you (f.) put on clothes’	tīləbsu ‘you (m.) put on clothes’

In other forms the 2FSG ending is absent even though the base of these forms behaves the same. The negative imperfect, the negative jussive and the imperative forms all display palatalization and vowel raising and fronting in the 2FSG. In these forms the conditioning suffix has been lost and the primary exponence of the FSG has transferred from the suffix to the internal alternations of palatalization and ablaut. Since palatalization only occurs for verbal roots that end in one of the coronal consonants, ablaut is the most consistent marker of the FSG in Soddo and Goggot. The following forms show the alternations described above in addition to the raising of /i/ to /i/. The raising of both /ə/ and /i/ occur in both forms involving *end palatalization* and those lacking it.

(42) Soddo 2FSG forms without suffix (Leslau 1968)

	2FSG	2MSG
negative imperfect	tittiqərš	tittiqərs
negative jussive	attisfer	attisfər
imperative	Type A (Basic Stem)	sifer
	Type B (D-stem)	šəkkič
	Type C (L-stem)	gal ^y ib
		galb

A different set of patterns is observed in the tt-group of Outer South Ethiopic. The most conspicuous feature which distinguished this group from the other branches of South Ethiopic is the expanded set of consonants involved in *end palatalization* patterns. In addition to the coronal consonants, which are palatalized in the other branches, the tt-group also involves the palatalization of all stem-final non-labial consonants (Hetzron 1977). The set of palatalizations include $d > j$, $t > č$, $ʈ > č̣$, $z > ž$, $s > š$, $n > ñ$, $k > k^y$, $g > g^y$, $q > q^y$, $h > h^y$, $x > x^y$, $r > y$ with some variations from language to language depending partly on the starting inventory. The character of the vowel alternations also differs from those found in the n-group. Instead of a fairly obligatory raising of the vowels /ə/ and /i/, vowel alternations in the tt-group is described by Hetzron as involving a compensatory palatalization when the final consonant cannot be palatalized. Since a larger set of consonants can be palatalized, the cases where a vowel alternation takes place are relatively small.

Muher (Leslau 1981) occupies a somewhat intermediary position between the n-group and tt-group, being classified together with Soddo and Goggot as “Northern Gurage” while at the same time belonging to the tt-group and not the n-group like the other two languages (see Hetzron 1972). Muher like the other Northern Gurage languages has main verb markers (Hetzron 1968). However, in terms of palatalization Muher patterns closely with the other tt-

group languages. Like other tt-group languages *end palatalization* extends beyond the class of coronal to other non-labial consonants ($t > \check{c}$, $d > \check{j}$, $\text{ʈ} > \check{\text{ç}}$, $s > \check{s}$, $z > \check{ž}$, $k > k^y$, $g > g^y$, $x > x^y$, $q > q^y$). The liquids /l, r/ do not participate in palatalization in Muher. Examples of palatalization with the 2FSG are provided below.

(43) 2FSG forms with palatalization in Muher (Leslau 1981)

t > č	ti-kəfč-it	<*ti-kəft-it	‘you open’
d > j	ti-ləgǰ-it	<*ti-ləgd-it	‘you touch’
ʈ > č̣	ti-ʈəbč̣-it	<*ti-ʈəbʈ-it	‘you seize’
s > š	ti-wərs̄-it	<*ti-wərs-it	‘you inherit’
g > g ^y	ti-dərg ^y -it	<*ti-dərg-it	‘you strike’
x > x ^y	ti-fərx ^y -it	<*ti-fərx-it	‘you are patient’
n > ñ	ti-xədñ-it	<*ti-xədn-it	‘you cover’

Palatalization can also affect non-coronal consonants in non-final positions, e.g. *ti-səg^yr-it* ‘you (FSG) amble’, *ti-k^yəʈf-it* ‘you (FSG) hash’, *tiq^yərm-it* ‘you (FSG) insult’. The 2FSG suffix {-it} in Muher does not raise /ə/ to /e/ in the verb stem as was the case in the other Northern Gurage languages, e.g. Muher *ti-səbr-it*, Soddo *ti-sebr-in* < *ti-səbr-in, Goggot *ti-sebr-in* < *ti-səbr-in (Leslau 1968).

Muher does, however, exhibit vowel raising in jussive and imperative forms where the suffix has been lost.³² However, the vowel alternations are restricted to cases in which palatalization does not occur.

(44) Palatalization and ablaut in Muher verb forms (data from Leslau 1981)

Forms with palatalization

	2FSG	2MSG	gloss
<i>imperative</i>	tə-barəx ^y (76)	tə-barəx	‘be blessed!’
	albiš(154)	albis	‘cover!’

Forms with ablaut

<i>imperative</i>	sibir	sibir	‘break!’
	niber (75)	nibər	‘live!’
<i>relative imperfect</i>	tisəbir	tisəbir	‘he breaks’
<i>negative imperfect</i>	attisəbir	attisəbir	‘you don’t break
<i>negative jussive</i>	attisbir	attisbir	‘don’t break!’

The ablaut can be distinctive, but this distinction is not generalized to all forms but only a limited subset.

The same types of patterns are also encountered in other languages of the tt-group of Outer South Ethiop-Semitic. In Chaha (Leslau 1950) *end palatalization* involves the entire set of consonants involved in Muher plus the liquids /l/ and /r/. According to Rose (2007), the /n/ in Chaha does not display any surface palatalization but forms with a final /n/ are treated as if it

³² Hetzron (1968) does not describe vowel alternation in the relative imperfect in Muher, claiming the form *ti-səbir* is identical to the 2MSG form. Leslau (1981) gives *ti-səbir* for the same form.

were palatalized. For example, a vowel alternation does not occur with the 2FSG *tin* ‘smoke’ not *tin*. Like Muher palatalization occurs only finally for coronals but can occur in other positions with non-coronal consonants. Unlike Muher the 2FSG is always marked by internal modifications and not by a suffix.

(45) Chaha 2FSG forms (data from Leslau 1950)

	<i>form</i>	<i>root</i>	<i>gloss</i>
t > č	ti-kəfč	k-f-t	‘you open’
d > j	ti-rəmj	n-m-d	‘you love’
ʈ > č	ti-təbč	ʈ-b-ʈ	‘you seize’
s > š	ti-təkš	t-k-s	‘you kindle’
z > ž	ti-gərž	g-r-z	‘you become old’
k > k ^y	ti-nk ^y əb-šə < *ti-nkəb-i-šə	r-k-b	‘you will find’
g > g ^y	ti-dərg ^y	d-n-g	‘you hit’
q > q ^y	ti-sirq ^y i-šə	s-r-q	‘you will steal’
x > x ^y	ti-rəx ^y ib < *ti-rəxib-i	r-k-b	‘you find’
l > i	ti-məsi	m-s-l	‘you seem’
r > i	ti-səki	s-k-t	‘you are drunk’

The 2FSG forms in Endegeñ (Leslau 1971) share features both with Northern Gurage and the tt-group. Like Chaha and Muher the class of palatalizable consonants includes dorsal consonants, e.g. Endegeñ *ti-k^yətf-iwə* ‘you (FSG) hash’ (cf. Muher *ti-k^yətf-it* ‘you (FSG) hash’). In contrast to Chaha the 2FSG in Endegeñ is marked by the suffix {-iwə} and frequently involves an alternation in the stem vowel reminiscent of Soddo and Goggot.

(46) Vowel alternation in second person forms in Endegeñ, Soddo and Goggot

	2FSG	2MSG
Endegeñ (Leslau 1971)	ti-terf-iwə	ti-tərf
Soddo (Hetzron 1972)	ti-b ^y edr-in	ti-bədr-u
Goggot (Hetron 1972)	ti-sebr-in	ti-səbr-u

Furthermore, in Endegeñ 2FSG forms can be marked by vowel ablaut or non-final dorsal palatalization in addition to the *end palatalization* of coronals. This contrasts with Muher and Chaha where ablaut only occurs when there is no appropriate site for palatalization.

(47) Multiple exponence of the 2FSG in Endegeñ (data from Leslau 1971)

	2FSG	<i>gloss</i>
ə > e, s > š	ti-tebš-iwə < *ti-təbs-iwə	‘you roast on the griddle’
g > g ^y , z > ž	ti-g ^y ərž-iwə < *ti-gərž-iwə	‘you become old’ (cf. Chaha <i>ti-gərž</i>)
k > k ^y , d > j	ti-k ^y əfj-iwə < *ti-kəfd-iwə	‘you open’ (cf. Chaha <i>ti-kəfč</i> , Muher <i>ti-kəfč-it</i>)

In addition to *end palatalization* the tt-group has developed another internal morphological alternation, what Hetzron (1971, 1972, 1977) calls “Internal Labialization”. The impersonal form of the verb in West Gurage is characterized by a floating labial feature which attaches to the rightmost appropriate site. The impersonal form is also commonly associated with end palatalization (see Hetzron 1971 and Goldenberg 1977 for more extensive discussions of this phenomenon). Hetzron (1977) provides synchronic derivations for impersonal forms in Ennemor showing the different possible sites for labialization.

(48) Synchronic derivation of impersonal forms (adapted from Hetzron 1977:46)

3MSG				<i>impersonal</i>	<i>gloss</i>
yi-dərg	+	IL	→	yi-dərg ^w	‘hit’
yi-čəkīr	+	IL	→	yi-čək ^w īr	‘cook’
yi-gədir	+	IL	→	yi-g ^w ədīr	‘lay’
yi-šətīr	+	IL	→	yi-šətīr	‘wither’

The following data from Chaha (Leslau 1950) exhibits the same basic patterns with *end palatalization* where appropriate.

(49) Impersonal forms in Chaha (Leslau 1950, Leslau 1997a)

<i>impersonal</i>	<i>gloss</i>	3MSG
zənəf ^w i-m	‘one pillaged’	zənəfə-m
nəkəwi-m (b > w)	‘one found’	nəkəsə-m
tək ^w əši-m	‘one lightened’	təkəsə-m
nəm ^w əji-m	‘one loved’	nəmədə-m
sək ^w əri-m	‘one was drunk’	səkərə-m
mwənem	‘one filled’	məna-m

Scholars (Polotsky 1938, Hetzron 1971, 1972, 1977, Goldenberg 1977) generally agree that the origin of *internal labialization* is the Semitic masculine plural ending *-ū*. Hetzron (1977:9) describes the labialization “as a compensation for the loss of a labial vowel *-u* in a suffix”. Goldenberg (1977) rightly criticizes this characterization as implying “teleological considerations” not in line with Hetzron’s own thinking. As is clear in other cases the original conditioning element need not be absent for the alternation to occur, although the loss of the conditioning element forces the interpretation of the alternation as morphologically distinctive.

The assumption that the *internal labialization* in impersonal forms derives from the original 3MPL suffix **-u* (< PS **ū*) presents an interesting problem. In Masqan (Hetzron 1971), Central West Gurage (Leslau 1996) and in Gyeto (Hetzron 1977) in Peripheral West Gurage, there is a contrast between the impersonal and 3MPL forms.

(50) Examples of 3MPL and impersonal forms distinguished by IL and EP

	3MPL perfect	impersonal perfect	gloss
Chaha (Leslau 1996)	bənəsə	b ^w ənəši	‘one destroyed’
	fəndo-m	f ^w ənji	‘one judged’
Masqan (Hetzron 1971:195)	təbbəsə	təbb ^w əš-	‘one cooked’
	aggədə	agg ^w əj-	‘one tied’
Gyeto (Hetzron 1971:196)	barə	b ^w ar-	‘one said’
	qənəsə	q ^w ənəš-	one began’

In the rest of Peripheral West Gurage no contrast is made between the 3MPL and impersonal forms with respect either to *internal labialization* or *end palatalization* (Hetzron 1971:82, Hetzron 1972:82).

Internal labialization is characteristic of the impersonal forms in all the West Gurage. Because of this fact, Hetzron (1971) considers the impersonal to be the form in which internal labialization first appeared, while considering both internal labialization of the 3MPL in Ennemor (Leslau 1996), Endegen (Leslau 1971, Hetzron 1971:197) and other Peripheral West Gurage languages and of verb forms with 3MSG suffixes in Gyeto, Muher, Masqan and the Central West Gurage languages (Hetzron 1971) as later developments. In all cases the internal labialization can be attributed to a suffix with an original high back vowel /u/ or /ū/. Hetzron (1971, 1972) explains this situation in terms of the impersonal reflecting the original 3MPL with the 3MPL forms reflecting instead an innovative form with the new suffix form {-mu}.

Zway

Returning to Transverse South Ethiosemitic, Zway (Leslau 1999) contains a number of patterns peculiar to this branch which are not shared with other members of the Transverse branch or other East Gurage languages. One of the most conspicuous features of Zway is the widespread occurrence of different vowel alternations. Vowel alternations are of a few basic types. In some forms vowel quality is affected by neighboring consonants. For example, the short vowels /ə/ and /i/ can become /u/ before a labial or more occasionally before a velar, Proto-Gurage *imar ‘donkey’ > *umar*, Proto-Gurage *imun ‘stone’ > *umun*, Proto-Gurage *əfur ‘mouse’ > *ufur*, proto-Gurage *igdəñə ‘prisoner’ > *ugdəñə* (17). There are also many cases of vowel harmony. The vowel harmony described by Leslau for Zway generally involves a low vowel or a short vowel partially or fully assimilating to a following back round vowel, e.g. *i - u* becomes *u - u*, the sequence *ə - u* becomes *o - u* and the sequences *a* or *ə - o* become *o - o*.

These vowel harmony alternations are one of the potential sources for common ablaut alternations that occur in plural verb forms.

(51) Ablaut marking person and number in Zway (Leslau 1999)

	forms with ablaut		related 3MSG or 2MSG form	East Gurage	
				Silt'e (Gutt 1997)	Wolane (Cohen 1931)
3PL perfect	dobol	<*dəbəl	dəbələ	masaku	
3PL perfect +nu	dobəlu-nu	<*dəbəl-u-nu	dəbələ-nu	masakōn	wədədwən
3PL perfect +o	nōr(u)	<*nāru	nāro		
2FSG imperfect	tidebil	<*tidəbīli	tidəbil	timaski	tisəfriən
2PL imperfect	tidobul	<*tidəbīlu	tidəbil	timasku	tisəfruån
3PL imperfect	yidobul	<*yidəbīlu	yidəbil	imasku	isəfru
3PL jussive	yəsboru	<*yəsbəru-u	yəsbəru	yamsaku	yəsfəru
2FSG NEG jussive	atsiber	<*atsibəri	atsibər		
2PL NEG jussive	atsubor	<*atsibəru	atsibər		
2FSG imperative	siber	<*sibər-i	sibər	misaki	sifər-i
2PL imperative	sibor	<*sibər-u	sibər	misaku	sifər-u

More than in any other Ethiosemitic language, the ablaut alternations used to indicate 2FSG, 2PL and 3PL in prefix conjugation verb forms and the 3PL in suffix conjugation verb forms are regular and productive. The 2FSG ablaut alternations are *i~i*, *ə~e* and the plural alternations are *i~u*, *i~u*, *ə~o*, *a~o*, *ā~ō*. The origin of these ablaut alternations is fairly obvious as the plural suffix **-u* < PS **-ū* is found in other Semitic languages in exactly the same forms as ablaut does in Zway. The same is true for the 2FSG in Zway which originates in the 2FSG suffix **-i* < PS **-ī*.

The ablaut displayed above only affects the stem vowels. The personal, negative and derivational prefixes are not involved in these alternations. Generally, all the stem vowels are affected, although in a few cases a short stem vowel remains unchanged. This is sometimes the case for the second stem vowel when the 3PL suffix of the perfect form is preserved in forms with postposed *{-nu}* and for the first stem vowel of the imperative, e.g. *abosəlu-nu* 'they cooked' < **abəsəlu-nu*³³ (Leslau 1999:16), *siber* 'break (FSG)!' and *sibor* (81), but *olofu-nu* 'they passed' < **aləfu-nu*³⁴ and *ulof* 'pass (PL)' < **iləf-u* (91).

Based on comparisons with other East Gurage languages displayed in the chart above, it is clear that the ablaut alternations found in Zway are developments specific to this language variety. Not only do the Silt'e (Gutt 1986, 1997) and Wolane (Cohen 1931) forms not display any influence of the suffixes on the stem vowels, but both the 2FSG suffix *{-i}* and the plural suffix *{-u}* are generally retained. The loss of the suffixes lends support to the generally held notion that the appearance of the ablaut patterns is closely connected to the loss of the final vowel. This notion would appear to be generally true. The loss of the final vowel is often accompanied by a vowel alternation as is the case in Zway. Most likely, the influence of the

³³ The /a/ in this example does not undergo ablaut because it is the causative prefix.

³⁴ The /a/ in this example is a stem vowel derived from compensatory lengthening due to the loss of an original initial guttural *aləf* < **çalaf-a*.

suffix on the stem vowel precedes the ablaut. The imperative forms of verbs frequently involve both the loss of suffixes the appearance of ablaut.

(52) Imperative forms in South Ethiosemitic

		2MSG	2FSG	2(M)PL	gloss
Transverse South Ethiosemitic	Amharic (Leslau 2000)	sibər	sibəri	sibəru	‘break!’
	Harari (Leslau 1958)	ziməd	ziməji	zimədu	‘drag!’
East Gurage	Silt’e (Gutt 1986)	k’ital	k’itay ³⁵	k’italu	‘kill!’
	Wolane (Cohen 1931)	sifər	sifəri	sifəru	‘camper’
	Zway (Leslau 1999)	sibər	siber	sibor	‘break!’
Outer South Ethiosemitic	Gafat (Leslau 1956)	litəm	litəmi	litəm ^w im	‘arrive!’
Northern Gurage	Soddo (Leslau 1968)	sifər	sifer	sifər-im	‘measure!’
	Muher (Leslau 1981)	sibir nibər	sibir niber	sibrim ^w	‘break!’ ‘live!’
West Gurage	Chaha (Leslau 1950, Rose 2007)	nikis	nikiš	nikso	‘bite!’
		sirəf	siref		‘fear!’
		t’af	t’əf		‘write!’
	Endegen (Leslau 1971)	kitf	kitf-iwə	kutf-uwa	‘open!’

Looking exclusively at the imperative forms, most cases that involve a vowel alternation in the stem also lack suffixes. However, in all the languages above except Chaha, the ablaut is not necessarily the only exponent of 2FSG or plural. In most cases the ablaut can be accompanied by *end palatalization*. In Chaha ablaut only occurs when there is no appropriate site for palatalization. However, the vowel alternation does not occur only with forms where the suffix has been lost. Soddo, Goggot, and Endegen have 2FSG forms with both the vowel alternation and preserve the suffix {-i}, see (46) above. The vowel alternation is also found in perfect forms in Zway with {-nu}, which preserves the plural ending {-u}. While the loss of a final suffix vowel is not the only case where a phonological vowel alternation can be reanalyzed as morphological, the loss does seem to be an important contributor to the likelihood of the reanalysis.

3.3.4. Ablaut in Modern South Arabian languages

Leslau (1943) includes “umlaut” among features that support the grouping of Ethiosemitic with South Arabian languages in South-East Semitic. While the suffix {-i} has led to common vowel alternations in both groups, there is little evidence that these common developments are anything

³⁵ k’itay < *k’ital-i

but independent, although parallel, changes. The examples of morphological vowel alternation in Ethiosemitic are not characteristic of the entire family but are confined to a few languages and branches which show a variety of patterns.

The Modern South Arabian languages have ablaut patterns which are similar to those found in Ethiosemitic. As in Ethiosemitic, alternations occur both when the conditioning suffix is present and when it has been lost. Like Zway, both the 2FSG suffix *-ī and the plural suffix *-ū are responsible for vowel alternations. Unlike Ethiosemitic, however, the 2FSG and plural suffix are not responsible for widespread consonant alternation like those found in *end palatalization* and *internal labialization*. The crucial difference in this case seems to be existing palatalized and labialed consonant variants introduced through contact with non-Semitic Ethiopian languages. Although ablaut alternations for the 2FSG and plural forms are found in all the Modern South Arabian languages, there are instructive differences between them. Languages differ in where the original suffixes are found and in which forms vowel alternations occur. The likely independent origins of the ablaut patterns in Ethiosemitic and Modern South Arabian provides us with a more meaningful set of data with which to assess and propose hypotheses about their origins.

3.3.4.1. Ablaut in Jibbāli

Jibbāli has a particularly robust set of alternations in prefix conjugation verb forms. Like Ethiosemitic and Akkadian, there are separate imperfect (*qat(t)il) and subjunctive (jussive) verb (*qtVl) forms. The 2FSG is marked by ablaut in the imperfect, subjunctive and imperative. The suffix {-i} has been lost in Jibbāli.

(53) 2FSG ablaut in Jibbāli (data from Johnstone 1981)

		2FSG	2MSG	root gloss
type (a)	imperfect	tk'ídər	tk'ódər	'manage'
	subjunctive	tík'dir	tók'dər	
	imperative	k'dír	k'dér	
type (a), passive	imperfect	d-irefis'	d-irefós'	'be trampled'
	subjunctive	l-ərfis'	l-ərfós'	
type (b)	imperfect	tfiðír	tféðór	'shiver with fear'
	subjunctive	təfðír	təfðór	
	imperative	fðír	fðór	
intensive- conative	imperfect	di-gúdələn	de-gódələn	'tie'
	subjunctive	l-gúdul	l-gódəl	
causative	imperfect	d-iffilít	d-effélót	'escape'
	subjunctive	l-ífəlt	l-éfəlt	
infixed -t- type (a)	imperfect	təftígír	təftégór	'burst'
	subjunctive	təftígər	təftégər	
infixed -t- type (b)	imperfect	əftəkírən	əftəkérən	'consider'
	subjunctive	təftíkər	təftókur	
prefixed š- type (a)	imperfect	əšfidərən	əšfédərən	'outstrip'
	subjunctive	tšfidər	tšfédər	
prefixed š- type (b)	imperfect	əšdérík	əšdérók	'survive'
	subjunctive	tšidrək	tšédrək	

The alternations in Jibbāli are fairly complex reflecting the complex phonological history of this variety. The sound /ɔ/ has an ablaut variant /i/ and /ú/. The general pattern is that /ɔ/ becomes /i/, but in the subjunctive of the intensive conative /ɔ/ becomes /ú/. In the latter case /ɔ/ become /ú/ because the /ɔ/ is derived from /ó/ (ultimately from Semitic *ā since the intensive-conative reflects the L-stem) which becomes /ú/ in the imperfect of the intensive-conative form. The nature of the alternations, where most vowels are /i/ in the 2FSG, is consistent with their ultimate origin in the influence of the 2FSG suffix *ī. The one exception is where $o > u$ involves raising if not fronting.

The ablaut patterns associated with 2MPL and 3MPL are less consistent and more complex phonologically than those found for the 2FSG. In a few cases there is no distinction between the plural and the singular forms.

(54) Identical plural and singular forms in Jibbāli (data from Johnstone 1981)

		3MPL	3MSG	2MPL	2MSG	root gloss
type (a)	imperfect	yk'ódər	yk'ódər	tk'ódər	tk'ódər	'manage'
intensive-conative	subjunctive	ygódəl	ygódəl	l-gódəl	l-gódəl	'tie'
infix -t-, type (a)	subjunctive	yəftégər	yəftégər	təftégər	təftégər	'burst'
type (b)	subjunctive	yəftókur	yəftókur	təftókur	təftókur	'consider'

More commonly the 2MPL and 3MPL are marked by ablaut alternations.

(55) Masculine singular and plural forms marked by ablaut (data from Johnstone 1981)

		3MPL	3MSG	2MPL	2MSG	root gloss
type (a)	subjunctive	yók'dər	yək'dór	tók'dər	tək'dór	'manage'
	imperative			k'dór	k'dér	
type (a), passive	imperfect	d-irefés'	d-irefós'	d-irefés'	d-irefós'	'be trampled'
	subjunctive	l-ərfés'	l-ərfós'	l-ərfés'	l-ərfós'	
type (b)	imperfect	yfédór	yfédér	tfédór	tfédér	'shiver with fear'
	subjunctive	yəfódór	yəfódér	təfódór	təfódér	
	imperative			təfódór	təfódér	
intensive-conative	imperfect	d-igódələn	d-igódələn	de-gódələn	de-gódələn	'tie'
causative	imperfect	d-iffélét	d-iffélót	d-effélét	d-effélót	'escape'
	subjunctive	yófəlt	yéfəlt	l-ófəlt	l-éfəlt	
infix -t-, type (a)	imperfect	yəftégér	yəftégór	təftégér	təftégór	'burst'
infix -t-, type (b)	imperfect	yəftəkérən	yəftókérən	təftəkérən	təftókérən	'consider'
prefixed š-, type (a)	imperfect	yəšfódərən	yəšfédərən	tšfódərən	əšfédərən	'outstrip'
	subjunctive	yəšfódər	yəšfédər	tšfódər	tšfédər	
prefixed š-, type (b)	imperfect	yəšdérék	yəšdérók	tšdérék	əšdérók	'survive'
	subjunctive	yšódrək	yšédərək	tšódrək	tšédərək	

Still, even in these cases, where the MPL suffix *-ū* likely played a role, the causes of the alternations are more complex. One difficulty for the analysis of these alternations is that changes in vowel quality are frequently connected to changes in the prosodic structure (these types of changes are discussed in section 3.4.). It is not immediately clear whether the vowel alternations above are examples of umlaut being reanalyzed as ablaut or changes due to different prosodic contexts created by the presence or absence of the suffix.

Two basic ablaut types are found. The dominant pattern where vowels, including /ə, ε, e, o/, all occur as /ɔ/ in 2MPL and 3MPL forms is easily reconciled with an origin in umlaut. The other type involves what appears to be the opposite pattern with /ɔ/ occurring as /e/ in 2MPL and 3MPL forms.

Despite the relative complexity of the ablaut related to plural forms, there is reason to consider them as also involving the reinterpretation of umlaut. This scenario is supported by the existence of synchronic umlaut in the dual forms, which display the same basic alternations. The examples below indicate the close connection between umlaut alternations in the dual and ablaut alternations in the plural forms. In most forms it is difficult to compare the forms because of divergent prosodic patterns. For example, in the subjunctive the stem shape of the dual is {əʃCvCC} and that of the plural is {ʃvCCvC} making comparisons more difficult.

(56) Comparison between dual umlaut and plural ablaut (data from Johnstone 1981)

		3MDU	3MPL	3MSG	ablaut	root gloss
type (a)	subjunctive	yək'dór-ó	yək'dór	yók'dər	ə > ɔ	'manage'
type (b)	imperfect	yfəðér-ó	yfəðér	yfəðór	ó > é	'shiver with fear'
infix -t-, type (a)	imperfect	yəftəgér-ó	yəftégér	yəftégór	ó > é	'burst'
prefixed š-, type (b)	imperfect	yəʃdərék-ó	yəʃdérók	yəʃdérók	ó > é	'survive'

Outside of the verbal system there are two other similar umlaut or vowel harmony processes found in Jibbāli. The first involves the preposed definite article {e-} which alternate when the noun has an initial guttural consonant and a back stem vowel. In these cases the definite article becomes /o-/ or /ɔ-/, e.g. *o-hóri* 'the small boat', *o-hófēt*, *ɔ-hōt*, *o-hút* 'the fish', *ɔ-ğóθe*, *ɔ-xxóbz*, *o-xófet* (Johnstone 1981:xxix-xxx). Alternations are also found with /a/ and /ε/, e.g. *a-ğabré?*, *ε-xxēr*. A similar alternation is found with conjugated prepositions where suffixes with the high back vowel /u/ like 3MPL {-hum} and 2MPL {-kum} cause a vowel in the prefix to become /o/ or /ɔ/.

(57) Conjugated prepositions with vowel harmony (data from Johnstone 1981)

	b- 'by, with'		sér- 'behind'	
	form	gloss	form	gloss
3MSG	beš	'with him'	séréš	'behind him'
3MPL	bóhum	'with them'	séróhum	'behind them'
2MSG	bek	'with you'	sérék	'behind you'
2MPL	bókum	'with you'	sérókum	'behind you'
	ʔed- 'to, toward'		ʃak'- (ʃamk-) 'in, inside'	
	form	gloss	form	gloss
3MSG	ʔedéš	'to him'	ʃamkéš	'in him'
3MPL	ʔedóhum	'to them'	ʃamkóhum	'in them'
2MSG	ʔedék	'to you'	ʃamkék	'in you'
2MPL	ʔedóhum	'to you'	ʃamkókum	'in you'

3.3.4.2. 2FSG ablaut in the other Modern South Arabian languages

The 2FSG ablaut in prefix conjugation forms is also characteristic of the other Modern South Arabian languages. The peculiar prosodic properties of Jibbāli, which allow more than one primary stress (see Simeone-Senelle 1997:386, Johnstone 1981:xiv for short discussions of stress in Jibbāli), create a more complex situation than is found in other varieties. In Mehri, Hobbyōt, and Ḥarsūsi ablaut is restricted to stressed positions. There is a strong relationship between stress and vowel length in these languages. Historically, the placement of stress has led to tonic lengthening in open syllables (see section 3.4. below) such that synchronically stress is placed on long vowel. When there is no long vowel, stress is on the rightmost non-final closed syllable or the first syllable.

Mehri and Ḥarsūsi exhibit very similar patterns in terms of ablaut. Hobbyōt also shares many of the same characteristics although involving slightly more complex vowel patterns. In the imperfect, but not the subjunctive or conditional, ablaut is used to distinguish between the masculine and feminine 2SG forms. The morphological facts of Mehri as described in Johnstone (1987) are somewhat more complex than this and will be discussed at length later. The chart below indicates forms exhibiting ablaut.

(58) 2FSG ablaut in Hobbyōt, Ḥarsūsi and Mehri (Simeone-Senelle 1997)

<i>language</i>	<i>form</i>	2FSG	2MSG	<i>root gloss</i>
Hobbyōt ³⁶	type (a), imperfect	ṭyērəb	ṭyōrəb	‘to understand’
	type (a), subjunctive	ṭyʌrēb	ṭyʌrēb	‘to understand’
Ḥarsūsi	type (a), imperfect	təlībəd	təlōbəd	‘to strike’
	type (a), subjunctive	təlbəd	təlbəd	‘to strike’
Mehri	type (a), imperfect	təθībər	təθōbər	‘to break’
	type (a), subjunctive	tərkēz	tərkēz	‘to straighten’
	type (b) imperfect	təθbēr	təθbōr	‘to get broken’

The similarities between these forms, and even the forms from Jibbāli, are convincing evidence that the 2FSG ablaut has a common origin in continental Modern South Arabian. The only outlier is Soqotri where unlike the other languages it is the last vowel not necessarily the stressed vowel that is involved in the ablaut alternations. Ablaut is observed in all the forms.

³⁶ dialect of Ḥawf

(59) 2FSG ablaut in Soqotri (Lonnet 2006)

	2FSG	2MSG	<i>gloss</i>
<i>imperfect</i>	tkótib kīb ³⁷	tkóteb kōb	‘you write’ ‘you introduce’
<i>subjunctive</i>	táktíb lēkíb	táktéb lēkéb	‘(you) to write’ ‘(you) to introduce’
<i>imperfect, passive</i>	(?)ótkib šowri?	(?)ókob šowre?	‘you are introduced’ ‘you resemble’

The basic character of ablaut in Soqotri is also supported by data found in Johnstone (1968) and Simeone-Senelle (1997).

Another case of what we might describe as “palatal” ablaut is also found in Mehri and Hobyōt, but not Ḥarsūsi, Jibbāli and Soqotri. In these cases the conditioning suffix was the 2FSG perfect suffix -š < Proto-South-Semitic *-kī < PS *-tī. The paradigms in Johnstone (1987) and Simeone-Senelle (1997) limit this ablaut to the type (a) form.

(60) 2FSG perfect forms (data from Simeone-Senelle 1997 unless otherwise stated)

<i>languages without ablaut</i>	2FSG	2MSG	<i>gloss</i>
Ḥarsūsi	kətōbəš	kətōbək	‘you wrote’
Soqotri	ʕərəbš	ʕərəbk	‘you understood’
	gəšəlš	gəšəlk	‘you got broken’
Jibbāli (Johnstone 1981)	k’ódórš	k’ódórk	‘you managed’
	fédərəš	fédərək	‘you shivered with fear’
	egódələš	egódələk	‘you tied’
	šderókəš	šderókək	‘you survived’
<i>languages with ablaut</i>	2FSG	2MSG	<i>gloss</i>
Hobyōt	γḏrəbəš	γḏrəbək	‘you understood’
Mehri (Johnstone 1987)	rəkəzš	rəkəzk	‘you straightened’
	θəbrəš	θəbrək	‘you were broken’
	gəhəməš	gəhəmək	‘you went in the morning’

Unlike the other alternations so far described, these ones are, in a sense, redundant. Since the 2FSG is clearly marked with the suffix {-š} or {-š}, which contrast with the masculine {-k}, the vowel alternation cannot be construed as preserving a distinction that has been lost.

The inflection of prefix conjugation 2FSG forms in Mehri also presents problems for the hypothesis that ablaut arises out of a need to maintain a contrast when a suffix is lost. In Mehri, as described in Johnstone (1987), the 2FSG suffix appears in some forms but is missing in other forms. In both forms with and without the suffix we still find the vowel alternation, such that some examples appear as umlaut while others appear as ablaut.

³⁷ The personal prefixes are frequently dropped in Soqotri. For a description of this phenomenon see Johnstone (1968).

(61) 2FSG form without suffix {-i} in Mehri (Johnstone 1987)

	2FSG	2MSG	<i>gloss</i>
<i>type (a), imperfect</i>	tərēkəz	tərūkəz	‘you straighten’
	təʔēmər	táwmər	‘you order’
	təwīzəm	təwūzəm	‘you give’
<i>intensive-conative</i>	tarēkəb	tarōkəb	‘you put (a pot) on the fire’ (SUBJ)
	təhənsəm	təhənsəm	‘you breathe’ (SUBJ)
	təhárbaʔ	təhárbaʔ	‘you lift’ (SUBJ)
<i>causative</i>	təhəšəbəh	təhəšáwbəh	‘you hit’
	təhənēdəx	təhənūdəx	‘you fumigate’
	tətík’əθ’	təták’əθ’	‘you wake up’ (SUBJ)
<i>reflexive</i>	təmtēdəh	təmtōdəh	‘you praise excessively’ (SUBJ)
	təšákber	təšákber	‘you consider large’ (SUBJ)
<i>causative-reflexive</i>	təšákber	təšákber	‘you consider large’ (SUBJ)
	tədəgdəg	tədəgdəg	‘you tap’ (SUBJ)

Johnstone (1975) argues that the suffix is preserved in some Mehri forms because of the weakening of the contrast between /ē/ and /ī/ which is necessary for the ablaut distinction in forms like 2MSG subjunctive *tarkēz* vs. 2FSG *tarkīz* ~ *tarkēz*. However, this hypothesis is not born out in the data in Johnstone (1987). Rather, the main determinant of the presence or absence of the suffix is the placement of stress. When stress occurs on the penultimate syllable of the stem, the suffix is lost. In many cases the distinction between masculine and feminine is maintained by ablaut.

In a similarly large set of forms with stress on the penultimate syllable of the stem, the suffix is lost and there is no ablaut. These forms thus have no overt marking of the masculine-feminine distinction. The occurrence of ablaut is determined not by a need to maintain a distinction, but due to phonology of the forms.

(62) Second person forms without any gender distinction in Mehri (data from Johnstone 1987)

	2FSG	2MSG	<i>gloss</i>
<i>intensive-conative</i>	təsēwər	təsēwər	‘you consult’
	təhāddəl	təhāddəl	‘you show’ (SUBJ)
	təhétəm	təhétəm	‘you spend the night’ (SUBJ)
<i>causative</i>	təháwrəd	təháwrəd	‘you take down to water’ (SUBJ)
	təntífəz	təntífəz	‘you cut your foot’ (SUBJ)
	tātáks	tātáks	‘you be bored’ (SUBJ)
<i>reflexive</i>	təšēmən	təšēmən	‘you believe’ (SUBJ)
	təšáws’əb	təšáws’əb	‘you be hit’ (SUBJ)
	təšík’ər	təšík’ər	‘you hide yourself’ (SUBJ)
<i>causative-reflexive</i>	təšík’ər	təšík’ər	‘you hide yourself’ (SUBJ)
	təšxáwwəl	təšxáwwəl	‘you stay’ (SUBJ)

In contrast to the forms with stress on the penultimate syllable of the stem, those with stress on the final syllable of the stem retain the suffix.

(63) 2FSG form with suffix {-i} and ablaut in Mehri (Johnstone 1987)

	2FSG	2MSG	<i>gloss</i>
<i>type (a), passive,</i>	tərkáyzi	tərkōz	‘you are straightened’
<i>imperfect</i>	təθbáyri	təθbōr	‘you are broken’
<i>type (b)</i>	tədláyli	tədlūl	‘you show’
<i>type (a), active</i>	təśáymi	təśōm	‘you sell’
	təməyti	təmut	‘you die’
	təsyēri	təsyūr	‘you go’
<i>causative</i>	təhənsáymi	təhənsūm	‘you breathe’
	təhədláyli	təhədlūl	‘you show’
<i>reflexive</i>	təntəfáyzi	təntəfūz	‘you cut your foot’
	təstáymi	təstōm	‘you buy’
	tətk’áyθ’i	tətk’ōθ	‘you wake up’
	təgtēθ’i	təgtūθ’	‘you get angry’
<i>causative-reflexive</i>	təšəkábáryi	təšəkábūr	‘you consider large’
	təšēmáyni	təšāmūn	‘you believe’
	təšəwşáybi	təšəwşōb	‘you are hit’
<i>quadrilateral</i>	tədəgdáygi	tədəgdūg	‘you tap’
	təšxəwláyli	təšxəlūl	‘you stay’

The suffix is retained along with the ablaut, creating form in which the masculine/feminine distinction is doubly marked.

Another set of forms has invariant stem vowels but marks the 2FSG with the suffix. The differences between this set and the set with double marking can be accounted for entirely by the vowel in the 2MSG. All the cases with ablaut have either /ū/ or /ō/ in the 2MSG and all the cases without ablaut have either /ā/ or /ē/ in the 2MSG.

(64) 2FSG marked only by suffix {-i} in Mehri

	2FSG	2MSG	<i>gloss</i>
<i>type (a)</i>	tədlēli	tədlēl	‘you show’ (SUBJ)
	taʔmēri	taʔmēr	‘you say’ (SUBJ)
	təgāri	təgār	‘you fall’ (SUBJ)
	tāzēmi	tāzēm	‘you decide’ (SUBJ)
	təməti	təmət	‘you die’ (SUBJ)
	təsyēri	təsyēr	‘you go’ (SUBJ)
<i>intensive conative</i>	təngāli	təngāl	‘you sweat’ (SUBJ)
<i>reflexive</i>	təgtēθ’i	təgtēθ’	‘you get angry’ (SUBJ)
<i>causative-reflexive</i>	təšk’áyri	təšk’áyr	‘you hide’

The distribution of ablaut according to the available data is determined by phonological factors. There are very few cases where you cannot clearly predict whether there will be ablaut

based on the vowel of the 2MSG form. One of the few exceptions encountered involves forms with stressed /á/ in 2MSG. There are a few form with /á/ that become /ǎ/ in the 2FSG (e.g. 2MSG *táhánsám* vs. 2FSG *táhǎnsám*, 2MSG *táhárbaʔ* vs. 2FSG *táhǎrbaʔ*), whereas almost identical forms with /ǎ/ retain the vowel in the 2FSG in other cases (e.g. *táháddǎl*). The 2FSG form *táhágǎr* (2MSG *táhágar*), like the second class just described, does not involve ablaut of the stressed vowel but does so for the unstressed /a/.

Another set of exceptions also appears to have clear phonological conditioning. Some intensive-conative forms in the subjunctive have a stem vowel /ī/ in the 2MSG and in at least one case of the causative-reflexive the stem has the vowel /ē/. Like /ē/ and /ā/, these vowels do not alternate. However, even though stress is stem-final, the suffix is dropped. Something about the quality of the vowel or the history of these forms seems to have created an additional context in which the suffix is lost.

(65) Forms with unexpected loss of suffix

	2FSG	2MSG	<i>gloss</i>
<i>intensive-conative</i>	tabdīd	tabdīd	‘you separate’ (SUBJ)
	talwīm	talwīm	‘you blame’ (SUBJ)
<i>causative-reflexive</i>	tǎšwēd	tǎšwēd	‘you arrange a meeting’ (SUBJ)

Another form in which the suffix is unexpectedly dropped is in the 2FSG (and 2MSG) form *tǎgáwr*. This form has stem-final stress, so we might expect to find the suffix. In this case the loss is explained by the origin in the form *tǎgáwǎr* (see Johnstone 1987:xxv, n. 2).

To sum up, there is no reason to assume that a desire too maintain contrasts has had any role in the development of 2FSG forms in Mehri. There appear to be two basic principles responsible for the second person forms in Johnstone (1987). First, the loss of the suffix is conditioned by the placement of stress. This process occurs whether or not there is a secondary means of distinguishing the masculine/feminine forms. The second principle is that the original vowel determines whether or not there is an internal vowel alternation. There are relatively few exceptions and most of them can clearly or likely be accounted for by other means.

3.3.4.3. Plural ablaut in the other Modern South Arabian languages

Plural ablaut in the Modern South Arabian languages comes in two basic varieties. The first variety are those related to the suffix *-ū attached to 2MPL and 3MPL forms in prefix conjugation forms. This type of ablaut was described above for Jibbāli but exists in some form in at least some varieties of Mehri and Soqotri. Many of the same problems encountered in the analysis of this alternation in Jibbāli are also found in these other languages. The second variety originates in the suffix *-ū which was originally attached to the 3MPL form of the perfect verb form. Ablaut in the 3MPL perfect forms has a limited distribution in Ethiosemitic, being found in Zway (Leslau 1999) in East Gurage and Endegeñ (Leslau 1971) in West Gurage, but does not appear in the majority of Ethiosemitic languages nor in Jibbāli. Because of the distribution of this ablaut in small pockets in Ethiosemitic and in a subset of the Modern South Arabian languages, it would appear that this alternation has developed independently a few times. In a sense, one might argue that these are not truly independent developments as they owe a great deal to a common Semitic inheritance (i.e. is the 3PL suffix *-ū) and the fact that other ablaut or umlaut alternations are present that might in some way facilitate the development of further similar alternations.

In Ḥarsūsi and Hobyōt, the 3MPL of the perfect and the 3MPL and 2MPL of the prefix conjugations is marked by the suffixes {-um} and {-əm}, respectively. It is not completely clear how this form relates to the assumed original suffix {-ū}, whether it is a continuation of the older form or an innovation. This suffix might reflect the same processes that produced a very similar suffix {-um} in some Arabian and Bedouin dialects (Jastrow 1980, de Jong 2000). Related suffixes occur in the prefix conjugation forms of Mehri, but are missing in the perfect, while marking of the masculine plural forms is by ablaut, if at all, in Jibbāli and Soqotri. A feminine plural suffix in these languages has fared comparatively better. The suffix {-ən} occurs in all Modern South Arabian languages in the prefix conjugation forms. The perfect forms of the 3FPL do not have any suffix and are generally homophonous with the forms of 3MSG.

The ablaut associated with MPL forms in Soqotri differs in several respects from the patterns observed in 2FSG. The 2FSG ablaut has a fairly straightforward character with the final stem vowel becoming /i/ or /ī/ and a simple historical explanation due to the influence and loss of the final suffix {-ī}. The alternations and origins of MPL ablaut in Soqotri can not be so easily characterized or determined. In the 3MPL of the perfect, several vocalic alternations occur in the mpl forms. Some of these changes may exhibit potential signs of the original MPL ending {-ū}. For example, the 3MPL form of *ʔārɔb* ‘he understood’ is *ʔārub* ‘they understood’ (from the Soqotri dialect of Qadhub, Simeone-Senelle 1997). Similarly, in the imperfect forms of the both the 2MPL and the 3MPL, the stressed vowel contrasts sharply with the alternation found for the 2FSG where only the unstressed final vowel exhibits ablaut, e.g. *yək’óbər* ‘they bury’ vs. *yək’ábər* ‘he buries, *tək’óbər* ‘you (MPL) bury’ vs. *tək’ábər* ‘you (MSG) bury’ (Johnstone 1975), Qadhub dialect *ik’ófəd* ‘they go down’ vs. *ik’áfəd* ‘he goes down’ (Simeone-Senelle), *l-ǰmtil* they speak (subjunctive) vs. *ǰmtil* ‘they speak (subjunctive)’. In Qadhub, unlike the Soqotri described by Johnstone, the ablaut is only found in the 3MPL form not the 2MPL, which is identical to the 2MSG form. Other alternations do not seem to follow so clearly from the assumed original forms with {-ū}. The other alternations encountered either involve synchronically the vowel becoming /ə/ or the raising and/or fronting of the vowel. The data below represents different varieties, making a unified analysis difficult.

(66) Plural ablaut in Soqotri

ablaut	dialect or source	form	3MPL	3MSG	root gloss
ɔ > ə	Johnstone’s notes ³⁸	type (b), imperfect	ydekər	yədəkər	‘to remember’
	Johnstone 1975	type (a), perfect	kətəb	kətəb	‘to write’
ε > ə	Lonnet 2006	type (a), subjunctive	l’ik’bər	li-k’bər	‘to bury’
ε > e		subjunctive	ləktéb	ləktéb	‘to write’
ɔ > ē		subjunctive	ləkéb	ləkéb	‘to introduce’
ɔ > i	Qadhub (Simeone-Senelle 1997)	imperfect	ikéb	ikób	‘to introduce’
ə > i		type (a), subjunctive	ləfárib	ləfárəb	‘to know’
e > ε, ə > e		type (b), perfect	gəšel	gəšəl	‘to get broken’
ɔ > ɪ	Johnstone 1968	causative, imperfect	ynéǰir	ynéǰər	‘to put’
		causative, imperfect	yǰǰmētɪl	yǰǰmētəl	‘to speak’
		passive, imperfect	yǰhuubɪs	yǰhuubəs	‘to be imprisoned’
a > ɪ		reflexive, subjunctive	l-ikéetnɪh	l-ikéetnaħ	‘to return’

³⁸ As taken by Simeone –Senelle 1997.

As with Jibbāli, it can be difficult to disentangle alternations which likely involved earlier assimilation between vowels and those related to stress and syllable structure. Some of the alternations described above are of unclear origin. For example, the paradigm for the subjunctive in the Soqotri of Qadhub (Simeone-Senelle 1997) has several different ablaut patterns. The final stem vowel is /i/ in both the 2FSG and the 3MPL forms *təʔárib* ‘you (FSG)/they know’. In most other forms without suffixes the vowel is /ə/, e.g. *ləʕárəb* ‘he knows/ I know’, *təʕárəb* ‘you (2MSG) know’.

The plural ablaut alternations in Mehri are also of a complex nature, although in many cases they appear to exhibit traces of the original *-ū suffix. Most of data below is from Johnstone (1987) and displays particularly rich alternations. The Mehri of Qishn (Simeone-Senelle 1997) has non-alternating forms with suffixes in the perfect 3MPL where Johnstone describes ablaut, e.g. *r(ə)kūz* ‘he put something straight’, *rkūzəm* ‘they put something straight’ vs. *rəkūz* ‘he put something straight’, *rəkáwz* ‘they put something straight’. Similar contrasts are also found within Johnstone’s own data with some 3MPL perfect forms lacking ablaut and having suffixes, e.g. *mōt* ‘he died’ vs. *mōtəm* ‘they died’. The character of the plural ablaut patterns is on the surface quite complex.

The strongest case for the origin of the ablaut in the suffix *-ū is provided by forms where a diphthong /aw/ is found in plural forms. This alternation is directly parallel to the alternation found in the 2FSG in Mehri where the suffix *-ī is responsible for the diphthong /ay/. In both cases the character of the alternation is directly connected to the vowel quality of the original suffix (/ay/ from /ī/, /aw/ from /ū/).

(67) MPL forms with /aw/ (Johnstone 1987)

	MPL	MSG	<i>gloss</i>
<i>type (a), perfect</i>	<i>rəkáwz</i>	<i>rəkūz</i>	‘they/he straightened’
	<i>ʔāmáwr</i>	<i>ʔāmūr</i>	‘they/he spoke’
	<i>wəzámw</i>	<i>wəzūm</i>	‘they/he gave’
	<i>səyáwr</i>	<i>səyūr</i>	‘they/he went’
<i>type (a), II-w, imperfect</i>	<i>yəmáwt</i>	<i>yəmūt</i>	‘they die’/‘he dies’
<i>type (a), II-y, imperfect</i>	<i>yəsyáwr</i>	<i>yəsyūr</i>	‘they speak’/‘he speaks’

While the type (a) perfect is a common form, the ablaut alternations found more generally for MPL forms do not so clearly reflect their origin in the suffix *-ū. The most common ablaut pattern involves the replacement of a stem vowel with /ī/.

(68) MPL forms with /aw/ (Johnstone 1987)

	MPL	MSG	gloss
type (a), passive, imperfect	yərkiṣ	yərkōṣ	‘they are/he is straightened’
	tərkiṣ	tərkōṣ	‘you are straightened’
type(b), imperfect (/subjunctive)	yəṯbīr	yəṯbōr	‘they are/he is broken’
	təṯbīr	təṯbōr	‘you are broken’
causative, perfect	hənsīm	hənsūm	‘they/he breatherd’
	ṯbīt	ṯbūt	‘they/he made firm’
	hədlīl	hədlūl	‘they/he showed’
	hātīm	hātūm	‘they/he spent the night’
causative, imperfect	yəhənsīm	yəhənsūm	‘they breathe’/‘he breathes’
	təṯbīt	təṯbūt	‘you make firm’
	yəhədlīl	yəhədlūl	‘they show’/‘he shows’
reflexive, type (a), imperfect	yəntəfīṣ	yəntəfūṣ	‘they cut their feet’/‘he cuts his feet’
	təstīm	təstōm	‘you buy’
	yātkīs	yātkūs	‘you are bored’
reflexive, type (b), perfect	əftəkīr	əftəkūr	‘they/he wondered’
	əftərīr	əftərūr	‘they/he yawned’
reflexive, type (b), subjunctive	təktəkīr	təftəkūr	‘you wonder’ (SUBJ)
	yātālīm	yātālūm	‘they learn (SUBJ)’
causative-reflexive, type (a), perfect	šəkbīr	šəkbūr	‘they/he considered large’
	šəgīs	šəgūs	‘they/he went in the early evening’
causative-reflexive, type (a), imperfect	yəšēmīn	yəšēmūn	‘they believe’/‘he believes’
	təšāgīl	təšāgūl	‘you hurry’
quadrilateral, perfect	ənk’ərbīt	ənk’ərbūt	‘they were/he was curled’
	zəgayrīr	zəgayrūr	‘they/he screamed’
quadrilateral, imperfect	yadəgdīg	yadəgdūg	‘they tap’/‘he taps’
quiqueliteral, imperfect	yəsxəlīl	yəsxəlūl	‘they stay’/‘he stays’

3.3.5. Ablaut in modern Aramaic languages

Outside of South Semitic, there is at least one other case of the loss of inherited suffixes and the formation of new ablaut patterns to distinguish features of subject inflection. In modern Aramaic languages, the prefix conjugation verb forms have generally been lost or reduced in usage. Only in the Western Neo-Aramaic have prefix conjugation forms survived. Like its southern cousins, the suffixes that were originally attached to the prefix conjugation and imperative forms have been lost at times leaving an ablaut alternation that was originally conditioned by the suffix.

In Western Neo-Aramaic traces of an original 2FSG suffix {-ī} are found in ablaut alternations in both reflexes of the Semitic imperative and in a prefix conjugation form that

functions as a subjunctive. The general pattern is that the unstressed, final vowel /e/ in many forms from original derived stems becomes /i/ in 2FSG forms. The same type of pattern was observed above in prefix conjugation forms in Soqotri and Muher. Jastrow provides the examples below illustrating the occurrence of ablaut in Western Neo-Aramaic in the subjunctive form.

(69) Western Neo-Aramaic subjunctive forms (Jastrow 1997)

<i>stem</i>	2MSG	2FSG	<i>gloss</i>
I	čifθuḥ	čifθuḥ	‘that you open’
II	čzappen	čzappin	‘that you sell’
III	čsōfar	čsōfar	‘that you travel’
IV	čaḥšem	čaḥšim	‘that you eat dinner’

The same basic pattern is also present in the imperative forms, although here there are variants with long vowels. In the case of the basic stem imperative there is a vowel alternation for the long vowel variant but not the short vowel variants. The *u of the basic stem imperative is lengthened to /ō/ in the masculine singular but is lengthened to /ū/ in the case of the feminine singular. The original suffix *-ī would appear to have had the effect of raising the long /ō/. This type of raising effect for the 2FSG suffix is well supported by examples from both Ethiosemitic and Modern South Arabian languages.

(70) Western Neo-Aramaic imperative forms (Jastrow 1997)

<i>stem</i>	2MSG	2FSG	<i>gloss</i>
I	ifθuḥ ~ fθōḥ	ifθuḥ ~ ifθūḥ	‘open!’
II	zappen ~ zappēn	zappin ~ zappīn	‘sell!’
III	šōreṭ ~ šarēt	šōriṭ ~ šarīt	‘bet!’
IV	aḥref ~ aḥrēf	aḥrif ~ aḥrīf	‘answer!’

As is clear from the cases above, the loss of the 2FSG does not always lead to the ablaut alternations. In many (if not most) cases the loss of the 2FSG suffix simply results in the loss of an overt morphological distinction. This distinction is lost in most other Neo-Aramaic languages. Of them only Modern Mandaic regularly distinguishes 2MSG and 2FSG in imperative forms. The distinction between the 2MSG and 2FSG is also signaled by an alternation in both the quantity and quality of the stem vowels. The 2MSG form has the vowel /o/ or /a/, while the related 2FSG form has the vowel /ū/. The other stem vowel can be /e/ or harmonized vowel. In stems with a final stem vowel of /e/, particularly in derived stems, an ablaut alternation typically does not take place.

(71) Modern Mandaic imperative forms (Macuch 1965)

	2FSG	2MSG	<i>gloss</i>
basic stem	geṭūl	gəṭol	‘kill!’
	šeχūḅ ~ šuχūḅ	šeχoḅ ~ šoχoḅ	‘lie down!’
	duhūl	dehel ~ dohol	‘fear!’
	hudūr	hədar ~ hedar	‘turn around!’
	enheṯ	enheṯ	‘go down!’
D-stem	barreχ	barreχ	‘bless!’
	šaddar	šaddar	‘send!’
Š-stem	ahreḅ	ahreḅ	‘destroy!’
T-stem	edhel	edhel	‘be afraid!’
Dt-stem	ekāmmar	ekāmmar	‘return!’

Based on the lack of a palatal quality to the alternation, it seems more likely that this alternation is due to an earlier alternation between a short and long vowel based on syllable type (open vs. closed) than the influence of an earlier suffix *-ī. This type of change leads us into the next section.

3.4. Prosodic origin of non-linear alternations

The changes discussed so far have all involved the loss of a suffix and the reanalysis of an originally phonological alternation. The phonological alternations in these cases were conditioned by the specific phonological character of the suffixes. The alternations frequently involved assimilation, often at a distance. These types of changes can play an important role in the formation of new alternations, but it is questionable whether such alternations can ultimately be responsible for the development of the entire complex set of internal morphological alternations that characterize the root-and-pattern morphology of the Semitic languages. To find the origin of this type of morphology we must look to changes that have had more far-reaching and fundamental effects on the morphology.

Changes to the prosodic system of a language can have very profound effects on both the phonology and the morphology of a language. Small changes related to the placement or realization of stress can have effects far beyond their immediate impact. In Maltese, the Western Arabic dialects and the Modern Ethiosemitic languages, such changes have had major consequences for the vowel system. The reduction of short the vowels in these languages may have played a substantial role in subsequent changes (see section 4.3.2). The changes in Western Arabic dialects and the Ethiosemitic languages involving phonological mergers have often led to a reduction in morphological contrasts as well.

Two other cases of prosodic change in Semitic languages are worth special consideration. Biblical Hebrew, as reflected in the tradition of the Masoretes, and the Modern South Arabian languages have both undergone extensive changes in the vocalic system. Stress, for undetermined reasons, has had a transformative effect on the character of these languages well beyond that encountered in other Semitic languages. In Biblical Hebrew and the Modern South Arabian languages, the relation of the vowel to the position of stress has largely determined the subsequent development of vowels. Vowels in the least prominent positions have often been reduced quite drastically. In contrast, vowels in prominent positions have frequently been lengthened, often simultaneously undergoing changes in quality. The changes that have occurred in these languages have given them a phonological and morphological character quite different

from most Semitic languages, but oddly similar to each other. Although we can not completely discount some undiscovered connection, the evidence is overwhelmingly in support for these being independent but parallel developments; despite similar prosodic and phonological developments, other morphological developments clearly place these languages in separate branches of West Semitic.

3.4.1. Vowel reduction and nonconcatenative morphology

The most common type of prosodically conditioned change is vowel reduction. Vowel reduction, such as syncope, is one of the most common types of changes cross-linguistically. While a common process, vowel reduction can both contribute to the introduction of new non-linear alternations and affect the patterns existing in a language already exhibiting non-linear patterns.

There are two primary types of vowel reduction observed in the Semitic family. The first kind of vowel reduction involves the merger of a phonological vowel contrast across the board. This type of reduction and merger is seen in Western Arabic dialects where in most contexts the original short vowels /a, i, u/ are all reduced to /ə/ and in Ethiosemitic where the short vowels /i/ and /u/ have been reduced to /i/, and /a/ has been reduced to /ə/. In both cases an external contact is a likely source for these mergers. This is most clearly the case for the Western Arabic where a clear Berber source for changes is apparent. These cases will be dealt with for the most part in section 4.3.2.

The second type of vowel reduction considered here occurs in specific prosodic contexts such as open or unstressed syllables, but not in other contexts. In some cases, the reduction is complete and the vowel is simply dropped, in other cases the vowel is maintained but is reduced to /ə/ or some other similarly short vowel. This type of reduction is widespread in the Semitic languages. Examples are found in varieties of Aramaic and Arabic, as well as Hebrew and the Modern South Arabian languages which will be discussed in Sections 3.4.2 and 3.4.3, respectively.

The most important cases of vowel reduction for the Semitic verbal system involve the perfect forms of the verb. The paradigm of the perfect verb displays two common sites for reduction. Cases of reduction involving both sites are widely observed in the Semitic family. Assuming an original paradigm of the basic stem perfect of sound roots like that of Classical Arabic, the stem has an invariant stem shape $C_1aC_2vC_3$, where $v = \{a, i, u\}$. The second vowel, often called the “thematic vowel”, is associated with a distinction between active and stative verbs. The /a/ is associated with active verbs, while both /u/ and /i/ are associated with stative verbs. The inflection of an active perfect verb in Classical Arabic is presented below.

(72) Inflection of the perfect in Classical Arabic

	SG	PL
1	katab-tu	katab-nā
2M	katab-ta	katab-tum
2F	katab-ti	katab-tunna
3M	katab-a	katab-ū
3F	katab-at	katab-na

Older West Semitic varieties such as Ugaritic and the language of the Amarna tablets provide evidence that the paradigm without vowel reduction reflects the original perfect paradigm of West Semitic. The clearest evidence for stem shape is provided by syllabic

cuneiform transcriptions. The Amarna letters are characterized by both Akkadian stative forms which display reduced vowels (3FSG *qatl-at) and West Semitic forms which have full forms (3FSG *qatal-at), e.g. Akkadian *bal-ta-at* or *ba-al-ta-at* ‘sie lebt’, *ba-al-tu* ‘sie lebten’ and West Semitic *na-gar-ra-at* ‘sei is feind’, *pa-ṭa-ra-at* ‘sie ist abgefallen’, *ḥa-ba-lu* ‘sie rauben’, *la-ka-ḥu* ‘sie haben genommen’ (Ebeling 1909). In the few examples of the 3MPL perfect form in syllabic transcriptions of Ugaritic, the full form is found, e.g. *ša-ma-tù* ‘they were transferred’ and possibly *ḥa-ba-tu* (Huehnergard 1987).

This pattern of an invariant root without reductions, particularly for “active” verbs with thematic vowel /a/, is also preserved in many modern Arabic dialects and, if we do not consider the general reductions and mergers in vowel inventories, in many Ethiosemitic languages. Varieties which have an invariant stem for the perfect without various reductions are found throughout the range of Arabic, except in the far Western dialects. This situation in verbs with /a/ is found in many dialects of the Arabian Peninsula, including those of the Southern Hijaz and Tihāmah (Prochazka 1988), Mecca (Ingham 1971) and parts of Yemen (Diem 1973), many of the *qəltu* dialects of Mesopotamia (Blanc 1964, Jastrow 1978), some Levantine dialects (Cantineau 1934, Geva-Kleinberger 2004), commonly in Egyptian dialects (Woidich 2006, Gadalla 2000, Nishio 1994) and in Sudanic dialects, like those of Khartoum (Dickins 2007), Chad (Abu-Absi 1995, Kaye 1976) and Nigeria (Owen 1993).

(73) Examples from dialects with an invariant stem in the perfect with /a/³⁹

	Meccan dialect	Yemeni dialect ⁴⁰	Mesopotamian Qəltu dialects		Palmyra dialect	Cairene dialect	Nigerian dialect
			Christian Baghdadi dialect	Mardin dialect			
1SG	katab-tu	katab-k	katab-tu	daxal-tu	katab-t	katab-t	katáb(-t)
2MSG	katab-t	katab-k	katáb-et	daxal-t	katab-t	katab-t	katáb(-t)
2FSG	katab-ti	katab-š	katab-ti	daxal-ti	katab-te ¹	katab-ti	katáb-ti
3MSG	katab	katab	katab	daxal	katab	katab	kátáb
3FSG	katab-at	katab-at	kátáb-et	dáxal-ət	katab-at	katab-it	kátáb-at
1PL	katab-nā	katab-na	katab-na	daxal-na	katab-ne	katab-na	katáb-na
2MPL	katab-tu	katab-kum	katab-tem	daxal-tən	katab-to ^u	katab-tu	katáb-tu
2FPL	katab-tinna	katab-kun			katab-ten ⁿ		katáb-tan
3MPL	katab-u	katab-u	katab-u	dáxal-u	katab-o ^u	katab-u	kátáb-o
3FPL	katab-na	katab-ain			katab-en ⁿ		kátáb-an

In some dialects the invariant stem is also found in “stative” verbs with the thematic vowel /i/. This pattern can be seen in Uzbeki dialect of Arabic (Akhvlediani 1985) as well as some Arabian dialects of the Southern Hijaz and the Tihāmah (Prochazka 1988).

³⁹ Data from Ingham 1971 for Meccan dialect, Diem 1973 for Yemeni dialect, Blanc 1964 for Christian Baghdadi dialect, Jastrow 1978 for Mardin dialect, Cantineau 1934 for Palmyra dialect, Woidich 2006 for Cairene dialect and Owens 1993 for Nigerian dialect.

⁴⁰ Dialect represented here is that found in the southern mountain range.

(74) Dialects with invariant stems form both verbs with thematic vowel /a/ and /i/

	Uzbeki dialect (Akhvlediani 1985)		Bal-Qarn dialect (Prochazka 1988)	
	<i>thematic</i> vowel /a/	<i>thematic</i> vowel /i/	<i>thematic</i> vowel /a/	<i>thematic</i> vowel /i/
1SG	qatal-t	širib-t	katab-t	širib-t
2MSG	qatal-t	širib-t	katab-t	širib-t
2FSG	qatal-ti	širib-ti	katab-ti	širib-ti
3MSG	qatal	širib	katab	širib
3FSG	qatal-at	širib-et	katab-at	širib-at
1PL	qatal-nā	širib-nā	katab-na	širib-na
2MPL	qatal-tū	širib-tū	katab-tu	širib-tu
2FPL	qatal-tīn	širib-tīn		
3MPL	qatal-ū	širib-ū	katab-aw	širib-aw
3FPL	qatal-īn	širib-īn		

Most commonly, the paradigm of the perfect form verb has been affected by one or more vowel reductions, for all verbs or at least some classes of verbs. There are two primary sites for vowel reduction in the Semitic languages. First, the final stem vowel is often reduced, a case of syncope, when a vowel initial suffix is attached to the stem (3FSG *qátal-at > /qatəl-at/ or /qatl-at/). Second, the first stem vowel is reduced in several languages when stress is placed on the final stem vowel often due to being a heavy syllable because the suffix is consonant-initial (3MSG *qatál > /qətál/ or /qtal/ 2MSG *qatál-ta > /qətál-ta/ and /qtál-ta/).

The most complete and consistent realization of these two types of reductions occurs in the Western dialects of Arabic, from Tunisia to Mauritania. The Jewish dialect of Tunis is representative of this dialect group as a whole. The merger of short vowels {a, i, u} to /ə/ and the reduction of short unstressed vowels have transformed the perfect paradigm of the Western dialects.

(75) The perfect paradigm in Jewish dialect of Tunis (Cohen 1975a)

1SG	ktəbt	< *katáb-t
2MSG	ktəbt	< *katáb-t
2FSG		< *katáb-ti
3MSG	ktəb	< *katáb
3FSG	kótəbət	< *kátab-at
1PL	ktəb-nā	< *katáb-nā
2PL	ktəb-tu	< *katáb-tu
3PL	ktəbu	< *katáb-u

The patterns of reduction are nearly identical across the Western dialect area.

A similar pattern is found in the Jewish dialect of Baghdad, except that there are no reductions in the 3MSG form.

(76) Jewish dialect of Baghdad (Blanc 1964)

	<i>thematic</i> vowel /a/	<i>thematic</i> vowel /i/
1SG	ktab-tu	lbas-tu
2MSG	ktab-t	lbas-t
2FSG	ktab-ti	lbas-ti
3MSG	katab	labas
3FSG	katb-et	labs-et
1PL	ktab-na	lbas-na
2PL	ktab-tem	lbas-tem
3PL	katb-u	labs-u

The common forms which gave rise to the Western dialect type are not far removed from those found in other African and even Levantine dialects. The innovated 2PL suffix {-tu} appears not only in Northwest African dialects, but also in Sudanic, Egyptian, Levantine and even some Western Arabian dialects. The loss of a contrast between the 1SG and 2MSG is common in roughly the same set of languages. One feature that sets the Western dialects apart from the rest of Arabic is a further loss of a contrast between the 2FSG and both the 1SG and 2MSG. The stress patterns of the assumed common form are identical to those found in Nigerian Arabic as described by Owens (1993), except that Proto-Western-Arabic would appear to have stress on the final syllable *katáb instead of on the penultimate syllable as is the case in Nigerian Arabic *kátab*.

The Al-Maḥābšeh dialect of Yemen (Diem 1973) exhibits consistent pretonic reduction, a feature not generally characteristic of Yemeni and other Arabian dialects (see below).

(77) Consistent pretonic reduction in Al-Maḥābšeh dialect of Yemen (Diem 1973:72)

	SG	PL
1	ktab-t	ktab-na
2M	ktab-t	ktab-tu
2F	ktab-ti	ktab-tinna
3M	ktab	ktab-u
3F	ktab-an	ktab-na

In other Arabic dialects a great amount of diversity is found. Although most of the reductions fit into the two basic types, i.e. syncope and pretonic reduction, the dialects differ along other dimensions providing a rich variety of patterns. The same diversity is also seen in the Semitic family more generally. In many languages you will find one of the types of changes but not the other. The reduction can be complete or simply involve the reduction to /ə/ or some other short vowel. The reduction may affect all short vowels or only a subset of the vowels, particularly the short vowel /i/. Languages treat slightly different contexts differently. Changes in a stress pattern, such as the retraction of stress, can lead to divergent developments by bleeding or feeding the contexts necessary for the changes.

The most common pattern is for the forms with the thematic vowel /i/ to experience syncope while the forms with thematic vowel /a/ maintain their invariant stem. This pattern is

best exhibited in Egyptian and Sudanese dialects where the thematic vowel is lost when a vowel initial suffix is attached to the stem.

(78) Perfect forms with thematic vowel /a/ and /i/ in Egyptian and Sudanese Arabic

	Cairene Arabic (Woidich 2006:413)		Upper Egyptian dialect of Qift (Nishio 1994)		Khartoum dialect (Dickins 2007)	
	thematic vowel /a/	thematic vowel /i/	thematic vowel /a/	thematic vowel /i/	thematic vowel /a/	thematic vowel /i/
1SG	katab-t	širib-t	katab-t	širib-t	daras-ta	simiŕ-ta
2MSG	katab-t	širib-t	katab-t	širib-t	daras-ta	simiŕ-ta
2FSG	katab-ti	širib-ti	katab-ti	širib-ti	daras-ti	simiŕ-ti
3MSG	katab	širib	katab	širib	daras	simiŕ
3FSG	katab-it	širb-it	katab-at	širb-et	daras-at	simŕ-at
1PL	katab-na	širib-na	katab-na	širib-na	daras-na	simiŕ-na
2MPL	katab-tu	širib-tu	katab-tu	širib-tu	daras-tu	simiŕ-tu
2FPL					daras-tan	simiŕ-tan
3MPL	katab-u	širb-u	katabu	širb-u	daras-u	simŕ-u
3FP					daras-an	simŕ-an

A similar pattern is found in the Palmyra dialect, but not other Levantine dialects.

(79) Dialect of Palmyra (Cantineau 1934:118)

	<i>thematic vowel /a/</i>	<i>thematic vowel /i/</i>
1SG	katab-t	ʔönzal-t
2MSG	katab-t	ʔönzal-t
2FSG	katab-te ⁱ	ʔönzal-te ⁱ
3MSG	katab	ʔönzal
3FSG	katab-at	nezl-et
1PL	katab-ne	ʔönzal-ne
2MPL	katab-to ^u	ʔönzal-to ^u
2FPL	katab-ten ⁿ	ʔönzal-ten ⁿ
3MPL	katab-o ^u	nezl-o ^u
3FPL	katab-en ⁿ	nezl-en ⁿ

The same pattern is also found in the Meccan dialect.

(80) Meccan dialect (Ingham 1971)

	thematic vowel /a/	thematic vowel /i/
1SG	katab-t	simiʕ-t
2MSG	katab-t	simiʕ-t
2FSG	katab-ti	simiʕ-ti
3MSG	katab	simiʕ
3FSG	katab-at	simiʕ-at
1PL	katab-na	simiʕ-na
2PL	katab-tu	simiʕ-tu
3PL	katab-u	simiʕ-u

Syncope occurs most commonly in 3FSG forms, perhaps due to the fact that the ending is consistently a heavy syllable. In the Southern plateau dialects of Yemen, syncope only occurs in the 3FSG form of verbs with thematic vowel /i/.

(81) Perfect forms with /a/ and /i/ in Yemeni Southern plateau dialects (Diem 1973:42)

	<i>thematic</i> vowel /a/	<i>thematic</i> vowel /i/
1SG	katab-t	ʒilis-t
2MSG	katab-t	ʒilis-t
2FSG	katab-ti	ʒilis-ti
3MSG	katab	ʒilis
3FSG	katab-at	ʒils-at
1PL	katab-na	ʒilis-na
2MPL	katab-tu	ʒilis-tu
2FPL	katab-tain	ʒilis-tain
3MPL	katab-u	ʒilis-u
3FPL	katab-ain	ʒilis-ain

In many Levantine dialects, syncope occurs in the 3FSG form of verbs with the thematic vowel /a/ in the perfect.

(82) Perfect forms with thematic vowel /a/ in some Levantine dialects

	Ḥoran (Cantineau 1946:207)	Damascus (Cowell 1964:55)	Aleppo (Sabuni 1980:119)	Haifa, Muslim dialect (Geva- Kleinberger 2004:125)
1SG	katab-t	katáb-(ə)t	sākáb-t	katab-(^l)t
2MSG	katab-t	katáb-(ə)t	sākáb-t	katab-(^l)t
2FSG	katab-ti	katáb-ti	sākáb-ti	katab-ti
3MSG	katab	kátáb	sākáb	katab
3FSG	katb-at	kátb-et	sákab-et	katb-at
1PL	katab-ne	katáb-na	sākáb-nä	katab-na
2MPL	katab-tu	katáb-tu	sākáb-tu	katab-tu
2FPL	katab-ten ⁿ			
3MPL	katab-u	kátáb-u	sākáb-u	katab-u
3FPL	katab-en ⁿ			

In these same dialects, syncope is found in all forms with thematic vowel /i/ where the suffix is vowel initial. These languages also exhibit pretonic reduction in all other forms but the 3MSG.

(83) Perfect forms with thematic vowel /i/ in some Levantine dialects

	Ḥoran (Cantineau 1946:207)	Damascus (Cowell 1964:55)	Aleppo (Sabuni 1980:119)	Haifa, Muslim dialect (Geva-Kleinberger 2004:125)
1SG	lbes- ^ə t	nzól- ^ə t	ḏhək-t	šrib-(^l)t
2MSG	lbes- ^ə t	nzól- ^ə t	ḏhək-t	šrib-(^l)t
2FSG	lbes-ti	nzól-ti	ḏhók-ti	šrib-ti
3MSG	lebes	nózel	ḏóhək	širib
3FSG	lebs-et	nózl-et	ḏóhək-et	širb-at
1PL	lbes-ne	nzól-na	ḏhók-nä	šrib-na
2MPL	lbes-tu	nzól-tu	ḏhək-t	šrib-tu
2FPL	lbes-ten ⁿ			
3MPL	lebs-u	nózl-u	ḏóhək-u	širb-u
3FPL	lbes-en ⁿ			

In other dialects as well, there is a combination of pretonic reduction and syncope. As in the case of syncope, the occurrence of pretonic reduction is also sensitive to the vocalization of the verb form.

The Lebanese dialect of Baskinta, like other dialects described above, exhibits syncope in verbs with thematic vowel /i/ but not in those with thematic vowel /a/. In contrast, pretonic reduction occurs in all forms with consonant initial suffixes because of the occurrence of stress on the heavy syllable.

(84) Syncope in the Lebanese dialect of Baskinta (Abu-Haidar 1979:164)

	<i>thematic vowel /a/</i>	<i>thematic vowel /i/</i>
1SG	ktab-t	smiʕ-t
2MSG	ktab-t	smiʕ-t
2FSG	ktab-ti	smiʕ-ti
3MSG	katab	simiʕ
3FSG	katab-it	simiʕ-it
1PL	ktab-na	smiʕ-na
2PL	ktab-tu	smiʕ-tu
3PL	katab-u	simiʕ-u

In the Christian dialect of Baghdad both syncope and pretonic reduction are limited to verbs with thematic vowel /i/, as is the case in the Levantine dialects described above.

(85) Christian dialect of Baghdad (Blanc 1964:99)

	<i>thematic vowel /a/</i>	<i>thematic vowel /i/</i>
1SG	katab-tu	lbes-tu
2MSG	katab-et	lbes-et
2FSG	katab-ti	lbes-ti
3MSG	katab	lebes
3FSG	katab-et	lebs-at
1PL	katab-na	lbes-na
2PL	katab-tem	lbes-tem
3PL	katab-u	lebs-u

A more complicated pattern is observed in the Eastern Libyan dialect. Verbs with thematic vowel /i/ follow a pattern similar to that found in the Western Arabic dialects with syncope with vowel initial suffixes and pretonic reduction in all other forms. Interestingly, pretonic reduction also occurs with vowel initial suffixes for vowel initial suffixes in verbs with thematic vowel /a/.

(86) Perfect forms with /a/ and /i/ in the Eastern Libyan dialect (Owens 1984:223)

	<i>thematic vowel /a/</i>	<i>thematic vowel /i/</i>
1SG	ki'tab-it	ish'rib-it
2MSG	ki'tab-it	ish'rib-it
2FSG	ki'tab-ti	ish'rib-ti
3MSG	ki'tab	ish'rib
3FSG	ik'tib-at	'shirb-at
1PL	ki'tab-na	ish'rib-na
2MPL	ki'tab-tu	ish'rib-tu
2FPL	ki'tab-tan	ish'rib-tu
3MPL	ik'tib-o	'shirb-o
3FPL	ik'tib-an	'shirb-an

The patterns observed are assumed to have their origin in independent phonetic patterns. The reduction of /i/ is more common because of the typically shorter duration of this vowel compared to other vowels (cf. Klatt 1975:231). In the cases where pretonic reduction is limited to verbs with thematic vowel /i/, the first vowel has undergone a change under the influence of the thematic vowel (qatil > qītil). The other patterns are related to small prosodic differences between words. The most common case of syncope, for example, occurs with the suffix {-at} which is consistently a heavy, closed syllable. A certain amount of variation can be accounted for simply by chance.

The Kuwaiti dialect displays the full range of variation in the forms of the 3FSG and 3MPL. Like other dialects, this dialect generally has an invariant stem for verbs with thematic vowel /a/ and pretonic reduction for verbs with thematic vowel /i/. Both the 3FSG and 3MPL have variants without reduction, with syncope, and with pretonic reduction.

(87) Variations in the Kuwaiti dialect (Johnstone 1967:70-71)

	thematic vowel /a/			thematic vowel /i/			
1SG	kitab-t			šrib-t			
2MSG	kitab-t			šrib-t			
2FSG	kitab-ti			šrib-ti			
3MSG	kitab			šrib			
3FSG	ktib-at	kitb-at	katab-at	šarb-at	širb-at	šrub-at	šrib-at
1PL	kitab-na			šrib-na			
2MPL	kitab-tu			šrib-tu			
2FPL	kitab-tin			šrib-tin			
3MPL	ktib-aw	kitb-aw	katab-u	šarb-aw	širb-aw	šrub-aw	šrib-u
3FPL	ktib-an			šarb-an			

That these represent general and potentially recurrent types of changes is reflected in the frequency of these changes both in other Semitic languages as well as the Arabic dialects.

Almost all of the changes and their conditions have one or more parallels beyond the Arabic dialects.

Aramaic displays two basic patterns of reduction in the perfect forms. The first type involves consistent pretonic reduction. This pattern is found in Babylonian Aramaic and Palestinian Jewish Aramaic. This would appear to indicate that in common Aramaic either stress was consistently on the thematic vowel or that the stem variant with the reduced first stem vowel was generalized for the perfect.

(88) Aramaic perfect with pretonic reductions in all forms

	Babylonian Aramaic (Levias 1900)		Palestinian Jewish Aramaic (Stevenson 1924)	
	<i>thematic</i>	<i>thematic</i>	<i>thematic</i>	<i>thematic</i>
	<i>vowel /a/</i>	<i>vowel /i/</i>	<i>vowel /a/</i>	<i>vowel /i/</i>
1SG	qəṭāl-î(t)	qəṭêl-î(t)	kəṭab-îṭ	qəṣṣêb-îṭ
2MSG	qəṭal-t	qəṭêl-t	kəṭab-t(ā [?])	qəṣṣêb-t(ā [?])
2FSG	qəṭāl-îṭ	qəṭêl-îṭ	kəṭab-t	qəṣṣêb-t
3MSG	qəṭal	qəṭêl	kəṭab	qəṣṣêb
3FSG	qəṭal-ā [?]	qəṭêl-ā [?]	kəṭab-at	qəṣṣêb-at
1PL	qəṭal-nā ²⁴¹	qəṭêl-nā [?]		qəṣṣêb-nā [?]
2MPL	qəṭal-tû(n)	qəṭêl-tû(n)	kəṭab-tûn	qəṣṣêb-tûn
2FPL	(not attested)		kəṭav-tîn	qəṣṣêb-tîn
3MPL	qəṭal-û	qəṭîl-û	kəṭab-û	qəṣṣîb-û
3FPL	qəṭal-ān	qəṭîl-ān	kəṭab-ā [?]	qəṣṣîb-ā [?]

The other more common pattern is similar that found in some Arabic dialects where syncope occurs in forms with vowel initial, closed suffix, 1SG {-ēt} and 3FSG {-at} and pretonic reduction occurs in all other cases.

⁴¹ A wide range of forms are attested for 1PL in Babylonian Aramaic, e.g. qəṭal-nā[?], qəṭal-an, qəṭal-înān, qəṭal-nān.

(89) Aramaic perfect with syncope 1SG and 3FSG

	Biblical Aramaic (Rosenthal 1995)	Syriac (Muraoka 1997, 2007)		Mandaic (Macuch 1965)	Modern Mandaic (Macuch 1965:264)	
	thematic vowel /a/	thematic vowel /a/	thematic vowel /i/	thematic vowel /a/	thematic vowel /a/	thematic vowel /i/
1SG	kitb-ēt	šeq̄l-ēṭ	qerbēṭ	liḡṭ-it	geṭl-īṭ	dehl-īṭ
2MSG	kəṭab-t	šqal-t	qrev-t	lgaṭṭ	gəṭal-t	dehel-t
2FSG	(kəṭab-tī)					
3MSG	kəṭab	šqal	qrev	lgaṭ	gəṭal	dehel
3FSG	kitəb-at	šeq̄l-aṭ	qerb-aṭ	liḡṭ-at	geṭl-at	dehl-at
1PL	kəṭab-nā [?]	šqal-n	qrev-n	lgaṭ-nin	geṭal-nī	dehel-nī
2MPL	kəṭab-tūn	šqal-ton	qrev-ton	(lgaṭ-tun)	geṭal-ton	dehel-ton
2FPL	kəṭab-tēn	šqal-tēn	qrev-tēn	(lgaṭ-tin)	geṭal-ten	dehel-ten
3MPL	kəṭab-ū	šqal	qrev	lgaṭ	gəṭal-yōn	dehel-yōn
3FPL	kəṭab-ā ^h				gəṭal-yān	dehel-yān

Syncope with vowel initial suffixes is also a feature of Biblical Hebrew as is seen below in the 3FSG and 3PL forms. Pretonic reduction is also found in the 2MPL and 2FPL forms.

(90) Hebrew perfect inflection

	<i>thematic vowel /a/</i>	<i>thematic vowel /i/</i>
1SG	qāṭal-tî	kābād-tî
2MSG	qāṭal-tā	kābād-tā
2FSG	qāṭal-t	kābad-t
3MSG	qāṭal	kābēd
3FSG	qāṭal-ā ^h	kābəd-ā ^h
1PL	qāṭal-nû	kābād-nû
2MPL	qəṭal-tem	kəbad-tem
2FPL	qəṭal-ten	kəbad-ten
3PL	qāṭal-û	kābəd-û

In Ge‘ez, syncope occurs like in many Arab dialects in those forms with original thematic vowel /i/.

(91) Perfect forms in Ge‘ez (Lambdin 1978)

	<i>thematic vowel /a/</i>	<i>thematic vowel /i/</i>
1SG	nəbər-ku	gəbər-ku
2MSG	nəbər-kə	gəbər-kə
2FSG	nəbər-ki	gəbər-ki
3MSG	nəbər-ə	gəbr-ə
3FSG	nəbər-ət	gəbr-ət
1PL	nəbər-nə	gəbər-nə
2MPL	nəbər-kimu	gəbər-kimu
2FPL	nəbər-ken	gəbər-kin
3MPL	nəbər-u	gəbr-ə
3FPL	nəbər-a	gəbr-ət

In Tigré the syncope has been extended to all forms regardless of the original thematic vowel.

(92) Perfect paradigm in Tigré (Raz 1983)

	SG	PL
1	qanaş-ko	qanaş-na
2M	qanaş-ka	qanaş-kum
2F	qanaş-ki	qanaş-kin
3M	qanş-a	qanş-aw
3F	qanş-at	qanş-aya

Coupled with other changes, syncope and pretonic lengthening like those described above can have a profound effect on the morphology. In the next section I will describe the types of changes that have shaped Hebrew before turning to the case of the Modern South Arabian languages.

3.4.2. Prosodic changes and their influence on the morphology in Hebrew

Hebrew displays one of the most drastic restructurings of the vocalic and prosodic systems. These changes have led to drastic changes in the character of the nonlinear morphology and have led to new nonlinear alternations. In considering Hebrew I will first address the general prosodic changes that have shaped Biblical Hebrew. Then I will consider a case of the formation of a specific novel internal alternation.

3.4.2.1. General prosodic and vocalic changes

The prehistory of Hebrew is assumed to have been characterized by a number of stress shifts and quantitative and qualitative vowel changes. These changes have given Hebrew a very different phonological and morphological character from other Semitic languages. A comparison with Arabic, which has maintained the original vowel system, illustrates some of the changes that have affected Hebrew.

(93) Comparison of Arabic and Hebrew verb forms

		Arabic	Hebrew
<i>basic, a-u</i>	<i>perfect</i>	katab-a	kātab
	<i>imperfect</i>	ya-ktub-u	yī-ktōb
	<i>active participle</i>	kātib-	kōteb
<i>basic, i-a</i>	<i>perfect</i>	safil-a	šāpēl
	<i>imperfect</i>	ya-sfal-u	yī-špal
<i>basic, u-a</i>	<i>perfect</i>	(kabur-a)	qāṭōn
	<i>imperfect</i>	(ya-kbar-u)	yī-qṭan

One of the most important changes is that the short vowels /i, u/ have become /ē, ō/ in stressed syllables. The specific developments and theories about the relative chronology of stress and vowel shifts are dealt with in Bauer and Leander (1965), Blau (1976), and Joüon and Muraoka (2000).

3.4.2.2. The creation of ablaut: the case of the Hebrew jussive

In Hebrew the jussive and imperfect are contrasted for some weak verb stems and one derived conjugation for strong verbs. In general there is no formal distinction between the imperfect and the jussive in Hebrew. In the cases where the two forms are contrasted a vocalic alternation typically indicates whether the form is imperfect or jussive.

(94) Contrasts between Hebrew imperfect and jussive verb forms

	<i>stem</i>	<i>imperfect</i>	<i>jussive</i>
<i>Strong</i>	<i>Hiphil</i>	yaqtīl	yaqtēl
<i>III-guttural</i>	<i>Hiphil</i>	yašlī ^a ḥ	yašlah
<i>I-yod</i>	<i>Qal</i>	yēšēb	yēšeb
<i>Hollow II-waw</i>	<i>Qal</i>	yāqūm	yāqōm
<i>II-yod</i>	<i>Qal</i>	yāšīm	yāšēm
	<i>Hiphil</i>	yāqīm	yāqēm

The vocalic alternations for the most part reflect earlier alternations between long and short vowels depending on the type of syllable (open or closed). Vowels that are long in an open syllable are realized as short in a closed syllable. In Hebrew stressed short vowels /i, u/ are frequently lengthened ($i > ē$ and $u > ō$). This indicates that the jussive forms originally had the short vowels /i/ and /u/ in the last syllable (III-guttural and I-yod are exceptions because of other factors), while the imperfect forms originally had long vowels.

The reason for the alternation is lost in Hebrew, but can be found in cognate forms in Classical Arabic and other Semitic languages. Unlike Hebrew, Arabic and Ugaritic have preserved original final short vowels. Final short vowels are essential to the system of modal distinction for the prefix conjugation. In Arabic, except in cases where the prefix conjugation takes a suffix, different modes are distinguished by the presence of the short vowels /a/ and /u/ and the absence of a short vowel suffix. The imperfect indicative is indicated by the final vowel /u/.

(95) Semitic imperfect indicative forms

	Classical Arabic (Fischer 2002)	Ugaritic (Sivan 2001)	Aramaic (Rosenthal 1995)	Hebrew (Jouion and Muraoka 2000)
3MSG	ya-ktub-u	ya-ktub-u	yi-ktub	yi-ktōb
3FSG	ta-ktub-u	ta-ktub-u	ti-ktub	ti-ktōb
2MSG	ta-ktub-u	ta-ktub-u	ti-ktub	ti-ktōb
2FSG	ta-ktub-īna	ta-ktub-īna	ti-ktəb-īn	ti-ktōb-ī
1SG	ʔa-ktub-u	ʔa-ktub-u	ʔe-ktub	ʔe-ktōb
3MPL	ya-ktub-ūna	ya-ktub-ūna	yi-ktəb-ūn	yi-ktəb-ū
3FPL	ta-ktub-na	ta-ktub-na	yi-ktəb-ān	ti-ktōb-nā
2MPL	ta-ktub-ūna	ta-ktub-ūna	ti-ktəb-ūn	ti-ktəb-ū
2FPL	ta-ktub-na	ta-ktub-na	ti-ktəb-ān	ti-ktōb-nā
1PL	na-ktub-u	na-ktub-u	ni-ktub	ni-ktōb

The subjunctive/volitive/cohortative and the jussive are indicated by /-a/ and /-Ø/, respectively.

(96) Classical Arabic subjunctive and jussive forms (Fischer 2002)

	<i>subjunctive</i>	<i>jussive</i>
3MSG	ya-ktub-a	ya-ktub
3FSG	ta-ktub-a	ta-ktub
2MSG	ta-ktub-a	ta-ktub
2FSG	ta-ktub-ī	ta-ktub-ī
1SG	ʔa-ktub-a	ʔa-ktub
3MPL	ya-ktub-ū	ya-ktub-ū
3FPL	ta-ktub-na	ta-ktub-na
2MPL	ta-ktub-ū	ta-ktub-ū
2FPL	ta-ktub-na	ta-ktub-na
1PL	na-ktub-a	na-ktub

With the loss of the final vowel in Hebrew, other alternations conditioned by the presence or absence of the modal have been reinterpreted as morphologically significant.

3.4.3. The case of Modern South Arabian languages

The Modern South Arabian languages are also characterized by drastic vocalic changes due both to the influence of other vowels and changes in the prosodic system. The full range of factors involved in the creation of new non-linear morphological alternations is on display in the developments observed in the Modern South Arabian languages, with a different set of changes in each of the languages. The vocalic patterns of MSA are far removed from the forms accepted for Proto-Semitic, Proto-West-Semitic, and Proto-South-Semitic, yet these languages clearly maintain an exemplary instance of a root-and-pattern morphological system. A brief look at the 3MSG forms of the basic stem active voice verbs in the MSA languages and a selection of other Semitic languages illustrates the divergent quality of the vocalic patterns in the MSA languages.

(97) Reflexes of basic verb forms in MSA

		perfect	imperfect	jussive
PS			*yVkat(t)Vb	*yVktub
PWS		*kataba	?	*yVktub
PSS		*kataba	*yVkat(t)ib	*yVktib (?)
MSA	Mehri (Johnstone 1987)	rəkūz	yərūkəz	yərkēz
	Hobyōt (Simeone-Senelle 1997)	γḏrōb	yīγōrəb	yīγḏrēb
	Ḥarsūsi (Johnstone 1975)	kətōb	yəlōbəd	yəlbēd
	Jibbāli (Johnstone 1981)	k'ódór	yk'ódər	yók'dər
	Soqotri	kətób	yək'ábər	l-ik'bér
East Semitic	Akkadian	n/a	iparras	iprus
Central Semitic	Ugaritic (Sivan 2001)	kataba		yaktub
	Arabic	kataba		yaktub
South Ethiosemitic	Gə'əz	qətələ	yīqəttil	yīqtīl
	Harari (Leslau 1958)	səbərə	yīč'əmḳ(i)	yəsbər
	Gafat (Leslau 1956)	gəllədə	yīfərik	yəltəm

The strong relationship between vowel quantity and quality distinguishes the MSA languages from most other Semitic languages. However, the types of changes in the MSA languages are familiar from Hebrew, another language where the occurrence of particular vowels is constrained by prosodic factors. In both Hebrew and the MSA languages non-tonic vowels have frequently been reduced while tonic vowels have undergone a variety of quantitative and qualitative changes depending on syllable type (open vs. closed). In Mehri, Ḥarsūsi, Hobyōt and Baḥari, which form a group within the MSA languages, a number of related changes have affected the vocalization of verb forms. Some of these same changes can be observed in Jibbāli and Soqotri, although the developments in these two languages display many important points of departure. Following a discussion of the character and development of the stress system in the MSA languages and Semitic more generally, the development of the vocalization of verbs in the MSA languages will be examined in detail.

3.4.3.1. Vowel reduction and tonic lengthening in MSA

One of the most salient features of the MSA languages is the common occurrence of the reduced vowel /ə/. All the MSA languages exhibit the reduction of vowels to /ə/ to some extent. This development is most advanced in Mehri, Ḥarsūsi and Baḥari, in which most non-tonic vowels have been reduced to /ə/. The perfect and imperfect paradigms of the basic stem verbs nicely illustrate this development in Mehri and Ḥarsūsi. The vocalization of the perfect form of active verbs consists only of the vowel /a/ in Arabic (*kataba*) and is assumed to consist of only /a/ in Proto-West-Semitic (*kataba). The perfect forms show the reduction of all non-tonic /a/ as well as non-tonic /u/ in the suffixes. The one exception is /i/ in the first and second dual persons, which might go back to an earlier \bar{i} .

(98) Perfect paradigm of active, basic stem verbs

	Mehri (Johnstone 1987)	Ḥarsūsi (Simeone-Senelle 1997)	MSA precursor	Arabic	Gə'əz
3MSG	rəkūz	kətōb	< *katáb	kataba	nəbərə
3FSG	rəkəzūt	kətəbōt	< *katabát	katabat	nəbərət
2MSG	rəkəzk	kətōbək	< *katáb-k	katabta	nəbərəkə
2FSG	rəkəzš	kətōbəš	< *katábš	katabti	nəbərki
1SG	rəkəzk	kətōbək	< *katáb-k	katabtu	nəbərku
3MDU	rəkəzō	kətəbō	< *katabā	katabā	
3FDU	rəkəztō	kətəbtō	< *katabtā	katabatā	
2DU	rəkəzki	kətōb(ə)ki		katabatā	
1DU	rəkəzki	kətōb(ə)ki			
3MPL	rəkáwz	kətábəm	< *katáb-u	katabū	nəbəru
3FPL	rəkūz	kətōb	< *katáb-(a)	katabna	nəbéra
2MPL	rəkəzkəm	kətōb(ə)kəm	< *katáb-kum	katabtum	nəbərkiimu
2FPL	rəkəzkən	kətōb(ə)kən	< *katáb-kun	katabtunna	nəbərkin
1PL	rəkūzən	kətōbən	< *katában	katabnā	nəbərnə

The imperfect paradigm of the active basic stem verb shows a similar pattern of reduction.

(99) Imperfect paradigm of active, basic stem verbs

	Mehri	Ḥarsūsi	precursor	Akkadian	Gə'əz
3MSG	yərūkəz	yələbəd	< *yikátib	iparrVs	yinəbbir
3FSG	tərūkəz	tələbəd	< *tikátib	taparrVs	tinəbbir
2MSG	tərūkəz	tələbəd	< *tikátib	taparrVs	tinəbbir
2FSG	tərəkəz	tələbəd	< *tikátibī	taparrVsī	tinəbbiri
1SG	ərūkəz	ələbəd	< *ikátib	aparrVs	?inəbbir
3MDU	yərəkzō	yələbədō	< *yikatibā	iparrVsā	
3FDU	tərəkzō	tələbədō	< *tikatibā		
2DU	tərəkzō	tələbədō	< *tikatibā		
1DU	ərəkzō	ələbədō	< *ikatibā		
3MPL	yərəkzəm	yələbədəm	< *yikátibVm	iparrVsū	yinəbbiru
3FPL	tərəkzən	tələbədən	< *tikátibVn	iparrVsā	yinəbbira
2MPL	tərəkzəm	tələbədəm	< *tikátibVm	taparrVsū	yinəbbiru
2FPL	tərəkzən	tələbədən	< *tikátibVm		yinəbbira
1PL	nərūkəz	nələbəd	< *nikátib	niparrVs	ninəbbir

The original character of the prefix and the final stem vowels is less clear given the reductions. Most likely both of these vowels go back to *i. This reconstruction is supported by the /i/ reflexes of these vowels in the equivalent forms in Ethiosemitic. This suggests either reconstructed *i or *u. It is also supported by the more common occurrence of /i/ as opposed to /u/ in these positions in cognate forms in related languages, e.g. /i/ or /a/ are more common in the

prefixes of active verbs and /i/ is a common thematic vowel in Arabic especially in active derived forms (yukattibu).

Hobyōt is also characterized by non-tonic reduction, although the realization of these reductions is slightly different. Depending on context the reduced vowel may be /ə/, /ʌ/ or /Ø/.

(100) Perfect and imperfect paradigms of active, basic stems in Hobyōt (Simeone-Senelle 1997)

	<i>perfect</i>	<i>imperfect</i>
3MSG	γʌrōb	yīγōrəb
3FSG	γʌrəbōt	tγōrəb
2MSG	γʌrəbək	tγōrəb
2FSG	γʌrəbəš	tγērəb
1SG	γʌrəbək	εγōrəb
3MDU	γʌrəbo	yīγōrbo
3FDU	γʌrəbo	tγōrbo
2DU	γʌrōbki	tγōrbo
1DU	γʌrōbki	εγōrbo
3MPL	γʌrəbum	yīγōrbum
3FPL	γʌrōb	tγōrbən
2MPL	γʌrəbkum	tγōrbum
2FPL	γʌrəbkən	tγōrbən
1PL	γʌrəbən	nγōrəb

The paradigms of the active verb also illustrate tonic lengthening. The position of stress is typically associated with a long vowel in open syllables and with a stressed schwa in closed syllables. In Ḥarsūsi, Hobyōt and Mehri an originally short vowel in a stressed syllable will often become long and change quality. Both the changes $a > \bar{u}$ or \bar{o} and $i > \bar{e}$ are well attested in these two languages. These two changes occur in the forms of the basic stem verb. Like other South Semitic languages, there are three basic verb forms in MSA (perfect, imperfect and jussive). Like Ethiosemitic the distinction between /i/ and /u/ seems to have been lost in some cases, as with the thematic vowel of the jussive.

(101) Tonic lengthening in Mehri (Johnstone 1987) and other MSAL (Simeone-Senelle 1997)

	language	form	PMSA
active, perfect	Mehri	rəkūz	< *katáb
	Hobyōt	γʌrōb	
	Ḥarsūsi	kətōb	
active, imperfect	Mehri	yə-rūkəz	<yV-kátib
	Hobyōt	yī-γōrəb	
	Ḥarsūsi	yə-lōbəd	
active, jussive	Mehri	yə-rkēz	<yV-k(a)tíb
	Hobyōt	yī-γʌrēb	
	Ḥarsūsi	yə-lbēd	
stative, jussive	Mehri	yə-θbōr	<yV-ktáb

The jussive form in Hobyōt is of special interest as it may support an original stem $C_1aC_2VC_3$ as argued in section 2.4.5.

Tonic lengthening is not found in either Socotri or Jibbāli, although similar patterns of reduction are observed. Soqotri, as described by Johnstone (1975), shows a very similar pattern of vowel reduction to Mehri and Ḥarsūsi, although in a few cases a non-tonic syllable is not reduced as with the /o/ in the 2FSG suffix {-oh}, 3MDU suffix {-o} and 3FDU suffix {-əto}, the /i/ in the 2DU and 1DU suffix {-ki} and the 2FSG imperfect form *tək'ábir* and /ɔ/ in 3FPL perfect form *kátɔb*. Leslau's description deviates considerably, perhaps representing a separate dialect group. Many of the forms in Leslau would seem to suggest a development from a language closer to that described by Johnstone with assimilative vowel changes following a change in accentuation.

(102) Perfect and imperfect paradigms of active, basic stem verbs in Soqotri

	<i>Johnstone 1975</i>		<i>Leslau 1938</i>	
	<i>perfect</i>	<i>imperfect</i>	<i>perfect</i>	<i>imperfect</i>
3MSG	kátób	yək'ábər	qófod	iqáfed
3FSG	kátóboh	tək'ábər	qefédoh	teqáfed
2MSG	kátóbk	tək'ábər	qófodk	teqáfed
2FSG	kátóbš	tək'ábir	qófodš	teqófid),
1SG	kátóbk	ək'ábər	qófodk	?eqáfed
3MDU	kátóbo	yək'ábəro	qofódo	iqáfedo
3FDU	kátóbəto	tək'ábəro	qofodéto	tqáfedo
2DU	kátóbkí	tək'ábəro	qófodki	teqáfedo
1DU	kátóbkí	ək'ábəro	qófodki	?eqáfedo
3MPL	kátəb	yək'óbər	qéfed	iqófod
3FPL	kátəb	tək'ábərən	qófod	tqáfedin
2MPL	kátóbkən	tək'óbər	qofódken	tqófed
2FPL	kátóbkən	tək'ábərən	qofódken	tqáfedin
1PL	kátóbən	nək'ábər	qofóden	nqafed

Jibbāli displays a similar situation, with an Eastern dialect corresponding closely to other MSA languages and a Central dialect appearing to have undergone an number of changes related to a change in the prosodic system. Like Leslau's description of Soqotri, the quality of the originally stressed vowel in the Central dialect has influenced the quality of other now stressed vowels. Johnstone (1981) describes Central Jibbāli as allowing more than one stressed syllable. The central dialect forms involve stress on the original stressed vowel and all preceding stem vowels (not including the prefixes.)

(103) Perfect and imperfect paradigms of active, basic stem verbs in Jibbāli

	Central Jibbāli (Johnstone 1981)		Eastern Jibbāli (Johnstone 1975)	
	<i>perfect</i>	<i>imperfect</i>	<i>perfect</i>	<i>imperfect</i>
3MSG	k'ódór	yk'ódər	kətób	yərófəs
3FSG	k'ódórót	tk'ódər	kətiót	tərófəs
2MSG	k'ódórək	tk'ódər	kətóbək	tərófəs
2FSG	k'ódórš	yk'idər	kətóbš	tərifəs
1SG	k'ódórək	ək'ódər	kətóbək	ərófəs
3MDU	k'ódóró	yk'ódóró	kətió	yərəfsó
3FDU	k'ódórót	tk'ódóró	kətəbtó	tərəfsó
2DU	k'ódórši	tk'ədéró	kətóbši	tərəfsó
1DU	k'ódórši	nk'ódər	kətóbši	ərəfsó
3MPL	k'ódór	yk'ódər	kətób	yərófəs
3FPL	k'ódór	tk'ódərən	kətób	tərófsən
2MPL	k'ódórəkum	tk'ódər	kətóbəkum	tərófəs
2FPL	k'ódórəkən	tk'ódərən	kətóbəkən	tərófsən
1PL	k'ódórən	nk'ódər	kətón	nərófs

These developments have had an important impact on the development of the system of active, passive and stative basic stem verbs.

3.4.3.2. Active and stative/passive vocalizations in MSA and other Semitic languages

The development of active, passive and stative verb can be understood in terms of the types of reductions and changes described in this section. In order to evaluate the developments in the MSA languages it is necessary to reconstruct the thematic vowels of basic stem forms in the suffix and prefix conjugations.

In West Semitic a distinction is often made between active and stative verbs. The thematic vowel of basic stem verbs shows a great degree of variability, with perfect and imperfect/jussive forms occurring with all possible short vowels /i, a, u/. Active verbs have a thematic vowel of /a/ in the perfect (PWS *qatal), while stative verbs have /i/ (PWS *qatil) or less commonly /u/ (PWS *qatul). The imperfect in Hebrew and Arabic and subjunctive in Ge'ez typically have the thematic vowel /u/ and less commonly /a/ or /i/ in the active verb forms (PWS *yaktub, *yaktib, *yaktab) and /a/ in the stative verb forms (PWS *yiktab). The distinction between the two forms is maintained in Arabic, Hebrew and Ge'ez. The ablaut patterns, the vocalic alternations between the West Semitic perfect and the Central Semitic imperfect and South Semitic jussive, are more constrained. There are logically nine possible ablaut patterns, of which only a selection occurs in any West Semitic language.

Arabic, which has the largest selection of ablaut alternations, lacks two of the nine possible ablaut alternations, namely alternations involving a thematic vowel of /u/ in the perfect and /i/ or /a/ in the imperfect.

(104) Arabic Ablaut Classes

a~u	<i>kataba ~ yaktubu</i>	i~a	<i>šariba ~ ya-šrabu</i>	u~u	<i>ħasuna ~ yaħsunu</i>
a~i	<i>jalasaa ~ yajlisu</i>	i~i	<i>našima ~ yanšimu</i>		
a~a	<i>fašala ~ yašfa-u</i>	i~u	<i>ħađira ~ yađduru</i>		

This variety of forms however does not capture the asymmetries in the frequencies of particular classes. The most common classes are far and away a~u and i~a, although other forms do occur.

The differences in the thematic vowel in the perfect are generally correlated with active vs. stative verbs with /a/ occurring in active verbs and /i/ and /u/ occurring in stative verbs. The distinction between perfect forms with /i/ and /u/ is between verbs indicating a “temporary state” or “accidental quality” and those indicating a “permanent state” or “naturally inherent quality” (Wright 1896-1898:30). However, there are exceptions to this pattern, such as the active verb *šariba* ‘to drink’.

(105) Meaning and thematic vowels in Arabic

<i>active</i>	qatala	‘he killed’
	ḍaraba	‘he beat’
	ḍahaba	‘he went’
	saraqa	‘he stole’
<i>stative - temporary</i>	danifa	‘he was seriously ill’
	fariḥa	‘he was glad’
	ḡadiba	‘he was angry’
<i>stative - permanent</i>	šarufa	‘he was high born, noble’
	kabura	‘he was great, large, big’
	qaduma	‘it was old’

The vocalization in the imperfect form is somewhat more complicated and exhibits a weaker correlation with the active-stative distinction. Given that the a~u and i~a classes are the most common, a large number of active verbs in the imperfect have the thematic vowel /u/, while many stative verbs have the thematic vowel /a/. This situation is complicated by two independent facts. First, perfect forms with a thematic vowel of /u/ retain the same thematic vowel in the imperfect (e.g. *qaduma~yaqdumu*), giving both active and stative imperfects with a thematic vowel /u/. Second, guttural consonants often influence the quality of the thematic vowel, giving a low vowel /a/ instead of the expected vocalization. This gives us a number of forms which belong to the a~a ablaut class. The occurrence of forms in the a~a class not involving a guttural consonant is according to Wright (58) “excessively rare” with cases like *rakana~yarkanu* probably involving a conflation of the forms *rakana~yarkunu* and *rakina~yarkanu*. In addition to the a~u ablaut class, a smaller but not inconsequential number of forms belong to an a~i class (e.g. *ḍaraba~yaḍribu*, *jalasa~yajlisu*). The imperfect vocalization of “stative” verb forms is slightly more predictable with the ablaut classes beside i~a and u~u being either rare, as is the case for the i~i class, or extremely rare as with the i~u class.

In sum, seven different classes can be identified out of a theoretically possible set of nine. Of these seven only five of the classes are common, with one of those classes being largely phonologically determined. We are thus left with three major or basic ablaut classes (a~u for active, i~a for temporary states and u~u for permanent states) and two minor classes (a~a for active verbs which is largely phonologically determined and a~i for active verbs). In addition to these forms, Arabic also has a special internal passive which has the typical stative vocalization in prefix conjugation verbs, but the melody u-i in active verbs, e.g. *sumiṣ-a* ‘he was heard’ and *yu-smaṣ* ‘he is heard’.

The three perfect forms with different stem vowels are also retained in Hebrew and Aramaic, although the ablaut classes are fewer. In these two languages the basic distinction is maintained in the perfect between active verbs with the thematic vowel /a/ and in stative verbs with thematic vowels reflecting *i or *u. However, unlike in Arabic, there is no correlation between function and form for the *qaṭil and *qaṭul forms.

(106) Perfect basic stem forms in Hebrew (data from Joüon and Muraoka 2000)

<i>active</i> (*qatal)	qāṭal	‘he killed’
	kātab	‘he wrote’
	ʔākal	‘he ate’
	rāḥats	‘he washed’
<i>stative</i> (*qatil and *qatul)	gādēl	‘he was great’
	kābēd	‘he was heavy’
	lābēš	‘he was dressed’
	qāṭōn	‘he was small’
	yāgōr	‘he dreaded’
	yākōl	‘he was able to’

Hebrew has three major ablaut patterns involving the three types of perfect vocalizations. The three classes correspond closely to Arabic, except that both stative verb classes have /a/ as a thematic vowel

(107)

<i>class</i>	<i>perfect</i>	<i>imperfect</i>
a~u	qāṭal < *qatal	yiqtōl
i~a	gādēl < *qatil	yigdāl
u~a	qāṭōn < *qatul	yiqtān

Reflexes of *qatal, *qatil and *qatul are found in Aramaic, although many varieties of Aramaic do not preserve all the vocalizations. In Targumic Aramaic, all possible reflexes occur (Stevenson 1924). In Biblical Aramaic, both *qatal and *qatil forms are found, while the *qatul form, which is relatively rare in Hebrew and Arabic, is absent. A form like *yakil* in Aramaic which has *i as a thematic vowel corresponds to a form with *u as a thematic in the cognate forms in Hebrew

(108) Perfect *qatal and *qatil in Aramaic (data from Rosenthal 1995)

<i>active</i> (*qatal)	kətab	‘he wrote’
	rəšam	‘he inscribed’
	šəlah	‘he sent’
	ʔākal	‘he ate’
<i>stative</i> (*qatil)	bəʔeš	‘he was evil’
	yəkil	‘he was able’
	ləbeš	‘he was clothed’

Phonological mergers have reduced the number of possible thematic vowels in Ge‘ez. Both perfect and jussive forms can have two possible thematic vowels. In the perfect the thematic vowel is either /ə/ or, if going back to either /i/ or /u/, is lost. In forms with consonant initial suffixes, there is no contrast in the perfect with all verbs having /ə/, e.g. *ləbs-ə* ‘he got dressed’, but *ləbəs-kə* ‘you M got dressed’. Ge‘ez exhibits four ablaut classes *a~i*, *a~ə*, *Ø~ə*, and *Ø~i*, which represent all possible classes given the historical processes in Ethiosemitic such as the merger of /i/ and /u/ in /i/.

(109) Active and stative forms in Ge‘ez (Lambdin 1978)

perfect with thematic vowel /ə/			perfect with syncope		
perfect	imperfect	root gloss	perfect	imperfect	root gloss
ʔəkələ	yīʔkəl/yīʔkīl	‘to be sufficient for, satisfy’	ʔəbdə	yīʔbəd	‘to be mad, rage’
ʔərərə	yīʔrīr/yīʔrər	‘to harvest’	ʔəkyə	yīʔkəy	‘to be evil, bad, wicked’
ʔəsərə	yīʔsir	‘to tie up, bind’	ʔəmnə	yīʔmən	‘to be true to believe’
			ʔəbyə	yīʔbəy	‘to be big large, great’
ʔəqəbə	yīʔqəb	‘to guard, keep watch’	ʔərgə	yīʔrīg/yīʔrag	‘to ascend, come up, go up’

Modern South Arabian preserves three types of basic stem forms. These forms can for the most part be understood by reference to the processes described in the previous sections. The developments in the active basic stem verbs of the original *a~u* class, what Johnstone (1987) and Simeone-Senelle (1997) refer to as “type (a)”, were described above. In addition there are two other basic stem verb forms: a stative “type (b)” and a passive form. The type (b) verbs are assumed to go back to verbs of the *i~a* ablaut classes. The passive form of the verb has a less clear origin, perhaps being related to the Arabic *fuʕil* passive or the passive participle *faʕīl* found in Arabic and more regularly in Aramaic.

Passive forms exist for a number of basic stem verbs in Mehri. In the perfect the vowel /ū/ becomes /ē/ and in the imperfect /ē/ becomes /ō/. The reflexes in Mehri would appear to reflect *katab and *kutib in the perfect. In the jussive /ē/ becomes /ō/, seemingly reflecting *ya-ktib and *ya-ktab. The forms suggest an earlier loss of the distinction between /u/ and /i/ in the active imperfect, similar to the merger of /u/ and /i/ to /i/ in Ethiosemitic.

(110) Active and related passive forms in Mehri (Johnstone 1987)

PERF	IMPF	root gloss	PERF	IMPF	root gloss
həgūm	yəhgēm	'to attack, assail'	həgēm		'to be attacked'
həgūr	yəhgēr	'to guard'	həgēr		'to be guarded'
hərūf	yəhrēf	'to move, remove'	hərēf		'to be moved, removed'
həzūl		'to put aside'	həzēl		'to be put aside'
kətūb	yəktēb	'to write'	kətēb	yəktōb	'to be written'
rəkūz	yərkēz	'to straighten'	rəkēz	yərkōz	'to be straightened'
səkūb	yəskēb	'to pour'	əskēb	yəskōb	'to be poured'
lənūk'		'to hang'	lənēk'		'to be hung'
xəlūk'		'to create'	xələk		'to be born, created'
xərūt'	yəxrēt'	'to pick, pluck'	xərēt'	yəxrōt'	'to be picked, plucked'
zərūk'	yəzrēk'	'to throw a dagger or a dart, stab at, strike'	zərēk'	yəzrōk'	'to be stabbed, bitten by a snake'
ḡəmōr	yəḡmēr	'to trust s.o.'	ḡəmēr		'to be trusted'
səhāt	yəshōt	'to slaughter'	səhāt	yəshōt	'to be slaughtered'
t'əhān	yət'hōn	'to grind'	t'əhān	yət'hōn	'to be ground'

In some cases the passive vocalization is not associated with a corresponding active form.

(111) Passive forms without corresponding active forms in Mehri (Johnstone 1987)

PERF	IMPF	root gloss
bəhəl	yəbhōl	'to be cooked, baked, read'
gəhəl		'to be unfriendly or unjust to'
ləhəd	yəlhōd	'to bear witness'
fəhēm	yəfhōm	'to understand'
dəhēf	yədhōf	'to pat, slap'
kəhəl	yəkhōl	'to be able'

The passive contrasts with a stative type (b). One of the chief ways the stative contrasts with the passive is in the placement of stress in the perfect; the stative has stress on the initial syllable while stress is on the second syllable in the passive.

(112) Stative forms in Mehri (Johnstone 1987)

PERF	IMPF	root gloss	PERF	IMPF	root gloss
θībər	yəθbōr	'to be broken'	θəbūr	yəθbēr	'to break (tr.)'
mīθəl		'to be like'	məθūl		'to be like'
sīkər	yəskōr	'to be dizzy, drunk'			
tīgər	yətgōr	'to be rich, become rich'			
lībəs	yəwbōs	'to wear, put on'			

The passive can be easily derived by the processes of non-tonic reduction and tonic lengthening, as described for the active stem. The only difficulties are presented by the suffix of

the 3MPL which is sometimes /-əm/ and sometimes realized by ablaut of the stem vowel and by the influence of the thematic vowel on suffix vowels. We must also propose a rule /i/ > /a/ in stressed closed syllables.

(113) Development of perfect basic stem passive in Mehri

	Mehri (Johnstone 1987)	tonic lengthening	non-tonic reduction and syncope	MSA precursor	Arabic
3MSG	rəkēz	< rəkēz	< rəkíz	< *rukíz	kutiba
3FSG	rəkzēt	< rəkzēt	< rəkzít	< *rukízít	kutibat
2MSG	rəkázk	< rəkíz	< rəkíz	< *rukíz	kutibta
2FSG	rəkázš	< rəkízš	< rəkízš	< *rukízš	kutibti
1SG	rəkázk	< rəkíz	< rəkíz	< *rukíz	kutibtu
3MDU	rəkzē	< rəkzē	< rəkzí	< *rukízí	kutibā
3FDU	rəkəztē	< rəkəztē	< rəkəztí	< *rukízí	kutibatā
2DU	rəkázkí				kutibatā
1DU	rəkázkí				
3MPL	rəkēzəm	< rəkēz-u	< rəkíz-u	< *rukíz-u	kutibū
3FPL	rəkēz	< rəkēz-(a)	< rəkíz-(a)	< *rukíz-(a)	kutibna
2MPL	rəkázkəm	< rəkíz	< rəkíz	< *rukíz	kutibtum
2FPL	rəkázkən	< rəkíz	< rəkíz	< *rukíz	kutibtunna
1PL	rəkēzən	< rəkāzən	< rəkízən	< *rukízan	kutibnā

The jussive forms follow the same basic patterns, although the jussive dual endings would appear to have their origin in analogy with the corresponding perfect endings.

(114) Development of jussive basic stem passive in Mehri

	Mehri (Johnstone 1987)	tonic lengthening	reduction and syncope	MSA precursor	Arabic
3MSG	yərkōz	< yərkōz	< yərkáz	< *yurkáz	yu-ktab
3FSG	tərkōz	< yērkōz	< yērkáz	< *yurkáz	tu-ktab
2MSG	tərkōz	< tərəkōz	< tərəkáz	< *turkáz	tu-ktab
2FSG	tərkōz	< tērkōz	< tērkáz	< *turkáz	tu-ktab-ī
1SG	l-ərkōz	< l-ərkōz	< l-ərkáz	< *l-urkáz	?u-ktab
3MDU	yərkəzē	< yərkəz-ē	< yərkəz-í	< *yurkaz-í	yu-ktab-ā
3FDU	tərkəzē	< tərəkəz-ē	< tərəkəz-í	< *turkaz-í	tu-ktab-ā
2DU	tərkəzē	< tərəkəz-ē	< tərəkəz-í	< *turkaz-í	tu-ktab-ā
1DU	l-ərkəzē	< l-ərkəz-ē	< l-ərkəz-í	< *l-urkaz-í	
3MPL	yərkīz	< yərkīz	< yərkíz	< *yurkíz	yu-ktab-ū
3FPL	tərkōzən	< tərəkōz-ən	< tərəkáz-ən	< *turkáz-an	yu-ktab-na
2MPL	tərkīz	< tərəkīz	< tərəkíz	< *turkíz	tu-ktab-ū
2FPL	tərkōzən	< tərəkōz-ən	< tərəkáz-ən	< *turkáz-an	tu-ktab-na
1PL	nərkōz	< nərkōz	< nərkáz	< *nurkáz	nu-ktab

The imperfect is generally identical to the jussive in the passive.

The stative and the passive verbs have the same basic paradigm in the imperfect/jussive.

(115) Imperfect passive and stative paradigms in Mehri (Johnstone 1987)

	<i>passive</i>	<i>stative</i>
3MSG	yərkōz	yəθbōr
3FSG	tərkōz	təθbōr
2MSG	tərkōz	təθbōr
2FSG	tərkayzi	təθbayri
1SG	ərkōz	əθbōr
3MDU	yərkəzē	yəθbərō
3FDU	tərkəzē	təθbərō
2DU	tərkəzē	təθbərō
1DU	ərkəzē	əθbərō
3MPL	yərkīz	yəθbīr
3FPL	tərkōzən	təθbōrən
2MPL	tərkīz	təθbīr
2FPL	tərkōzən	təθbōrən
1PL	nərkōz	nəθbōr

Given the contrast between stative *ya-ktab* and passive *yu-ktab* in Arabic, one expects a loss of a morphological contrast due to non-tonic lengthening *yuktáb and *yaktáb > *yəktáb*. In the perfect, however, a distinction between these two forms is maintained. In contrast to the active basic stem verb and the passive form, the stative has stress on the initial syllable of many forms in the perfect paradigm. According to Simeone-Senelle (1997), the Hobyōt and Ḥarsūsi paradigms follow that of Mehri.

(116) Stative perfect in MSA

	Mehri (Johnstone 1987)	Jibbāli (Johnstone 1981)	Soqotri (Simeone-Senelle 1997)
3MSG	θībər	fédər	gésəl
3FSG	θəbrūt	fiðirót	gésələh
2MSG	θábrək	fédərək	gésəl̩k
2FSG	θábrəš	fédərəš	gésəl̩š
1SG	θábrək	fédərək	gésəl̩k
3MDU	θəbrō	fédéró	gésələ
3FDU	θəbértō	fédértó	gésəltə
2DU	θábrəki	fédərši	gésəl̩ki
1DU	θábrəki	fédərši	gésəl̩ki
3MPL	θábrəm	fédər	gésəl
3FPL	θībər	fédər	gésəl
2MPL	θábərkəm	fédər̩kum	gésəl̩kən
2FPL	θəbər̩kən	fédər̩kən	gésəl̩kən
1PL	θábrən	fédərən	gésələn

The developments described above in Arabic dialects and other Semitic languages provide an important key for understanding the development in the MSA languages. Two common processes widely attested in Arabic appear also to be at work in the MSA languages. First, the thematic vowel seems to influence the character of the initial stem vowel, e.g. *qatil > *qitil* as is the case in Cairene (Woidich 2006), Meccan (Ingham 1971), and many other dialects. Second, the thematic vowel /i/, but not /a/, is often lost through syncope, as is the case in Ge'ez and many Arabic dialects. This scenario assumes that stress in MSA was originally located in many forms on the initial syllable of the stem as is assumed to be the case in Arabic (Kaye 1997a:200) and Hebrew (Blau 1976). The stress later shifted to the rightmost closed syllable. The 3MSG and 3FSG forms of both active and stative types can be accounted for according to these processes.

(117) Derivation of 3MSG and 3FSG forms

	3MSG		3FSG		
PMSA	*θábira	*rákaza	*θábirat	*rákazat	Processes
	θíbira	n/a	θíbirat	n/a	vowel assimilation
	θíbra	n/a	θíbrat	n/a	syncope of /i/
	θíbr	rákaz	n/a	n/a	apocope
	n/a	rakáz	θíbrát	rakazát	stress shift
	n/a	rəkáz	θəbrát	rəkəzát	non-tonic reduction
	θíbr	rəkūz	θəbrūt	rəkəzūt	tonic lengthening
	θíbər	n/a	n/a	n/a	epenthesis
Mehri	θíbər	rəkūz	θəbrūt	rəkəzūt	

The passive forms present some difficulties for this analysis. Either we must assume that the thematic /i/ of the passive is not affected by syncope or we must assume a different original accentuation of this form, i.e. *rukíza* not *rúkiza*. A slightly different set of developments must be proposed for Jibbāli.

(118) Derivation of passive verb forms

	Mehri		Jibbāli	
PMSA	*rukíza	processes	*rufiṣa	processes
	n/a	vowel assimilation	n/a	vowel assimilation
	n/a	syncope of /i/	n/a	syncope of /i/
	rukíz	apocope	rfiṣa	pre-tonic reduction
	n/a	stress shift	rfiṣ	apocope
	rəkíz	non-tonic reduction	n/a	stress shift
	rəkēz	tonic lengthening	ɛrfiṣ	epenthesis
	n/a	epenthesis	ɛrfiṣ	
	rəkēz			

A set of changes sensitive to prosodic structure have led to strikingly different outcomes for different verb types. While the original alternations involved simple vowel alternations *qatal vs. *qatil, a set of reasonable changes have led to differences in both vocalization and

accentuation *qəṭūl* vs. *qītəl*. These changes illustrate the power of prosodically based changes for the general character of non-linear morphology.

3.5. Conclusions

This chapter illustrates the important role that phonological changes can have on the creation and development of a system of root-and-pattern morphology. The changes described were independently motivated phonological processes. While playing a role in creating new ablaut alternations, the changes also frequently led to a weakening or loss of earlier patterns. Like many of the processes described throughout this dissertation, the processes are indifferent to the non-linear morphological structure.

Chapter 4.

Change in nonconcatenative morphology: The case of the Semitic derived stems

4.1. Introduction

The character and development of the Semitic derived verbal system can inform our understanding of general mechanisms of change affecting nonconcatenative morphology as well as the specific morphological history of the Semitic language family. The distribution and character of changes may influence the types of processes and morphological representations we assume and thus our theories of historical processes and the structure of nonconcatenative morphology.

A core set of verb stem alternations is found in all the older Semitic languages and at least remnants of these same alternations are found in almost all later Semitic languages. This is in marked contrast to the system of internal plurals, which (though elaborate) is restricted to Arabic and the South Semitic languages. In addition to the system of derived stems being active to some degree in almost every Semitic variety, it also displays a great amount of internal vitality and diversity. This system includes many different types of non-linear alternations including changes in vocalic melody, basic template shape, and consonant and vowel length. Non-linear alternations are used to indicate both inflectional and derivational categories, crossing the line between nominal and verbal morphology. The derived verb system involves alternations among the basic and derived stems and between different aspectual forms, participles and nominal forms (verbal nouns and infinitives) within the various derived conjugations. The verbal system, particularly as reflected in the system of derived forms, is extremely extensive and elaborate. In sum, the system of derived stems provides a nearly ideal natural laboratory for examining the results of change in the system of nonconcatenative morphology.

Examining developments in the system of derived verbs can help us answer many questions about both the character of non-linear morphology and the history of the Semitic language family. Reviewing attested changes may tell us something about the character of non-linear representations and about how speakers use them. One of the main questions that will be examined in this section is what types or representations are assumed by any set of changes, including whether it is necessary to assume roots and patterns (e.g. vowel melodies and prosodic templates) as essential morphological units for the purposes of understanding historical changes. Assuming the universal application of a single representation across domains may be an overgeneralization without persuasive evidence in every case. However, the importance of roots and patterns need not be uniform across different situations and domains; it is possible that a speaker may use roots or patterns for particular tasks such as recognition or generating novel forms, but may largely ignore such representation in other contexts. I propose that the judgment of relevance should be determined on a domain by domain basis. The current study will examine specifically the importance of roots and patterns in the diachronic development of the morphology and the character of the representations involved in such a process.

In order to best answer questions concerning change in a system with root and pattern morphology, it is necessary to examine as much data as is possible. The Semitic languages offer not only numerous varieties, but also a history spanning five millennia. Working solely, or at least primarily, with the earliest Semitic varieties can lead to an unfortunate circularity.

Reconstructions of Proto-Semitic depend on our assumptions about what changes are possible, while the changes proposed depend on the reconstructions. Because there are few cases outside

the Semitic family that are directly analogous to the root and pattern morphology, many judgments about the likelihood and naturalness of changes must be established largely on the basis of Semitic data. The existence of many later forms of Semitic remedies the situation significantly. Besides simply adding to the available data pool, many later Semitic varieties have the advantage of having descended from another documented variety or at least a variety very close to a documented one. The frequency of particular types of changes in later Arabic dialects or Aramaic languages may argue in favor of the occurrence of the same type of change in Proto-Semitic and thus for a particular reconstruction of Proto-Semitic or intermediate branches. Conversely, the absence of other types of changes might suggest that the changes are unlikely or impossible because the change does not appear to follow otherwise established pathways for change.

In examining changes affecting the verbal system, we must disentangle the various competing motivations for change. It is often difficult to distinguish whether or not an analogy or sound change is responsible for the loss of a particular morphological alternation. While meaning changes and sound changes frequently occur independently of morphological concerns, the reverse is not necessarily true. Changes in sounds and meaning can spur subsequent analogical and morphological changes by increasing the likelihood of a reinterpretation of the existing morphological material.

This chapter is structured around the various motivations involved in changes to the nonlinear morphology of the derived verbal system. First, I will discuss changes in meaning and the consequences semantic changes have had for the morphology. Next, I will discuss some ways in which sound changes have directly affected the derived stems, continuing a theme from the preceding chapter. Finally, I will discuss the many ways in which analogy and particularly stem leveling have affected the system of morphology and the consequences these changes have for our understanding of root and pattern morphology. Very different processes can have similar results. The cases described in this section point to a domain in which the role of root and pattern morphology is fairly minimal; sound, meaning and analogical changes occurring without reference to nonlinear morphological units drive the attested developments.

4.2. The role of semantics and the fate of derived forms

It is common to view phonetics, phonology, morphology, syntax and semantics as hierarchically-related modules where interfaces occur between adjacent systems. If we view language as involving a continuum from physical to mental, there are two important interfaces with domains outside language. At one end language relies on the means of its production, propagation and perception. This is true for sound in spoken languages and gesture in signed languages, although each modality has radically different consequences. The particular modality determines what sounds or gestures are possible and impossible, i.e. human languages are restricted to sounds which the human vocal track can produce, atmospheric conditions can propagate and the human ear and brain can perceive. On a less fundamental, but linguistically more interesting, level the modality determines which sounds are more likely to be confused due to the likelihood of misperception or production mistakes and thus also informs our understanding of the likelihood of particular changes and the frequencies and distributions of sounds and gestures. This domain is covered by phonetics and the gesture-based analogue in signed languages.

At the other end of the continuum is the interface between linguistic forms and meanings shaped by pragmatics and human cognition. Pragmatics as determined by the circumstances of human societies and interactions and human cognition, including perception, determine the categories of meaning and the interpretations and reinterpretations that lead to semantic change;

distinctions that are useful and/or salient are likely to persist, while those that are not are likely to be lost. This domain is covered by semantics.

Indisputably, semantics is an important component in understanding the evolution of the system of derived stems, although questions remain as to what the precise role of meaning has been. A form expands in use when it is reanalyzed as having new or further meanings and replaces other earlier forms. Conversely, a form becomes obsolete when another form acquires new meanings which are suitably similar so as to replace the original form. Many of the changes in the system of derived stems may be laid on the similarity in meaning of a number of derived stems. The derived stems for the most part involve either valence increasing or valence decreasing operations. Both the typical meanings of the D-stem, a factitive, and the Š-stem, a causative, are valence increasing operations. Similarly, the T-stem, the N-stem and the internal passive typically involve valence decreasing operations, like passives, middles, reflexives, etc. Other forms, including some cases of the D-stem and the L-Stem, are associated with notions of intensity or verbal plurality.

While other factors may have a role in the likelihood of a particular change occurring, the semantic proximity of the different forms is one of the clearest factors driving change in the morphological system. In many cases the resulting morphological systems can be seen as the outcome of competition among the various derived forms. In other cases the competition comes from innovative morphological forms or syntactic constructions. For the most part the types of Semantic changes described in this section are detrimental to the system of nonconcatenative morphology, frequently leading to the loss or near obsolescence of particular patterns. However, this is not the only possible consequence of semantically-motivated changes.

In this section I will examine how the meanings of a subset of the derived stems have developed from Proto-Semitic into the forms of the earliest Semitic languages as well as those of later languages. I will first consider the argument-decreasing T- and N-stems in the Semitic languages which illustrate how meaning can play a crucial role in the obsolescence of morphological forms. I will then address the very different outcomes found for the argument-increasing D- and Š-stems and the reasons for the different developments.

4.2.1. The T- and N-stems: Semitic reflexive forms

Of the derived stems the two forms that are most similar in terms of range of functions are the N-stem and the T-stem. In all the languages where these two forms occur, the forms function as a selection or combination of reflexive, reciprocal, middle and passive. Given their respective distributions in the Semitic family, both derived stems clearly belong to Proto-Semitic and, likely, to an even earlier phase of the language. However, despite the obvious Proto-Semitic origins of the T- and N-stems and the well-known sets of meanings associated with both, it is less clear what the original distinction between these two forms may have been in Proto-Semitic or an earlier Afroasiatic stage.

For both stems the consensus argument is that either the original or basic meaning of the forms is reflexive. This is reflected both in the labels and descriptions given for these two forms in specific languages, as well as in the comparative literature. For lack of precise descriptions, these stems are often given hyphenated labels or are simply presented with lists of meanings. Bergsträsser (1928, 1983) describes the N-stem as having a “reflexive-passive” meaning and the T-stem as having a “reflexive-reciprocal” meaning. Moscati, Spitaler, Ullendorf and Soden (1964) make a similar distinction, describing the N-stem as having a “passive and reflexive meaning” and the T-stem as having “reflexive, passive and sometimes also reciprocal connotations”. Lipiński (1997), diverging somewhat from earlier accounts, states that the T-stem

originally functioned as a reflexive and frequentative verb form and that the N-stem (which has reflexive, reciprocal and passive meanings) may have originally been a reciprocal. Lipiński's view departs from that of most other scholars by assigning a basic reciprocal function to the N-stem and not the T-stem. In dealing specifically with Arabic, Wright (1896-1898:40-42) describes both as having a "middle or reflexive signification", while Fischer (2002) uses the term "reflexive-passive" for the N-stem and "reflexive-intransitive" for the T-stem, the latter being a somewhat unfortunate label given that in many cases the forms are "indirect reflexives" which take an object and so are clearly transitive.

In Arabic, and to a lesser extent Hebrew, forms marked by ablaut also perform the functions of a passive, e.g. Hebrew *Piel* vs. *Pual*, Arabic *faʿala* vs. *fuʿila*. Because of the independent existence of the internal passive, the passive functions of both the N- and T-stems are frequently considered to be secondary developments. For the various Semitic languages, many have claimed that the passive meanings of the two derived stems were later developments, although given the almost universal occurrence of passive meanings for both stems, this proposed development must have occurred earlier than Proto-Semitic.

According to Joüon and Muraoka (2000:150-1), the Hebrew *Niphal* (N-stem), which originally had a reflexive meaning and still does in many cases, frequently takes on other meanings including "a purely passive sense". Joüon and Muraoka also propose a similar scenario for the development of the *Hithpael* (Dt-stem). Like the *Niphal*, the *Hithpael* is considered to have a reflexive meaning, although as a reflexive form of the D-stem and not the basic stem. The T-stem, which would be the reflexive of the basic stem, has been replaced by the *Niphal* (N-stem) in Hebrew. The *Hithpael* has also taken on meanings beyond the original reflexive, including a passive meaning. For Arabic, Wright (1896-1898:42) describes a seemingly parallel development for form VIII (T-stem) whereby "occasionally the original reflexive meaning passes into the passive". The development of passive forms from reflexive forms is well-established cross-linguistically (Shibatani 1985). The developments described for Arabic and Hebrew are not confined to these languages, but instead represent processes that were already in progress in Proto-Semitic.

In many languages the semantic distinction between the N-stem and T-stem is obscured when one of these two derived stems is lost and the other takes on its original meanings. However, one of the primary ways in which these two derived stems are distinguished from each other are the potential combinations with other derived stems. In the majority of Semitic languages, and presumably for Proto-Semitic, the *n*-element of the N-stem does not combine with any other derived stems. One exception is the Mishnaic Hebrew *Nitpael*, which is a hybrid form combining the *Niphal* and *Hithpael* (Joüon and Muraoka 2000). In contrast, the *t*-element of the T-stem combines readily with all the derived stems except the N-stem. The *t*-element co-occurs with the D-stem, the Š-stem and the L-Stem in languages that preserve this derived stem. The almost universal occurrence of both Dt-stem and Št-stem verbs, even in languages where the basic T-stem is exceedingly rare or absent, points unambiguously to a proto-Semitic origin for these secondary derived stems.

In addition to differences in possible combinations with other derived stems, one can discern differences in the range of possible meanings of the N- and T-stems. In order to better understand the original functions of the derived stems, we can compare the reflexes of the derived stems in the Semitic languages. The most useful cases for reconstructing the original meanings of the derived stems are those which preserve both the N-stem and the T-stem, in which something of the original contrast between these forms may be gleaned. Cases where only

one of the stems survives are of somewhat more limited value because the loss of one form is often occasioned by the expansion of functions associated with the more successful form into the functional domain of the unsuccessful form. The frequency with which either the N-stem or the T-stem is lost in various branches and languages suggests that the two forms probably had largely overlapping functions which facilitated the loss of one form. Those languages like Arabic and Ugaritic which maintain a contrast between the N-stem and T-stem provide further confirmation of the considerable semantic similarity between the two derived stems. In sum, I assume that the likelihood of loss is related to the degree of overlap of the competing forms. In the following section I will describe languages in which one of the passive-reflexive stems has been lost before turning to languages which have preserved both stems.

4.2.1.1. Competition and loss

Most Semitic languages, especially from the first millennium BCE onward, do not contrast the N-stem and the T-stem. Classical Arabic, some modern Arabic dialects and Modern South Arabian languages maintain a contrast that has been lost in Northwest Semitic and the Ethiosemitic languages.

Ethiosemitic

In Ethiosemitic the N-stem disappeared, possibly being preserved in only a small set of verbs with reduplicative stems with a generally repetitive meaning.

(1) N-Stem verbs of Ge'ez (Lambdin 1978)

- N ʔəng^wədɡ^wədə 'to thunder', Q g^wədɡ^wədə 'to knock'
- N ʔənsəfəʃəfə 'to ooze', ʃəfəʃəf 'juice'
- N ʔənqəlqələ 'to move, shake, quake'
- N ʔənbəlbələ 'to flame, blaze'

While the *n*-preformative in these verb forms may ultimately be related to that of the N-stem, the N-stem with a reflexive or passive function is clearly missing.

In Ge'ez, the earliest attested Ethiosemitic language, the T-stem functions primarily as a passive form, but also has typical reflexive and middle uses (Dillmann 1907, Lambdin 1978, Gragg 1997).

(2) T-stems in Ge'ez (Lambdin 1978)

Passive

- T təfərħə 'he was feared'
- T tənəgrə 'it was spoken'
- T təqəbrə 'he/it was buried'
- T təqətlə 'he was killed'
- T təsəbkə 'it was preached'

Middle/Reflexive

- T təʕəqəbə 'he guarded himself against'; also 'it was guarded'
- T təriʔyə 'he/it appeared, seemed'

As in most Semitic languages some T-stem forms do not have a meaning directly related to an existing G-stem, although even in these cases the meaning might ultimately be derived from or have an implied passive or reflexive meaning.

(3) T-stem with unpredictable meanings (Lambdin 1978)

T təliʔkə ‘to serve, to minister to’

T təmʕiʕə ‘to become enraged’

T təhəšyə ‘to rejoice’

In the modern Ethiosemitic language the same patterns generally occur. The T-stem is preserved with some modifications in all the modern languages. Like Ge’ez, the marker of the T-stem is usually the preformative {tə-}, although Tigré has a form which corresponds to {ti-} in the other languages. In Argobba, and to lesser extent other languages, the /t/ assimilates to neighboring segments. The assimilation in Argobba (Leslau 1997b) is characteristic of the entire paradigm of the T-stem regardless of the following consonant, except in the imperative where the original /t/ resurfaces.

(4) Assimilation in the Argobba T-stem (Leslau 1997b:58)

	Type A	Type B
related non-reflexive-passive form	nəkkəsa ‘to bite’	beddəla ‘to treat ill’
gloss	‘to be bitten’	‘to be ill-treated’
perfect	innikkəsa	ibiddəl
imperfect	yinnikkəs	yibiddəl
compound imperfect	yinnikkəsəl	yibiddələl
jussive	yinnəkəs	yibədəl
imperative	tənəkəs	təbədəl
gerund	innikisdo	ibiddildo
compound gerundive	innikisdul	ibiddildul
verbal noun	mənnəkəs	məbəddəl

Two other patterns of assimilation in the T-stem, described by Leslau (1956), are also found. In Amharic (Leslau 2000) and Tigrinya (Leslau 1941) assimilation occurs whenever a following consonant comes directly after the preformative *t* such that assimilation occurs consistently in the imperfect and jussive, but not in the imperative or perfect.

(5) Assimilation in Amharic and Tigrinya T-stem forms

	Amharic (Leslau 2000)		Tigrinya (Leslau 1941)	
	Type A	Type B	Type A	Type B
related non-reflexive-passive form	nəggərə	fəlləgə	səbərə	bəddələ
perfect	tənəggərə	təfəlləgə	təsəbərə	təbəddələ
imperfect	yinnəggər	yiffəlləg	yisibər	yibiddəl
jussive	yinnəgər	yiffələg	yissəbər	yibəddəl
imperative	tənəgər	təfələg	təsəbər	təbəddəl

A more widespread pattern of assimilation occurs in the same general context (when the /t/ occurs immediately before another consonant), except only with a following coronal consonant. This pattern of assimilation is found in Ge‘ez (Dillmann 1907), Tigré (Raz 1983, Leslau 1945c), Harari (Leslau 1958, Cerulli 1936), Silte (Gutt 1997), Zway (Leslau 1999), Gafat (1956) and Muher (Leslau 1981).

(6) Assimilation with coronal consonants in Ethiosemitic languages⁴²

	non-assimilating		assimilating	
	perfect	imperfect	perfect	imperfect
Ge‘ez	təfəssəmə	yitfessəm	təzəkərrə	yizzekər < yitzekkər
Tigré	tiqarrača	litqarrač	tidaqqaba	liddaqqab < *litdaqqab
Harari	təqəbərə	yitqəbər	təšēləmə	yiššēləm < *yitšēləm
Zway	təfiqərə	yitfiqər	təṭūqəsə	yitṭūqəs < *yitṭūqəs
Gafat	təgəddələ	yitgəddəl	təsikkəmə	yissikkəm < *yitsikkəm
Muher	təməlləṭəm	yitməlləṭu	təžəbbərəm	yizžəbbəru < *yitžəbbəru

In Soddo (1968), there is facultative assimilation of the /t/ when in contact with any following consonant, e.g. *yatkəffala* ~ *yəkkəffala*, *yətmirraqə* ~ *yəmmirraqə*.

The functions ascribed to the T-stem in the modern Ethiosemitic language are consistent with each other as well as with Ge‘ez, being described in a variety of sources as either a “reflexive-passive” or some variation thereof (e.g. Dillmann 1907, Leslau 1956, Hetzron 1977, Rose 2007). However, the most common function of the T-stem would appear to be simply that of the passive of corresponding underived verbs as was the case in Ge‘ez. In addition to these functions, reflexive, middle and unpredictable meanings are common for T-stem forms. There is also a common reciprocal function associated with reflexes of the Lt-stem in Ethiosemitic.

The T-stem in Amharic is “the normal expression of the passive of transitive verb” (Leslau 2000:94). The Amharic t-stem can also have the function of a middle, indicating the intransitive form of a corresponding transitive verb, or a reflexive. Since these senses overlap, the choice of translation as a passive, middle or reflexive is not always clear.

(7) T-stems in Amharic (Leslau 2000)

passive

T təgəddələ ‘he was killed’	gəddələ ‘he killed’
T təčəmmərə ‘it was added’	čəmmərə ‘he added’
T təmərrəkə ‘he was taken prisoner’	mərrəkə ‘he took prisoners’

middle/reflexive

T təsəbbərə ‘it broke’	səbbərə ‘he broke (s.th.)’
T tədəbbəqə ‘he hid’, ‘he hid himself’	dəbbəqə ‘he hid (s.th.)’
T təməlləsə ‘he returned’	məlləs ‘he returned (s.th.)’
T tələyyə ‘he dissociated himself’	ləyyə ‘he separated (s.th.)’

⁴² Data from Gragg 1997 and Dillmann 1907 for Ge‘ez, Raz 1983 for Tigré, Leslau 1958 for Harari, Leslau 1999 for Zway, Leslau 1956 for Gafat, and Leslau 1981 for Muher.

A set of T-stems in Amharic functions as basic verbs with unpredictable relations to other verbs.

(8) Unpredictable T-stems (Leslau 2000)

T təšəkkəmə ‘he carried a load’
 T təqəmməṭə ‘he sat down’
 T təkəttələ ‘he followed’
 T tədəssətə ‘he enjoyed’

The functions of the T-stem in closely related varieties in the South Transverse branch follow closely to those of Amharic. The primary function, as in Amharic, is that of a passive of related basic stem verbs. Gutt (1997) describes the primary function of the T-stem in Silte as a passive. According to Leslau (1958, 1997b), the T-stem in Harari and Argobba has the basic meaning of a passive or reflexive, although no examples of reflexives are given. For Zway, Leslau (1999) describes the T-stem as having a passive or intransitive function.

(9) Passive functions of verbs in the South Transverse branch

Argobba (Leslau 1997b)

T	innikkəsa	‘he was bitten’	nəkkəsə	‘he bit’
T	immarrəka	‘he was taken prisoner’	marrəka	‘he took prisoner’

Harari (Leslau 1958)

T	təqəbərə	‘he was buried’	qəbərə	‘he buried’
T	təšələma	‘it was decorated’	šələma	‘he decorated’
T	təgāgərə	‘it was baked’	gāgərə	‘he baked’

Silte (Gutt 1997)

T	tačēñe	‘he was born’	čēñe	‘he gave birth’
T	tāba	‘he was given’	wāba	‘he gave’
T	ēwada	‘he was told’	ēwada	‘he told’

The middle, or intransitive, function is widely found in the South Transverse branch. This function is described in Harari (Leslau 1958) and Zway (Leslau 1999) as well as Amharic above.

(10) Middle functions of the T-stem in Harari (Leslau 1958)

T	təmagəda	‘it burned’	magəda	‘he burned (s.th.)’
T	təmələʔa	‘it became full’	mələʔa	‘he filled (s.th.)’

In the Outer branch of South Semitic, the T-stem has the same basic functions. Leslau (1945a, 1956) describes the T-stem in Gafat as the “reflexive-passive”⁴³ of underived verb forms and provides a few examples of verbs with passive meanings, e.g. *tədərrəsə* ‘he was found’ < *dərrəsə* ‘he found’, *təkimməra* ‘it was piled up’ < *kimməra* ‘he piled up’, *təwələjə* ‘it was

⁴³ “réfléchi-passif” in Leslau 1956.

constructed' < *wəlaǰə* 'he constructed', *taqəbə* 'he was watched' < *aqəbə* 'he watched', *təsəbatəmə* 'he was chosen' < *səbatəmə* 'he chose'. The full range of functions including passive, reflexive and middle are attested in Soddo (Leslau 1968), e.g. passive *təkəffəlo* 'he was paid' < *kəffəlo* 'he paid', reflexive *təg^wattato* 'he dragged himself' < *g^wattato* 'he dragged (s.th.)' and middle *təzibbəro* 'he returned (intransitive)' < *zibbəro* 'he returned (s.th.)'. The same range of functions is found in Muher (Leslau 1981, Hetzron 1977), e.g. passive *təsəbbəram* 'it was broken' < *səbbəram* 'he broke', *təčənnəfə* 'it was cut off' < *čənnəfə* 'he cut off', reflexive *təšabəm* 'he was dragged' < *šabəm* 'he dragged' and middle *təžəbbəram* 'he returned (intransitive)' and *žəbbəram* 'he returned (s.th.)'. In the relatively large group of West Gurage languages, the argument decreasing functions dominate. Rose (2007) describes the function of the T-stem in Chaha as a passive. Hetzron (1977) provides examples of the T-stem in Ennemor which displays the same variety of functions typically associated with this derived stem.

The North Ethiosemitic languages, which are generally considered to be more closely related to Ge'ez also exhibit the same basic patterns. In Tigré the T-stem is generally used to indicate the passive of the basic stem and the no longer semantically productive D- and L-stems (commonly described as Type B and Type C in the Ethiosemitic literature).

(11) T-stem verbs in Tigré (Raz 1983)

Passive

T <i>tirakkaba</i> 'he was found'	<i>rakba</i> 'he found'
T <i>timazzana</i> 'he was weighed'	<i>mazzana</i> 'he weighed'
T <i>tišārama</i> 'it was cut into strips'	<i>šārama</i> 'he cut into strips'

Leslau (1945c) describes the basic functions as those of a passive or a reflexive, e.g. *tihəššəbə* 'he bathed (himself)'. Leslau (1941) describes the T-stem in the closely related Tigrinya also as having a basic reflexive or passive function.

(12) T-stem in Tigrinya (Leslau 1941)

Passive

T <i>təkəftə</i>	'it was opened'
T <i>təsəbrə</i> or <i>təsəbərə</i>	'it was broken'
T <i>təbarəkə</i>	'he was blessed'
T <i>təmərmərə</i>	'he was examined'
T <i>təmarəkə</i>	'he was taken prisoner'

Reflexive

T <i>təhašbə</i>	'he washed himself'
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Throughout Ethiosemitic, a reciprocal meaning is often associated with the *tə-* attached to original L-stems or reduplicative stems. In many cases the reciprocal relates not to an underived L-stem form but an underived basic stem as many of the examples below illustrate. A selection of reciprocal forms from Ethiosemitic languages are presented below.

(13) Reciprocal T-stems in Ethiosemitic languages

Tigré (Raz 1983)

T	tīlāmadaw	‘they got used to each other’	G lamda	‘he got used to’
T	tīgādabaw	‘they fought each other’	G gadba	‘he plundered’

Tigré, dialect of Mensa (Leslau 1945c)

T	tīsaləmu	‘they greeted each other’
T	tīfagəru	‘they left each other’
T	tībatəku	‘they quarreled’

Amharic (Leslau 2000)

T	təgaddəlu	‘they killed each other’
T	təmakkəru	‘they consulted one another’
T	təlammədu	‘they got used to one another’

Argobba (Leslau 1997b)

T	innakkəsü	‘they bit one another’	G nəkkəsa	‘he bit’
T	ikkassəsü	‘they accused one another’	G kəssəsa	‘he accused’
T	immakkəru	‘they advised each other’	G məkkəra	‘he advised’
T	immarrəku	‘they pillaged one another’	L marrəka	‘he pillaged’

Harari (Leslau 1958)

T	təmārəkü	‘they took one another prisoner’
T	təšālədu	‘they shaved one another’
T	təqrərəmu	‘they hit one another with the knuckles’

Zway (Leslau 1999)

T	təgōdol	‘they wrestled’
T	tərōhobu-nu	‘they met one another’
T	təkrōkoru-nu’	‘they argued with one another’

Soddo (Leslau 1968)

T	tədaddəl-mun	‘they killed each other’	G gəddəlo	‘he killed’
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Muher (Leslau 1981)

T	tənakkəs-m ^w əm	‘they bit each other’	nəkkəsəm	‘he bit’
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Məsqaṅ (Hetzron 1977)

T	təwaddədo	‘they loved each other’	wəddədə	‘he loved’
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Chaha (Rose 2007)

T	təmākərə	‘give each other advice’	mākərə	‘he gave advice’
T	tək’ant’ə	‘despise each other’	k’ənt’ə	‘he had contempt for’

A large class of T-stems in both North and South Ethiosemitic also has unpredictable meanings, not synchronically derived from other verb forms. A large number of examples of

these verbs are provided for Harari (Leslau 1958:30), Zway (Leslau 1999:85), Gafat (1956:113-114), Tigrinya (Leslau 1941:100-101) and also a few in Argobba (Leslau 1997b:58), Muher (Leslau 1981:20) and Tigré (Leslau 1945c:11). One particular verb that is attested in many of the Ethiosemitic languages is the verb ‘to receive’, e.g. Ge. ‘ez *təqəbbəla* (Leslau 1989), Tigré *tiqəbbəta*, Tigrinya *təqəbbəla*, Amharic *təqəbbəla* (Leslau 1976a), Harari *təqəbəla*, Zway *təqībəla*, Argobba *iqqəbəla*, Gafat *təqibbəla*, Soddo *təqibbəlo* (Leslau 1968), Muher *təq’əbbəlm*, Chaha *tək’əpərə* ‘he received’ (Rose 2007) (Also compare with Arabic Form V *taqabbala* ‘he received’).

Northwest Semitic

The survival of a single form is also characteristic of the Northwest Semitic languages from the first millennium BCE on. Even in the earliest epigraphic sources these languages have typically lost either the N-stem or the T-stem in favor of the other reflexive-passive stem. Unlike the Ethiosemitic languages where the T-stem has replaced the N-stem, in Northwest Semitic languages the successful stem varies according to the branch of the family or sections within the dialect continuum. Garr (1985) proposes a dialect continuum for the Northwest Semitic languages of the first part of the first millennium BCE based on various phonological and morphological features including the presence or absence of the N-stem and T-stem. Different parts of the continuum are characterized by the preponderance of either the N-stem or the T-stem. A distillation of the results of Garr’s study along with the proposed continuum is presented below. The continuum is represented by a numerical scale which ignores the relative closeness or distance of the different varieties and only represents the order of the varieties on the continuum.

(14) Distribution of N-stem and T-stem in early Northwest Semitic (based on Garr 1985)

	language	T-stem	N-stem
1	Byblian	Attested	No Evidence
2	Standard Phoenician	No Evidence	Attested
3	Ammonite	No Evidence	Possibly Attested Once
4	Edomite	No Evidence	No Evidence
5	Hebrew	Epigraphic	No Evidence
		Biblical	Traces
6	Moabite	Attested	No Evidence
7	Deir Alla	Attested Once	Attested
8	Aramaic	Widely Attested	No Evidence
9	Samalian	Possibly Attested Once	No Evidence

Because of the very small corpora of many of the languages, it is impossible to draw conclusions with any confidence for many varieties. The lack of a particular form may not be very significant and may only reflect an accidental gap in the data. Still, the table suggests patterns which are further confirmed by later Northwest Semitic varieties. The Canaanite languages, including Phoenician, Ammonite, Edomite and Hebrew, lack the T-stem and instead use the N-stem. The opposite is true for varieties of Aramaic where the T-stem has replaced the N-stem. There are a few exceptions to this general situation. Byblian, a fairly divergent variety of Phoenician, follows the pattern of Aramaic preferring the T-stem to the N-stem. Moabite and Deir Alla, which Garr considers as transitional varieties between Hebrew and Aramaic, do not

neatly conform to the general pattern. While Moabite is generally considered to be fairly close to Hebrew (Moscatti, Spitaler, Ullendorf & Soden 1964; Segert 1997), it resembles Aramaic in lacking the N-stem. Deir Alla is an exception among the Northwest Semitic languages in having both derived stems.

Hebrew and Aramaic, because of their relatively large corpuses, best exhibit the range of meanings associated with the N- and T-stems in Northwest Semitic. Like Ge‘ez which has also lost the N-stem, Aramaic has a similar set of meanings associated with the T-stem from the main expression of the passive to other valence decreasing functions such as the reflexive and the middle. In Hebrew the basic T-stem has been lost, although the Dt-stem, the Hebrew *Hithpael*, is found. Although Hebrew has a different passive-reflexive stem for the basic stem, the semantics of the Hebrew N-stem closely parallel that of the T-stem in both Ge‘ez and the more closely related Aramaic. This is particularly true with respect to the core meaning of these stems. In Hebrew, the primary functions of the N-stem, the Hebrew *Niphal*, are as a reflexive or passive of a corresponding basic stem verb.

(15) Reflexive and passive functions of the Hebrew *Niphal* (Joüon and Muraoka 2000, BDB)

<i>Niphal</i>	<i>gloss</i>	<i>basic stem</i>	<i>gloss</i>
nōlad	‘he was born’	yālōdā ^h	‘she bore (a child)’
niqbar	‘he was buried’	qābar	‘he buried’
neʔēkal	‘it was eaten’	ʔākal	‘he ate’
nibnā ^h	‘it was built’	bānā ^h	‘he built’
neʔēmar	‘it was said’	ʔāmar	‘he said’
nišmar	‘he guarded himself’	šāmar	‘he guarded’
nigʔal	‘he redeemed himself’	gāʔal	‘he redeemed’
nibrākû	‘they blessed themselves’	(<i>Piel</i>) bērēk ⁴⁴	‘he blessed’
nibdēlû	‘they separated themselves’	(<i>Hiphil</i>) hibdîl	‘he separated’

Beside the expected basic meanings the N-stem has several less common meanings associated with it.

In Aramaic the T-stem has many of the same functions. Rosenthal (1995) describes the T-stem forms as a “passive/reflexive” in Biblical Aramaic. The examples of the *Hithpael* found in Daniel and Ezra generally exhibit a passive meaning, although some examples have more idiosyncratic functions.

⁴⁴ b-r-k is an unusual root in Hebrew. A basic stem passive participle is common in the form *bārûk* ‘blessed’ but the basic stem verb is otherwise replaced by the *Piel*.

(16) T-stem forms in Biblical Aramaic

<i>T-stem</i>		<i>basic stem</i>	
yitbənē [?] (Ezra 5:15)	‘let (it) be built’	bənā [?] , bənā ^h	‘he built’
yityahābūn (Dan 7:25)	‘they will be given’	yəhab	‘he gave’
yitməḥē [?] (Ezra 6:11)	‘let him be smitten’	məḥā [?]	‘he smote’
yitṣābēd (Ezra 6:11)	‘let (it) be made’	ṣābād	‘he made, did’
ləhitqəṭālā ^h (Dan 2:13)	‘to be slain’	qəṭal	‘he slew’
yitqərə (Dan 5:12)	‘let him be called’	qərə [?]	‘he called’
yitrəmē [?] (Dan 3:6)	‘(he) shall be cast’	rəmā [?]	‘he cast, threw’
yitśāmūn (Dan 2:5)	‘(they) shall be made’	śām	‘he set, made’
hištəkaḥ (Dan 2:35)	‘it was found’	(<i>Haphel</i>) haškaḥ	‘he found’

The Ethiosmitic and Northwest Semitic languages both provide clear outcomes for the competition between two argument-decreasing derivational stems in which one of the competing forms has been lost. The range of functions observed in use for each stem gives some indication of the great similarities shared by these two stems. However, in these cases the minor differences in the functions of these stems are all that is often left to help determine the original distinctions.

4.2.1.2. Reconstructing the meaning of the T- and N-stems: evidence from Akkadian, Ugaritic and Arabic

While the languages described above reveal the basic similarities between the T- and N-stems, what these languages can tell us about the original distinction is fairly limited. Fortunately, both the T- and N-stems occur side by side in Akkadian, Ugaritic and Classical Arabic. From languages like these we can come to a clearer understanding of the differences between these stems.

Akkadian

Akkadian, one of the earliest attested Semitic languages⁴⁵, retains both the T-stem and the N-stem with distinct functions. The meaning of the N-stem depends largely upon whether the corresponding basic stem form is an active (fientive) or stative verb.

(17) Passive, reflexive and other meanings of Akkadian N-stem (Black, George and Postgate 2000)

a. Verbs with a passive meaning

N-Stem		G-stem	
infinitive	gloss	infinitive	Gloss
nankulum	to be eaten	akālum	to be eaten
naḫṣurum	to be gathered, organized, bound	kaṣārum	to tie up, gather, organize
nabqurum	to be claimed	baqārum	to claim, to lay claim to
naḫbulum	to be treated unfairly, to be ruined	ḫabālum	to do wrong, violence to

⁴⁵ Only Eblaite rivals Akkadian in antiquity and even Eblaite cannot rival Akkadian in terms of our current linguistic understanding.

- b. Verb with a passive or middle meaning
 nagmūrum to be annihilated, be used up, be concluded, come to an end (as of an illness) gamārum to destroy, finish, complete
- c. Verbs with a reflexive (or middle) meaning
 naknūnum to contract (itself) kanānum to curl up, contract (a body part)
 narqūm to hide (o.s.), to take refuge raqūm to hide, give refuge to
- d. Verb with a passive and reciprocal meaning
 namḥūrum to be opposed, accepted, received, answered (as of prayers) maḥārum to face, oppose; confront, receive, appeal to
- e. Verb with passive and reflexive meaning
 napšušum to anoint (o.s.), to be anointed pašāšum to anoint

For active verbs the meaning of the N-stem follows other Semitic languages fairly closely. In general the N-stem functions as the passive of the basic stem verb, although reflexive, reciprocal and other functions also occur instead of or frequently in addition to the passive function.

The T-stem has several associated meanings. One of the most common is that of a reciprocal, but there are also reflexive forms and for verbs of motion the sense of movement away.

(18) T-stem in Akkadian (Soden 1969:121; Black, George and Postgate 2000)

- a. Verbs with a reciprocal meaning
- | T-stem | | G-stem | |
|----------|----------------------------|---------|--------------|
| mithūrum | to attack each other | maḥārum | to oppose |
| mitgūrum | to agree with one another | magārum | to agree |
| qitrubum | to draw near to each other | qerēbum | to draw near |
- b. Verbs with a separative meaning
- | | | | |
|---------|--------------------|--------|-------|
| altukum | to go away | alākum | to go |
| eltūm | to go up and a way | elūm | |
- c. Reflexive
- | | | | |
|----------|------------------|---------|-----------|
| litbušum | to dress oneself | Labāšum | to put on |
|----------|------------------|---------|-----------|

Ugaritic

Ugaritic, the earliest well-attested West Semitic language, has both T- and N-stem forms. The N-stem is fairly rare and is often difficult to identify confidently given the nature of the writing system. The alphabetic cuneiform of Ugaritic does not consistently represent either consonant length or vowel phonemes, two features which are necessary to identify the imperfect and other forms of the verb in the N-stem.

The range of attested meanings of the N-Stem in Ugaritic is broad and similar to the range in other Semitic languages. Generally, the N-stem functions as a passive of the corresponding basic stem verb.

(19) Passive N-stem forms in Ugaritic (Sivan 2001, Segert 1984)

N-stem	gloss	
nšlh [našlaḥa]	‘he was sent’	(basic stem <i>šlh</i> ‘he sent’)
nškḥ [naškaḥa]	‘it was found’	
nlqḥt [nalqaḥat]	‘it was taken’	(basic stem <i>lqh</i> ‘he took’)
nḥtʔu [naḥtaʔū]	‘they have been crushed’	
tmkrn [timmakirūna]	‘they will be sold’	

The N-stem sometimes serves as a reciprocal and in at least one case as a reflexive. Segert (1984) considers the reciprocal as the original meaning of the N-Stem in Ugaritic with the passive meaning later developing out of it.

(20) Reciprocal N-stem forms in Ugaritic (Sivan 2001)

na-ap-ṭa-ru [naṭṭarū] ‘they exchanged’
ymšḥn [yimmaṣiḥāni] ‘they tread on each other’

Except for a slight overlap with regard to reflexives, the functions of the N-stem and T-stem are fairly complementary. The T-stem in Ugaritic is reflexive in meaning, with examples of both the more proto-typical direct reflexives and indirect reflexives. One example is provided of a reflexive where the subject also serves the role as direct reflexive.

(21) Direct reflexive T-stem in Ugaritic (Sivan 2001)

yrḥs [yirtaḥa/isu] ‘he washes himself’
tʔadm [tiʔʔadim] ‘redden yourself!’ (‘rouge yourself’ Segert 1984)

More commonly, cases occur where the subject also serves in an oblique role, often with a benefactive meaning “to do something to or for oneself”. Thus the Ugaritic T-stem resembles the middle voice of Greek for which the subject “acts with some special reference to himself/herself, or to his/her possessions” (Mastronarde 1993). In many cases it is possible to dispense with the reflexive pronoun in translating the Ugaritic T-stem.

- (22) Indirect reflexive T-stem in Ugaritic (Sivan 2001)

yʔitsp [yiʔitasapu] ‘he gathered (to himself)’
 yštʔal [yištaʔalu] ‘he will inquire (for himself)’
 yštkn [yištakanu] ‘he will establish (for himself)’

Arabic

The functions of the N-stem and T-stem in Arabic align closely with those of Ugaritic. The N-stem, Arabic Form VII, exemplifies the more prototypical type of valence-decreasing morphology that eliminates one of the core grammatical relations, subject or object. Fischer (2002) calls the Arabic N-stem a “reflexive-passive”. Wright (1896-1898) describes the N-stem as a middle or reflexive, not a reciprocal, and, in contrast to the T-stem, as the stem which “approaches most nearly to the passive”. Besides the direct reflexive and passive functions, the N-stem can have an “effective” signification, a meaning very closely related to what is often called a middle.

- (23) Middle function of N-stem in Arabic (Wright 1896-1898)

ʔinkasara ‘to break (intrans.)’
 ʔinšaqqā ‘to open (of a flower)’
 ʔinkašafa ‘to appear, be uncovered’

The Arabic N-stem can also indicate that the subject is letting something be done to him or her.

- (24) “Tolerative” function of N-stem in Arabic (Wright 1896-1898)

ʔinqāda ‘to let himself be led’
 ʔinʔadaša ‘to let oneself be deceived’

This function is also found in Hebrew as the “*Niphal* Tolerativum”.

- (25) *Niphal* Tolerativum in Hebrew (Joüon and Muraoka 2000)

nidraš ‘to allow oneself to be asked’
 nizhar ‘to allow oneself to be warned’
 nōsar ‘to allow oneself to be chastised’

Particularly in Modern Arabic the N-stem has taken on the additional function of a reflexive or passive of the Arabic Form IV, the Š-stem (Wright 1896-1898).

Wright also considers the Arabic Form VIII, the reflex of the T-stem, to have a reflexive or middle function. Specifically, Wright describes both the T- and N-stems using the Arabic grammatical term *mutāwifun*, a form which expresses the state which an object is in as a result of an action. As in Ugaritic the T-stem often expresses a notion of action done for one’s own benefit and can often be translated identically to the basic form.

(26) Basic stems and T-stems with close meanings in Arabic (Wright 1896-1898)

G farasa, T ?iftarasa ‘to tear (a prey) to pieces’

G kasaba, T ?iktasaba ‘to earn one’s living’

G ḥaṭaba, T ?iḥtaṭaba ‘to collect firewood’

The other two functions, which Wright considers to have developed out of the original reflexive meaning, are the reciprocal and the passive.

(27) Reciprocal and passive T-stem forms in Arabic (Wright 1896-1898)

?iqtatalla ‘to fight with one another’

?iḡtaṣama ‘to dispute with one another’

?ītafaka ‘to be overturned’

?irtadafa ‘to be turned back’

4.2.1.3. A possible scenario for the development of the T- and N-stems

Based on Akkadian, Ugaritic and Arabic, and to a lesser extent other Semitic languages, we can begin to tease apart the overlapping senses of the T- and N-stems. Both of the stems can reasonably be viewed as originally reflexives, although reflexives that came to serve very different functions. The N-stem reflects a more prototypical reflexive involving a decrease in the valence of the verb. Because the N-stem involved a direct reflexive, in which a single entity serves as both the subject and object, the stem could more easily pass from a reflexive to a passive. The N-stem in Proto-Semitic would seem to match the range of meanings of the Spanish reflexive construction (Givón 1979:193-4). In contrast, the T-stem frequently occurs as an indirect reflexive where the resulting forms do not change the valence of the basic verb forms. Thus in many cases the T-stem has objects that are not co-referential with the subject, a situation which is generally absent for the N-stem. The T-stem has a range of meanings quite similar to the Greek middle (Jelf 1851, Smyth 1916).

One potential scenario for the development of the Proto-Semitic system of reflexives would involve the forms having developed at different stages. Given the occurrence of the *t*-element with most other derived stems, the wider range of its meanings and the difference between languages, the T-stem is likely the more original reflexive stem. At a later stage the N-stem was innovated and came to replace the T-stem in expressing direct reflexives of the basic stem. For derived stems the T-stem remained the primary way of forming the reflexive. In addition to the basic reflexive functions of the T- and N-stems, the stems took on other functions, with the N-stem taking on the set of meanings associated with valence decreasing morphology (direct reflexive, passive, middle and reciprocal) and the T-stem taking on these same functions as well as the indirect reflexive typical of the Greek middle. In many Semitic languages, the great similarity and overlap in functions between the two rival reflexives has been resolved through the success of one form at the expense of the other form. In languages where only one of the reflexive stems remains, the distinction described above is largely obscured because the surviving form typically serves the same functions.

4.2.2. The D- and Š-stems: Semitic factitive and causative forms

The D- and Š-stems present similar problems for the reconstruction of Proto-Semitic. Like the T- and N-stems, the D- and Š-stems cover a similar set of functions. Both the D- and Š-stems

involve valence-increasing morphology. The D-stem is commonly considered a “factitive” in which a transitive verb form is created from an original stative or intransitive verb form, although the actual range of meanings for this stem is much broader. The Š-stem functions as a causative of active verbs of the basic stem. Both the D- and the Š-stem can serve several other related functions including those of an appellative and a denominative. In many languages the meanings of the D- and Š-stems overlap considerably. The proximity of meaning has influenced the development of the D- and Š-stem in ways similar to those discussed above for the T- and N-stems. Despite similarities, the D- and Š-stem forms have generally fared better than their valence decreasing counterparts. The cases of the loss of either the D-stem or Š-stem are less common than those of either the T-stem or N-stem forms and, where loss has occurred, there are often phonological factors that appear to have played a role. First, I will outline the basic developments involving the D- and Š-stem. Second, I will explore the potential reasons for the observed developments.

4.2.2.1. The fate of the D- and Š-stems

The D- and Š-stems are remarkably well-preserved in pre-Modern stages of Semitic. Beyond languages from the earliest period like Akkadian, Eblaite and Ugaritic or languages, like Classical Arabic, which are considered in many respects to have more conservative phonological and morphological systems despite their later attestation, the two derived stems are also found in many of the languages where a distinction between the T- and N-stems has been lost. In Biblical Hebrew the *Piel* (D-stem) and *Hiphil* (Š-stem) not only occur but are common. They are the two most common derived stems according to token counts by Van Pelt and Pratico (2003). *Piel* forms occur 6473 times. *Hiphil* forms occur 9496 times. The next most frequent derived stem, the *Niphal* (N-stem), occurs only 4138 times. Both the D-stem, *Pael*, and the various reflexes of the Š-stem, *Aphel*, *Haphel*, *Šaphel* and *Saphel* are also common in varieties of Old and Middle Aramaic. The existence of the *Pael* is obscured by the consonantal nature of the earliest Aramaic texts, which indicate neither consonant gemination nor vowels, although later vocalized texts clearly distinguish the *Pael* from the basic stem. The Š-stem, although marked in a variety of ways {š-, s-, h-, ?-}, can be clearly discerned even in the most strictly consonantal texts. The variety of Š-stem forms exhibits several layers reflecting a mixture of retentions from earlier stages and borrowings from other Semitic languages (see Kaufman 1974:123-124).

Similar situations are found in many other early Semitic languages preserved in consonantal texts. Like Aramaic, early texts in Phoenician typically do not allow one to distinguish the basic stem and the D-stem except inconclusively by sense and comparison with other Semitic varieties. The development of vowel letters, *matres lectionis*, and the specific development of the forms in Canaanite allow for the disambiguation of these forms in many later texts. The texts in Roman script also provide clear evidence for the existence of the D-stem in Phoenician, e.g. <mysethi> /miššeʔti/ ‘I have come’ (Poen. 931; Krahmalkov 2001:167) and <bycys> /biqqis/ ‘it magnified’ (IRT 892.3/5; Krahmalkov, 167) The Š-stem with {h-} like in Hebrew is also clearly preserved in all Phoenician and Punic varieties.

The existence of the D-stem is likewise obscured by the writing system in Old South Arabian languages, the earliest attested South Semitic varieties, but is clearly found in Ge‘ez, although no longer as a productive derived stem. The basic, D- and L-stem are typically analyzed as basic forms of the verbs, comprising different lexical classes often described as type A, type B and type C, respectively. This situation persists into the modern Ethiosemitic languages. The causative Š-stem is preserved more generally as a productive derived form. Like Arabic the causative marker is {ʔ-} with the basic stem but {s-} in conjunction with the passive-

reflective marker {t-}. These markers are extended in Ge‘ez and later Ethiosemitic languages to the type B and type C forms by analogy with type A.

While the D-stem and Š-stem have fared better in these pre-modern varieties, the fate of these derived forms has been less secure in the modern languages. Arabic Form IV (Š-stem) has become a relatively uncommon form in many modern Arabic dialects. In contrast the Form II (D-stem) has expanded to include the causative of transitive verbs as well as an extensive use as a denominative form. This development is most pronounced in the Western Arabic dialects where Form IV is simply absent (W. Marçais 1902, P. Marçais 1956, 1977, Grand’Henry 1972, 1976, Talmoudi 1979). Form IV has also fared poorly in the qəltu dialects of Mesopotamia⁴⁶ (Jastrow 1978:180), Egyptian dialects (Woidich 2006) and Levantine dialects (Cowell 1964:85) where they are absent or comparatively rare.

In contrast to Arabic both the D- and Š-stems are well preserved in modern Aramaic varieties. However, in the Jewish dialect of Azerbaijan the basic stem and D-stem have generally merged with the corresponding basic stem forms (Jastrow 1997). Phonological changes would appear to have played a direct role in the loss of the relevant stem. The merger of the D-stem with the basic stem in the Jewish dialect of Azerbaijan was occasioned by the loss of gemination. In the Arabic dialects it is likely that a major contributor to the loss of the Š-stem was a series of phonological and morphological changes that led the Š-stem to become less distinct from the basic form in prefix-conjugation forms. Even in Classical Arabic, the imperfect forms of Form IV and Form I can only be distinguished by vocalization. The consonants /h/ and /ʔ/ as the exponents of the Š-stem are commonly lost in intervocalic positions such as after the agreement markers of prefix conjugations. This development is attested in Hebrew, Aramaic varieties⁴⁷, Ge‘ez and Arabic, but notably not in Modern South Arabian. The loss of the consonant then leads to a necessary resolution of the resulting vowel sequence.

(28) Development of Š-stem in West Semitic languages

PS	<i>medial forms</i>	<i>attested forms</i>
*yu-ša-C ₁ C ₂ iC ₃ ⁴⁸	yu-ha-qtir →	Hebrew <i>ya-qtîr</i> ‘he will make sacrifices’
	yu-ʔa-ktib →	Palestinian Jewish Aramaic <i>ya-ktēb</i>
	yu-ʔa-fqir →	Ge‘ez <i>ya-fqîr</i> ‘he love’ (subjunctive)
	yu-ʔa-dxil →	Classical Arabic <i>yu-dxil</i> ‘he is introduced’

Arabic stands out as the only language in which the prefix vowel persists instead of the stem vowel. The prefix vocalization with /a/ has served for the most part to disambiguate the Š-stem forms from other derived forms and particularly the basic stem. The generalization of a single imperfect prefix vocalization has eliminated this means of disambiguation. For example, in the Cairene dialect of Arabic (Gadalla 2000){yi-} has been generalized for all stems.

⁴⁶ The Dēr iz-Zōr dialect is an exception.

⁴⁷ Biblical Aramaic sometimes retains /h/ in imperfect, e.g. *yəhōdaš* ‘(he) will make known’ Dan 2:25.

⁴⁸ Cf. Akkadian Š-stem preterite *u-šapris*

(29) Cairene Arabic imperfect forms (table adapted from Gadalla 2000:48)

form	Semitic stem	template	examples
I	Basic	yi-C ₁ C ₂ vC ₃ v={a, i, u}	yi-ktib 'he writes' yi-skut 'he becomes silent' yi-ḍrab 'he hits'
II	D-stem	yi-C ₁ aC ₂ C ₂ vC ₃ v={a, i}	yi-kassar 'he smashes' yi-ʔaddim 'he presents'
III	L-stem	yi-C ₁ āC ₂ iC ₃ yi-C ₁ ōC ₂ aC ₃	yi-ḥārib 'he fights' yi-soogar 'he locks up well'
IV	Š-stem	yi-C ₁ C ₂ iC ₃	yi-ḥrig 'he embarrasses'
V	Dt-stem	yi-tC ₁ aC ₂ C ₂ vC ₃ v={a, i}	yi-ṭharrak 'he moves' yi-tgaddid 'it is renewed'
VI	Lt-stem	yi-tC ₁ āC ₂ iC ₃	yi-tnāʔiš 'he discusses'
VII	N-stem	yi-nC ₁ iC ₂ iC ₃	yi-nhizim 'he is defeated'
VIII	T-stem	yi-C ₁ tiC ₂ iC ₃	yi-gtihid 'he works hard'
IX		yi-staC ₁ C ₂ vC ₃ v={a, i}	yi-ḥmarr 'he becomes red'
X	Št-stem	yi-C ₁ aC ₂ vC ₃	yi-stayfar 'he asks for forgiveness' yi-staʕyil 'he is in a hurry'

Notice that *yi-ktib*, one pattern of a basic stem verb, and *yi-ḥrig*, a Š-stem verb, cannot be distinguished by form. The same is also true in many other dialects with traces of Form IV (Š-stem) including Iraqi, Levantine and Arabian dialects, e.g. Damascene dialect I *yá-nzel* 'he descend' vs. IV *yá-ʕlen* 'he announce' (Cowell 1964), Muslim Baghdadi dialect I *yi-ktib* 'he writes' vs. IV *yi-ʕlin* 'he announces' (Erwin 1963), Dēr Iz-Zōr dialect I *yi-ktib* 'he writes' vs. IV *yi-ḥdir* 'he brings' (Jastrow 1978), Muslim Haifa dialect I *yi-ktib* 'he writes' vs. IV *yi-ḍrib* 'he strikes' (Geva-Kleinberger 2004), Ḥoran dialect I *ye-kser* 'he break' IV *ye-rsel* 'he send' (Cantineau 1946), Southern Hijazi dialect I *yi-ksir* 'he breaks' vs. IV *yi-ʕlih* 'he will go away' (Prochazka 1988), Meccan dialect I *ʔi-ksir* 'he breaks' vs. *ʔi-rsil* 'he sends' (Ingham 1971), Riyadhhi dialect I *yi-ktib* 'he writes' vs. IV *yi-bʕid* 'he moves away from' (Prochazka 1988). In some cases like the Eastern Arabian dialects, however, the prefix vowel can distinguish the two forms, e.g. Kuwaiti dialect *ya-ktib* 'he writes' vs. IV *yi-rsil* 'he sends' (Johnstone 1967).

In contrast to the T- and N-stem where the loss of one stem seemed to be semantically motivated, the cases of the loss of the D- and Š-stem seems to owe much more to morphological and phonological factors. The question remains as to why semantic proximity did not lead to similar developments with the D- and Š-stems.

4.2.2.2. Seeking explanations for patterns: the function and development of the D- and Š-stems

It is clear that simple semantic proximity and overlap alone can not account for the different sets of developments observed for the T- and N-stems and the D- and Š-stems. Other factors must be considered to explain why proximity resulted typically in only the survival of either the T- or N-stem in many languages, while the D- and Š-stems have more frequently both been preserved.

There are important differences between these two pairs of derived stems in terms of functions. These differences might underlie the developmental trajectories experienced by each pair. From a fairly idealized point of view, the fact that the D-stem is primarily a factitive and Š-

stem is a causative, might mean that the two forms would less likely be associated with the same basic stem because the factitive should only be formed from stative, intransitive verbs while the causative should be restricted to active verbs. Examples of these typical functions are provided below from Biblical Hebrew.

(30) Biblical Hebrew argument increasing stems (data from Joüon and Muraoka 2000)

factitive D-stem (Piel)

ʔibbad	‘he made perish’	ʔabad	‘he perished’
qiddaš	‘he sanctified’	qādaš	‘he was holy’
giddēl	‘he made great, raised’	gādal	‘he was great’

causative Š-stem (Hiphil)

hōšîʔ	‘he made go out’	yāšaʔ	‘he went out’
heʔēkîl	‘he fed’	ʔākal	‘he ate’
hippîl	‘he made fall’	nāpal	‘he fell’
herʔā ^h	‘he showed’	rāʔā ^h	‘he saw’

Although this may have had some role, there is an unmistakably large number of basic stem forms with both a D-stem and Š-stem in various Semitic languages. In some cases, the *Piel* and *Hiphil* have clearly distinct uses, while in others there is considerable overlap. Biblical Hebrew exhibits both types.

(31) Hebrew roots in both D-stem and Š-stems (data from BDB)

<i>forms with overlapping meanings</i>			
D-stem		Š-stem	
šillam	‘he completed, finished’	IMPF ya-šlîm	‘he will complete, perform’
qiddaš	‘he set apart as sacred, consecrated’	hiqdîš	‘he set apart, devoted, consecrated’
šihēṭ	‘he spoiled, ruined’	hišḥîṭ	‘he spoiled, ruined’
ḥillēl	‘he defiled, polluted’	hēḥēl	‘he began; he polluted’
ḥizzaq	‘he made strong (physically)’	heḥēzîq	‘he made strong, strengthened’
hīyyā ^h	‘he preserved alive, let live’	heḥēyā ^h	‘he preserved alive, let live’
<i>forms with distinct meanings</i>			
gillāh	‘he uncovered’	heglā ^h	‘he took into exile’
INF yaledken	‘your helping to give girth’	hōlîd	‘he begat’

Perhaps the simplest explanation for the difference between the development of each pair of derived stems is frequency. In Biblical Hebrew, as discussed above, both the D-stem and the Š-stem are more frequent than the N-stem and the T-stem, which is only found in secondary

derived forms. The relative robust character of the D- and Š-stems may simply be a function of their greater frequency.

4.3. Morphological and phonological factors in the development of the derived stems

I have described cases where both independent changes in meaning and sound have had ramifications that impacted the set of non-linear alternations found in the Semitic languages. The role of meaning was addressed in the preceding section. With respect to sound change, phonological alternations were shown to be an important source for new non-linear alternations through a process of morphologization. In this section, we will also examine how phonological neutralizations can have a similarly important effect on non-linear alternations in the verbal system. However, probably the most important remaining factor and the one that would most reasonably involve nonlinear representations are analogical changes.

The results of analogy can be observed widely throughout the Semitic languages. Assuming that learners do not hear or remember every form they use, they must create some forms based on known forms. This includes not only extension of affixes, but also the non-linear alternations which pervade the morphological system. Studies (Clark and Berman 1984, Berman 2003; Bolozky 1999) have shown the ability of both children and adults to extend a particular non-linear alternation to a new form based on similar existing forms. This type of analogy is involved in the everyday use and acquisition of Semitic languages, as well as in the incorporation of foreign words. In Hebrew and the Modern Arabic dialects there are numerous examples of non-Semitic words being incorporated into the root and pattern morphology (Bolozky 2003 for Hebrew, Talmoudi 1986 for Tunisian Arabic, Mifsud 1995, 1996 mainly for Maltese and but also includes discussion of loans in other dialects). The most likely cases of analogy involve verbs which are both extremely frequent and are related by fairly regular meanings and patterns. Speakers must be able to extend the internal modifications to new forms because it is unlikely that a speaker will have had experience with all possible forms. Nearly every verb occurs in the perfect, the imperfect, one or more participial forms and either a verbal noun or an infinitive form, and all of these forms are indicated at least partially by internal modifications.

For each of these forms, the semantics and morphology are mostly predictable based on the ablaut class and voice of the verb. For example, if a speaker is given the form *ya-ktub-u* ‘he is writing’, he or she can form the perfect *katab-a* ‘he wrote’, the active participle *kātib* ‘writing’ and the passive participle *ma-ktūb* ‘written’, based on numerous other verbs that follow the same pattern. Speakers may also use analogical extension to form derived forms from the basic stem and other derived stem verbs depending on the semantic and morphological clarity of the forms. In many cases the meanings of derived stems are far too irregular and idiosyncratic to allow such easy extension, although even in these cases the forms are uniform enough to allow the analogy, however unlikely the need may be.

Finally, we can consider the large class of noun and other non-verbal patterns which although belonging to distinct classes generally have weak semantic associations or are somewhat limited in scope. For example, many adjectives in Arabic have the pattern C1aC2īC3 (*kabīr* ‘large’, *ṣaḡīr* ‘small’, *ṭawīl* ‘tall’, *bakīr* ‘early, precocious’, *jamīl* ‘beautiful’, *raḥīm* ‘compassionate’, *kalīb* ‘rabid, raging’), yet this likely reflects an early productive pattern which is no longer used commonly to form adjectives. Instead, either a participle or a form with a *nisba* ending is preferred. Because the nominal patterns are not as regular, frequent or productive as the verbal patterns, they are of much more limited use in understanding the processes of analogy affecting the system of nonconcatenative morphology. Even so, all patterns

have the potential to become productive through reinterpretation and extension, so we cannot exclude these forms completely.

We can construe these extensions by analogy as evidence for independent root and pattern representations. At the very least, root and pattern representations are compatible in most cases with this type of analogy. Using the example above starting with *ya-ktub-u*, a speaker would first extract the root consisting of the ordered set of consonants k-t-b based on their knowledge of the imperfect pattern ya-C1C2uC3-u and map those consonants on to known patterns, such as the perfect C1aC2aC3-a, present participle C1āC2iC3, and past participle ma-C1C2ūC3.

These analogies, however, do not preclude the existence of other ways of modeling the morphology and neither do they show that roots and patterns are of equal importance in different domains. What is clear is that speakers are able to create new forms based on the various kinds of non-linear morphological alternations. This is not surprising given that non-linear types of morphology, such as consonant mutation and ablaut, are fairly common. In languages with morphology of this type, speakers obviously have no trouble extending patterns. It is also certainly true that speakers are able to isolate and identify “roots” and this knowledge likely has effects on other linguistic behaviors. On the other hand, the analogies described above do not prove that the consonantal roots of Semitic languages have the same importance as stems in more strictly concatenative languages. In order to answer this question other data must be considered.

4.3.1. Paradigmatic leveling in the Semitic languages

Cases of paradigmatic leveling offer an interesting contrast to cases of analogical extension where roots and patterns appear to have an active role. The development of the system of derived stem forms in West Semitic offers many chances to observe the possible role of roots and patterns in morphological changes.

Every derived stem in every West Semitic language can occur in the perfect and imperfect aspects and the active and passive participles. Thus it is easy to identify the ways in which the various languages have diverged from each other, giving us insights into the types of changes that have occurred. It is not always completely clear what forms should be reconstructed, but ultimately the choice has little effect on the general results of the analysis, as will be shown below. When languages have diverged, the usual source is paradigmatic leveling which has eliminated stem allomorphy. The leveling assumes stems but neither roots nor patterns. In fact in most cases the leveling serves to eliminate a non-linear morphological alternation, making particular associations weaker across derived stems.

Based on the forms of the classical West Semitic languages we can reconstruct with some certainty the various forms of the derived stems. Unlike the basic stems where one must be concerned with the thematic vowel (imperfect *yaqtul*, *yaqtil*, *yaqtal* and perfect *qatal*, *qatil*, *qatul*), the patterns of the derived stems generally have consistent thematic vowels (D-stem *yu-qattil* and *qattal*, Š-stem *yuhaqbir* and *haqbar*).

4.3.1.1. The Classical Arabic verbal system and the reconstruction of the Proto-Semitic system of derived stems

In terms of the transparency, variety and regularity of patterns, Classical Arabic surpasses the other Semitic languages. Arabic contains the five primary derived stems (D-stem, Š-stem, T-stem, N-stem and L-stem) and three secondary derived stems (Dt-stem, Št-stem, Lt-stem). Each stem can occur in both active and passive perfect, imperfect and participial forms. A single root can occur in as many as forty-eight different derived stem forms, not including conjugated forms

of perfect and imperfect verbs, modal forms (imperative, jussive, subjunctive) which are clearly related to the imperfect indicative, verbal nouns and a few additional comparatively rare derived stems.

(32) The verbal system of Classical Arabic

	perfect		imperfect		participle		
	active	passive	active	passive	active	passive	
D	faʕʕal-	fuʕʕil-	yufaʕʕil-	yufaʕʕal-	mufaʕʕil-	mufaʕʕal-	CVCCVC
Š	ʔaʕʕal-	ʔuʕʕil-	yufʕʕil-	yufʕʕal-	mufʕʕil-	mufʕʕal-	CCVC
L	fāʕʕal-	fūʕʕil-	yufāʕʕil-	yufāʕʕal-	mufāʕʕil-	mufāʕʕal-	CVVCVC
N	infaʕʕal-	unfuʕʕil-	yanfaʕʕil-	yunfaʕʕal-	munfaʕʕil-	munfaʕʕal-	nCVCV
T	ifāʕʕal-	uftuʕʕil-	yafʕʕil-	yufʕʕal-	muftaʕʕil-	muftaʕʕal-	CtVCVC
Dt	tafaʕʕal-	tufuʕʕil-	yatafaʕʕal-	yutafaʕʕal-	mutafaʕʕil-	mutafaʕʕal-	taCVCCVC
Lt	tafāʕʕal-	tufūʕʕil-	yatafāʕʕal-	yutafāʕʕal-	mutafāʕʕil-	mutafāʕʕal-	taCVVCVC
Št	istaʕʕal-	ustufʕʕil-	yastaʕʕil-	yustafʕʕal-	mustafʕʕil-	mustafʕʕal-	stvCCVC
	a-a	u-i	a-i	a-a	a-i	a-a	

We find in Classical Arabic several consistent patterns across stems. From the table above, we can isolate vocalic melodies that are associated with each voice and aspect and templates associated with each derived form. The melody of active perfect verbs consists entirely of the vowel /a/, with the exception of the prosthetic vowel of the N-, T- and Št-stems which is a high front vowel when not elided. This melody is also identical to that of the largest class of basic stem verbs (*faʕʕal-*). The passive perfect verbs all share the same melody consisting of the vowel /i/ as the last vowel of the stem and the vowel /u/ in all other positions including the prosthetic vowel.

The active imperfect and participle in Arabic share the same stem, as do their passive counterparts. In these forms the active melody is *a-i*, while the passive melody is *a-a*. Only the Dt- and Lt-stems do not conform to these patterns. Instead, the stems of both active and passive imperfect Dt- and Lt-stem verbs and participles are invariant. The stems {tafaʕʕal} and {tufāʕʕal} occur in the active imperfect, and perhaps significantly also in the active perfect leaving only the passive perfect and the active participle out. Consequently, the active and passive imperfect forms are only distinguished by the vowel in the prefix, /a/ for active and /u/ for passive.

The role of the prefix vowel in determining the voice of Dt- and Lt-stems is the inverse of that D-, Š- and L-stems where the prefix vowel is consistent and the melody of the stem indicates the voice of the verb. The remaining stems (N- and Št-stems) mark the voice of the imperfect redundantly in both the prefix vowel and the melody of the stem (e.g. N-stem active *ya-nfaʕʕil-* and *yu-nfaʕʕal-*). While the vocalic melody has been set up as the means of distinguishing aspect and voice, only in the case of the passive perfect does the distinction require reference to a vocalic melody. With every other distinction described above it is sufficient to refer to the thematic vowel, the final vowel of the stem. The orderly system also confronts significant challenges when we introduce the large and varied class of weak verbs which deviate from the patterns in various ways.

Outside the Dt- and Lt-stems, Arabic presents a fairly elaborate but regular morphological system, while most other West Semitic languages have either less robust or less transparent morphology. This suggests two potential scenarios. The first assumes that the

Arabic system represents the retention of an older system of morphology which has been both simplified and obscured by subsequent developments in other languages. In this scenario the simplification of the system would have its source in the loss of contrasts through the obsolescence of forms. If we assume that the internal passive was original to at least to Proto-West-Semitic, then the absence of the internal passive in most Semitic languages could be explained by the replacement of the internal passive by other innovative syntactic and morphological forms. This particular scenario is supported by developments in the Arabic dialects and in Hebrew where the internal passive clearly belongs to an earlier stage but has fared poorly in the subsequent history of the language.

In the other direction phonological mergers might at the same time obscure other patterns. Phonological neutralizations may simplify the original contrasts. In the Arabic system described above, the vocalic melodies and their import were fairly consistent across derived stems, but a loss of contrast between short vowels for example could make the associations between melody and meaning less transparent. The same result could also be achieved through stem leveling within a paradigm. This type of development will be discussed in Section 4.3.2 below.

4.3.1.2. Leveling in stems with *t* preformative

Paradigmatic leveling may well be responsible for the exceptional status of the Dt and Lt-stems in Arabic and other Semitic languages which do not neatly fit into the patterns of vocalic melody found for all other derived stems. We might assume that these forms originally conformed to the general pattern giving *ya-tafaʕʕil-* in the active imperfect and *yu-tafaʕʕal-* in the passive imperfect of the Dt-stem, as well as the expected participles *mu-tafaʕʕil-* and *mu-tafaʕʕal-*. The stem {*tafaʕʕal*} which is used in the passive imperfect and the active perfect eventually replaced the stem of the active imperfect giving us the invariant stems of the Dt and Lt-stems. Assuming that the invariant stems {*tafaʕʕal*} and {*tafaʕʕal*} had their origins in the active perfect form explains the presence of both the vocalization and the occurrence of a vowel between the preformative *t* and the initial root consonant in these two stems. In both the T-stem and Št-stem in Arabic, and in all stems involving the preformative *t* in the imperfect in other Semitic languages, there is no vowel separating the preformative from the first root consonant. In the following table the Arabic imperfect is compared with other Semitic imperfect forms. Akkadian and Ethiosemitic have a different form for the imperfect but have other forms that relate to the Arabic imperfect. The Akkadian preterite and the Geʿez subjunctive are cognate with the Arabic “jussive” which is identical to the imperfect except that there is not a final /u/ vowel (imperfect *yatafaʕʕalu* vs. jussive *yatafaʕʕal*.) The term “jussive” is somewhat misleading in this case as the form in Arabic clearly continues some preterite functions (see section 2.4.1).

(33) Active imperfect/jussive (Akkadian preterite/Geʿez subjunctive) of T-stems

	Arabic	Akkadian	Geʿez	Hebrew	Aramaic
<i>T-stem</i>	ya-qtabir-u	i-qtabVr	yə-tqabar		yi-tqəbēr
<i>Dt-stem</i>	ya-taqabbar-u	u-qtabbir	yə-tqabbar	yi-tqabbēr	yi-tqabbar
<i>Lt-stem</i>	ya-taqābar-u		yə-tqābar		
<i>Št-stem</i>	ya-staqbir-u	u-štaqbir	yā-staqbər		yi-ttaqbar

Arabic is unique in having this configuration (*tafaʕʕal*) in the imperfect forms of the Dt- and Lt-stems, although it shares this configuration with Geʿez in the perfect forms (Dt-stem *taqattala* and Lt-stem *taqātala*). Geʿez also displays an analogous development for the T-stem

(*taqatla*). Other Semitic languages have either the preformative *t* attached directly to the base or infixed directly after the first root consonant. In both cases the forms can be related by a process of metathesis. This metathesis would seem to have started in cases where the first root consonant is a sibilant. In Ge'ez we find the metathesis only in the Št-stem. In Hebrew we find metathesis in the only potential example of the Št-stem (*hištaḥāwā^h* 'he worshipped, prostrated himself', Ezra 46:2) and for roots with an initial sibilant in the *Hithpael* (e.g. *hištammēr* 'he observed').

While it is possible that the Arabic Dt- and Lt-stems are actually the more original, the evidence weighs slightly in favor of the Arabic forms being innovations. Both Akkadian and Hebrew forms of the Dt-stem have a vocalization consistent with the hypothesis that the original proto-Semitic form was *yV-tqabbir with the vocalic melody *a-i* and not the melody *a-a* found in Arabic, Ge'ez and Aramaic. The occurrence of this pattern in both East and West Semitic supports proto-Semitic origin of this melody. The Akkadian evidence might also be weighed more heavily because of the language's great antiquity. Of course, we cannot exclude the possibility that these represent independent, but parallel developments. In Akkadian the development might have occurred by analogy with the vocalization of the corresponding D-stem—the melody of the D-stem being transferred to the Dt-stem.

(34) Dt-stem *u-ptarras > u-ptarris (based on u-parris)

This however turns the expected progression on its head. Since the Dt-stem was likely formed on the basis of the D-stem, it is unclear why the vocalization of the Dt-stem would have diverged from that of the D-stem. In order to salvage this hypothesis we would still need to explain the *a-a* vocalization of the Dt-stem. The simple D-stem and the L-stem have reflexes of the *a-i* vocalic melody in almost all languages.

(35) Imperfect forms of the D-stem and L-Stem

			D-stem	L-stem
East Semitic		Akkadian	u-qabbir (preterite)	
West Semitic	Northwest Semitic	Ugaritic	ya-qabbir	
		Hebrew	yə-qibbēr	
		Aramaic	yə-qabbēr	
		Arabic	yu-qabbir-u	yu-qābir-u
	South Semitic	Ge'ez	yi-qəbbir	yə-qābər
	MSA (Mehri)		ya-qōbər (subjunctive)	
Proto-Semitic			*yu-qabbir-	*yu-qābir

In general the forms in the table above are fairly easy to interpret. In Biblical Hebrew and Biblical Aramaic depending on the position of stress and the syllable structure proto-Semitic *i has become in some contexts a vowel represented by a *tsere* transcribed <ē> while *u becomes a schwa transcribed <ə>. Thus, despite sound changes, Hebrew and Aramaic reflect the same stem for the D-stem as Akkadian, Ugaritic and Arabic and the same prefix vowel as Akkadian and Arabic. The same is also true for Ge'ez where the vowel represented by <ī> here is a reflex of

either proto-Semitic *i or *u. Since *u does not occur as a thematic vowel in the D-stem, it is safe to assume that /i/ is a reflex of *i. The D-stem of the form behind the Akkadian preterite and West Semitic preterite, jussive, volitional and imperfect verbs is *yu-qabbir-.

The L-stem, which is restricted to Arabic and the South Semitic languages with which it is traditionally associated, follows both the D-stem in vocalization and the identity of the prefix vowel. Because of its absence in Akkadian and Northwest Semitic, the status of the L-stem in Proto-Semitic is not clear. Still, whether we reconstruct the form to Proto-Semitic, West Semitic or South Semitic, we will come to the same reconstructed form *yu-qābir. Assuming that the Dt- and Lt- stems are historically derived from the D- and L-stems, the two sets of stems should have the same vocalization. For the D- and Dt-stems the vocalization of the imperfect is the same in Akkadian and in Hebrew as far as the thematic vowel is concerned. In Ugaritic it is unclear what the vocalization of the Dt-stem was, so it must be left out of consideration. In Aramaic, Arabic and Ge'ez the vocalization of the imperfect (Ge'ez subjunctive) Dt-stem is not the same as the corresponding D-stem but is identical instead to the perfect form, while Hebrew has the same thematic vowel in both perfect and imperfect D- and Dt-stems.

(36) Dt-stem perfect and imperfect forms

	<i>perfect</i>	<i>imperfect</i>
Hebrew	hitqabbēr	yi-tqabbēr
Aramaic	hitqabbar	yi-tqabbar
Arabic	taqabbar-a	ya-taqabbar-u
Ge'ez	taqabbara	yə-tqabbar

Beyond the evidence based on the reflexes of the D-, Dt-, L- and Lt-stems, the hypothesized leveling process is supported by analogous but relatively restricted changes involving other stems with the *t* preformative in various Semitic languages. In Ge'ez the T-stem follows the patterns of vocalization of the Dt- and Lt-stems (perfect *taqatla* and subjunctive *yə-tqatal*). However, the Št-stem follows the expected pattern (perfect *astangara* and subjunctive *yā-stangər*). In Aramaic the Št-stem like the Dt-stem has the thematic vowel /a/ (perfect *hittaqbar* and imperfect *yi-ttaqbar*). As was the case with Ge'ez, Aramaic has one form that does not follow this pattern, in this case the simple T-stem (perfect *hitqabēr* and imperfect *yi-tqabēr*). Unlike the Dt- and Lt-stems where both the thematic vowels /a/ and /i/ were widespread, the direction of the change in the Ge'ez T-stem and the Aramaic Št-stem is fairly unambiguous as they are the only cases of the anomalous thematic vowel /a/ in these two stems.

One other explanation that we must address for the vocalization of the imperfect of the Dt-stem and Lt-stem (as well as the Ge'ez T-stem and the Aramaic Št-stem) is that the thematic vowel /a/ represents an extension of the thematic vowel of the passive forms. The thematic vowel /a/ in the imperfect is commonly associated with passive or intransitive forms; thus we have *yi-qtal* as a common form of stative basic stem and we have a thematic vowel of /a/ in all imperfect internal passives in Arabic and Hebrew. Joüon and Muraoka (2000) have proposed such a development for Aramaic in which the *hitpaal* (Dt-stem) is considered as a secondarily derived reflexive form. However, it is unclear why this would be the case for the Dt-stem but not for many other forms. Of course this is a problem that any theory must contend with and to some degree chance processes cannot be entirely discounted in the occurrence of change in one form but not another. Still, this theory leaves a number of significant questions to be answered.

Foremost, why has this type of change only occurred in a few forms with preformative /t/? The difference is clearly not in terms of the semantics of the forms. The stems with a preformative /t/, and particularly the Dt- and Lt-stems, do not have in any sense a more passive or intransitive function than many other forms to which the thematic vowel /a/ has not extended. In fact, as a primarily reflexive/reciprocal form the T-stem is semantically quite distinct from the passive, although the meaning of a particular form may have developed into that of a passive. In many cases, the meaning of the T-stem is closer to that of the Greek middle where the reflexive involves an oblique argument and not the direct object, leaving both a subject and an object. Given these facts, it would seem strange that the speakers would not have similarly extended the passive thematic vowel /a/ to the N-stem which “approaches more nearly to a passive” (Wright 1896-1898:40-41). Instead the N-stem has the vocalization we would expect.

(37) Vocalization of the N-stem

	<i>perfect</i>	<i>imperfect/preterite</i>
Akkadian	n/a	i-qqabir
Hebrew	niqbar	yi-qqābēr
Arabic	inqabar-a	ya-nqabir-u

It is also unclear semantically why the Dt- and Lt-stems, as opposed to the T- and Št-stems, have experienced a change in the thematic vowel; there does not appear to be any significant semantic distinction between these sets of related stems that would help account for the developments.

Ultimately, the reason why the Dt- and Lt-stems do not conform to the general pattern is not semantic. Instead, the fate of these stems is more likely related to aspects of their morphology. In every case where a language has the thematic vowel /a/ the preformative /t/ is prefixed, not infix. This is not to say that the position of the preformative is in any way the cause of the change, but it does suggest another possibility, a possibility that may have some bearing on the question of the mechanism involved. The Dt- and Lt-stems have a more transparent relationship with other related forms. A speaker can easily see the relationship of the imperfect Dt and Lt-stem (PS *ya-tqabbir-, *ya-tqābir-) to the corresponding perfect forms (PS *tqabbar-, *tqābar-) as well as the corresponding D- and L-stems (PS *yu-qabbir-, *yu-qābir-, *qabbar-, *qābir). In these stems only the thematic vowel changes; otherwise, both the basic template and vocalization stay the same.

In contrast the relationship between the basic stem and any derived stem is complicated by the occurrence of both strikingly different template shapes and thematic vowel alternations. The situation is most apparent in imperfect forms which have the shape C1C2VC3 with /i/, /a/ and most commonly /u/ as thematic vowels in the basic stem. In other stems neither the shape of the template nor the thematic vowel of the basic stem is preserved. Only in Akkadian do the thematic vowels of the basic stem occur in related derived stems, and even here such is not the case for either D- or Š-stem verbs. The following table shows the basic stem and their complicated relationship to the derived stems in terms of template and vocalization.

(38) Comparison of basic and derived stems in Arabic and Akkadian

Stem	Akkadian (preterite)				Arabic (imperfect/jussive base)			scheme
G	i-prus	i-šbat	i-pqid	i-rpud	ya-drus-	ya-ḏhab-	ya-ḏrib-	C1C2VC3
D	u-parris				yu-darris-			C1aC2C2iC3
Š	u-šapris				ya-dris- (Aram. yə-haktēb)			šaC1C2iC3
T	i-ptaras	i-ptaqid	i-rtagum		ya-ftaʕil-			C1taC2a/VC3
N	i-pparis		i-mmagur		ya-nfaʕil-			nC1aC2i/uC3
L					yu-fāʕil-			C1āC2iC3

With the exception of the consonantal root skeleton, the imperfect form of the basic stem is not clearly related to any of the imperfect forms of the derived stems. The vocalization of the derived stems are with a few exceptions not based on that of the basic stem and the templates are in most cases quite different—only the Š-stem seems to preserve the basic CCVC template and this could just be a coincidence due to the common occurrence of syncope. Even if we assume that the imperfect forms of the derived stems are historically derived from that of the basic stem, later changes have eliminated any obvious synchronic relationship beyond the root.

The relationship between the Š-stem and the Št-stem in various West Semitic languages is obscured by a different process. The Š-stem was originally indicated by the prefixing of a sibilant *š, probably related to the third person pronouns (Akk. 3MSG šū, 3FSG šī, 3MPL šunu, 3FPL šina). While PS *š typically remains a sibilant, it has become an /h/ in the third person pronominal forms (3MS pronouns: Ar. huwa, Heb. hū, BA hū, Ug. <hw>, Sab. <hʔ, hwʔ>, Ge. suffixal pronoun -hu, Meh. heh) and the Š-stem in most West Semitic languages, although not all (3MS pronouns: Jib. šε, Qat. s¹w). In some languages the Š-stem, but not the third person pronominal forms, are realized with a glottal stop /ʔ/, not /h/. In Biblical Aramaic forms with /š/, /h/ and /ʔ/ are all attested, although /h/ is most common (Rosenthal 1995). In modern varieties of Aramaic the Š-stem with /ʔ/ and its reflexes is universal, e.g. Maʕlūla *aḥref* ‘he answered’, Mlaḥsô *m-agreš* ‘he pulls’ (Jastrow 1997). Even in pre-modern varieties, the forms with /š/ are relatively marginal, occurring for only a few roots, and are likely borrowed from Akkadian or other Northwest Semitic languages (Kaufman 1974:123-124). The changes of š > h and h > ʔ, y, or Ø have led to a variety of reflexes of the original Š-stem across the Semitic languages and for Aramaic because of contact within a single language.

(39) Reflexes of PS Š-stem

		imperfect/ preterite/ jussive	perfect	active participle
Akkadian		ušaqbir		mušaqbir-
Ugaritic		yušaqbir	šaqbir-	mušaqbir-
Arabic		yuqbīr-	ʔaqbar-	muqbīr-
Hebrew		yaqbīr	hiqbīr	maqbīr
Phoenician		yiqbir	yiqber	miqbīr
Aramaic	Biblical	yəhaqbēr yaqbēr	haqbēr ʔaqbēr	məhaqbēr maqbēr
	Palestinian	yaqbēr	ʔaqbēr	maqbēr
	Maflūla	yaqber	aqber	maqber
	Mlaḥsô			ma-greš
OSA	Sabean	<yhqbr>	<hqbr>	<mhqbr->
	Qatabanian	<ys ^l qbr>	<s ^l qbr>	<ms ^l qbr>
MSA	Mehri	yə'haqbər	həqbōr	
	Jibbali	yəqbər	əqbīr	
Ethiopic	Ge'ez	yāqbər	ʔaqbar-	maqbər
	Tigré	lāqbīr	ʔaqbar-	maqbīr
PS		*yu-šaqbir-	*šaqbar- or *šaqbir-	mušaqbir-

In contrast to the variety found in the Š-stem, the Št-stem has remained much more faithful to the PS form. In the Št-stem the *š has the expected reflexes, not those of the pronominal forms. Consequently, the exponent of the causative is not consistent across stems. Examples of the Š-stem are provided below with the imperfect forms of the Š-stem included for comparison.

(40) Reflexes of the Št-stem and comparison with Š-stem imperfect

		Št-stem		Š-stem
		perfect	imperfect/ preterite/ jussive	imperfect/ preterite/ jussive
Akkadian			uštaqbir	ušaqqbir
Ugaritic			(tšthwy)	yušaqqbir
Arabic		istaqbar-	yastaqbir-	yuqqbir-
Hebrew		(hištaḥwāh)	(yištaḥweh)	yaqqbir
Phoenician				yiqbir
Aramaic	Biblical			yəhaqqbēr yaqqbēr
	Palestinian	ʔittaktab	yittaktab	yaqqbēr
OSA	Sabean	<sʔqbr>	<ysʔqbr>	<yhqbr>
	Qatabanian	<sʔqbr>	<ysʔqbr>	<ysʔqbr>
MSA	Mehri	šəqqbōr	yəšəqqbər	yəʔhaqqbər
	Jibbali	šəqqber	yəʔšəqqbēr	yəqqbər
Ethiopic	Geʿez	ʔastaqbara	yāstaqqbər	yāqqbər
	Tigré			lāqqbir
PS		štaqqbr	yV-štaqqbir-	*yu-šəqqbir-

It is clear that the relationship between the historically related Š- and Št-stems is quite obscure in most later Semitic languages, where proto-Semitic *š has undergone different changes in different forms. This explains why the Št-stem is a less likely candidate for undergoing the types of analogical changes that require a speaker to recognize that two forms are related.

Aramaic, the only case of leveling involving a Št-stem, displays a number of other unusual developments in the system of stems with preformative /t/. In almost all forms of Aramaic the preformative /t/ is prefixed and not infix; however, both prefixed and infix forms of the primary T-stem are attested in the earliest epigraphic texts. Garr (1985) argues that prefixed T-stem of Aramaic was formed by analogy with the prefixed form. Evidence of an original infix T-stem is provided by the earliest Aramaic text from Tell Fakhariyah, e.g. <ygtzr> ‘may it be cut off, as well as several other Northwest Semitic languages, e.g. Ugaritic <yʔitsp> ‘he gathered up to himself’ (KTU 1.3 I,22-23, Sivan 2001), Byblian Phoenician <tḥtsp> ‘it will break’, <tḥtpk> ‘it will overturn (it.)’ (Ahirom 2, Krahmalkov 2001) and Moabite <wʔlthm> ‘and I fought’ (Meshah 11:15, Garr 1985). Since in many cases the forms with the infix preformative /t/ are also among the oldest, it is reasonable that the infix form is more original.

It is possible that a similar re-formation of the Št-stem occurred by analogy as well, although it is difficult to determine what happened simply from the form of the Aramaic Št-stem which instead of a /š/, /h/ or /ʔ/ has a geminate /tt/ that obscures both the original position and quality of the consonant. Biblical Aramaic lacks clear examples of the Št-stem, for which Rosenthal (1995) constructs the form *Hithaqbar*. The one Št-stem *yištaklālūn* ‘(it) is rebuilt’ (Ezra 4:13) is considered by (Rosenthal, 56; cf. BDB) to be borrowed from Akkadian. It would, however, make sense for the geminate Aramaic Št-stem to have been formed from the

assimilation of the glottal stop /ʔ/ to an adjacent /t/ given the potential perceptual difficulties of such a combination.

We may want to reconsider whether the Aramaic Ittaphal is even a reflex of the original Št-stem. The Ittaphal may be an innovation based on the Aramaic *Aphel* (Š-stem) to which the preformative /t/ of the T-stem and Dt-stem has been extended. The absence of the Št-stem in Biblical Aramaic leaves open the possibility that at an earlier point in the history of Aramaic the Št-stem was lost and was later re-formed by analogy. This scenario also offers a potential explanation for why the Aramaic Št-stem has undergone changes not shared by other Semitic languages, namely that the re-formation of the Št-stem in Aramaic yielded a form that at least initially was more transparently related to the form from which it derived. In Aramaic the re-formed Št-stem followed the Dt-stem in the use of a single stem in both imperfect and perfect forms which is identical to the perfect of the related Š- and D-stems

Unlike Aramaic, Ge'ez has the expected vocalizations for Št-stem but not the primary T-stem. With respect to the Št-stem Ge'ez follows most other West Semitic languages in maintaining the sibilant reflex of the causative preformative *š in the Št-stem while losing it in the Š-stem (Š ʔaḳbara, Št ʔastaḳbara). The Ge'ez Št-stem also maintains the infix placement of the preformative /t/. Thus the Št-stem lacks the requisite transparency to be a good candidate for the type of leveling found in the Ge'ez Dt- and Lt-stems. The T-stem, however, has undergone such a leveling. The question remains of why only Ge'ez displays this type of change in the T-stem. Once again a crucial element seems to be the placement of the preformative /t/. As in Aramaic the T-stem with infix /t/ has been replaced by a prefixing form.

- (41) PS *ya-qtabir > Ge'ez yə-tqatal
 PWS *qtatal-a > *tqatal-a > Ge'ez taqatl-a (by epenthesis and syncope)
 PS* ya-qtabbir > Ge'ez yə-tqattal

It is impossible to tell whether the restructuring of the preformative as a prefix or the change in vocalization was first, but in light of the Aramaic Št-stem it is likely that the changes, though seemingly unrelated, are in fact closely related. The change in position of the preformative /t/ may enable speakers to more easily recognize the relationships between stems and make stem leveling more likely.

At this point it is worth reviewing the developments of forms with preformative /t/ and addressing a few other changes which are relevant to the general discussion. There are four common forms with preformative /t/, the T-, Dt- Lt- and Št-stems. In Akkadian, which lacks the L and Lt-stems, the preformative /t/ is infix in all forms and the thematic vowel is /i/ in the Dt- and Št-stems and variable in the T-stem depending on the thematic vowel of the basic stem. In West Semitic the preformative /t/ occurs both as an infix and as a prefix. In the Dt- and Lt-stems the preformative /t/ is always a prefix. In the T- and Št-stem both the infix and prefix forms are found, but the infix form is much more common with only a few examples of the prefix form. The thematic vowel of the imperfect forms with preformative /t/ is always either a reflex of PS *a or more commonly *i. Interestingly, forms which have a thematic vowel going back to PS *a also all have a prefixed preformative /t/. The Lt-stem, found only in Arabic and South Semitic, is always characterized by both a preformative prefix /t/ and a thematic vowel /a/ in the imperfect and perfect. The Dt-stem, the most widely attested of all forms with the preformative /t/, follows a very similar pattern to that of the Lt-stem. All West Semitic Dt-stems have a prefixed preformative /t/ and in all but the case of Hebrew have a thematic vowel of /a/. However, it is

notable that even Hebrew has the same thematic vowel in the both the imperfect and perfect. In this case the vocalization of the imperfect we would expect from Akkadian seems to be extended to perfect instead of the opposite, which I have proposed for Aramaic, Arabic and Ge'ez.

- (42) Perfect PS *tqabbar > hitqabbar (with prosthetic vowel and laryngeal) > hitqabbēr (based on imperfect ya-tqabbēr)

I have proposed that imperfect forms of the Dt- and Lt-stems can be accounted for by a process of stem leveling in which the stem of the perfect has been extended to that of the imperfect. This process would appear to occur most commonly in those forms in which the preformative /t/ is prefixed. I have suggested that derived stems with the prefixed preformative /t/ are more likely to involve stem leveling because the relationship of the forms to those from which they are derived is more transparent. This helps explain why the Dt- and Lt-stems are frequently implicated in these cases of stem leveling, while other stems are not. Further support is provided by the fact that the two cases outside the Dt- and Lt-stem which involve the extension of the thematic vowel /a/ to the imperfect are also characterized by the presence of a prefixed preformative /t/, which is likely an innovation in these cases. The occurrence of leveling in these two cases, the Aramaic Št-stem and Ge'ez T-stem, also strengthens the proposal that the vocalization of Akkadian, our earliest attested Semitic language, is more original than that found in Arabic.

While it might be attractive to reconstruct an original thematic vowel *a in the Dt-stem and Lt-stem, doing so in either the T- or Št-stem would simply complicate matters. Since we have confidently established the occurrence of the process of stem leveling in at least two cases, there is no reason to exclude this process. The burden is on other proposals to show that the changes involved in them are plausible. Other proposals may also fail to take into account the connection between the position of the preformative /t/ and the occurrence of stem leveling. We find that all prefixed preformative /t/ forms have an invariable vocalization in the perfect and imperfect. While the direction of the stem leveling would appear to be different for the Dt-stem in Hebrew and the T-stem, nonetheless stem leveling has occurred. In contrast there are no cases of stem leveling having occurred in any language where the preformative /t/ was infixal.

4.3.1.3. The process of leveling in other derived stems

The kind of change that occurs in Hebrew in the Dt-stem represents another common change in the system of Semitic morphology. In this case the stem of the imperfect is extended to the perfect form eliminating any stem allomorphy. There are two major consequences for this change. First, it eliminates the internal changes that indicate different aspects. Second, it makes the generalization about the vocalization of the perfect tense across forms less robust since the melody of the perfect in all stems no longer consists entirely of the vowel /a/. The imperfect stem can also extend to the participles (and at least in one case in the other direction).

The case of stem leveling is characteristic of the D- and Š-stems in both active and passive forms in Northwest Semitic, as well as the Dt-stem in Hebrew, but not Aramaic. In a few cases the leveling extends to the participles as well. In other Semitic languages stem leveling has not occurred and there remains an internal alternation between the perfect and imperfect stems. Akkadian, which does not have a perfect form, has a similar alternation between the preterite form, cognate with the Arabic jussive form, and the present form, e.g. *uballit* 'he has revived' and *uballat* 'he revives'. The D-stem serves well to illustrate the general

process because it and Š-stem have undergone basically the same changes. The forms of the Š-stem were displayed in (39), while those of the D-stem are below.

(43) Active D-stem forms

		imperfect/ preterite/ jussive	perfect	active participle
	Akkadian (Ungnad [1879] 1992)	uqabbir		muqabbir-
	Ugaritic (Sivan 2001)	yaqabbir-	qabbir-	muqabbir-
	Arabic (Fischer 2002)	yuqabbir-	qabbar-	muqabbir-
	Hebrew (Joüon and Muraoka 2000)	yəqabbēr	qibbēr/ qibbar	məqabbēr
	Phoenician (Krahmalkov 2001)	yeqebber	qibber	meqettel
Aramaic	Biblical (Rosenthal 1995)	yəqabbēr	qabbēr	məqabbēr
	Palestinian (Stevenson 1924)	yəqabbēr	qabbēr	məqabbēr
	Mandaic (Voight 2007b)	niqabbir	qabbir	mqabbir
	Maṣlūla (Spitaler 1938)	yqabber	qabber	mqabber
	Mlaḥsô (Jastrow 1994)			mqaaber
OSA	Sabean (Beeston 1984)	uncertain		
MSA	Mehri (Johnstone 1987)	yaqōbər	aqōbər	
	Jibbali (Johnstone 1981)	yqōbər	eqōbər	
Ethiopic	Geʿez (Voigt 2007a)	yi-qebbir	qəbbər-	maqabbər
	Tigré (Raz 1983)	li-qabbir	qabbar-	maqabrāy
PS		*yu-qabbir	*qabbar-	*mu-qabbir-

We can confidently reconstruct the base of the prefix conjugation as *-qabbir- based on the various reflexes. The only real deviations from the expected form occur with the prefix vowel in Ugaritic, which is only supported for the 1SG form, and could possibly take the prefix vowel /u/ in other forms (Sivan 2001). The form of the suffix conjugation, which does not occur in Akkadian, is somewhat more difficult to reconstruct. Arabic and South Semitic have a perfect form with a vocalic melody consisting solely of the vowel /a/, following a pattern clearly established for other derived stems and as the most common melody for active (fientive) verbs in the basic stem, e.g. Hebrew *kātab* ‘he wrote’, Arabic *kataba* ‘he wrote’.

From the point of view of consistency and systematicity, *qabbar- is clearly the preferred reconstruction. Even so, without evidence from East Semitic we cannot easily dismiss the possibility that the vocalization of Arabic and South Semitic represents a later systematization and that the original vocalization is that of Northwest Semitic, either *qabbir or *qibbir. Ugaritic and Aramaic have forms that go back to *qabbir, while the Canaanite languages largely have forms that go back to *qibbir instead. Of these two possible patterns /qabbir/ is likely the more original both because the non-thematic vowel agrees with that of almost every other Semitic language and because it is the form found in Ugaritic. The relative antiquity of Ugaritic compared particularly with the varieties of Arabic and South Semitic preserved with vocalizations weighs in favor of the form *qabbir, but a few other factors should be considered. The position of Arabic in the Semitic family is important for this question. If we assume the grouping of Arabic with Northwest Semitic in a Central Semitic branch together with Northwest

Semitic (e.g. Hetzron 1976b, Faber 1997), then the distribution would favor *qabbar. On the other hand, if we follow the traditional grouping of Arabic with South Semitic (e.g. Moscati, Spitaler, Ullendorff and Soden 1964), then the distribution would not favor either of the forms.

Another consideration should be the relative plausibility of the changes that are necessary to account for the various reflexes. I will argue that the mechanism of stem leveling described above accounts well for the forms in Northwest Semitic, as well as forms in later Semitic languages, if we assume that the original vocalization of the D-stem perfect was *qabbar. The type of systematization necessary to account for Arabic and South Semitic if we assume *qabbir or *qibbir is, on the other hand, hard to establish as there do not appear to be any other clear cases of this happening.

The same basic principle also extends to the Š-stem and the passive forms of both D- and Š-stems, although the situation for the Š-stem is complicated by the lenition of the original preformative to the point where in many cases there is no longer a trace of the original *š, particularly in the imperfect, Arabic *yu-qbir*, Hebrew *ya-qbīr*, Ge'ez *yā-qbir*. If we revisit the forms of the Š-stem in (39), we find nearly identical patterns to those of the D-stem in (43). In those languages where the thematic vowel is /i/ in the perfect D-stem it is also so in the perfect Š-stem.

(44) Perfect D-stem and Š-stem in Northwest Semitic languages

	<i>perfect D-stem</i>	<i>perfect Š-stem</i>
Ugaritic (Sivan 2001)	qabbir	šaqbir
Hebrew (Joüon and Muraoka 2000)	qibbēr/qibbar	hiqbīr
Phoenician (Krahmalkov 2001)	qibber	yiqber
Biblical Aramaic (Rosenthal 1995)	qabbēr	haqbēr/?aqbēr

Because these languages all belong to the Northwest Semitic branch, it is likely that the innovations in these cases go back to Proto-Northwest Semitic and thus we can assume that the changes involved occurred only once.

A similar scenario likely also took place for the passive forms in Northwest Semitic, although the much more limited distribution of the internal passives in the Semitic languages make it somewhat more difficult to reconstruct the developments. Internal passive forms are found in Ugaritic, Arabic, Hebrew and Aramaic, but are widely lost in other Semitic languages, even in later forms of languages which earlier had the alternation. Because both the N-stem and the T-stem had senses that overlapped considerably with that of internal passives, there were always ample opportunities for the passive to be replaced and become obsolete. In Hebrew and Aramaic, which retain internal passives, the stem of the imperfect and perfect has the same thematic vowel. Ugaritic, however, seems to diverge from the other Northwest Semitic languages in this respect. Although the evidence is weak because of the generally consonantal nature of the writing system, a couple forms suggest that the vocalization of the passive forms is closer to the situation found in Arabic (Sivan 2001).

The passive D-stem is only attested a handful of times and even in these cases the interpretation is far from certain. In two cases there is an indication of the thematic vowel /a/ in prefix conjugation forms, <tlʔakn> (KTU 1.4 V, 42) which Sivan interprets as a dual passive D-stem /talaʔakāni/ or /tulaʔakāni/ '(the two lads) are sent' and the cuneiform <tu-wa-aš-ša-ru-na> (KL 72:600, 11-12) /tuwaššarūna/ 'they may be sent'. In the first case the glottal stop

symbol indicates the character of the adjacent vowel, while in the second case the syllabic cuneiform transcription provides the vocalization. The passive D-stem forms are indicated for Biblical Hebrew and Classical Arabic..

(45) Passive D-stem forms in Hebrew and Arabic

	Imperfect/ Preterite/Jussive	Perfect	Passive Participle
Classical Arabic	yu-qabbar-u	qubbir-a	mu-qabbar-
Biblical Hebrew	yə-qubbar	qubbar	mə-qubbār

I propose that the perfect forms of the D-stem of Northwest Semitic are based on the stem of the imperfect form. This analogical change follows the seventh tendency of Mańczak (1958) which states that “the forms of the present more frequently bring about the remaking of the other tenses”. It also works well with the thesis of Benmamoun (1999, 2003) and Ratcliffe (1997) which privileges the position of the imperfect form in Arabic morphology.

Yet we need not interpret the elaborate quality of Arabic verbal morphology as evidence of greater conservatism. An alternate scenario assumes the opposite—that the system of morphology found in Arabic represents the end of a significant elaboration and systematization of root and pattern morphology which other Semitic languages have participated in to a greater or lesser degree. This view would assume that the root and pattern system of Semitic is a more recent development. This hypothesized scenario however does not take into account the many remnant forms found in the family and does not consider the types of changes that do occur. The assumed changes under such a scenario are largely unmotivated.

4.3.1.4. Review of the changes from Proto-Semitic to the Classical Semitic languages

The details described so far have obscured somewhat the general patterns of change observed in the Semitic family. To arrive at the derived forms observed in the Semitic languages it is necessary to propose a number of analogical changes that have operated in individual languages. The observed changes point to a number of important generalizations about the process of analogy in the Semitic languages. The first two generalizations point to the importance of a notion of verb stem over verb root in these processes

- (a) Analogy takes place without reference to vocalic melody or prosodic template, with the process often eliminating an ablaut alternation.
- (b) Transparent relationship between derived forms aids analogy.
- (c) Languages appear to vary according to the degree to which one form or another serves as the base for the analogy.

Hebrew

The changes for Hebrew all involve substituting the base of the imperfect for another base. There is no need in these cases to assume separate vowel melodies.

1. *Piel* Perfect is based on *Piel* imperfect/imperative
*qabbar > qabbēr (based on imperfect yu-qabbēr) > qibbēr
2. *Hiphil* perfect is based on *Hiphil* imperfect/imperative
*haqbar > haqbīr (based on imperfect yaqbīr < *yu-haqbīr) > hiqbīr

3. *Hithpael* perfect is based on *Hithpael* imperfect/imperative
*tqabbar > hitqabbar (with prosthetic vowel and laryngeal) > hitqabbēr (based on imperfect ya-tqabbēr)
4. *Pual* and *Hophal* perfect forms are based on the base of the imperfect.
*qubbir > qubbar (based on *yu-qubbar)
*huqbir > huqbar (based on *yu-huqbar)
5. *Piel* passive participle based on imperfect base
*muqabbar > muqubbar (based on *yu-qubbar) > məqubbār

Aramaic

Most of the developments in Aramaic are identical to developments found in Hebrew and might represent common Northwest Semitic morphological developments. The final stem type is not attested in Hebrew.

1. Perfect *Haphel* and *Pael* are based on the imperfect forms.
*qabbar > qabber (based on *yu-qabber)
*haqbar > haqber (based on *yu-haqber)
2. *Pual* and *Hophal* Perfect forms are based on the base of the imperfect.
*qubbir > qubbar (based on *yu-qubbar)
*huqbir > huqbar (based on *yu-huqbar)
3. *Hithpeel* perfect based on *Hithpeel* imperfect
*tqabara > hitqabar > hitqāber (based on yi-tqāber)

The following changes contrast with both the developments in Hebrew and those above in Aramaic in having a perfect form serve as a base for the analogy.

4. *Hithpaal* imperfect, imperative and participle based on *Hithpaal* perfect
*yatqabbir > yatqabbar (based on hit-qabbar)
*tqabbir > hitqabbar (based on hit-qabbar)
*mutqabbir > mutqabbar (based on hit-qabbar)

The final change probably represents the reanalysis of the participle as a verbal form, a process described at length in Chapter 5.

5. Passive perfect of the basic stem is based on the passive participle
*qubira > qabīr (based on participle qabīr) > qābīr

Arabic

Only in the case of the Dt-stem do the developments in Arabic resemble those in either Hebrew or Aramaic. As in Aramaic the Dt-stem has been reformed on the basis of the perfect. The other changes are unique to Arabic.

1. Base for fa^{cc}al passive imperfect forms based on passive participle
*yuqubbaru > yuqabbaru (based on passive participle muqabbar)

2. Imperfect and imperative doubled stem with prefixed t- based on perfect
 *yatqabbiru > yataqabbaru (based on taqabbara)
 *tqabbir > taqabbar (based on taqabbara)
3. Perfect n-prefix stem based on perfect of basic stem
 *naqbara > 'inqabara (based on qabara)

Ethiopic

Both of the changes proposed for Ethiopic involve the same process seen in Dt-stem in both Arabic and Aramaic.

1. Imperfect and imperative basic stem with prefixed t- based on perfect
 *yutqabiru > yəṭqabar (based on taqabra < *taqabara)
 *tqabir > taqabar (based on taqabra < *taqabara)
2. Imperfect and imperative doubled stem with prefixed t- based on perfect
 yatqabbiru > yəṭqabbar (based on taqabbara)
 tqabbir > taqabbar (based on taqabbara)

Processes like those described above occur not only in early Semitic but can also be observed in later varieties, thus providing support for the reconstructions and changes provided here.

4.3.1.5. Further support for generalizations: the case of Arabic

In the previous sections I proposed that the vocalization of both perfect and imperfect forms diverges in various Semitic languages largely because of the operation of stem leveling between various forms of a particular verb, usually but not always with the imperfect form serving as the base. Developments in various Arabic dialects provide further support for the plausibility of changes of this type. Because of the relatively conservative nature of Classical Arabic and the wide range of later dialectal forms, the Arabic dialects provide a large data set with which to compare the changes we have proposed so far. Having independent but parallel changes in Semitic languages can help us determine whether the changes in question are in some sense “natural” and thus whether the reconstruction of the history follows otherwise attested pathways. When the only case we have that supports the analysis belongs to the proposed reconstruction and changes, it is necessary to question both whether the assumed changes are likely or even possible and whether there are any alternative possibilities describing the developments. The developments clearly support the changes proposed in the previous section, while the changes assumed for other reconstructions are not attested.

The system of derived stems in Classical Arabic is preserved to some degree in all Modern Arabic dialects. In most varieties one or more of the original derived stems have been lost. In addition to the obsolescence of particular derived forms, the shape and vocalization of derived forms have changed considerably in some varieties. Often the changes are simply of a phonological nature, but in other cases the most likely explanation is that analogical leveling of a stem has eliminated an original ablaut alternation.

In many dialects the basic ablaut alternations of Classical Arabic are largely preserved, even though other changes have occurred altering the original stem and affixes. The ablaut alternations between perfect and imperfect forms of the derived stems are typically preserved in the dialects of Iraq (Erwin 1963, Malaika 1963, Abu Haidar 1991), the Levant (Cowell 1964, Jiha 1964, Grotzfeld 1965, Geva-Kleinberger 2004) the Arabian Peninsula (Johnstone 1967, Prochazka 1988) and Bedouin dialects in general (Rosenhouse 1984, Owens 1984, de Jong 2000).

Several changes are either nearly universal or at least quite widespread. The system of person prefixes has typically been simplified collapsing the original distinction between Classical Arabic *yu-* and *ya-* into a single form *yi-*, which often occurs with further reductions. The settled dialects of Egypt and the Levant also typically have a prefix *b(i)-* attached to the imperfect forms.

In addition to changes in the prefixes, other phonological changes, especially various types of vowel reductions and deletions, have influenced the verbal system. The prosthetic vowels of the Arabic T-, N- and Št-stems are often lost, as is the vowel between the preformative {t} and the root in the Dt- and Lt-stems. The table below shows several examples of dialects where the ablaut alternation between the perfect and imperfect forms has been maintained, along with several instances of the other types of changes described above.

(46) Classical Arabic and dialects which preserve older pattern

	Classical	Muslim Baghdadi (Erwin 1963)	Syrian (Cowell 1964, Grotzfeld 1965)	Saudi Dialects (Prochazka 1988)	Upper Egyptian (Nishio 1994)
Form VIII (T-stem)	<i>iqtabar-a</i>	<i>qtibar</i>	<i>qtábar</i>	<i>ʔáqtabar, ʔiqtabar, qtabar</i>	<i>iqtabar</i>
	<i>ya-qtabir-u</i>	<i>yi-qtibir</i>	<i>byə-qtóber</i>	<i>yí-qtibir, yí-qtibir, yi-qtábir, yi-qtíbir</i>	<i>y-iqtibir y-iqtabar</i>
Form II (D-stem)	<i>qabbar-a</i>	<i>qabbar</i>	<i>qábbar</i>	<i>qabbar</i>	<i>qabbar</i>
	<i>yu-qabbir-u</i>	<i>y-qabbir</i>	<i>bi-qábbir</i>	<i>yi-qabbir y-qabbir</i>	<i>y-qabber, y-qabbir, y-qabbar</i>
Form V (Dt-stem)	<i>taqabbar-a</i>	<i>tqabbar</i>	<i>tqabbar</i>	<i>tqabbar, taqabbar, tiqabbar</i>	<i>itqabbar</i>
	<i>ya-taqabbar-u</i>	<i>yi-tqabbar</i>	<i>byə-tqabbar</i>	<i>yi-tqabbar, ya-tqabbar, y-tiqabbar</i>	<i>y-itqabbar</i>
Form III (L-stem)	<i>qābar-a</i>	<i>qābar</i>	<i>qābar</i>	<i>qābar</i>	<i>qābar</i>
	<i>yu-qābir-u</i>	<i>yi-qābir</i>	<i>bi-qāber</i>	<i>yi-qābir y-qābir</i>	<i>y-qāber, y-qtābir</i>
Form VI (Lt-stem)	<i>taqābar-a</i>	<i>tqābar</i>	<i>tqābar</i>	<i>tqābar, taqābar, tiqābar</i>	
	<i>ya-taqābar-u</i>	<i>yi-tqābar</i>	<i>btə-tqābar</i>	<i>yi-tqābar,</i>	
Form IV (Š-stem)	<i>ʔaqbar-a</i>	<i>ʔaqbar</i>	<i>ʔaqbar</i>	<i>ʔaqbar</i>	
	<i>yu-qbir-u</i>	<i>yi-qbir</i>	<i>byə-qber</i>	<i>yi-qbir</i>	
Form X (Št-stem)	<i>istaqbar-a</i>	<i>staqbar</i>	<i>staqbar</i>	<i>ʔastaqbar, ʔistaqbar, staqbar</i>	<i>istaqbar</i>
	<i>yu-staqbir-u</i>	<i>yi-staqbir</i>	<i>byə-staqber</i>	<i>yi-staqbir</i>	<i>y-isatqbir, y-istaqbar</i>
Form VII (N-stem)	<i>inqabar-a</i>	<i>nqibar</i>	<i>nqābar</i>	<i>ʔánqabar, ʔínqabar, ʔínqibar, nqíbar</i>	
	<i>ya-nqabir-u</i>	<i>yi-nqibir</i>	<i>byə-nqóber</i>	<i>yí-nqabir, yí-nqibir, yi-nqābir, yi-nqíbir</i>	

Muslim Baghdadi Arabic (Erwin 1963) is identical to Classical Arabic once a few phonological developments are taken into account. The prosthetic vowels of the T-, N- and Št-stems have generally been lost (T *iqtabara* > *qtibar*, N *inqabara* > *nqibar*, Št *istaqbara* > *staqbar*). The final vowel of the 3MSG perfect and the mood markers of the prefix conjugation

have generally been lost (D qabbara > qabbar, T-stem qtabar > qtibar, yi-qtabir > yi-qtibir, etc.). Imperfect *yu-qabbir-u*, subjunctive *yu-qabbir-a*, Jussive *yu-qabbir-a* all become *yi-qabbir*. The original distinction between the vowels of the personal prefix of different derived forms has been eliminated with the forms of the prefixes being predictable based on the phonological context—the allomorphs /yi-/ , /ti-/ and /ni-/ occur before a consonant cluster, while /y-/ , /t-/ and /n-/ occur elsewhere. Finally, the vowel /a/ is raised to /i/ in open syllables (basic stem katab > kitab). In addition to these changes which can be seen in (42), unstressed short /i/ often becomes /u/ when adjacent to a labial consonant or before another vowel which has become /u/. The influence of consonants on the quality of adjacent vowels is a characteristic of all confessional dialects (Erwin 1963, Malaika 1963, Abu Haidar 1991).

(47) Cases of i > u under the influence of adjacent labials (Erwin 1963)

T-stem

*yi-htifiḏ	>	yi-htufuḏ	‘he keeps’
*ṣṭibar	>	ṣṭubar	‘he waited’
*yi-ṣṭibir	>	yi-ṣṭubur	‘he waits’

N-stem

*yi-nṣirif	>	yi-nṣuruf	‘he is becoming known’
*njibar	>	njubar	‘he was forced’
*yi-njibir	>	yi-njubur	‘he is being forced’

D-stem

y-xarrib	>	y-xarrub	‘he ruins’
y-fawwir	>	y-fawwur	‘he boils’

L-stem

y-ḥābir	>	y-ḥabur	‘he telephones’
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Št-stem

yi-stajwib	>	yi-stajwub	‘he questions’
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While these changes modify the character of the ablaut alternations, a distinction is still maintained (/a/ vs. /u/ as in *ṣṭubar* ‘he waited’ and *yi-ṣṭubur* ‘he waits’).

Many of the same process are also involved in the Syrian (Damascene) dialect (Cowell 1964, Grotzfeld 1965) and Saudi Arabian dialects (Prochazka 1988). The loss of the prosthetic vowel in the perfect T-stem, N-stem and Št-stem is consistent in the Syrian dialect and is also found in some Saudi Arabian dialects. There are cases of vowel raising in some Saudi Arabian dialects and a potentially related development in the imperfect forms of Syrian Arabic where /a/ has become /ə/, e.g. *byə-qtáber* < *ya-qtabir-u and *byə-nqáber* < *ya-nqabir-u. All of these dialects maintain the ablaut alternation between the perfect and imperfect forms of the D-, L-, T-, Š- and Št-stems as well as the lack of an alternation between the Dt- and Lt-stems. The same is true of many other dialects including the Muslim and Jewish dialects of Haifa (Geva-Kleinberger 2004), the dialect of Bishmizzine, Lebanon (Jiha 1964), the dialects of the Gulf (Johnstone 1967),

Northern Israeli Bedouin dialects (Rosenhouse 1984), Libyan dialects (Owens 1984), the dialect of Qift in Upper Egypt (Nishio 1994) and most Sinai Dialects (de Jong 2000).

For the remaining languages where the ablaut alternations have not been fully retained, the outcomes range from a loss of ablaut only in one additional derived form to a systematic loss of ablaut. Because the outcomes are quite heterogeneous and there is a lack of any clear social or geographical continuity between the relevant Arabic dialects, the cases of stem leveling would appear to be largely independent developments.

In the Chadian Arabic (Kaye 1976) and the Christian dialect of Haifa (Geva-Kleinberger 2004), the N-Stem (Form VII) has changed in the same way that the Dt- and Lt-stems did between Proto-West-Semitic and Classical Arabic. Originally in Proto-Semitic and Proto-West Semitic the N-stem had the thematic vowel /i/ in the prefix conjugation as it does in Akkadian (*iqqabir*⁴⁹), Hebrew (*yiqqābēr*) and Classical Arabic (*yanqabiru*). In West Semitic the suffix conjugation had the thematic vowel /a/ which is the case in all attested examples of the N-stem perfect. As described in section 4.2.1, the N-stem has been lost in many Semitic languages, but still is a robust form in Classical Arabic and Hebrew (*niqbar*). While absent, or practically so, from Aramaic and all its descendant varieties, as well as Ge'ez and the modern Ethiosemitic languages, our earliest examples of West Semitic, Ugaritic and the Northwest Semitic language of the Amarna tablets, preserve the N-stem. Syllabic cuneiform transcriptions of Ugaritic show that it had the form /naqbara/ sharing its basic template CVCCVC with Hebrew and its all /a/ vocalization with Arabic, e.g. <na-ap-ṭa-ru> /naṭṭarū/ 'they exchanged' (PRU III, p. 89, 5; Sivan 2001). Identical forms are found in the Northwest Semitic language represented in the Amarna tablets, e.g. <na-aq-ša-pu> /naqšapū/ 'they were angry' (EA 82, 51; Rainey 1996, 2:376-377). The Hebrew form /niqbar/ also must go back to an earlier /naqbar/, which explains the forms of several weak verbs. Verb roots with an original first consonant of /w/ have a form like that of /nōšab/; because Hebrew /ō/ is frequently the result of the simplification of the diphthong /aw/, the form /nōšab/ likely was originally *nawšab (Joüon and Muraoka 2000). Traces of the original first vowel are also preserved in the N-stem forms of hollow verbs and doubled verbs except that the original vowel has lengthened in the open syllable, e.g. /nākōn/ 'it was firm, established' from the root k-w-n and /nāsab/ 'it turned around' from the root s-b-b.

In general Chadian Arabic preserves the morphological alternations of Classical Arabic, although several of the verbal forms are no longer used except in a few "frozen" forms. The Š-, T- and Št-stems exist only as "frozen" forms, while both the Dt- and Lt- stems are uncommon (Kaye 1976).

⁴⁹ The thematic vowel /i/ for three of the four ablaut classes in Akkadian with the only exception being the relatively small u-u class which has the form /iqqabur/

(48) Stem alternations in Classical and Chadian Arabic (Kaye 1976)

	Classical Arabic		Chadian Arabic	
	perfect	imperfect	perfect	imperfect
Form I (Basic Stem)	qabar-a qabir-a qabur-a	ya-qbar-u ya-qbir-u ya-qbur-u	qabar	ba-qbir
Form VIII (T-stem)	iqtabar-a	ya-qtabir-u		
Form II (D-stem)	qabbar-a	yu-qabbir-u	qabbar	bi-qabbir
Form V (Dt-stem)	taqabbar-a	ya-taqbbar-u	ʔalqabbar	bi-lqabbar
Form III (L-stem)	qābar-a	yu-qābir-u	qābar	bi-qābir
Form VI (Lt-stem)	taqābar-a	ya-taqābar-u	ʔalqābar	bi-lqābar
Form IV (Š-stem)	ʔaqbar-a	yu-qbir	ʔaqbar	b-aqbir
Form X (Št-stem)	istaqbar-a	yu-staqbir		
Form VII (N-stem)	inqabar-a	ya-nqabiru	ʔanqabar	bi-nqabar

The N-stem, which is according to Kaye “the most common passive”, does not have an ablaut alternation like the D- and L-stems or like the corresponding N-stem in Classical Arabic and most other varieties of Arabic. It is clear that the lack of ablaut is an innovation of Chadian Arabic because this situation is not found in any of the older Semitic languages including Classical Arabic.

The Christian dialect of Haifa has also lost the original ablaut alternation between the perfect and imperfect forms in some N-stem forms but not at all in other stems.

(49) Stem alternations in Classical Arabic and the Christian dialect of Haifa (Geva-Kleinberger 2004)

	Classical Arabic		Christian dialect of Haifa	
	perfect	imperfect	perfect	imperfect
Form I (Basic Stem)	qabar-a qabir-a qabur-a	ya-qbar-u ya-qbir-u ya-qbur-u	qabar qibir	bi-qbir bu-qbur bi-qbar
Form VIII (T-stem)	iqtabar-a	ya-qtabir-u	(ʔi)qtabar	bi-qtbir
Form II (D-stem)	qabbar-a	yu-qabbir-u	qabbar	bi-qabbir
Form V (Dt-stem)	taqabbar-a	ya-taqbbar-u	tqabbar	bi-tqabbar
Form III (L-stem)	qābar-a	yu-qābir-u	qābar	bi-qābir
Form VI (Lt-stem)	taqābar-a	ya-taqābar-u	tqābar	bi-tqabar
Form IV (Š-stem)	ʔaqbar-a	yu-qbir	ʔaqbar	bi-qbir
Form X (Št-stem)	istaqbar-a	yu-staqbir	(ʔi)staqbar	bi-staqbir
Form VII (N-stem)	inqabar-a	ya-nqabiru	(ʔi)nmásak ʔinmasak	bi-n(ʔ)msik bi-nmasak

Geva-Kleinberger describes this development in the N-stem as a case of analogy based on the form of the perfect stem.

Because of the geographical distance between the dialects, the occurrence of parallel changes cannot easily be explained by contact or common descent. There could be some as yet uncovered historical connection which explains why two closely related dialects could have become so separated. There are certainly similarities between these dialects beside the stem leveling in the N-stem; both dialects for example attach the particle {b-} to the personal prefixes of the imperfect verb. However, the group of dialects with this feature is large and includes many Levantine and Egyptian dialects, and also we are left to explain why the Christian dialect of Haifa is not like neighboring dialects. Perhaps the status of the two communities and their relationships to Classical Arabic might explain the similar forms. Both communities are marginal, although in different ways. Chadian Arabic stands at a geographical margin where the role of Classical or Standard Arabic has not been quite as pervasive. Arab Christian communities may be considered as existing at something of a social margin in which attitudes toward Classical Arabic, the language of the Qur‘an, diverge substantially from those of the Muslim majority. One possibility is that at some earlier point the loss of the ablaut alternation was more widespread. However, eventually, the ablaut alternation was reintroduced through contact with Classical Arabic, but was not reintroduced in these dialects because of the weaker influence of the classical language in these communities. This scenario of loss and reintroduction would fit with Versteegh’s (1984) hypothesis of creolization and decreolization in the Arabic dialects. However, such a scenario is highly speculative and creates more questions than it seeks to answer. For now, independent but parallel development remains the most parsimonious and plausible explanation.

A similarly geographically isolated set of dialects has lost the ablaut alternation in some Št-stem forms. In the Shukria dialect of Eastern Sudan (Reichmuth 1983) as well as several closely related Bedouin dialects of the Sinai (de Jong 2000) the distinctive vocalization of the imperfect St-stem has often been lost in favor of that of the perfect form. In the Shukria dialect the imperfect form has either the form ya-ssaqbar or ya-ssaqbir with the assimilation the preformative /t/. For example, the Št-stem verb *assaʕajal* ‘he hurried’ is either *tassaʕajal* or *tassaʕajil* ‘you hurry’ in the imperfect, but only *missaʕajil* ‘in a hurry’ as a participle. The same set of alternations also occurs for the verbs *astāhal* ‘he merited’ and *assaʕaza* (also *astaʕaza*) ‘he let out a battle cry’. While the thematic vowel does not always alternate between the stems of the perfect and imperfect, the ablaut alternation always happens between the stems of the perfect and active participle in the Št-stem and between both the perfect and the identical stems of the imperfect and the active participle in the D-stem, L-stem, T-stem and N-stem. Because of the great similarity between the imperfect and active participle, we can rule out a simple phonological explanation for the loss of the ablaut alternation in the imperfect. As was the case for Classical Arabic in the Dt-stem and Lt-stem, the stem leveling has affected only the imperfect and not the active participle, which in both cases retains the thematic vowel /i/.

(50) Thematic vowels of the Dt-, Lt- and Št- stems

	Classical Arabic			Shukria Arabic
	Dt-stem	Lt-stem	Št-stem	Št-stem
perfect	taqabbar-a	taqābar-a	istaqbar-a	assaqbar
imperfect	ya-taqabbar-u	ya-taqābar-u	ya-staqbir-u	ya-ssaqbar, ya-ssaqbir
active participle	mu-taqabbir-	mu-taqābir-	mu-staqbir-	mi-ssaqbir

The different treatment of the stems of the imperfect and the active participle in both Arabic and Shukria Arabic suggests that the two developments are independent and parallel.

Several Bedouin dialects of the Sinai (de Jong 2000) have eliminated the ablaut alternations between the Št-stem perfect and imperfect forms for sound roots, but maintain the ablaut in other derived stem as well as in some weak Št-stems and in the active participle. The chart below shows how the ablaut alternation in the Št-stem in some Sinai dialects but not other.

(51) Schematic comparison of Classical Arabic and Sinai sound Št-stems

	Classical Arabic	Sinai dialects			
		Rmēliy	Šmēšniy	Biyyāđiy	Dwēğriy
perfect	istaqbara	astaqbar	(i)staqbar	(i)staqbar	astaqbar
imperfect	yastaqbiru	yistaqbir	yistaqbar	yistaqbir	yistaqbir
active participle	mustaqbir-	mistaqbir	(not recorded)	mistaqbir	(not recorded)

We find even more complex patterns when we look at the specific ablaut patterns. In the Šmēšniy dialect the ablaut alternation has been lost in sound roots but is still found in geminate roots.

(52) Examples of the Št-stem in the Šmēšniy dialect (de Jong 2000)

verb type	perfect	imperfect	act. part.	root gloss
sound	(i)staḥmal	yi-staḥmal		‘bear’
	(i)stašjal	yi-stašjal		‘hurry’
	(i)stawṭan	yi-stawṭan		‘settle’
geminate C ₂ =C ₃	(i)stašidd	yi-stašidd	mi-stašidd	‘prepare (oneself)’

In the Biyyāđiy dialect, ablaut alternations are found between the participle and the imperfect, but not between the imperfect and the perfect.

(53) Examples of the Št-stem in the Biyyāđiy dialect (de Jong 2000)

verb type	perfect	imperfect	act. part.	root gloss
sound	(i)stáfhām	yi-stáfhām	mi-stafhim	‘inquire’
	(i)stášmal	yi-stášmal		‘use’
	(i)stákbar	yi-stákbar		‘select for largest size’
hollow C ₂ = {y, w}		bi-stašāru (PL)		‘consult’
geminate C ₂ =C ₃			mi-stašidd	‘prepare (oneself)’

The patterns found in these Arab dialects support the basic generalizations about analogical change established for Semitic earlier in this section (see 4.3.1.4.).

4.3.1.6. Further support for generalizations: the case of the Ethiosemitic languages

Leveling has also had an important impact on the forms of the reflexes of the derived stems in the Ethiosemitic languages. As in early Semitic languages and the Arabic dialects, the contrasts

between various prefix and suffix conjugation forms have been lost in many cases in Modern Ethiosemitic languages. As with Classical Arabic, Ge‘ez (Classical Ethiopic), provides a convenient, if imperfect, starting point for examining the development of this group. As the oldest Ethiosemitic variety, Ge‘ez is assumed to reflect most closely the original situation in Ethiosemitic. The verbal system of Ethiosemitic can be reconstructed by comparing the Modern Ethiosemitic languages to each other as well as to Ge‘ez and the other non-Ethiopian Semitic languages. Unlike both Arabic and early Semitic leveling, the Ethiosemitic cases do not always appear to operate on the stem level but sometimes are related instead to specific ablaut alternations, sometimes with an alternation being lost while another is maintained in the very same form. However, these changes are still consistent with a stem- or word-based approach and are not a strong support for a morphological tier approach; the changes affect the specific processes which relate morphological forms, not a general vocalic melody.

Several developments and features are characteristic of this branch of the Semitic family. Some of these features are shared with other South Semitic languages and others are more specific to Ethiosemitic. One of the main features that distinguishes Ethiosemitic, as well as South Semitic as a whole and East Semitic, from Central Semitic is the existence of two stem types for prefix conjugations. Although Hetzron (1969) argues that there were two prefix conjugations in Central Semitic, these two forms were distinguished by stress placement and not by the stem shape. Unlike Akkadian, the Ethiosemitic languages have a suffix conjugation perfect which places Ethiosemitic and the South Semitic languages together with Central Semitic in West Semitic branch.

(54) Ge‘ez verb system (Voigt 2007a)

<i>stem</i>	<i>Semitic stem</i>	<i>perfect</i>	<i>imperfect</i>	<i>jussive</i>
Type A	G-stem	qətəl-ə	yī-qəttil	yī-qtīl
Type B	D-stem	qəttəl-ə	yī-qəttil	yī-qəttīl
Type C	L-stem	qatəl-ə	yī-qat(t)il	yī-qatīl
Type A-causative	Š-stem	ʔəqtəl-ə	ya-qəttil	ya-qtīl
Type B-causative		ʔəqəttəl-ə	ya-qəttil	ya-qəttīl
Type C-causative		ʔəqatəl-ə	ya-qat(t)il	ya-qatīl
Type A-t	T-stem	təqətl-ə	yī-tqəttəl	yī-tqətəl
Type B-t	Dt-stem	təqəttəl-ə	yī-tqəttəl	yī-tqəttəl
Type C-t	Lt-stem	təqatəl-ə	yī-tqat(t)əl	yī-tqatəl
Type A-t-causative	Št-stem	ʔəstəqtəl-ə	ya-stəqəttil	ya-stəqtīl
Type B-t-causative		ʔəstəqəttəl-ə	ya-stəqəttil	ya-stəqəttīl
Type C-t-causative		ʔəstəqatələ	ya-stəqat(t)il	ya-stəqat(t)il

The imperfect and jussive forms in Ge‘ez and other Ethiosemitic languages are similar in form to those found in Akkadian and the Modern South Arabian languages.

(55) Imperfect vs. jussive contrast in Ethiosemitic⁵⁰

	G-stem		D-stem		Š-stem	
	imperfect	jussive	imperfect	jussive	imperfect	jussive
Ge'ez	yi-qəttil	yi-qtīl	yi-qəttil	yi-qəttil	ya-qəttil	ya-qtīl
Tigré	li-qattil	li-qtal	li-qattil	li-qattil	la-qattil	la-qtīl
Amharic	yi-qətl	yi-qtəl	yi-qəttil	yi-qəttil	ya-qətl	ya-qtīl
Gafat	yi-qətil	yə-qtəl	yi-qittil	yə-qəttil	ya-qəttil	ya-qtīl
Muher	yi-qətl-u	yə-qtīl	yi-qəttil-u	yə-qəttil	ya-kəbr-u	ya-qtīl
Akkadian	i-qattal	i-qtul ⁵¹	u-parras	u-parris	u-šapras	u-šapris
Mehri	yə-qūtəl	yə-qtēl	ya-qátl-ən	ya-rökəb	yə-hənsūm	yə-hənsəm
Jibbali	y-qótəl	yó-qtəl	i-qótəl-ən	y-qótəl	iqétól	yéqtəl

Another general feature of Ethiosemitic is the loss of the ablaut alternation in T-stem forms of Type A (G-stem), Type B (D-stem) and Type C (L-stem) shown above in Ge'ez.

(56) T-stem ablaut⁵²

	Type A-t		Type B-t		Type C-t	
	perfect	imperfect	perfect	imperfect	perfect	imperfect
Arabic	iqātala	ya-qtatil-u	taqātala	ya-taqattal-u	taqātala	ya-taqātal-u
Aramaic	hitqəṭēl	yi-tqəṭēl	hitqattal	yi-tqattal		
Akkadian		i-qtattVI		u-qtattil		
Ethiosemitic						
Ge'ez	təqətl-ə	yi-tqəttəl	təqəttəl-ə	yi-tqəttəl	təqətəl-ə	yi-tqat(t)əl
Tigré	tīqattala	li-tqattal	tīqattala	li-tqattal	tīqātala	li-tqātal
Argobba	iqqəttəla	yi-qqəttəl	iqqəttəla	yi-qqəttəl	iqqəttələ	yi-qqəttəl
Harari	təqətəla	yi-tqətəl	təqētəla	yi-tqētəl	təqātəla	yi-tqātəl
Zway	təqətələ	yi-tqətəl	təqitələ	yitqitəl	təqətələ	yi-tqətəl
Gafat	təqəttələ	yi-tqəttəl	təqittələ	yi-tqittəl	təqəttələ	yi-tqəttəl
Soddo	təqəttəlo	yi-tqəttəl-u	təqittəlo	yi-tqittəl-u	təqəttəlo	yi-tqəttəl-u
Muher	təqəttələm	yi-tqəttəl-u	təqəttələm ⁵³	yi-tqəttəl-u	təqəttələm	yi-tqəttəl-u
Chaha	təqətələ	yi-tqətəl	təqətələ ⁵⁴	yi-tqətəl	təqətələ	yi-tqətəl

⁵⁰ Data for Ge'ez (Voigt 2007a), Raz (1983), Amharic (Leslau 2000), Gafat (Leslau 1956), Muher (Leslau 1981), Akkadian (Ungnad 1992), Mehri (Johnstone 1987), Jibbāli (Johnstone 1981)

⁵¹ preterite

⁵² Data from Arabic (Fischer 2002), Aramaic (Rosenthal 1995), Akkadian (Ungnad 1992), Ge'ez (Voigt 2007a), Tigré (Raz 1983), Argobba (Leslau 1997b), Harari (Leslau 1958), Zway (Leslau 1999), Gafat (Leslau 1956), Soddo (Leslau 1968), Muher (Leslau 1981) and Chaha (Rose 2007).

⁵³ The first or second root consonant is palatalized for some Type B T-stems in the perfect and imperfect but not in all other forms, e.g. perfect *təzəbbərəm*, imperfect *yižzəbbəru* and jussive *yazzəbbər* (Leslau 1981)

⁵⁴ Chaha has several unusual morphophonemic alternations, including consonant mutations, palatalization and labialization (cf. Rose 2007). Palatalization occurs in Type B perfect and imperfect forms.

That this development can be traced back to Proto-Ethiosemitic is clear because of the same development in all branches of Ethiosemitic. While similar developments have occurred in other branches of Semitic (see section 4.3.1.2.), in these branches and languages the changes have occurred only to a subset of the reflexive passive forms with /t/. For example, in Classical Arabic the simple T-stem occurs with an alternation between the perfect and imperfect although it is missing in both Dt- and Lt-stems. Both T-stem forms in Aramaic have lost the ablaut alternation, except that the imperfect base has been extended to the perfect in the T-stem and the perfect base has been extended to the imperfect. As is argued in section 4.3.1.2, comparisons suggest that the ablaut is original to these forms in West Semitic.

The common loss of ablaut in forms with the /t/ preformative contrasts with a set of changes which have affected the forms of the D- and Dt-stems leading to a wide variety of reflexes.

In most Ethiosemitic, including Ge'ez, type B verbs (D-stem) are distinguished from other verb types by “palatality”, following the terminology of Hetzron (1972), involving either ablaut or palatalization. The Ethiosemitic languages can be divided into several different groups with respect both to the distribution and character of this alternation. Palatality is most commonly found in the forms of the imperfect. With the exception of language where palatality is absent, the distribution of palatality is most restricted in Ge'ez and Tigrinya. In these two languages palatality occurs only in the imperfect of the basic and derived forms of type B verbs. In Tigrinya, palatality is not found in the imperfect of type B verbs nor in any of the gerundive verb forms.

(57) Languages with type B palatality only in the imperfect

		perfect	imperfect	jussive	imperative
Ge'ez (Voigt 2007a)	Type B	qəttəl-ə	yī-qəttil	yī-qəttil	qəttil
	Type B-t	təqəttəl-ə	yī-tqəttəl	yī-tqəttəl	təqəttəl
	Type B-a	ʔəqəttəl-ə	ya-qəttil	ya-qəttil	ʔəqəttil
	Type B-ast	ʔəstəqəttəl-ə	ya-stəqəttil	ya-stəqəttil	ʔəstəqəttil
Tigrinya (Leslau 1941)	Type B	qəttəl-ə	yī-qəttil	yī-qəttil	qəttil
	Type B-t	Təqəttələ	yī-qqəttəl	yī-qqəttəl	təqəttəl
	Type B-a	ʔəqəttəl-ə	ya-qəttil	ya-qəttil	ʔəqəttəl

There are thus two main reasons for assuming that palatality originated in the imperfect of type B (D-stem) verbs: (1) the imperfect exhibits palatality in all languages with this feature and (2) Ge'ez, the oldest Ethiosemitic language, only has palatality in the imperfect. Next to the imperfect, palatality is most commonly found in the perfect. However, there is evidence in the Outer South Ethiosemitic languages that the palatality in the perfect is a secondary development.

In addition to the imperfect, palatality is also found in the perfect form of many Outer South Ethiosemitic languages. The jussive and the imperfect typically do not display palatality. The imperfect and jussive are distinguished by the occurrence of ablaut, palatalization or both depending on the language. In Muher some type B verbs lack palatalization when the relevant consonants are not palatalizable, e.g. imperfect *yī-məzzix-u* ‘he chews’ vs. *yə-məzzix* ‘let him chew’ (Leslau 1981; see section 3.3.3 for discussion of palatalization in Muher). In Chaha palatality can be realized either as palatalization or by a vowel alternation.

(58) Palatality in the imperfect in Outer South Ethiosemitic

	<i>type</i>	<i>imperfect</i>	<i>jussive</i>	<i>root gloss</i>
Gafat (Leslau 1956)	B	yi-kimmir	yə-kəmmir	‘empiler’
	B-t	yi-tqibbəl	yə-tqəbbəl	‘recevoir’
	B-a	ya-qimmit	ya-qəmmit	‘cuire’
	B-at	ya-tkimmir	ya-tkəmmir	‘faire empiler’
Soddo (Leslau 1968)	B	yi-šikkīt-u	ye-šəkkīt	‘make’
	B-t	yi-tmirrəq-u	ye-tmərrəq	
	B-a	ya-lizzib-u	ya-ləzzib	
Muher (Leslau 1981)	B	yi-šəkkīt-u	yə-səkkīt	‘make’
	B-t	yi-žžəbbər-u	ya-zzəbbər	‘return’
	B-a	ya-šəggir-u	ya-səggir	
Chaha (Rose 2007)	B	ya-djəggir-ɪ ⁵⁵	ya-ddəggir	
		yi-jəpɪr	yə-dəpɪr	‘finish’
		yi-g ^y əniz	yə-gəniz	‘cut in big slice’
		yi-met ^y ir	yə-mət ^y ir	‘select’
	B-t	yi-trək ^y ər	yə-trəkər	‘be lost in law suit’

While the forms of the perfect contain palatality, the corresponding negative perfect forms do not in languages like Soddo and Muher. The negative perfect may be construed as representing a more conservative form that has not undergone the innovative changes of the affirmative perfect. The retention of the earlier perfect form has a parallel in the retention of the Proto-Semitic preterite in the negative perfect form in Arabic, e.g. *qatala* ‘he killed’ vs. *lam yaqtul* ‘he didn’t kill’ (cf. Akkadian preterite *iprus*).

(59) Absence of palatality in the negative perfect in Outer South Ethiosemitic

	<i>type</i>	<i>perfect</i>	<i>negative perfect</i>	<i>root gloss</i>
Soddo (Leslau 1968)	B	tikkələ	al-təkkələ	
Muher (Leslau 1981)	B	šəkkətəm	an-səkkətə	‘make’
		nəqq ^y əsəm	an-nəqqəsə	‘limp’
	B-t	təžəbbərəm	an-tizəbbərə	‘return’
	B-a	ašəggərəm	annasəggərə	
	B-at	adjəggərəm	annaddəggərə	

The palatality feature has been extended to the forms of the perfect but not to other verbals forms, including the negative perfect.

The spread of the palatality occurs on a form by form basis. The extent of the spread of palatality differs according to the language. The spread of palatality is the greatest in the Transverse branch of South Ethiosemitic. In Argobba palatality is found in both affirmative and negative perfect forms and the imperfect forms as well as the gerund.

⁵⁵ The preformative /t/ assimilates in a variety of ways to the following consonant (see Leslau 1981:9).

(60) Type B verbs in Argobba (Leslau 1997b)

	Type B	Type B-t	Type B-a
<i>perfect</i>	neggəda	ibbeddəla	a-bettənə
<i>negative</i>	al-neggəda		
<i>imperfect</i>	yineggid	yibbeddəl	yabəttin
<i>compound</i>	yineggidəl	yibbeddələl	yabəttinəl
<i>negative</i>	ayneggid-u		
<i>jussive</i>	yinəggid	yibbədəl	yabəttin
<i>imperative</i>	nəggid	təbədəl	abəttin
<i>gerund</i>	neggido	ibbeddildo	abəttindo
<i>compound</i>	neggidul	ibbeddildul	abəttindul
<i>verbal noun</i>	mənəggəd		
<i>root gloss</i>	‘trade’	‘ill-treat’	‘scatter’

Harari and the East Gurage languages exhibit even further developments in this direction extending palatality to the jussive forms and throughout the complete verbal paradigm. Harari exhibits palatality in all forms, including the jussive and verbal noun where Argobba lacks palatality.

(61) Palatality in Type B verbs in Harari (Leslau 1958)

	Type B	Type B-t	Type B-a
<i>perfect</i>	šēməqa	təbērəqa	ačērəqa
<i>imperfect</i>	yišimqi	yitbērəq	yačīrqi
<i>compound</i>	yišimqāl		yačīrqāl
<i>jussive</i>	yəšəmqi	yətbērəq	yačērqi
<i>imperative</i>	šəmqi	təbērəq	ačērqi
<i>verbal noun</i>	məšəməq	mətbērəq	mačērəq
<i>root gloss</i>	‘hide’	‘be drawn’	‘strangle’

The same basic pattern is also found in Zway where palatality occurs in all Type B forms.

(62) Palatality in Type B verbs in Zway (Leslau 1999)

	Type B	Type B-t	Type B-a
<i>perfect</i>	mīzənə	təfīqərə	ačīrəqə
<i>negative</i>	al-mīzəno	al-tifīqəro	al-čīrəqo
<i>imperfect</i>	yimīzin	yitfīqər	yačīrq
<i>compound</i>	yimīzinal	yitfīqərəl	yačīrqəl
<i>negative</i>	aymīzinu	aytifīqəru	ayčīrqu
<i>jussive</i>	yəmēzinu	yətfēqəru	yačēriqu
<i>imperative</i>	mēzin	təfēqər	ačēriq
<i>gerund</i>	mīzənə-m		
<i>verbal noun</i>	wəmēzīnat	wətfēqərat	wačēriqat
<i>root gloss</i>	‘weigh’	‘play’	‘finish’

The question remains as to the mechanism by which the palatality of the imperfect type B verbs has been extended to other verb forms. The simplest explanation would appear to be that the specific feature of palatality has been extended. The palatality alternation has been extended at the same time as the thematic vowel alternation between the perfect and imperfect has been maintained, e.g. Argobba *neggəd-ə* ‘he traded’ < *nəggəd-ə vs. *yi-neggid* ‘he trades’ (Leslau 1997b). Interestingly, the vowels appear to be treated separately according to the processes observed. The extension does not involve the entire vowel melody. Another possibility that must be entertained is, as has been argued in the other cases of leveling, that the relevant level for the analogy is that of the stem. Under this scenario, the forms of passive/reflexive type B verbs with preformative /t/ must play a critical role. As described above, the passive/reflexive forms in Ethiosemitic do not have ablaut alternations for the thematic vowel in prefix and suffix conjugation forms. This lack of alternation may have created a situation conducive to the extension of palatality by the extension of the imperfect stem of passive/reflexive B-type verbs. The stem form of the type B-t imperfect may have first been extended to the Type B-t perfect and then from the Type B-t perfect to the type B perfect.

(63) Scenario for the extension of palatality by stems

		<i>original</i>	<i>stage 1</i>	<i>stage 2</i>	<i>final</i>
Type B-t	<i>imperfect</i>	yi-t-qettəl			yi-t-qettəl
	<i>perfect</i>	tə-qəttəl-ə	> tə-qəttəl		tə-qəttəl
Type B	<i>perfect</i>	qəttəl-ə		> qəttəl-ə	qəttəl-ə
	<i>imperfect</i>	yi-qəttil			yi-qəttil

In marked contrast to the gradual spread of palatality described above, this feature has been eliminated in Type B verbs in Amharic and Tigré, representing the two main branches of Ethiosemitic.

(64) Lack of palatality in type B in Tigré (Raz 1983) and Amharic (Leslau 2000)

Tigré	Type B	Type B-t	Type B-a
<i>perfect</i>	qattal-a	ti-qattal-a	?ā-qattal
<i>imperfect</i>	li-qattil	li-t-qattal	lā-qattil
<i>jussive</i>	li-qattil	li-t-qattal	lā-qattil
<i>imperative</i>	qattil	ti-qattal	?ā-qattil
Amharic			
<i>perfect</i>	qəttəl-ə	tə-qəttələ	a-qəttələ
<i>imperfect</i>	yi-qəttil	yi-qqəttəl	ya-qəttil
<i>compound</i>	yi-qəttil-all		
<i>jussive</i>	yi-qəttil	yi-qqəttəl	ya-qəttil
<i>imperative</i>	qəttil	tə-qəttəl	a-qəttil
<i>gerund</i>	qəttil-o	tə-qəttil-o	a-qəttil-o

The underlying mechanisms would appear to be much the same as that involved in the spread of palatality. In both Tigré and Amharic it would be reasonable to assume that the imperfect without palatality is due to the extension of the stem of the imperative or jussive into the imperfect. The differences between the Ethiosemitic languages can to a large extent be traced to the choice of stems, a situation basically similar to that already described above for other Semitic languages. These changes, whether by stem or by specific alternation, are also clearly morphological in nature.

4.3.2. Phonology and morphology in the restructuring of some Arabic dialects

The changes described in the previous section were limited in scope, often involving a single derived stem and only a subset of its forms. Several dialects have experienced much more drastic restructuring of the verbal system. This change may be a result of independent phonological changes that have neutralized the original ablaut contrast. In other cases the losses are due solely to analogical processes that have eliminated stem allomorphy. Thus there are two basic paths for the loss of ablaut: a phonological one and a morphological one.

All the changes described in the previous section were limited to a single derived form and even then not always to every example of that derived stem. This description, however, is too simplistic as the two types of processes probably rarely occur independently of each other. A phonological change likely may serve as a catalyst to analogy by providing pairs in which the ablaut alternation is lost. This can be conceived of as a two-step process. For example, a morphological contrast, such as that between the perfect and imperfect, is originally marked by a set of ablaut alternations. The first step involves the loss of one of the ablaut alternations due to a phonological change. Then, in a second step, cases where the two forms are no longer distinguished morphologically can serve as the basis for the analogical extension of the non-alternating forms.

In this section, we will first deal with a case of the loss of ablaut in derived stem forms in the Maghrebi (Northwest African) dialects of Arabic that appears to be mainly phonologically motivated. The dialects have experienced some of the most drastic changes to the vowel system. Then, we will examine cases where the loss of ablaut clearly has both phonological and morphological components.

4.3.2.1. Phonological neutralization: changes in the verbal system of dialects of the Maghreb (Northwest Africa)

The Arabic dialects spoken in Morocco, Algeria and Tunisia have changed in a particularly drastic fashion, especially with respect to the vocalic and prosodic systems. These changes have had important consequences for the morphology of the verb because sound changes have neutralized many of the original phonological contrasts.

The vowel system of Classical Arabic and that typically reconstructed for Proto-Semitic consists of three cardinal vowels /a, i, u/ along with long versions of those same vowels /ā, ī, ū/ and the diphthongs /ay, aw/. In Moroccan Arabic (Harrell 1962) the vowel system has been greatly modified. For example, the long vowels commonly have reflexes as “stable vowels”, vowels which are not elided. The following Moroccan data comes from Harrell, but the historical work is my own.

(65) Long vowel reflexes in Moroccan Arabic ($\bar{a} > a$, $\bar{i} > i$, $\bar{u} > u$)

Classical Arabic		Moroccan Arabic	
māt-a	>	mat	‘he died’
ʔallāh	>	l̥lah	‘God’
θānī	>	tani	‘second’
ya-bīʕ-u	>	i-biʕ	‘he sells’
kabīr	>	kbir	‘big, great’
maḍrūb-īna (acc.)	>	məḍr̥ub-in	‘beaten (pl.)’
ʕūd	>	ʕud	‘wood’
ya-qūl-u	>	i-qul	‘he says’

The other main source of “stable vowels” is the diphthongs /ay/ and /aw/.

(66) Diphthong reflexes in Moroccan Arabic (ay > i, aw > u)

Classical Arabic		Moroccan Arabic	
sayf	>	sif	‘sword’
baʕaytu	>	b̥git	‘I want’
mawt	>	mut	‘death’
lawn	>	lun	‘color’

There are also a few examples where “stable vowels” go back to an original short vowel, but these would appear to be exceptions for the most part—in some cases possibly due to the influence of Standard Arabic. One striking set of exceptions is the independent pronouns in which short vowels are remarkably well preserved.

(67) Moroccan independent pronouns (a > a, i > i, u > u)

Classical Arabic		Moroccan Arabic	
huwa	>	huwa	‘he’ 3MSG
hiya	>	hiya	‘she’ 3FSG
ʔanta	>	nta	‘you’ 2MSG
ʔanti	>	nti	‘you’ 2FSG
ʔanā	>	ana	‘I’ 1SG
hum		huma	‘they’ 3PL
ʔantum		ntuma	‘you’ 2PL
naḥnu		ḥna	‘we’ 1PL

In general the short vowels were elided or became the vowel /ə/, represented by Harrell as <e>. In addition to /ə/, original /a/ sometimes becomes /ã/ adjacent to a pharyngeal consonant, a sound which according to Harrell is contrasted, if at all, in a very small set of pairs such as ḥāll < CA ḥall-a ‘he opened’ and ḥəll < CA ḥullu ‘open!’, and original /u/ sometimes becomes /o/ in closed syllables, e.g. moʕtabar < CA muʕtabar ‘excellent’, oxra < CA ʔuxrā ‘other (FSG)’, koll < CA kull ‘all’ and šəfthom < CA šuf-tu-hum ‘I saw them’. In the vast majority of cases the

contrast between the short vowels is completely neutralized. We can thus present the somewhat simplified chart of vowel correspondences below.

(68) Correspondences between Classical and Moroccan Arabic

Classical Arabic	Moroccan
ā	a
ī	i
ay	
ū	u
aw	
a	ǎ
	ə
i	
u	o

These developments have had a profound effect on the morphology of Moroccan Arabic and other dialects of Northwest Africa. The ablaut alternation between perfect and imperfect forms has been completely eliminated, except in the case of some weak verbs. This not only true of Moroccan Arabic as described by Harrell (1962), but also for other dialects of Morocco, Algeria and Tunisia as well as Andalusian Arabic (Corriente 1977) and to some extent Maltese.

(69) Stem alternations in Classical Arabic and Moroccan Arabic

	Classical Arabic		Moroccan Arabic	
	Perfect	imperfect	perfect	imperfect
Form I (Basic Stem)	qabar-a qabir-a qabur-a	ya-qbar-u ya-qbir-u ya-qbur-u	qbər	i-qbər i-qbər
Form VIII (T-stem)	iqtabar-a	ya-qtabir-u	qtabər, təqbər, ttəqbər	i-qtabər, i-təqbər, i-ttəqbər
Form II (D-stem)	qabbar-a	yu-qabbir-u	qəbbər	i-qəbbər
Form V (Dt-stem)	taqabbar-a	ya-taqbbar-u	tqəbbər	i-tqəbbər
Form III (L-stem)	qābar-a	yu-qābir-u	qabər	i-qabər (i-qibər)
Form VI (Lt-stem)	taqābar-a	ya-taqābir-u	tqabər	i-tqabər
Form IV (Š-stem)	?aqbar-a	yu-qbir		
Form X (Št-stem)	istaqbar-a	yu-staqbir	stəqbər	i-stəqbər
Form VII (N-stem)	inqabar-a	ya-nqabiru	nqbər	i-nqbər

For the most part the vowel correspondences in (68) along with the widespread loss of final short vowels common to most Arabic Dialects can relate Classical Arabic forms to the forms in Moroccan Arabic.

(70) Reflexes of *ya-qbur in Moroccan Arabic

	Classical Arabic		Moroccan Arabic		root gloss
	perfect	imperfect	perfect	imperfect	
u > o	daxal-a	ya-dxul-u	dxəl	i-dxol	‘enter’
	sakan-a	ya-skun-u	skən	i-skon	‘live, dwell’
	sakat-a	ya-skut-u	skət	i-skot	‘be silent’
	saxan-a	ya-sxun-u	sxən	i-sxon	‘be warm’
	xaraj-a	ya-xruj-u	xrəž	i-xrož	‘go out’
u > ə	katab-a	ya-ktub-u	ktəb	i-ktəb	‘write’
	θaqab-a	ya-θqubu	tqəb	i-tqəb	‘pierce’
	rabat	ya-rbut/ya-rbit	rət	i-rət	‘tie’
	ṭalab-a	ya-ṭlub-u	ṭləb	i-ṭləb	‘request, seek’
	ḥasab-a	ya-ḥsub-u	ḥsəb	yə-ḥsəb	‘count’

The short vowels are lost in open syllables and typically become /ə/ in closed syllables, although *u sometimes becomes o and *a becomes /ä/ when adjacent to the pharyngeal consonants /ħ/ and /ʕ/. Thus, the only cases where an ablaut alternation is maintained is in the basic stem where the *u has become /o/. The CA form *yaqbur* has both reflexes as *iqbər* and *iqbor*, so in many cases even with original *u the alternation has been eliminated.

In all other forms, both basic and derived, there is no ablaut alternation, although the addition of a suffix often affects the stem shape. In the perfect form the presence or absence of vowels can be accounted for by the vowel correspondences described above and a rule of vowel syncope in open syllables that works cyclically from right-to-left.

(71) Perfect inflected forms of the basic stem verbs

3MSG	katab-a	> kətəb >	ktəb
3FSG	katab-at	> kətəb-ət >	kətəb-ət
2SG	katab-ta (m)	> kətəb-ti >	ktəb-ti
	katab-ti (f)		
1SG	katab-tu	> kətəb-t >	ktəb-t
3PL	katab-ū	> kətəb-u >	kətəb-u
2PL	katab-tum (m)	>kətəb-tiw >	ktəb-tiw
	katab-tunna (f)		
1PL	katab-nā	> kətəb-na >	ktəb-na

The imperfect forms also exhibit the same basic phonological changes. Additionally, epenthesis serves to break up consonant clusters of three or more created by syncope. The result of this change is to disrupt, at least on the surface level the original shape of the imperfect stem that occurs both with the original shape -C1C2vC3 and the innovative shape -C1vC2C3.

(72) Imperfect inflected forms of the basic stem verbs

Classical Arabic

ya-ktub-u	> yə-ktəb > i-ktəb >
ta-ktub-u	> tə-ktəb >
ta-ktub-u	> tə-ktəb >
ta-ktub-ī	> tə-ktb-i > tə-kətb-i (epenthesis) > t-kətb-i (syncope) >
ʔa-ktub-u	> na-ktub (by analogy) > nə-ktəb >
ya-ktub-ūna	> ya-ktub-ū (by analogy) > yə-ktb-u > i-kətb-u (epenthesis) >
ta-ktub-ūna	> ta-ktub-ū (by analogy) > tə-ktb-u > tə-kətb-u > t-kətb-u >
na-ktub-u	> na-ktub-ū > nə-ktəb-u > n-kətb-u (syncope) >

Moroccan Arabic

i-ktəb
tə-ktəb
tə-ktəb
t-kətb-i
nə-ktəb
i-kətb-u
t-kətb-u
n-kətb-u

The derived stem forms similarly show a loss of ablaut between the perfect and imperfect forms. These forms also show the effects of the widespread neutralization of short vowel contrasts. The same loss of ablaut is found in almost all Western varieties of Arabic from Tunisia to Mauritania. The tables below exhibit the same basic phonological developments.

(73) Perfect and imperfect forms of derived stems in Maghrebi (Western) Dialects

	Tlemcen (Marçais 1902)		Mzāb (Grand'Henry 1976)		Cherchell (Grand'Henry 1972)	
	perfect	Imperfect	perfect	imperfect	perfect	imperfect
Basic	ktəb	yə-kteb	ktəb	yə-ktəb	ktəb	yə-ktəb
T-stem	ftrōq	yə- ftrōq	PL žtəmʕ-u	PL i-žtəmʕ-u	štḡəl	yī-štḡəl
D-stem	kéddeb	i-kéddeb	dāḥḥəl	i-dāḥḥəl	dəḥḥəl	yī-dəḥḥəl
Dt-stem	tkélləm	yə-tkélləm	thättəm	i-thättəm	tkəlləf	yī-tkəlləf
L-stem	rāqeb	i-rāqeb	ḥārāb	i-ḥārāb	ḥārāb	yī-ḥārāb
Lt-stem	trārem	yə-trārem	PL tnāsb-u	PL i-tnāsb-u	tsāmāḥ	yī-tsāmāḥ
Š-stem	<i>missing</i>		<i>missing</i>		<i>missing</i>	
Št-stem	ssékber	yə-ssékber	stāḥbār	?	stāḥsən	yī-stāḥsən
N-stem	nsrōq	yə-nsrōq	<i>missing</i>		n ^ə ḡrāḥ	yə-nḡrāḥ

	Djidjelli (Marçais 1956)		Jewish Tunish (Cohen 1975a)		Mauritania (Cohen 1963)	
	perfect	imperfect	perfect	imperfect	perfect	imperfect
Basic	rféd	yə-rféd	ktəb	yə-ktəb	ktəb	yə-ktəb
T-stem	rtāḥ	yə-rtāḥ	t ^ə fzāʕ	yə-t ^ə fzāʕ	əštrāk	y-əštrāk
D-stem	šəbbər	i-šəbbər	bəddəl	ibəddəl	nəggāz	i-nəggāz
Dt-stem	tkəlləm	i-tkəlləm	tkəlləm	yə-tkəlləm	tʕallam	yə-tʕallam
L-stem	nāzōʕ	i-nāzōʕ	fātən	i-fātən	gābəl	i- gābəl
Lt-stem	tfāreḡ	yə-tfāreḡ	tʕāzəb	yə-tʕāzəb	tṛāhən	yə-tṛāhən
Š-stem	<i>missing</i>		<i>missing</i>		sagbāl	i- sagbāl
Št-stem	ssəḥbār	yə-ssəḥbār	štāʕzəb	yə-štāʕzəb	staktar	yə-staktar
N-stem	ndrəb	yə-ndrəb	<i>missing</i>		nzraḥ	yə-nzraḥ

There is no reason to assume that this loss of ablaut has any morphological motivation. It would appear to be completely sound driven.

Maltese and Tunisian dialects

Maltese, which shares many features with the Western Arabic dialects, has significantly diverged from them and other Arabic dialects because of its long isolation. Maltese lacks the degree of reduction in vowels, maintaining the contrasts between short vowels and the presence of short vowels in open syllables. Still, we find the same basic losses, syllabification and innovations in the inflection of the verb.

(74) Inflection of verbs in Maltese (Borg 1978) and Moroccan Arabic (Marçais 1977)

	Maltese	Moroccan	Maltese	Moroccan
3MSG	kitep	ktəb	yi-ktep	yə-ktəb
3FSG	kidb-et	kətb-ət	ti-ktep	tə-ktəb
2SG	ktip-t	ktəb-t	ti-ktep	tə-ktəb
1SG	ktip-t	ktəb-t	ni-ktep	nə-ktəb
3PL	kidb-u	kətb-u	yi-ktb-u	yə-ktb-u
2PL	ktip-tu	ktəb-tu	ti-ktb-u	tə-ktb-u
1PL	ktib-na	ktəb-na	ni-ktb-u	nə-ktb-u

It is clear that Maltese belongs to the larger Western Arabic dialect group. Maltese has almost exactly the same set of inflectional affixes as the dialects of Tunisia, Algeria and Morocco. Maltese has generalized a prefixed {n-} as the marker of the first person in the imperfect replacing the proto-Semitic/Classical Arabic prefix {ʔ-} and the suffix {-u} as the general marker of the plural. In the imperfect all plural forms have this suffix including the 1PL, which has the form *na-ktub-u* (the *u* in this form is not the same *u* that occurs in Maltese and is instead a marker of mood which is almost universally lost in the dialects). In the 2PL form of the perfect it would also appear that the suffix {-u} (with the allomorph {-w} after a vowel) has spread to this form in both Maltese and Moroccan Arabic. In addition to the affixes, Maltese also follows the Northwest African dialects in terms of the syllabification of the stems.

(75) Stem shape in Maltese and other Arabic dialects

Aspect	Context	Maltese	Maghrebi	Egyptian	Saudi
Perfect	3MS	Cv.CvC			
	w/ C-initial suffix	CCvC	CCvC	Cv.CvC	Cv.CvC
	w/ V-initial suffix	CvCC	CvCC	Cv.CvC or CvCC	
Imperfect	w/o suffix or w/ C-initial suffix	CCvC	CCvC	CCvC	CCvC
	w/ V-initial suffix	CCC	CCC		CCVC or CCC

Unlike most Eastern dialects the first vowel of the perfect stem is usually lost in Maltese as it is in many Northwest African dialects (Harrell 1962, Grand'Henry 1972, Cohen 1975a, Marçais

1977). Maltese also deletes the vowel in open syllables created by the addition of a vowel-initial suffix more consistently than is the case in many Eastern dialects.

Maltese has also eliminated ablaut alternation in many forms, although not quite to the extent of related varieties. Not surprisingly, given the developments discussed so far, the derived stem verbs have experienced the most extensive loss of thematic vowel alternations. In all derived forms the stem is invariant, although consonants have had a great influence on neighboring vowels, giving a variety of vocalization. The chart below provides the most neutral vocalization of the verbs.

(76) Imperfect and perfect forms of the Maltese derived stems

	<i>perfect</i>	<i>imperfect</i>
Form VIII (T-stem)	qtabar	yi-qtabar
Form II (D-stem)	qibber	i-qibber
Form V (Dt-stem)	tqibber	yi-tqibber
Form III (L-stem)	qīber	i-qīber
Form VI (Lt-stem)	tqīber	yi-tqīber
Form IV (Š-stem)	<i>missing</i>	
Form X (Št-stem)	stiqber	yi-stiqber
Form VII (N-stem)	nkiser	yi-nkiser

Still, ablaut alternations are found in many basic stem forms in Maltese as they are also in Tunisia. Unlike the Algerian dialect of Djidjelli (Marçais 1956:158) where ablaut has been completely lost, some original alternations have been maintained in Maltese and the closely related Tunisian dialects. Like other Western dialects, Tunisian dialects in many cases have neutralized the contrast between short vowels leading to the concurrent loss of ablaut. The most common vocalization is that with <i>.</i>

(77) Tunisian verbs without ablaut (Stumme 1896)

<i>class</i>	<i>perfect</i>	<i>imperfect</i>	<i>root gloss</i>
i	lbis < CA labis-a	yí-lbis < CA ya-lbas	'dress oneself'
	ktíb < CA katab-a	yí-ktib	'write'
	kđib	yí-kđib	'lie'
	brik	yí-brik	'kneel'
a	dfaṣ	yí-dfaṣ	'pay'
	lṣab	yi-lṣab	'play'
e	ṣāref	yá-ṣref	'know'
	ḥmél	yá-ḥmel	'carry'
u	ḥkum	yá-ḥkum	'judge'
y	qbýl	yá-qbyl	'receive'

Somewhat less commonly, an ablaut alternation is maintained.

(78) Tunisian verbs without ablaut (Stumme 1896)

<i>class</i>	<i>perfect</i>	<i>imperfect</i>	<i>root gloss</i>
a ~ u	ħráž	yú-ħruž	‘exit’
	đhár	yú-đhur	‘seem’
	ftár	yú-ftur	‘have breakfast’
	tbáħ	yú-tbuħ	‘cook’
e ~ u	qtél	yú-qtul	‘kill’
a ~ o	qřád	yó-qřod	‘sit’
	háráb	yó-hrob	‘flee’
i ~ u	skit	yú-skut	‘be silent’
	skin	yú-skun	‘live’

The ablaut is fairly consistent in doubled verbs ($C_1=C_2$), e.g. PERF šédd vs. IMPF *i-šidd* ‘contain’.

Maltese also exhibits a number of forms that still exhibit some type of ablaut alternations, although even in Maltese most verbs have invariant thematic vowels. In many cases, the ablaut alternations occur in the same verbs as in related Tunisian dialects.

(79) Ablaut in Maltese (data from Sutcliffe 1936, Tunisian data from Stumme 1896)

<i>class</i>	<i>perfect</i>	<i>imperfect</i>	<i>root gloss</i>
a ~ o	daħal	ji-dħol	‘enter’ (cf. Tunisian <i>yú-dħul</i>)
	ġabar	ji-ġbor	‘gather’
	qagħad	jo-qgħod	‘stay’ (cf. Tunisian <i>yó-qřod</i>)
	tebaħ	ji-tboħ	‘cook’ (cf. Tunisian <i>yú-tbuħ</i>)
e ~ o	siket	ji-skot	‘be silent’ (cf. Tunisian <i>yú-skut</i>)
	tines	ji-tnos	‘weep’

Despite the loss of thematic vowel ablaut in many forms, developments in Maltese have introduced new types of vowel alternation. Sutcliffe (1936) describes sixteen different vowel combinations for perfect and imperfect pairs, with six distinct vocalization types for perfect forms and eight for imperfect forms.

(80) Vocalizations of Maltese verbs (adapted from Sutcliffe 1936:74)

<i>perfect</i>	<i>imperfect</i>
1. qatal	1. ja-qtal, 2. ji-qtal, 3. ji-qtol, 4. jo-qtol
2. qatel	1. ja-qtel, 2. jo-qtol
3. qetel	1. je-qtel, 2. ji-qtel
4. qetal	1. je-qtal, 2. ji-qtal, 3. ji-qtol, 4. jo-qtol
5. qitel	1. ji-qtel, 2. jiqtol
6. qotol	1. ji-qtol, 2. jo-qtol

In Classical Arabic there were originally three different vocalizations for the perfect (qabar-a, qabir-a and qabur-a). In Maltese, as laid out by Borg (1978), these four vocalizations have given rise to six new types (qabar, qebar, qaber, qiber, qeber and qobor). In many cases the new vocalizations can be traced back to more than one of the original vocalization types such that the original vocalization classes have very little significance for the current vocalization types.

(81) Vocalization of the Maltese perfect forms (Borg 1978)

patterns		examples		gloss
original	new form	CA	Maltese	
qabar	qabar	xabaṭ-a	habit	‘he collided’
		faḍal-a	fadal	‘it was left over’
	qebar	fataḥ-a	fetah	‘he opened’
		sabaq-a	saba?	‘he overtook’
	qaber	ġafar-a	hafer	‘he forgave’
		xaraj-a	harej	‘he went out’
	qiber	katab-a	kiteb	‘he wrote’
		daras-a	di-res	‘he studied’
		nazal-a	nizel	‘he descended’
	qeber	ġalab-a	ēleb	‘he overcame’
		xalaṣ-a	heles	‘he finished’
	qobor	ḥalam-a	holom	‘he dreamed’
ṡarak-a		ōrok	‘he rubbed’	
qabir	qiber	labis-a	libes	‘he wore’
		rakib-a	rikeb	‘he rode’
	qeber	waḥil-a	wheel	‘he got stuck’
		fahim-a	fēm	‘he understood’
	qobor	šarib-a	šorob	‘he drank’
ṡajib-a		ōjob	‘he pleased’	
qabur	qobor	raxuṣ-a	rohos	‘it got cheap’
		kaṡur-a	kotor	‘it increased’

The most important factor in determining the quality of the vowels is whether or not the adjacent consonants were originally pharyngeal or emphatic (see Sutcliffe 1936:74). This distribution is similar to the distribution of vowels in Northwest African dialects. One big difference being that synchronically speaking the occurrence of /ā/ in Algerian dialect of Cherchell (Grand’Henry 1972), for example, is predictable, while in Maltese because of considerable mergers and shifts involving pharyngeal and emphatic consonants the original trigger is often lost and thus the occurrence of the vocalizations is unpredictable.

Developments in Maltese have largely effaced the original system of ablaut due to phonological neutralizations and created a new and equally complex system of vowel alternations by other phonological processes including the influence of consonants on vowels and the loss of certain consonantal contrasts. In all of the changes, the primary driving force would appear to be phonological and not morphological.

4.3.2.2. The loss of ablaut in Egyptian Arabic

Cairene Arabic has also experienced the widespread loss of ablaut alternations. Unlike the cases in the previous section, the motivation in these cases appears to be more complicated with an important morphological component, although as in the cases above these two motivations do not occur entirely independent of each other and are to some extent both involved.

Ablaut alternations are relatively well preserved in the Cairene dialect. Although the character has changed due to the weakening of the opposition between /i/ and /u/ in many Egyptian dialects (see Woidich 1980:207). Still ablaut alternations are found with the majority of basic stem verbs, the active a ~ i/u and stative i/u ~ a being the most common.

(82) Ablaut in basic stem verbs in Cairene Arabic (data from Woidich 2006:63)

<i>type</i>	<i>perfect</i>	<i>imperfect</i>	<i>root gloss</i>
a ~ i/u	katab	yi-ktib	'write'
	ʔafal	yi-ʔfil	'close'
	xarag	yu-xrug	'exit'
a ~ a	ṭabax	yu-ṭbux	'cook'
	ḍarab	yi-ḍrab	'beat'
	ḥafaz	yi-ḥfaz	'keep'
i/u ~ a	samaḥ	yi-smaḥ	'allow'
	kitir	yi-ktar	'become many'
	šugur	yi-šgar	'become small'
i ~ i	fihim	yi-fham	'understand'
	širib	yi-šrab	'drink'
	nizil	yi-nzil	'descend'
i ~ u	libis	yi-lbis	'dress oneself'
	sikit	yi-skut	'be silent'
	sikin	yi-skun	'live, dwell'

The situation in basic stem verbs contrasts sharply with the situation in the derived stems where ablaut alternations have generally been lost. Ablaut alternations have only been retained in Form VII (N-stem) and Form VIII (T-stem), all other alternations have been lost. A phonological influence can be discerned in forms with guttural and pharyngealized consonants. The vocalization of verbs with one of these consonants is typically /a/, e.g. *ballaġ* 'he informed' and *yi-ballaġ* 'he informs'. The imperfect forms would have originally had an /i/ which has become /a/ under the influence of the guttural consonant (CA *yi-balliġ* > Cairene *yi-ballaġ*). This phonological process led to a loss of ablaut in a large subset of verbs. In some derived forms, this might have set up an analogy (*yi-ballaġ*:*ballaġ*::*yi-kammil*:*kammil*) by which the loss of the ablaut could precede morphologically to verbs without a guttural or pharyngealized consonant. The imperfect stem was extended to the perfect on the model of guttural and pharyngealized verbs.

(83) The derived stems of Cairene Arabic (data from Woidich 2006)

	patterns		examples		
	perfect	imperfect	perfect	imperfect	basic meaning
Form VIII (T-stem)	iqtabar itqabar	yi-qtibir yi-qtabar yi-tqibir	iftakar iṣṭaḡal itkatab itmasak	yi-ftikir yi-ṣṭaḡal yi-tkitib yi-tmisik	‘think’ ‘work’ ‘be written’ ‘be seized’
Form II (D-stem)	qabbar qabbir	yi-qabbar yi-qabbir	ballaḡ xallaṣ kammil fahhim	yi-ballaḡ yi-xallaṣ yi-kammil yi-fahhim	‘inform’ ‘finish’ ‘complete’ ‘explain’
Form V (Dt-stem)	itqabbar itqabbir	yi-tqabbar yi-tqabbir	itṣallaḥ ittabbil	yi-tṣallaḥ yi-ttabbil	‘be repaired’ ‘be peppered’
Form III (L-stem)	qābir qōbar qēbar	yi-qābir yi-qōbar yi-qēbar	sāfir lāḥiz sōra? ʔēlaṭ	yi-sāfir lāḥiz yi-sōra? yi-ʔēlaṭ	‘travel’ ‘notice’ ‘black out’ ‘Krampfadern bilden’
Form VI (Lt-stem)	tqābar tqābir	yitqābar yi-tqābir	itdāra itʔābil	yi-ddāra yi-tʔābil	‘hide’ ‘meet’
Form X (Št-stem)	isatqbar istaqbir	yi-staqbar yi-staqbir	istaṭraf istaʕbaṭ istaxdim istafhim	yi-staṭraf yi-staʕbaṭ yi-staxdim yi-stafhim	‘find nice’ ‘find foolish’ ‘use’ ‘ask’
Form VII (N-stem)	inqabar	yi-nqabar	inkatab	yi-nkitib	‘be written’

4.4. Conclusions

This chapter dealt with two important ways in which the system of derived stems has been influenced by other linguistic developments. First, meaning was shown to play a role in the loss and retention of verb forms. Second, analogy and, specifically, leveling were shown to influence the existing alternations. Leveling between tense forms is a recurrent type of change that has occurred at many stages and branches of the Semitic family. Because of the recurrent quality of the change, it is reasonable to assume a similar process was operational in Proto-Semitic and earlier stages.

The common occurrence of leveling is also interesting because of what it means for the role of root and pattern representations. Leveling typically has the result of obscuring the original patterns. Thus a pattern or melody generalization becomes more restricted in its application. The existence of a regular pattern does not seem either to inhibit these processes or to play a role in restoring lost alternations. The changes do not seem to make any crucial reference to these types of representations. They proceed largely indifferent to roots and patterns.

Chapter 5.

The development of new verbal forms from non-verbal forms

5.1. Introduction

The system of root and pattern morphology characteristic of the Semitic verbal system has developed in a dynamic and open manner. The loss of patterns and alternations has not always led to the decay of the nonconcatenative character of the morphology. Instead, the introduction of new patterns and alternations has offset the loss of earlier patterns and has contributed to the continued vitality of the complex system of verbal morphology. In Chapter 2 I examined how the loss of affixes can lead to the reinterpretation of conditioned phonological alternations as meaningful morphological ones. In this chapter I turn to the reinterpretation of non-verbal forms as verbal ones, thus incorporating pre-existing alternations into the verbal system. These two processes, the morphologization of nonlinear phonological alternations and the reanalysis of non-verbal forms, are closely connected in many cases and have worked together to expand the large number of nonlinear alternations present in the verbal system and reinforce the root-and-pattern character of the morphology.

While characteristic of both nominal and verbal morphology, in a number of meaningful ways root-and pattern morphology is more closely connected to verbs than nouns. Verbs as a word class have the potential to include a large number of productive inflectional and derivational forms including the constellation of tense, aspect and mood distinctions in addition to common valence changing alternations (causative, factitive, passive, etc.). This diversity of forms would seem to be a necessary prerequisite for a root-and-pattern analysis. In turn, the variety and productivity of verbal alternations can lead to the expansion of a previously more limited alternation.

The primacy of the verb in root-and-pattern morphology is also supported by asymmetries between the classes of nouns and verbs. While every verb stem in the older Semitic languages is involved in the root-and-pattern system, many nouns occur largely outside the system. Nouns in the Semitic languages can be divided into two classes, primary nouns and derived nouns. The derived nouns as a class have more or less predictable meanings based on the basic root and the patterns involved. Primary nouns do not always have related verbal roots and have unpredictable patterns. Specific noun forms can be described as conforming to a prosodic template, but these templates do not have predictable associated meanings or distributions. A large class of primary nouns has either monoconsonantal or biconsonantal roots which refer to basic vocabulary such as kinship terms, body parts and other common nouns.⁵⁶

The reanalysis of non-verbal forms as verbal forms is a recurrent feature of the history of the Semitic language as is seen in the development of many innovative forms. The most extensive study of this type of process is found in the works of Cohen (1975b, 1984) who has

⁵⁶ PS *ʔab ‘father’, Akk. ab-, Ug. ʔab <ʔab->, Heb. ʔāb, CA ʔab-, OSA <ʔb>, Ge. ʔəb ; PS *ʔimm ‘mother’, Akk. umm-, Ug. ʔumm- <ʔum>, Heb. ʔēm (ʔimm- with suffixes), CA ʔumm, OSA <ʔm>, Ge. ʔimm, PS *ʔaχ ‘brother’, Akk. aḥ-, Ug. ʔaḥ- <ʔaḥ> or <a-ḥu>, Heb. ʔaḥ, CA ʔaχ, OSA <ʔḥ>, Ge. ʔiḥiw and ʔiḥ^w, PS *bən ‘son’, Akk. bīn-, binn-, Ug. bun- <bn>, Heb. bēn, CA ibn, OSA bn-m, Ge. ʔibn, PS *p ‘mouth’, Akk. pū(m), Ug. <p>, Heb. peh, CA fām (fū in construct), OSA <p> ‘voice, authority’, Ge. ʔəf, PS *yad ‘hand’, Akk. id-, Ug. yad- <y-d>, Heb. yād, CA yad, OSA <y-d>, Ge. ʔid, PS *dam, Akk. dām-, Ug. dam- <dm>, Heb. dām, CA dam, OSA <dm>, Ge. dām, PS *ʕed ‘tree, wood’, Akk. iṣ-, Ug. ʕiṣ- <ʕṣ> and <iṣ-šú>, Heb. ʕēṣ, OSA <ʕd>, PS *yamm ‘sea’, Ug. yamm- <y-m>, Heb. yām (yamm- with suffixes), CA yamm PS *səm ‘name’, Akk. šum-. Ug. šum- <šm> or <šu-um>, Heb. šēm, CA ism, OSA <s¹m>, Ge. sim,.

examined the role of nominal forms in the creation of verb forms not only in the Semitic languages but also in related Afroasiatic languages. In the Semitic family four primary forms can be identified which have played an important role in the development of new verb forms in the Semitic family: the active participle, the passive participle, the verbal noun/infinitive and the verbal adjective. Perhaps the most common source for new verbal forms has been the active participle, which has served as the basis for new verbal forms in varieties of Hebrew, Arabic and Aramaic. Additionally, the other forms mentioned above have also attested as having developed into new verbal forms. The passive participle has undergone changes directly parallel to the active participle in some languages, while the verbal noun has served as the base for new verbal forms in the Ethiosemitic languages.

Of great importance for our understanding of the early history of the Semitic family and specifically the West Semitic branch is the origin of the West-Semitic Perfect, or suffix conjugation. The most obvious source of the West Semitic perfect is the verbal adjective. This similarity is clear for stative verbs in Hebrew, where stative verbs in the perfect and adjectives frequently have identical forms (see Joüon and Muraoka 2000:129-130). That the active perfect forms represent a later development is also supported by the existence of seemingly cognate suffix conjugations in Akkadian and Ancient Egyptian. Rubin (2005) lays out a plausible scenario for the development of the West Semitic perfect from the earlier adjective and pronominal forms within the framework grammaticalization theory, but does not provide a scenario for the extension of this form from stative verbs to active verbs. This chapter will focus on investigation of the mechanisms involved in the formation of the West Semitic perfect and analogous formations.

This chapter is divided into three parts. The first two parts present data from many languages and branches of the Semitic family over several millennia. The first part examines the processes involved in the reanalysis of non-verbal forms as verbal ones. This includes a detailed discussion of the factors involved in the maintenance of the original contrasts and the ambiguities in the forms that made the reanalysis possible, such as the semantics, syntax and morphology of these forms. The second part of the chapter deals with further developments involving the creation of new inflected forms. This part concentrates on the processes of grammaticalization and analogy involved in the development of the new verbal forms, particularly with respect to their role in the restructuring of the Neo-Aramaic verbal system. In the third and final section, I reexamine the origin of the West Semitic imperfect in light of the data and analysis presented in the first two sections.

Several themes and questions are addressed throughout the chapter, including what mechanisms and structures have influenced the changes in question, whether a notion of root and patterns is necessary for understanding the types of changes that have occurred and how these changes shape our understanding of historical processes. I propose that the changes can be accounted for by a constrained set of processes that rely on a similarly restricted set of motivations.

5.2. Syntactic reanalysis in the development of new verbal forms

The modern Semitic languages look different from their predecessors in a number of important ways, yet the existence of a wide range of nonlinear morphological alternations is characteristic of all, even the most contact-influenced, varieties. For example, even in Nubi, an Arabic creole, modifications in the placement of the tonal accent are used to mark a distinction between both the verb and verbal noun and between some related transitive and intransitive forms, e.g. *séretú* ‘spoil’ vs. *serétu* ‘spoiling’, *áálim* ‘teach’ vs. *aalím* ‘teaching’ and *séregú* ‘steal’ vs. *seregú* ‘be

stolen' (Heine 1982, see also Luffin 2005 for similar alternation in the Nubi of Mombasa). In Maltese, although the productivity of the root-and-pattern morphology has been questioned (Hoberman and Aronoff 2003), a great number of alternations continue to persist.

One basic distinction that has persisted in the modern Semitic languages is that between the suffix-conjugation and prefix-conjugation verb forms. While these two basic verb forms continue to be distinguished by both templatic shape and vocalic patterns, the original uses of the two forms have diverged considerably due to the creation of new auxiliary forms and the accretion of new tense, mood and aspect markers through grammaticalization. For example, the distinction between the West Semitic perfect and imperfect as it was in Biblical Hebrew or Classical Arabic has been all but lost in the Modern varieties of West Semitic languages, where new verbal forms have developed out of the originals. One part of the Semitic family in which the perfect and imperfect forms have fared particularly poorly is the Modern Aramaic languages and particularly the Northeastern Neo-Aramaic group. The fate of the original Semitic verb forms was connected to a widespread development, the incorporation of participial verb forms into the system of TMA marking in the Semitic languages, which found its fullest realization in the Aramaic languages.

The first stage in this process involves a syntactic reanalysis of the original intended structure. Meaning plays a large role and the forms must be pragmatically open to an interpretation that is plausible as a verbal form. Because they already contain the verbal idea of the related verb form, the various deverbal noun and adjective forms are well-suited for reanalysis as verbal forms marking TMA distinctions. The function of the new verbal forms is to some extent predictable based on the functions and typical contexts of the nominal forms in question. Paralleling the developments in English and other European language, the active participle is associated with an imperfective aspect and the passive participle typically with a perfective aspect. If the proper semantic and pragmatic preconditions are met, the likelihood for reanalysis is then determined by whether the syntactic and morphological structures allow for multiple interpretations or not, i.e. whether or not the surface forms are ambiguous. The greater the structural ambiguity, the greater the likelihood of reanalysis. The recurrent reanalysis of the active participle as a verb is most likely due to both favorable semantic and structural conditions. In contrast, the relative infrequency of other types of reanalysis stems from a relative lack of semantic and structural ambiguities in the original forms and structures. These changes should not be viewed mechanistically, but should involve chance processes that translate into various relative probabilities for the changes involved. In no case should we see the reanalyses as predetermined in any way. Conditions may increase or decrease the probability of reanalysis but do not directly dictate the course of development. Thus we can find related forms with similar starting structures which have nonetheless followed separate paths of development.

Forms derived from the Proto-Semitic active participles occur in later varieties of Arabic, Hebrew and Aramaic. The recurrent quality of the changes involving the active participle suggests a similar motivation in these three separate groups. The unifying motivation appears to be a common Semitic inheritance and the ambiguities inherent in this system, although contact between these overlapping language groups cannot be completely discounted. These ambiguities created a great potential for the reanalysis of the active participle as a verbal form. Several facts about the original syntactic and morphological structure of Classical Arabic and other older Semitic languages are likely responsible for the ambiguities that created the potential for reanalysis, a potential which was likely furthered by subsequent changes that created further ambiguities.

The seeds of reanalysis can be identified in early forms of Semitic where the reanalysis has not yet occurred. Several features of the Semitic languages can be identified. Any of these features alone or a complex of these features together may have enabled reanalysis, including but not necessarily limited to, favorable semantics, the already mixed syntax of participles, favorable word order alternations, the absence of a present tense copula and in later varieties a lack of distinguishing morphology. Reanalysis can even occur, although it is probably less likely, when there are factors that would allow for the two forms to be distinguished. Thus the inherited nominal morphology can be reanalyzed along with the syntactic function of the participial form.

In order to understand the contexts in which ambiguity arises it is necessary to understand the many ways in which the grammar of a language distinguishes two forms such as the active participle and finite verb form. Both morphological and syntactic means can provide important information for disambiguating forms. In terms of morphology, either the inflectional or derivational marking of the form itself or that of associated forms can inform the correct analysis. Case marking indicates not only that the form is a noun but can also provide important information about the relations between words, including information about the *regens*, i.e. the governing word. For example, the occurrence of genitive case will frequently suggest that the rector is a noun, while that of the accusative will suggest a verb. In terms of syntax, word order patterns and the use of particular constructions frequently mark functions and relations very similar to those marked by morphological case. As both morphological and syntactic means are used in distinguishing related nominal and verbal forms in the Semitic languages, I treat at length the importance and influence of these two factors in the development of the Semitic verbal system.

5.2.1. Morphological marking and reanalysis: the West Semitic perfect and the Ethiosemitic gerundive

The system of morphological marking is deeply entangled with the process of reanalysis. Morphological marking in many cases helps to distinguish between otherwise ambiguous linguistic units. For example, morphological marking can play an important role in distinguishing a gerund NP and a sentence even in languages with relatively simple morphology like English.

(1) Syntactic structure distinguished by morphological marking

NP:	Booth's	killing	Lincoln
S:	Booth	killed	Lincoln

Leaving aside the syntactic distribution of these two phrases, these linguistic strings can be distinguished by the morphology, even though they both consist of the same three lexemes in the same order and refer to the same event. Both the possessive clitic and the {-*in*} suffix indicate that the first is a gerund NP, while the lack of marking on the nouns and the past tense {-*d*} favors an interpretation as a sentence and excludes that of an NP.

While in cases like these the morphology plays a clear disambiguating role, in many other cases both the existence and the absence of morphological markers can play the opposite role by contributing to the ambiguity. When morphological marking is absent, it clearly does not contribute to disambiguating forms except in so far as the lack of marking can be construed as zero marking. In a language without morphological case marking, grammatical relations cannot be distinguished by morphology and thus must be distinguished by syntactic or pragmatic means.

The existence of a rich set of morphological markers does not eliminate the possibility of ambiguity. For example, the existence of syncretism, where distinct morphemes have identical forms, introduces ambiguity into even the richest morphological systems. Syncretism can arise due either to the formal convergence of previously distinct forms or to the divergence of a single common morpheme into formally identical but distinct morphemes. Both cases are amply attested in the Semitic languages.

To illustrate processes of both divergence and convergence, I will examine two cases related to the Ethiosemitic gerundive. The first case concerns the relationship between the gerundive and the set of possessive pronominal suffixes and constitutes a clear instance of divergence, where both forms can be derived straightforwardly from a single common and demonstrable source. In this case similarities are due to a common history. The second case deals with the more complicated relationship of the gerundive to the perfect. The inflection of the gerundive and the perfect are undoubtedly related at a very deep level, illustrating divergence, but also provide cases where later phonological or morphological processes have created surface similarities not directly attributable to their common source. These surface similarities are due to processes of convergence. The lengthy discussion of the origin of the perfect in this section will set the foundation for the investigation into the development of the West Semitic perfect at the end of this chapter. This section will explore not only the history of the forms in Semitic, but in Afroasiatic more generally.

5.2.1.1. Divergence: the development of the gerundive suffixes from the possessive suffixes

The gerundive, also known as the “perfective active participle” (Lambdin 1978), is a subordinate verb form derived from an originally deverbal noun form. It is widely used in Ge‘ez, Tigrinya, Amharic and Argobba, but is missing in Tigré, Harari and the Gurage languages (Leslau 1956:100). The inflection of the gerundive derives transparently from the genitive pronominal suffixes on accusative nouns. For example, in Ge‘ez, both sets of suffixes are identical.

(2) Possessive origin of gerundive inflection in Ge‘ez (Lambdin 1978)

	<i>gerundive</i>		<i>possessed accusative nouns</i>	
1SG	qətil-iyə	‘I, having killed’	həgər-iyə	‘my city’
2MSG	qətil-əkə	‘you, having killed’	həgər-əkə	‘your city’
2FSG	qətil-əki	‘you, having killed’	həgər-əki	‘your city’
3MSG	qətil-o	‘he, having killed’	həgər-	‘his city’
3FSG	qətil-a	‘she, having killed’	həgər-a	‘her city’
1PL	qətil-ənə	‘we, having killed’	həgər-ənə	‘our city’
2MPL	qətil-əkim	‘you, having killed’	həgər-əkimu	‘your city’
2FPL	qətil-əkīn	‘you, having killed’	həgər-əkīn	‘your city’
3MPL	qətil-omu	‘they, having killed’	həgər-omu	‘their city’
3FPL	qətil-on	‘they, having killed’	həgər-on	‘their city’

Despite the identical form of these suffixes, these endings constitute two distinct sets. The pronominal suffixes of the gerundive have been reinterpreted as verbal inflection. This conclusion is supported by both the fact that subject inflection is common for the gerundive (Dillmann 1907:472) and by developments which have occurred in one but not the other set in later Ethiosemitic languages.

In Amharic and Argobba divergent phonological and morphological developments have yielded largely distinct sets of endings for the gerundive and the possessive pronoun suffixes. In Tigrinya, in contrast, the suffixes are identical except for the 1SG.

(3) Gerundive and possessive suffixes in Ethiosemitic

	Ge'ez (Dillmann 1907)		Amharic (Leslau 2000)		Argobba (Leslau 1997b)		Tigrinya (Leslau 1941)	
	Gerund	Poss.	Gerund	Poss.	Gerund	Poss.	Gerund	Poss.
1SG	-iyə	-iyə	-e ⁵⁷	e	-č	-iyə, -e	-ə	-əy
2MSG	-əkə	-ikə	-əh	-ih	-ah	-ah	-ka	-ka
2FSG	-əkī	-ikī	-əš	-iš	-ih	-ih	-ki	-kī
3MSG	-o	-u	-o	-u	-o	-u	-u	-u
3FSG	-a	-a	-a	-wa	-a	-wa	-a	-a
1PL	-ənə	-inə	-ən	-aččīn	-ən	-inno	-na	-na
2MPL	-əkīm	-ikīm	-aččīhu	-aččīhu	-ihum	-ihum	-kum	-kum
2FPL	-əkīn	-ikīn					-kin	-kīn
3MPL	-omu	-omu	-əw	-aččəw	-əm	-əmmu	-om	-om
3FPL	-on	-on					-ən	-ən

Many of the divergences can be explained by the loss of the accusative in the modern languages. While the gerundive suffixes continue the possessive suffixes of accusative nouns, the possessive suffixes derive from the nominative forms. With the loss of this grammatical distinction the original relation between these two sets became more obscure. These developments are reflected in the 3MSG forms in both Amharic and Argobba and in the 2SG forms in Amharic. All the phonological changes assumed for the following derivations are well established for Ethiosemitic, many following very common Semitic and crosslinguistic patterns.⁵⁸ The 3MSG forms have clear Proto-Semitic sources, PS *u-hu NOM-3MSG.POSS > *ū >

⁵⁷ With doubling of the preceding consonant, e.g. *səbirre*.

⁵⁸ The Ethiosemitic languages are characterized by a set of shifts affecting the vowel inventory. The Proto-Semitic vowel inventory consisted of a set of three short vowels /a, i, u/, a corresponding set of long vowels /ā, ī, ū/ and the diphthongs /ay/ and /aw/. This system is basically what is found in Classical Arabic. The Ethiosemitic languages generally have seven vowel systems as represented in the seven orders of the Ethiopic syllabary or *abugida*. The long vowels /ā, ī, ū/ have become the corresponding short vowels. Short /a/ has become the low central vowel /ə/, often represented by <ä> by Ethiopists and Semitists, while both short /i/ and /u/ have merged as the high central vowel /i/, which is also sometimes represented by <ə> or less frequently by <e>. The final two vowels /e/ and /o/ are the result of the contraction of early diphthongs. These developments are reflected in contrasts between Classical Arabic and Ge'ez, e.g. CA *bāraka* vs. Ge. *barəkə* 'he blessed', CA *yamīt* 'let him removed' vs. Ge. *yimiṭ* 'let him turn away', CA *yazīn* vs. Ge. *yizīn* 'let him decorate', CA *yakūn* vs. Ge. *yikun* 'let him/it/there be', CA *qatala* vs. Ge. *qətələ* 'he killed', CA *yaqtul* vs. Ge. *yiqṭil* 'let him kill', CA *kāhin* vs. Ge. *kāhin* 'priest', CA *bayt* vs. Ge. *bet* 'house' Ar. *mawt* vs. Ge. *mot* 'death' (note: the one exception to the regular correspondences is found in the quality of the prefix vowel which have been leveled to a large degree in both languages). Other relevant changes include the spirantization *k in Amharic and Argobba (*k > x or h), the palatalization of *ki (*ki > š), the loss of *h, particularly in intervocalic position, and the subsequent coalescence of vowels (e.g. *a-hu > *aḥ > o). These four processes are also widely found in other Semitic varieties. Spirantization of *k > x is somewhat common. The postvocalic spirantization of k and other stops is well established in Hebrew and Aramaic. The effects of this process are found in the Neo-Aramaic languages, e.g. 2MSG suffixes Maṣlūla *tarb-ax* 'your path', Mlaḥsô *em-ox*

Ethiosemitic *u and PS *a-hu ACC-3MSG.POSS > *a_u > Ethiosemitic *o. The 3FSG forms in Amharic and Argobba also seem to reflect a clear path of development from the accepted PS forms, PS *u-hā NOM-3FSG > *uā > Amh. and Arg. *wa* and PS *a-hā ACC-3FSG > *ā > Ethiosemitic *a. The 2sg forms in Amh. also have clear derivations, PS *u-ka NOM.2MSG > *i-kə > Amh. *ih*, PS *u-ki NOM-2FSG > *i-ki > Amh. *iš*, PS *a-ka ACC.2MSG > *ə-ka > Amh. *əh*, PS *a-ki ACC-2FSG > *ə-ki > Amh. *əš*. In several other cases the distinction between the accusative and nominative forms has been lost due either to phonological mergers or morphological leveling. This is true of both Ge‘ez and Tigrinya in which there is no distinction between the gerundive and possessive suffixes in the 3FSG. In Argobba and Tigrinya the second person singular and plural suffixes are also identical.

In addition to cases where the changes follow an expected course, the two sets have also diverged in both Amharic and Argobba in ways which do not follow simply from the set of assumed phonological changes. These changes often involve innovative morphology in one but not the other set, providing evidence for viewing these two sets as morphologically distinct. The plural possessive suffixes in Amharic are innovative forms, which, except for the 2PL, have not been extended to the gerundive forms. These forms have endings closer to what we would expect from Proto-Semitic and other older Semitic languages. The endings of the gerundive and the possessive suffixes are also distinct for the 1PL and 3PL in Argobba, although the nature of the innovations is very different from that found in Amharic. Finally, the endings of the gerundive and the possessive suffixes have diverged in the modern forms of Ethiosemitic in 1SG marking. In each case the two suffixes have diverged in different ways. In Amharic, Argobba and Tigrinya, it is possible that these represent phonological developments.

5.2.1.2. Convergence: the Ethiosemitic gerundive and perfect inflection

In contrast to the relatively simple case of the gerundive and the possessive pronominal suffixes, the gerundive and the perfect have a more complex relationship in which both divergence and convergence have contributed to the situation in the Ethiosemitic languages. The endings of the gerundive are similar to varying degrees to those of the perfect.

‘your mother’, Hertevin *bet-ōh* ‘your house’, Christian Urmi *bet-ūx* ‘your house’, Kerend *bel-ox* ‘your house’ and Neo-Mandaic *beθ-āx* ‘your house’ (Jastrow 1997). Palatalization of *k > š or č occurs in MSA, Neo-Aramaic and many Arabic dialects, particularly 2FSG suffix forms, e.g. Muslim Baghdadi Arabic *abū-č* ‘your (FSG) father’ (Blanc 1964), Zafār (Yemeni) Arabic *-(i)š* ‘your (FSG)’ (Diem 1973), Eastern Arabian Arabic *-(i)č* (Johnstone 1967), Mašlūla *tarb-iš* ‘your (FSG) path’, (Jastrow 1997) and Mehri *abāt-š* ‘your (FSG) house’. The loss of intervocalic h is found in many languages with similar coalescence rules, e.g. Syrian Arabic *dars-o* (< CA *dars-ahu*) ‘his lesson’ (Cowell 1964), and Heb. *sūs-ō* ‘his horse’ < *sūs-ahu.

(4) Comparison of gerundive and perfect inflection in Ethiosemitic

	Ge'ez (Dillmann 1907)		Amharic (Leslau 2000)		Argobba (Leslau 1997b)		Tigrinya (Leslau 1941)	
	GER	PERF	GER	PERF	GER	PERF	GER	PERF
1SG	-iyə	-ku	-e ⁵⁹	-ku, -hu	-č	-ku	-ə	-ku
2MSG	-əkə	-kə	-əh	-k, h	-ah	-k, -ih	-ka	-ka
2FSG	-əki	-ki	-əš	-š	-ih	-č(i), -ih	-ki	-ki
3MSG	-o	-ə	-o	-ə	-o	-a	-u	-ə
3FSG	-a	-ət	-a	-ə	-a	-əd	-a	-ət
1PL	-ənə	-nə	-ən	-(i)n	-ən	-in	-na	-na
2MPL	-əkim	-kimu	-aččihu	-aččihu	-ihum	-kum, -ihum	-kum	-kum
2FPL	-əkīn	-kīn					-kīn	-kīn
3MPL	-omu	-u	-əw	-u	-əm	-u	-om	-u
3FPL	-on	-a					-ən	-a

The similarities and differences between these two paradigms have a variety of sources. Many of them can be traced to very recent changes, even changes affecting individual languages. For example, the 2PL forms in Amharic are identical and have little obvious connection to the earlier forms which are much closer to the forms in the other three languages above. These two suffixes represent an innovative ending that has been extended to both the gerundive and the perfect. Other similarities and differences must be attributed to more remote sources.

Having examined the relationship of person marking in verbal inflection and pronominal forms, we can more confidently turn to the question of the inflection of the gerundive and the perfect in the Ethiosemitic languages. As discussed above the gerundive has its source in the suffixal possessive pronoun forms that are attached to nouns. These dependent pronominal forms are more distantly related to other sets of pronominal forms. In an early stage of Afroasiatic a distinction appears to have been made between subject pronouns and other pronouns. The subject pronouns, which are most conspicuously marked by the presence of /t/ in the second person, are preserved in the independent pronouns and the inflection of both the prefix conjugation and the suffix conjugation. The non-subject forms, which have /k/ in the second person forms, are preserved mainly in the forms of the bound possessive and object pronouns. The *t and *k of the second person form possibly have a common origin, providing a possible case of divergence, although the origins are obscured by the antiquity of this distinction. In Proto-Semitic the markers of the perfect/stative and the possessive suffixes would have contrasted /t/ and /k/ in the second person forms.

⁵⁹ With doubling of the preceding consonant, e.g. səbīrre.

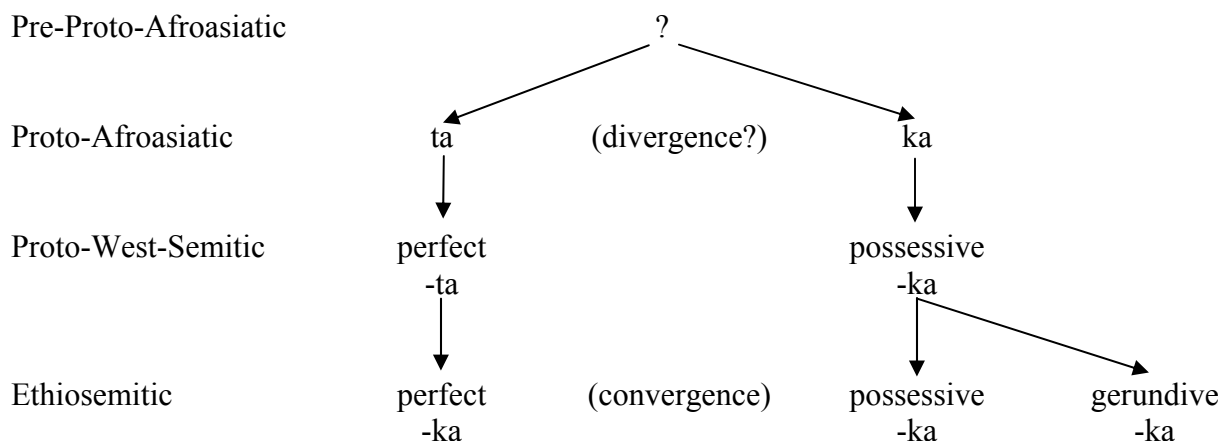
(5) Proto-Semitic second person perfect inflection and possessive suffixes

	<i>perfect</i>	<i>possessive</i>
2MSG	*-ta	*-ka
2FSG	*-ti	*-ki
2MPL	*-tum(ū)	*-kum(ū)
2FPL	*-tin(na)	*kin(na)

These second person forms in the perfect would have also contrasted with the 1SG form *-ku, as is the cases in Akkadian as well as in the forms of the independent pronouns which are assumed to have a common source with the inflection of the perfect. In Central Semitic the /t/ of the second person forms has been extended to the 1SG, PS *-ku > *-tu, due to some kind of analogy or contamination. The opposite has occurred in South Semitic with the /k/ of the 1SG marker being extended to the second person forms. This might have been further enabled by the possessive and object forms with /k/ also found in South Semitic. The ultimate result of these changes has been a convergence in form for the second person forms of the possessive and object suffixes and the inflection of the perfect.

The following developments can be assumed for the second person forms in Ethiosemitic. The following chart used the 2MSG forms to illustrate the proposed development of the various the second person markers.

(6) Proposed development of 2MSG suffixes



These developments and mechanisms described in this section will be further discussed in subsequent sections.

5.3. Syntactic structure and reanalysis

Morphology can either enhance the possibility of reanalysis because of formal similarities or inhibit the same process by helping to distinguish two forms. The degree to which the morphology plays a role is influenced by the frequency and distinctiveness of the morphology involved. Still, these factors are limited in how they can influence the likelihood of a particular reanalysis. There is always a possibility that the morphological characteristics of a form will be ignored or reanalyzed along with the syntactic function of the word. Syntax likely plays a much more determinative role in the process of reanalysis. In the following section, I will examine two

elements of the syntax that likely have an important role in the reanalysis of the active participle form. The first element involves characteristics of the morphosyntax of the participle and its arguments which favor the verbal reanalysis. The second element is the more general word order patterns which can have a mixed effect on reanalysis by either enhancing or inhibiting the reanalysis involved. I will also examine arguments about the role reanalysis might have in pushing word order changes.

5.3.1. Morphosyntax and reanalysis: the mixed status of the active participle and other deverbal forms

Turning to the structure of the Semitic languages, one of the chief contributors to the possibility for reanalysis is the already mixed syntax of participles and other deverbal forms. “Mixed syntax” refers to the possibility for a form to possess syntactic patterns associated with more than one lexical class, usually for forms exhibiting patterns characteristic of nouns and verbs, often simultaneously.

5.3.1.1. Mixed status of participles and verbal nouns in Arabic

The mixed status of the active participle in Arabic is recognized by Wright (1896-1898, 2:63), who wrote:

“The nomina agentis or participles, which hold a middle position between the verb and the noun, and partake of the force of both, may, like the nomina verbi, follow the government either of the verb or the noun, or of both.”

The mixed status revolves primarily around the various possible complementation patterns for the active participle. A participle functions as noun or adjective with respect to its own distribution in the sentence, but can govern other elements in either the manner of a noun or a verb.

In Classical Arabic a nominal complement governed by a verb is typically marked by the accusative case. In the singular the accusative is generally marked by the suffixes {-a} or {-an}.

(7)

- a. zawwaj-tu zayd-an bn-at-a aχ-ī
 give.in.marriage.PERF-1SG Zayd-ACC child-fem-acc brother-POSS.1SG
 “I gave Zayd to my brother’s daughter in marriage” (Wright 1896-1898:48 A)

- b. ṣayyar-tu t-ṭīn-a ʔibrīq-an
 make.PERF-1SG DEF-clay-ACC jug-ACC
 “I made the clay into a jug” (49 A)

In contrast a nominal complement governed by another noun is marked by the genitive case, usually by the suffixes {-i} or {-in} in the singular.

(8)

- a. sultān-u l-barr-i wa-l-baħr-i
 lord-NOM DEF-land-GEN and-DEF-sea-GEN
 “the lord of the land and the sea” (199 D)

- b. *ḫalq-u* *s-samāʔ-i*
 creation-NOM DEF-heaven-GEN
 “the creation of heaven” (199 D)

The active participle, together with the verbal noun (Ar. *al-maṣḍar*), can take three different types of complementation. In Classical Arabic the active participle can govern an object in the accusative case like a verb, in the genitive case like a noun or with the proclitic preposition *li-*, a strategy found only with the active participle.

(9) Object complements of the active participle (data from Fischer 2002)

genitive	<i>dāribu ʔaḫīhi</i>	‘striking his brother’ Qur’an 3:185
accusative	<i>dāribun ʔaḫāhu</i>	‘striking his brother’ Qur’an 21:35
	<i>ṭālibun-i θ-θaʔra</i>	‘one who seeks blood revenge’
li-	<i>ʔaṭ-ṭālibu lil-ʕilmi</i>	‘the one who seeks knowledge’

To some extent the choice of the genitive or the accusative is determined by whether the active participle functions more as a verb or as a noun. One case where the genitive is standard is when the noun in question has been conventionalized as an agentive noun and thus does not function anymore as a typical participle, e.g. *kātib* “writer”, *ḫāliq* “creator”. *ṭālib* “student”, *mudarris* “teacher”. That some of these forms have been conventionalized is clear from the fact that the meaning of the agentive noun sometimes represents a specialized meaning of the verb, not the basic or most common, e.g. *ṭālib* means “student” but the verb *ṭalaba* usually means “he sought”. Wright describes this class as involving participles formed from transitive verbs which have the meaning of the perfect. In most cases below, the participle can be translated without a substantial change in meaning as either an agentive noun or a phrase using an English verb as a past tense or perfect form (e.g. *the writer*, *the one who wrote*, *the one who has written*).

(10)

- a. *kātib-u* *r-risāl-at-i*
 write.PART-NOM (writer-NOM) DEF-letter-FSG-GEN
 “the writer of the letter” (Wright 1896-1898:199 D)
- b. *ḫāliq-u* *l-ʔarḍ-i*
 create.PART-NOM (creator-NOM) DEF-earth-GEN
 “the creator of the earth” (199 C)
- c. *ṭālib-u* *l-ʔilm-i*
 seek.PART-NOM (student-NOM) DEF-science-GEN
 “the student of science” (220 D)
- d. *qātil-u* *n-nās-i*
 kill.PART-NOM DEF-people-GEN
 “one who has killed people” (64 D)

examples below show that thematic role of arguments is not solely determinative of case or word order since either the patient or the recipient can occur first with the genitive marking.

(13)

- a. ʔanā muṣṭī zayd-in dirham-an
 1SG give.PART Zayd-GEN dirham-ACC
 “I will give Zayd a dirham” (Wright 1896-1898:68 A)
- b. ʔanā muṣṭī dirham-in zayd-an
 1SG give.PART Zayd-GEN dirham-ACC
 “I will give Zayd a dirham” (68 A)

A similar pattern occurs when there is more than one object joined by a conjunction. Here the first object following the verb can be put in the genitive but all following objects must be in the accusative.

(14)

- a. jāʕil-u l-layl-i sakan-an wa-š-šamš-a
 appoint.PART-NOM DEF-night-GEN rest-ACC and-DEF-sun-ACC

wa-l-qamar-a ḥusbān-an
 and-DEF-moon-ACC reckoning-ACC

“He appointed the night for rest and the sun and the moon for reckoning (time).”
 (Wright 1896-1898:67 C)

- b. al-wāhib-i l-miʔat-i l-ḥijān-i
 DEF-give.PART-GEN DEF-hundred-GEN DEF-white.camel-GEN

wa-ʕabd-a-hā
 and-servant-ACC-POSS.3FSG

“of him who gives a hundred fine white camels and their attendant” (67 C)

It is clear that the syntax of complements for the participle allows for arrangements that closely follow the patterns of both nouns and verbs and even admits arrangements not found in either the classes of nouns or verbs. Much of the same pattern is also found for the verbal noun (*al-maṣdar*) in Classical Arabic. The complement can be marked by the genitive as in (1), by the accusative as in (2) and (3) or by both as in (4).

(15)

- a. manaʕ-a=hum min qawl-i l-ḥaqq-i
 hider.PERF-3MSG=3MPL from say.VN-GEN DEF-truth-GEN
 “he prevented them from saying the truth” (57 C)

- b. ḍaʕīf-u n-nikāyat-i ʔaʕdāʔ-a-hu
 weak-NOM DEF-harm.VN-GEN enemy.PL-ACC-POSS.3MSG
 “feeble in harming his enemies” (57 D)

- c. fa-lam ʔa-nkul-Ø ʕani d-ɖarb-i mismaʕ-an
 so-NEG 1SG-desist-JUSS from DEF-beat.VN-GEN Mismaʕ'-ACC
 “and I did not desist from beating Mismaʕ” (57 D)
- d. karih-tu ʔakl-a l-χubz-i wa-l-laħm-a
 be.sick.PERF-1SG eat.VN-ACC DEF-bread-GEN and-DEF-meat-ACC
 “I am sick of eating bread and meat” (58 A)

5.3.1.2. Mixed status of participles and verbal nouns in other Semitic languages

In Semitic languages that retain accusative case marking, similar patterns involving participles and other deverbal nouns occur. These patterns are described below for various Semitic languages.

In Geʿez the inherited participle forms are not productive and so are not formed for all verbs (See Dillmann 1907:262-263). However, the gerundive, which has taken over some of the functions of the participle and as has already been discussed is on its way to becoming a full fledged verbal form, and the infinitive can display complementation patterns characteristic of verbal forms. The object of a gerundive is generally in the accusative. This is perhaps partly due to the fact that there is already a pronominal suffix attached to the gerund, which generally indicates the subject of the verb, and to the fact that the first member of a construct⁶⁰ rarely has a suffix.

(16)

- a. xədīg-omu ɸəmər-ə wə-ʔəb-a-homu
 leave.GER-3MPL ship-ACC and-father-ACC-3MPL
 “leaving the ship and their father” (Matt 4:22; Dillmann 1907:472)

⁶⁰ “Construct phrase” is a term used to describe a particular type of genitive construction widely found in the Semitic family. In Arabic, this construction is known as *al-ʔidāfah*. The particulars of the construction vary from language to language, but some patterns are general. The construct phrase is typically described as having two terms, the first term serving as the head of the phrase and the second term serving the functions of a genitive. For example, in a possessive construct phrase the first term is that which is possessed and the second term is the possessor. In a construct phrase, the first term is typically not marked for definiteness, e.g. CA *bayt-u r-rajul-i* ‘house of the man’, Heb. *bēt ham-mélek* ‘house of the king’; in order to indicate the definiteness of the first term a periphrastic construction must be used CA *al-bayt lir-rajul-i* ‘the house of the man’. Also, typically nothing can intervene between the first and the second terms of the construct, e.g. CA **bayt-u l-kabiir-u r-rajul-i* is not grammatical. In languages where the case system is preserved the construct is indicated partly by the use of the genitive on the second term of the construct. In languages where the case system is largely or completely lost a distinction is often made between construct and non-construct forms. Geʿez has a suffix {-a} on the first term of a construct. Probably the most common type of construct form involves feminine forms in which /t/ is retained in the construct form but not the non-construct forms, e.g. Iraqi Arabic *sayyaara* ‘car’ vs. *sayyaarat ʕali* ‘Ali’s car’ (Erwin 1963:370) and Syr. *mdino* ‘city’ and *mdinat qudšo* ‘the holy city (lit. city of holiness)’ (Nöldeke 1904:162). Other special forms for nouns in the construct are found involving the modification of vowels, particularly diphthongs, and special suffixes for plural as well as more irregular patterns, e.g. Heb. *báyit* ‘house’ and *bēt parʕōh* ‘Pharaoh’s palace’ (Genesis 12:15), *begādīm* ‘garments’ and *bigdē haq-qódeš* ‘the holy garments (lit. garments of holiness)’ (Exod 29:29), Syrian Arabic *ʔabb* ‘father’ and *ʔabu ʕ-šabi* ‘the boy’s father’ (Cowell 1964:169). The construct forms arise from the particular prosodic contexts in which they are found. Construct forms are by definition always followed by a genitive noun, so they never occur at the end of an utterance and thus are less prone to apocope. Other changes are due to retraction of stress due to forming a prosodic unit with following genitive noun.

- b. səfiḥ-o ʔide-hu
 stretch.GER-3MSG hand-3MSG
 “stretching out his hand” (Matt 8:3; Dillmann, 472)

The infinitive more commonly involves a construct but can also govern a noun in the accusative (Dillmann, 472). Like the examples of the gerundive, the example below of an infinitive also involves a suffix indicating what would be the subject of the corresponding verb form.

- (17) bəʔət-u mənḡišt-ə səmay-at
 entering-3MSG kingdom-CONST heaven.PL
 “his entering the kingdom of heaven” (Matt 19:23)

Most varieties of Semitic, including later varieties of Arabic and the Ethiosemitic languages, have lost case marking due to the loss of short vowel endings through the common process of apocope. The lack of distinguishing case morphology then likely heightens the possibility for reanalysis by providing many new contexts where multiple interpretations are possible. Case endings in Classical Arabic can in most contexts serve to disambiguate competing nominal and verbal structures. However, in later varieties they can no longer play such a role. Participles in Syrian Arabic (Cowell 1964), except those that are clearly being used as a noun or adjective, take objects in the same manner as verbs.

- (18)
- a. ḡāṭṭ-e warde b-šaʕra
 wear.ACT.PART-FSG flower in-hair
 “she’s wearing a flower in her hair” (Cowell, 440)
- b. mīn ʔmʕallem l-ʔwlād had-dars
 who teach.ACT.PART DEF-children DEM.DEF-lesson
 “who taught the children this lesson?” (440)

Verbal noun forms in Syrian Arabic can also take objects that are not in construct with the verbal nouns, particular when the subject argument is functioning as the second member of the construct. In varieties without case marking the construct is indicated by the absence of a definite article on the first member of the construct and sometimes a special form for the first member. The most common modification for these forms involves feminine nouns, which typically end in -a or -e in non-construct forms but have the ending -et or -t in the corresponding construct form. In the first example below the verbal noun *dirāset* has a construct form instead of the non-construct form *dirāse*. The object *l-mūsīqa*, however, is outside the construct as it follows a definite noun, marked by the possessive suffix. In the second example below the form of the verbal noun does not distinguish between construct and non-construct forms.

- (19)
- a. dirāset ʔəbn-o l-mūsīqa
 study.VN son-POSS.3MSG DEF-music
 “his son’s studying of music” (Cowell, 440)

- b. ʔakl ʕn-nās ʕl-laḥəm
eat.VN DEF-people DEF-meat
“the people’s eating of meat” (440)

Even with the loss of morphological case in many Semitic languages, other morphological and syntactic means frequently make it clear that the arguments of deverbal nouns and adjectives are being handled in the same ways as verbal arguments. The arguments of infinitive constructs, infinitive absolutes and the active participle can be treated either in a manner typical of nouns or of verbs. There exists two common ways in which languages without morphological case systematically distinguish the arguments of verbs and nouns. In many languages a particle, most often derived from a preposition, is used to mark definite direct objects. For example, the particle *ʔēt* (or *ʔet-*), which typically marks a definite direct object of finite verb, is also used with participles and infinitives in Biblical Hebrew. The objects of the participles can be marked with an object particle, especially when they are more verb-like.

(20)

- a. wə-hinnē^h bārāq rōdēp ʔet-sisərāʔ^h
and-behold Barak pursue.ACT.PART OBJ-Sisera
“And behold Barak was pursuing Sisera” (Judg 4:22)
- b. wə-ribqā^h ʔōhéb-et ʔet-yaʕāqōb^h
but-Rebecca love.ACT.PART-FSG OBJ-Jacob
“but Rebecca loved Jacob” (Gen 25:28)
- c. ʕēn-ey-kā hā-rōʔō-t ʔēt kol-ʔāšer ʕāšā^h
eye-PL-2MSG DEF-see.ACT.PART-FSG OBJ all-REL do.PERF
“your eyes are the ones that have seen all that he did” (Deut 3:21)
- d. wə-šām hāy-û ləpānīm nōtən-îm ʔet-ham-minḥā^h
and-there be.PERF-3MPL formerly store.ACT.PART-3PL OBJ-DEF-offerings
“and there they had formerly stored the grain offerings” (Neh 13:5)

The use of the particle *ʔēt* is particularly common when the infinitive construct serves as the main verb in temporal, causal, result and purpose clauses. It is not surprising that the verbal type of morphology is found in these cases because the functions of the infinitive approach fairly closely to verbal ones.

(21)

- a. baʕābûr harʔōt-əkā ʔet-kōh-î
in.order.to show.INF.CONST-2MSG OBJ-strength-1SG
“in order to show you my strength” (Exod 9:16)
- b. wə-lābān hālak li-gzōr ʔet-šō(?)n-ô
and-Laban go.PERF to-shear.INF.CONST OBJ-sheep-3MSG
“And Laban went to shear his sheep” (Gen 31:19)

- b. l-merho l-ʔamm-eh
 to-tend.INF OBJ-people-3MSG
 “to tend his people (as a flock)” (Aphr. 193:6; Nöldeke 1904:234)

Pronominal objects offer a somewhat mixed situation. As was the case with full NPs, deverbal forms like the infinitive, verbal noun or participles occur both with constructions associated with either genitive nouns or the object of a verb. Pronominal objects can either be represented by suffixes directly on the verb form or by suffixes on particles such as Hebrew *ʔēt* or Aramaic *l-*. In the cases where the pronominal object is attached to one of the object markers already described, it is clear that the deverbal forms are patterning in many of the same ways as the corresponding verbal forms. In essentially the same set of contexts where we find objects marked with the direct object particle, we also find the direct object particle with pronominal suffixes.

(24)

- a. kî-yārēʔ ʔānōkî ʔōt-ō
 because-fear.ACT.PART 1SG OBJ-3MSG
 “because I fear him” (Gen 32:12)
- b. kol-haq-qōrōt ʔōt-ām
 all-DEF-befall OBJ-3MPL
 “all that befell them” (Gen 42:29)
- c. hā-ʕōne^h ʔot-î
 DEF-answer.ACT.PART OBJ-1SG
 “the one who answered me” (Gen 35:3)

The infinitive construct also allows the expression of pronominal objects attached to the direct object marker.

(25)

- a. wə-nātat-tî lā-hem lēb lādāʕat ʔōt-î
 and-give.PERF-1SG to-3MPL heart to-know.INF.CONST OBJ-1SG
 “and I will give them a heart to know me..” (Jer 24:7)
- b. lə-yirʔā^h ʔōt-î
 to-fear.INF.CONST OBJ-1SG
 “to fear me” (Deut 4:10)
- c. bə-šînʔat YHWH ʔōt-ānû
 in-hate.INF.CONST YHWH OBJ-1PL
 “because the Lord hates us” (Deut 1:27)
- d. lə-yassərā^h ʔet-kem
 to-punish INF.CONST OBJ-2MPL
 “to punish you” (Lev 26:18)

- e. kī mē-ʔahābat yhwh ʔet-kem
 because from-love.INF.CONST YHWH OBJ-2MPL
 “because YHWH loved you” (Deut 7:8)

In Syrian Arabic (Cowell 1964) the particle *yā-* with pronominal suffixes is used to mark a second object when the first object is a pronominal ending on the verb.

(26)

- a. ʕatā-ni yā-ha kəll-ha
 give.PERF-OBJ.1SG OBJ-3FSG all-3FSG
 “he gave it all to me” (Cowell 1964:545)
- b. ʔaʕʕa y-xallī-l-na yā-k
 God 3MSG-keep.IMPF-for-1PL OBJ-2MSG
 “God keep you for us” (545)

The same pattern is found for participles of double object verbs with one argument as a pronominal suffix on the verb.

- (27) mīn ʔmʕallám-on yā-Ø
 who teach.ACT.PART-3MPL OBJ-3MSG
 “who taught it to them” (440)

The same particle is also used with verbal nouns that have a pronominal suffix encoding the subject.

(28)

- a. dirāst-o yā-ha
 study.VN-3MSG OBJ-3FSG
 “his studying it” (Cowell 1964:440)
- b. ʔakl-on yā-Ø
 eat.VN-3MPL OBJ-3MSG
 “their eating it” (440)

The objects of participles and infinitives can also be marked by pronominal suffixes directly affixed to the form. For verbs the pronominal suffix indicates the object of the verb, while for nouns the pronominal objects stand in the same relation as a noun in the genitive case. Both types of suffixes can be attached to deverbal forms, although in most cases it is impossible to distinguish the type of suffix on form alone. The two sets of pronominal endings are for the most part identical.

(29) Nominal and verbal suffixes in East Semitic (Akkadian) and West Semitic (Classical Arabic)

	Akkadian (Ungnad [1879] 1992)		Classical Arabic (Fischer 2002)	
	nominal	verbal	nominal	verbal
1SG	-ī, -ya	-anni, -ni	-ī, -ya	-nī
2MSG		-ka		-ka
2FSG		-ki		-ki
3MSG		-šu		-hu
3FSG		-ša		-hā
2DU				-kumā
3DU				-humā
1PL	-ni	-niāti		-nā
2MPL	-kunu	-kunūti		-kum
2FPL	-kina	-kināti		-kunna
3MPL	-šunu	-šunūti		-hum
3FPL	-šina	-šināti		-hunna

Since the suffixes attached to deverbal forms are generally the same as those attached to verbs, the pronominal suffixes might be seen as a factor contributing to reanalysis due to ambiguity.

Only in the first person singular are the two pronominal endings regularly distinguished, with the verbal suffix pronoun having the form {-ni} and the nominal suffix pronoun the form {-ī}, with the variant /-ya/ following a vowel. This distinction is found throughout the Semitic family across branches and periods.

(30) First person suffixes in Semitic languages

	<i>nominal</i>	<i>verbal</i>
Akkadian (Ungnad [1879] 1992)	-ī, -ya	-anni, -ni
Ugaritic (Sivan 2001)	*-ī ⁶¹ , *-ya	*-nī
Classical Arabic (Fischer 2002)	-ī, -ya	-nī
Iraqi Arabic (Erwin 2004)	-ī, -ya	-ni
Moroccan Arabic (Harrell 1962)	-ī, -ya	-ni
Biblical Hebrew (Joüon and Muraoka 2000)	-î	-nî
Phoenician (Krahmalkov 2001)	*-ī	*-ni
Biblical Aramaic (Rosenthal 1995)	-î	-nî
Syriac (Muraoka 1997)	-Ø ⁶² , -y	-an, -n
Ge'ez (Voigt 2007a)	-yə	-(ə)nī
Tigré (Raz 1983)	-ye	-(n)ni
Amharic (Leslau 2000)	-e, -ye	-iññ

⁶¹ Forms with asterisk represent the form which is assumed to underlie the defective orthographic forms.

⁶² Form is written <-y> but is not pronounced.

The possibility for deverbal forms to pattern with both verbal and nominal forms is also found with the forms of the 1SG suffixes. In Biblical Hebrew both 1SG forms are attested with the active participle and the infinitive construct. For the infinitive construct, the nominal suffix, however is used to indicate the subject argument.

(31) Deverbal forms with the nominal suffix *-î*

- a. kol-mōšׁ?î
all-find.ACT.PART-1SG
“all who find me” (Gen 4:14)
- b. ʕad-bōׁ?î
until-come.INF.CONST-1SG
“until I come” (2 Kgs 18:32)

(32) Deverbal forms with the verbal suffix *-nî*

- a. hă-lōׁ?î-bāb-béten ʕōs-ēnî ʕāsā-hû
INT-NEG-in.DEF-womb make.ACT.PART-1SG make.PERF-3MSG
“Did not the one who made me in the womb make him?” (Job 31:15)
- b. ʔên rōׁ?î-ānî
NEG.exist see.ACT.PART-1SG
“there is no one who sees me” (Isa 47:10)
- c. māddûׁʕ māšāׁ?î-tî ʔēn bə-ʔēn-ey-kā lə-hakkîr-ēni
why find.PERF-1SG favor in-eye-PL-2MSG to-notice.INF.CONST-1SG
“why have I found favor in your eyes such that you notice me?” (Ruth 2:10)
- d. YHWH lə-hōšîʕ-ēnî
YHWH to-save.INF.CONST-1SG
“the Lord will save me” (Isa 38:20)

The similar patterns of complementation found with verbs and participles likely contributes to the possibility of reanalysis, because they create a situation where the syntactic patterns do not help distinguish structures. However, this pattern alone does not account for the likelihood of reanalysis as other aspects of the syntax and morphology may still serve to disambiguate the two forms. The patterns of complementation of the active participle in Classical Arabic go part of the way towards explaining why this form was particularly suited for reanalysis. It does not however explain why the active participle and not the verbal noun served as the seed for the new verbal forms in Arabic, Hebrew and Aramaic, something that it did in fact do in the Ethiosemitic languages. To answer this question we must examine other aspects of the syntax, semantics and morphology of the active participle.

5.3.2. Syntax and reanalysis: word order patterns

Along with morphological case, word order is one of the most common ways in which the Semitic languages distinguish between grammatical functions. Word order and changes in word

order play an indispensable role in the various reinterpretations that have occurred in the Semitic family. The basic word order patterns of the Semitic languages would appear to argue against the likelihood of reanalysis. With some exceptions, the basic word order of the Semitic languages is connected to a distinction between two clausal types or constructions, nominal and verbal. For the present study the two clause types will be defined by the presence or absence of a finite verb form. Put simply, a verbal clause contains a finite verb form, while a nominal clause does not. One forms a nominal clause simply by juxtaposing the subject and the predicate which can be a noun phrase, adjective phrase or prepositional phrase. The subject of a nominal clause typically precedes the predicate. The subject of a verbal clause more commonly follows the main verb as is illustrated in Arabic in the following examples.

(33) Word order and clause type in Classical Arabic (Wright 1896-1898)

Nominal clauses

- | | | | | |
|----|--------------------------|--|-----------|----------------|
| | S | | P | |
| a. | yūsuf-u | | marīd-un | |
| | Joseph-NOM | | sick-NOM | |
| | “Joseph is sick | | (258 D) | |
| | | | | |
| | S | | P | |
| b. | ʔanta | | šarīf-un | |
| | 2MSG | | noble-NOM | |
| | “you are noble” | | (250 D) | |
| | | | | |
| | S | | P | |
| c. | zayd-un | | fi | l-masjid-i |
| | zayd-NOM | | in | DEF-mosque-GEN |
| | “Zayd is in the mosque.” | | | (251 B) |

Verbal clauses

- | | | | | | | |
|----|--|--|---------------|--|---------------------|------------------|
| | V | | S | | O | |
| a. | ḥarama=hu | | llāh-u | | barakat-a | l-ʕilm-i |
| | deprive.PERF=3MSG | | God-NOM | | blessing-ACC | DEF-learning-GEN |
| | “God deprived him of the blessing of learning.” | | | | | (48 B) |
| | | | | | | |
| | V | | S | | | O |
| b. | wa-yu-snid-u | | hārūn-u | | wa-ban-ū=hu | ʔaydiy-a=hum |
| | and-3MSG-lay-IMPF | | Aaron-NOM | | and-son.PL-NOM=3MSG | hand.PL-ACC.3MPL |
| | ʕalā | | raʔs-i=hi | | | |
| | upon | | head-GEN=3MSG | | | |
| | “And Aaron and his sons will lay their hands upon his head.” | | | | | (294 D) |

The patterns found in Arabic represent a more widespread pattern found in many other Semitic languages, particularly in the Central Semitic branch. Brockelmann ([1913] 1961) in his *Grundriss der vergleichenden Grammatik der semitischen Sprachen* describes the basic orders of West Semitic as verb-subject for verbal clauses and subject-predicate for nominal clauses.

In contexts where the basic word orders described above are encountered the participle should be an unlikely candidate for reanalysis as a speaker can easily disambiguate a sentence with a finite verb form from one with a participle based solely on the word order, due to the fact that a sentence with a participle as the head of the predicate should follow the patterns of nominal sentences. The contrast between a sentence with a participial and verbal predicate in Classical Arabic is shown in the following examples.

(34) Word order in participial vs. verbal predicates in Classical Arabic

- a. zayd-un ḍārib-un ʕamr-an
 Zayd-NOM beat.PART-NOM ‘Amr-ACC
 “Zayd is beating (will beat) Amr.” (Wright 1896-1898:65 B)
- b. ḍarab-a zayd-un ʕamr-an
 beat.PERF-3MSG Zayd-NOM ‘Amr-ACC
 “Zayd beat Amr”

However, the word order patterns are much more complex and variable than has been suggested so far. Word order, or linearization, in Semitic is influenced by information structure and exhibits grammaticized patterns which are sensitive to the semantic and grammatical features of the sentence and its constituents. Features of the subject, other arguments and adjuncts all are important to word order. Word order varies depending on factors like the transitivity and *aktionsart* type of the verb, definiteness of the noun phrase or whether pronouns or full noun phrases occur. Many of these differences in word order originate in the various discourse functions of different types of noun phrases. However, in many cases these patterns have been conventionalized to some degree. Discourse features play a central role in linearization. Different focus structures, moods and genres are typically associated with different orderings. The language-specific ways in which these different features interact with word order accounts for much of the small variations found in the many varieties of Semitic. Small variations in word order can serve as the basis for changes that have far reaching effects on both the syntax and morphology. As is the case in phonology (Ohala 1989), synchronic variation is also a source for diachronic changes in syntax and morphology.

Before examining the general word order patterns of the Semitic family, I will examine a major class of exceptions, languages whose word order has been fundamentally affected by language contact. I will then focus on the more general pattern characteristic of the family in verbal sentences and then nominal sentences.

5.3.2.1. Language contact and word order change

Despite diversity in the specific word order patterns, the Semitic languages display a surprising uniformity in terms of basic word order patterns. The basic patterns of both nominal and verbal sentences persist to a large degree across periods and regions. In those languages where the basic word orders have changed, there is frequently a clear contact source. The shifts in word order usually involve a shift from the typologically less common VSO pattern to either of the

two more common SOV or SVO patterns. These changes are not unexpected. Thomason and Kaufman (1988:55) characterize word order as “the easiest sort of syntactic feature to borrow or acquire via language shift.” Moravcsik (1978), Smith (1981), Comrie (1989), Dryer (1988, 1992) and Harris and Campbell (1995) reach very similar conclusions based on numerous examples of contact-induced word order changes.

Word order patterns in the Semitic languages support the basic mutability of word order in contact situations. SOV word order is characteristic of Akkadian and modern Ethiosemitic, as well as some varieties of Aramaic and Arabic. The word order patterns in the Ethiosemitic languages have long been viewed as having their ultimate source in the influence of the more distantly related Cushitic languages (Cohen 1931, Leslau 1945b, 1966, Ferguson 1976). Cohen (12) describes SOV word order as “the deepest mark left by the Cushitic substrate”.⁶³ However, word order is just one of a large set of features which characterizes the Ethiosemitic languages and more generally the Ethiopian *Sprachbund*, or language area, encompassing both Semitic and non-Semitic languages of the region.⁶⁴ The case of contact-induced word order change in Ethiosemitic has garnered significant attention because of the rich data set it provides.⁶⁵ In terms of examining word order changes, the Ethiosemitic case benefits from the existence of numerous points of comparison including an older Ethiosemitic language, Ge‘ez and many other non-Ethiopian Semitic languages that do not share the same patterns as Cushitic. Ge‘ez for the most part shares the word order patterns of other older West Semitic languages. A further support for the later imposition of the Cushitic word order patterns is provided by the varying degree of conformity to the SOV pattern, with the northern languages generally retaining more of the inherited patterns and southern languages like Harari conforming almost completely to the adopted patterns (Harris and Campbell 1995:137; Cohen 1931:12).

In addition to Northeast Africa, the Semitic languages have expanded into two other language areas characterized by SOV word order: the Ancient Near East and Central Asia (defined very broadly). SOV word order in Akkadian is usually attributed to influence from Sumerian (Soden 1969, Ungnad [1879] 1992). VSO to SOV have also occurred in varieties of Aramaic and Arabic that have come into contact with either Akkadian or Indo-Iranian languages with SOV order. The most striking cases in Arabic involve minority varieties spoken in areas where Turkic and Indo-Iranian languages are more common. Kieffer (2000) describes an Arabic dialect found in Afghanistan as having a basic SOV word order.

⁶³ “La marque la plus profonde imprimée par le substrat couchitique, c’est l’ordre des mots ...”

⁶⁴ Leslau (1945b) argues for the importance of the Cushitic languages on the Ethiosemitic languages by examining thirty features drawn from the phonology, morphology, syntax and lexicon which the Ethiosemitic languages share with the neighboring Cushitic languages but not generally with other Semitic languages. Ferguson’s (1976) main concern is with the set of features which characterize a Ethiopian language area, some of which are due to contact but others which reflect the group’s shared Afroasiatic heritage. Many other studies have dealt with substratal and adstratal influences of Cushitic languages on Semitic ones without dealing specifically with SOV word order. Leslau (1952) examines the influence of Sidamo, a Highland East Cushitic language, on the Gurage cluster of Ethiosemitic languages. Cerulli (1936: 440-1) also lists several features in Harari that are due to Cushitic influence.

⁶⁵ See Thomason and Kaufman 1988:130-135, Comrie 1989:208-209 and Harris and Campbell 1995:137-138 for discussion of word order and other changes in Ethiosemitic in more general linguistic contexts.

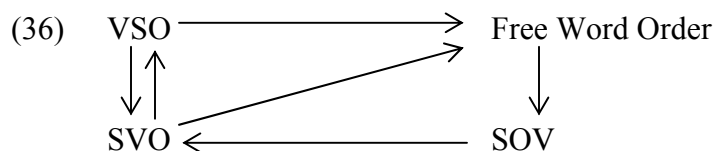
(35)

a. náḥna fi aṅkiit esteqamaát sawée-na⁶⁶
 1PL at there sojourn do.PERF-1PL
 “we stayed there” (Kieffer 2000:190)

b. baqara m-a-rṣée
 cow.COLL IND-1SG-graze.IMP
 “I graze cows” (192)

Like the Ethiosemitic case, the influence of Persian on Afghanistani Arabic is exhibited in many domains beside word order. Persian calques and loan words are common in this variety of Arabic. Aramaic presents a very complicated story for the development of word order. The eastern branch of Aramaic is characterized by having a relatively free word order. Kutscher (1970) describes the “Eastern type” as often having, among other features, both the subject and object before the finite verb form in contrast to Early Aramaic. Akkadian or Persian influence is seen as the main source of these patterns (Ginsberg 1936, Kutscher 1970, 1971, Kaufman 1974)

There are also a number of instances where word order has shifted from VSO to SVO. In these cases it is often more difficult to disentangle internal from external motivations. SVO is an important secondary word order in Semitic languages with a basic VSO word order. Thus, it is not implausible that the changes observed in many varieties come about through grammaticalization and syntactic reanalysis. There appears to be a general tendency toward a shift to SVO in many Semitic languages. The likelihood of this shift is supported by findings outside the Semitic family. Vennemann (1973) include a shift from VSO to SVO among the possible basic word order changes that occur crosslinguistically.



Heine and Reh (1984) describe two main pathways for the shift from VSO to SVO. The scenario that is most compatible with the available evidence from the Semitic languages involves the reinterpretation of originally pragmatically marked sentences with fronted subjects as pragmatically unmarked. SVO word order has been described as the basic or most common word order in many Arabic dialects, e.g. Eastern Libyan (Owens 1984), Cairene (Woidich 2006), Christian Baghdadi (Abu-Haidar 1991), and Gulf dialects (Johnstone 1967). In many of these cases, assuming the judgments are correct, it is possible that these shifts represent language internal developments. Even the best candidates for contact-induced VSO to SVO shifts, namely Maltese and Nubi, are not absolutely clear on account of the fact that language-internal and universal processes can not be completely eliminated even in these cases.

Heine (1982:27) describes Nubi as being “a ‘highly consistent’ type A, or SVO, language” following his own typology for word order in African languages (Heine 1978b). Chadian Arabic (Kaye 1976, Abu-Absi 1995) also exhibits fairly rigid SVO word order. The

⁶⁶ As Kieffer points out in note 30, this compound verb is a calque on the very common construction involving the verb *kardan* ‘to do’ and other “light” verbs, cf. Dari *estaqaamat kard-eem* ‘we dwelt’.

Egyptian and Sudanese Arabic dialects to which Nubi is most closely related allow both SVO and VSO orders in verbal clauses, although in restricted contexts (Woidich 2006 for Cairene Arabic, Dickins 2007 for Khartoum Arabic). Because the complete loss of VSO patterns is relatively rare in the Arabic languages, it is likely that the developments in Nubi and Chadian Arabic either reflect universal processes associated with pidgins and creoles or substratal/adstratal influences. The likely substrate languages for Nubi are typologically diverse. The languages of Sudan include representatives all four word order types proposed by Heine (1978b). Still, the languages of southern Sudan, including Bari, Mamvu and all of Western Nilotic belong to type A and B, which are both characterized by basic SVO word order. Since these languages most likely played the largest role in the formation of Nubi, it is likely that these languages would exert the strongest substratal pressures.

The Maltese case is very different from Nubi. Unlike Nubi, the sources of various contributions to Maltese are fairly clear. The strongest influence on Maltese is clearly from Sicilian, the impact of which is clear in both morphology and the lexicon.⁶⁷ There are also influences from Standard Italian and other European and Mediterranean languages. Additionally, during the last two centuries English has exerted an important influence.⁶⁸ In most treatments of Maltese, the basic word order is considered to be SVO (Aquilina 1959, Borg 1981; cf. Sutcliffe 1936 for VSO). According to Aquilina, VS(O) order is limited both in terms of registers and grammatical contexts; the order occurs in “emphatic and high-flown literary language” and in subordinate clauses where it is a “less common and less idiomatic” than SV(O) order (341). A slightly different account of word order variation is found in Fabri (1993) in which information structure, transitivity of verbs, definiteness of subjects and the occurrence of direct object clitics all influence word order, with VS(O) being a possible word order choice in many contexts. Fabri, however, is more concerned with describing those orders which are possible without giving a full account of distribution or frequency. While verb-initial syntax does occur, SV(O) order is the statistically dominant word order. For example, in Oliver Friggieri’s novel *It-tfal jiġu bil-vapuri* verb subject order is mostly limited to quotative expressions which follow the direct quotation.

⁶⁷ Two of the more salient Sicilian features found in Maltese are the merger of open mid vowels with high vowels and the palatalization of certain clusters. The reduction of the seven vowel system of standard Italian (i, e, ε, a, u, o, ɔ) to a five vowel system (i, e, a, o, u) through the merger of *o* and *u* and *e* and *ɛ* is very widely attested in Maltese (see Mazzola 1976, Rohlfs 1972, Ruffino 1997 for same development in Sicilian). Because of this merger, there is no longer a distinction between the plural suffixes for masculine and feminine nouns. For example, Maltese *benefiċċju* (MSG) ‘benefit’ (this form also shows the merger of *o* and *u* > *u*), *benefiċċji* (MPL) ‘benefits’, compared to Italian *beneficio* (MSG) and *benefici* (MPL), and *kolonja* (FSG) ‘colony’ and *kolonji* (FPL) ‘colonies’, compared to Italian *colonia* (MSG) and *colonie* (MPL). Italian <chi> /kʲ/ and <pi> are both realized as /č/ in Maltese, a feature of some Sicilian dialects (Ruffino 1997: 367).

⁶⁸ A number of studies have looked at the origins of Maltese loanwords. Many works by Aquilina (1958, 1959) deal with loanwords and loan phonology and morphology. Borg (1996) examines the various contributions from languages of the Mediterranean such as French, Turkish, Arabic, Spanish, Greek and the Italian dialect of Venice. Massa (1986) deals specifically with English influence. Mifsud (1995, 1996) has conducted an extensive synchronic and diachronic study into the incorporation of loanverbs in Maltese. Fenech (1978) stands out as one of the few studies to examine loanwords quantitatively

(37) VS order in quotatives in Maltese

- a. V S
 ...,” qal Dun lis-
 Grejbel sagristan
 said Dun to the
 Grejbel sacristan
 “ ...,’ Dun Grejbel said to the sacristan.” (Friggieri 2000:2)

- b. V S
 ...,” wieġbu x-xweyyaħ kwazi bit-ton ta’ parir
 answered.him the.old.man almost in.the-tone of advice

 ta’ missier
 of father’
 “ ...,’ the old man (the sacristan) answered him almost with a tone of fatherly advice” (2)

- c. V S
 ...,” qalet Susanna lill-qassis minn taħt l-ilsien
 said Susanna to.the. priest from under the.tongue
 “ ...,’ Susanna said to the priest in a whisper” (14)

- d. V S
 ...,” sejħet is-Sinjura
 called the Lady
 “ ...,’ the Lady called.” (101)

In other contexts, SVO word order almost exclusively occurs, including in dependent clauses like that in example 2 below.

(38) SV(O) in Maltese

- a. S V Comp
 Omm Susanna kienet minsuba diġà fuq hoġor it-tieqa
 mother Susanna was placed already on windowsill
 “Susanna’s mother was already situated on the windowsill” (Friggieri 2000:13)

- b. S V Comp
 Susanna ma ntebħitx b’ommha u meta
 Susanna NEG perceive with.her.mother and when

S V Comp
 hi u Dun Grejbel waslu quddiem il-bieb
 3FSG and Dun Grejbel arrived before the.door

S	V		Comp	
l-omm	ingidbet	bil-heffa	'l	gewwa
the.mother	was.drawn	swiftly	to	inside

“Susanna did not notice her mother and when she and Dun Grejbel arrived before the door the mother was drawn swiftly inside.” (13)

- c.
- | | | | | | | |
|--------|-------|------|-------|-------|-----|------------------|
| S | V | O | | | V | |
| Arturu | xeħet | kowt | oħxon | fuqu | u | ħareg ĵigri |
| Arthur | threw | coat | thick | on.it | and | went.out running |
- Comp
mid-dar
from.the.house
- “Arthur threw his thick coat on it and ran out of the house.” (99)

The shift from VSO order to SVO order is clearly well-advanced in Maltese, but it is unclear if these shifts are internally or externally motivated. A shift to SVO is also well advanced in other dialects of Arabic, and the Maltese case would not constitute a radically different outcome. Still other evidence does support the possibility of Romance influence on word order. Verb initial syntax in other Maghrebi or Western Arabic dialect groups appears to be relatively well preserved. Harrell (1962) describes the subject as usually following the verb in Moroccan Arabic and provides many examples of verb initial word order, but does not provide any account of the distribution of the different word orders. Tunisian dialects also display a wider use of verb initial syntax than Maltese.

(39) Word order patterns in Tunisian dialects

Dialect of Tunis

- a.
- | | | | | |
|---------|---------|-------|-----------------|--------|
| V | | | S | |
| yibda | ħandna | lyūm | ħáyđ | likbīr |
| be.IMPF | upon.us | today | the.Greater.Eid | |
- “The Greater Eid is upon us today” (Singer 1980a:266)

- b.
- | | |
|-------------|--------------|
| V | S |
| itlammu | il-awlad |
| gather.IMPF | DEF-children |
- “The children gather” (266)

Dialect of Zārāt (Southern Tunisia)

- c.
- | | | | | | |
|---------|-------------|------|-------|-----------|--------------------|
| V | S | | | | |
| támši | l-baħriyya | mən | owwel | el-līl | yimšu l-el-bħar |
| go.IMPF | DEF-sailors | from | first | DEF-night | go.IMPF to-DEF-sea |
- “The sailors go out at midnight to the sea” (Singer 1980b:271)

Jewish Dialect of Gafsa (Southern Tunisia)

- d. V S
 u iżī r-rebbi
 and come.IMPF DEF-rabbi
 “(and) the Rabbi comes” (274)
- e. V S
 u yu-qṣōd-u l-ḥaḏḏābā tam n-nhār
 and 3MPL-stay.IMPF-PL DEF-barbers whole DEF-day
 “(and) the Barbers stay the whole day” (274)
- f. V S
 aqbāl-mā yāklūh l^a-ḡrūṣ u l^a-ḡrūṣa
 Before eat.IMPF DEF-groom and DEF-bride
 “before the bride and groom eat” (274)

Furthermore, the VS patterns that do occur in Maltese have parallels in European languages. Quotative inversion, as described above in Maltese, is found in a number of languages. Even in English, this is a common construction in literary texts.

(40) Quotative inversion in English

- a. “Don’t be alarmed,” repeated the voice. (*Invisible man*, by H.G. Wells)
- b. “It’s the oldest rule in the book,” said the King. (*Alice in Wonderland*, by Lewis Carroll)
- c. “Dost thou mock me now?” said the Minister. (*The scarlet letter*, by Nathaniel Hawthorne)
- d. There’s a man likes eggs with his pepper, said the proprietor. (*All the pretty horses*, by Cormac McCarthy)
- e. “Steal Captain Black’s car,” said Yossarian. (*Catch-22*, by Joseph Heller)
- f. “Oh,” said Freida, “somebody has to love you. (*The bluest eye*, by Toni Morrison)

VS constructions are also found in Romance languages. Quotative inversion is found in Italian and in Spanish, where it is obligatory in certain cases according to Suñer (2000). Beside quotatives, Fabri (1993) claims that VS order is also possible in other contexts, such as with certain intransitive verbs. Italian also has a lot of flexibility in word order with verb initial syntax possible in contexts outside quotatives (Longobardi 2000, Belletti 2001). Maltese has clearly diverged from other Western Arabic dialects and the VS patterns that do persist frequently have direct parallels in the European languages with which Maltese has had the most intimate contact. The available evidence is largely consistent with the hypothesis of contact interference. Still, this question requires further grammatical and quantitative analysis to determine whether the word order patterns of Maltese are a result of interference from English or Romance languages, internal developments or a mixture of the two.

5.3.2.2. Basic word order patterns in Semitic

The discussion of possible word order interference in Nubi and Maltese introduced many important aspects of word order patterns in Arabic and the Semitic languages more generally. Describing the Semitic languages as having a “basic” VSO word order, while useful, obscures a much more complicated set of patterns. Excluding those languages which have shifted to basic

SOV word order under the influence of unrelated languages, Semitic languages can be placed somewhere in the middle of a continuum between VSO and SVO almost without exception (see Nubi above). A variety of both VS and SV patterns are found in these languages with the distribution determined by grammatical and discourse features which interact with each other. This is not an unusual pattern. In Steele's (1978) typological study of word order, 50% of the languages in the sample⁶⁹ considered to have basic VSO word order also had SVO as a possible variant.

Differences between Semitic languages can to some degree be described in terms of positions along this continuum, although one must at times consider word order in terms of specific constructions. Purely consistent VSO word order is nowhere described in the Semitic family. Earlier Semitic varieties often appear to be much closer to the VSO end of the continuum, with a trend toward SVO in later varieties. Even in languages where the trend toward SVO appears particularly advanced, VSO patterns are frequently retained in more restricted contexts as was seen in Maltese. Extensive word order variation is a characteristic of all Semitic languages and varieties.

These variations in word order help to explain how utterances which are distinguished by word order in canonical contexts can be reanalyzed in other contexts. The word order contrast between a sentence with a finite verb and one with a participial predicate, although maintained in some contexts, is not maintained in every context.

Despite the often assumed secondary status of SVO patterns in the Semitic languages, the frequency of these secondary patterns makes reanalysis a real possibility. The reanalysis of the participle as verbal in contexts where SVO order is dominant may interact with word order variations in one of two possible ways. The expansion of contexts where SVO syntax is found may increase the likelihood of the reanalysis. Conversely, the reanalysis of the participial construction as verbal may expand the contexts of SV syntax pushing the language further toward a more strictly SVO type.

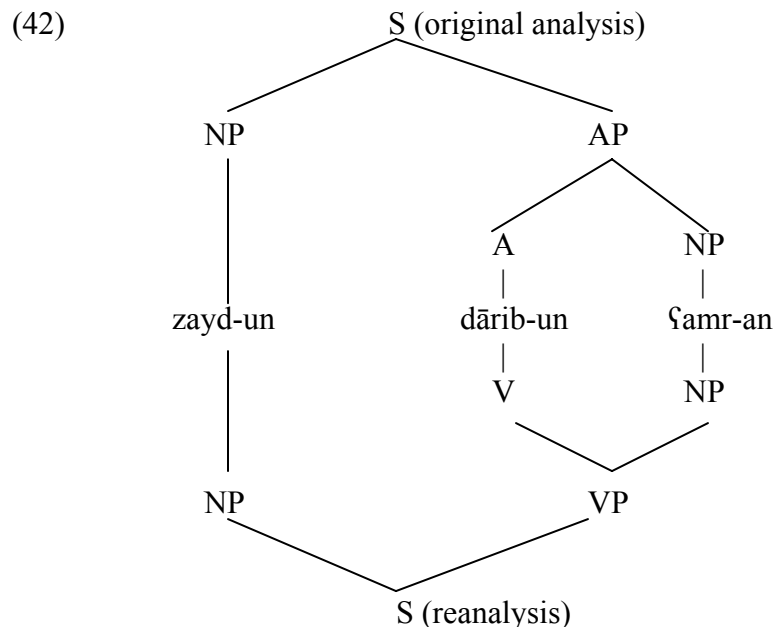
In some discourse contexts nominal and verbal sentences will have superficially identical structures. Syntactic reanalysis as defined by Langacker is "change in the structure of an expression or class of expressions that does not involve any intermediate or intrinsic modification of its surface manifestation" (1977:58). In conversational contexts, both verbal and nominal sentences would frequently have identical surface arrangements with the subject preceding the predicate. Because the participle frequently has verb-like complementation when serving as the head of a predicate phrase, sentences with a finite verb form and those with a participle may only differ in the forms of the verb and participle. The partially contrived examples below exhibit a potential minimal contrast between a sentence with a participle and one with a finite verbal form.

⁶⁹ The sample in Steele was constructed to get a representative sampling from different genetic groupings. The sample included 63 languages from 23 different genetic groups. Of the languages 10 were judged as having basic VSO word order. Five of the languages with basic VSO order also have SVO as a possible word order variant. Only VOS was better represented as a word order variant in VSO languages with 6 out of 10 languages allowing this.

(41) Identical orders with participial and verbal predicates

- a. zayd-un dārib-un ʕamr-an
 Zayd-NOM Beat.PART-NOM ‘Amr-ACC
 Zayd is beating (will beat) Amr.” (Wright 1896-1898:65 B)
- b. zayd-un ɗarab-a ʕamr-an
 Zayd-NOM Beat.PERF-3MSG ‘Amr-ACC
 Zayd beat Amr.”

The reanalysis of the structure does not affect the surface arrangement, although the results of this reanalysis might ultimately lead to changes in other contexts such as negative or interrogative sentences. Two alternative tree structures have been assigned to the sentence above in (75a).



Beside word order, the morphology is an important clue to the type of sentence structure involved. In cases where, for example, the predicate consists of a prepositional phrase or a noun or adjective phrase, the presence of nominal morphology or the absence of verbal endings make the basic structure of the sentence clear. The participle in Classical Arabic still clearly has nominal morphology taking both the gender and number inflection as well as case inflection of nouns.

(43) Nominal inflection of participles in Classical Arabic

	NOM	ACC	GEN
MSG	fāṣil-un	fāṣil-an	fāṣil-in
FSG	fāṣil-at-un	fāṣil-at-an	fāṣil-at-in
MPL	fāṣil-ūna		fāṣil-īna
FPL	fāṣil-āt-un	fāṣil-āt-un	fāṣil-āt-in

The morphological means of distinguishing nominal and verbal sentences has also been significantly weakened in the subsequent histories of the Arabic dialects. The original case markings of nouns have been substantially eroded in the Modern Arabic dialects like they have even in all but the oldest Semitic languages. The case system of the Semitic languages is preserved in Classical Arabic, Akkadian and some of the older examples of West Semitic, such as Ugaritic. There are also survivals of the system in Biblical Hebrew and Ge'ez. Otherwise, these endings have been almost universally lost. With this loss, the burden is shifted completely to the syntax and particularly to the order of constituents.

5.3.3. Accounting for word order variation

Word order variation in Semitic enables the reanalysis of participles and other forms. Reanalysis of the participle as a verbal form depends on the neutralization of word order contrasts in a common discourse context. To a large extent, descriptions of Semitic languages, if they treat syntactic patterns at all, provide fairly cursory accounts of word order variation. The most comprehensive accounts of word order variation are encountered in the literature on Hebrew and Arabic of different periods. While discourse factors are universally considered to be the primary driver of word order variations, accounts differ considerably in terms of specificity, framework and the mechanisms proposed.

Anshen and Schreiber (1968) account for SVO word order by means of a focus transformation which relates the surface structure to a structure generated by phrase structure rules in which the predicate precedes the noun. Although a discourse function clearly motivates the transformation, it is unclear under exactly which conditions this transformation would occur. Other studies of word order in Arabic within the generative tradition (Majdi 1990, Aoun, Benmamoun and Sportiche 1994) similarly glance over the distribution of different word orders in discourse and focus on grammatical features associated with different word orders, such as asymmetric agreement patterns, or on the assumed underlying word order⁷⁰.

Brustad (2000) takes a more discourse oriented approach to word order in Arabic, examining the discourse functions of the different possible word orders in four modern dialects within the framework of Li and Thompson (1976). According to Brustad, the choice of VSO and SVO word order in the Arabic vernaculars is determined mainly by discourse factors. VSO is a “subject prominent” structure which dominates in narratives, while SVO is a “topic prominent” structure which occurs mainly in genres where the topic shifts, such as descriptions and conversations. A similar generalization is also characteristic of Classical Arabic, where SVO word order is “distributionally equivalent” to sentences with extraposition (Khan 1988).

⁷⁰ The generative literature on Arabic word order is particularly concerned with two related questions: (1) the nature of the underlying word order and (2) the transformations or principles which relate the underlying word order to the surface structure. SVO, VOS and VSO have all been suggested as possible underlying word orders. See Majdi 1990 for a discussion of different hypotheses.

Brustad's findings point to an important domain in which reanalysis could take place, namely in conversational contexts where SVO structures are predominant. One of the limitations of Brustad's approach is that it does not provide a framework for describing differences in word order between dialects nor does it propose historical mechanisms that would lead to this differentiation.

A more extensive and quantitative study of word order in Arabic dialects is found in Dahlgren (1998), although the basic approach and many of the conclusions are very similar. Dahlgren concludes that variations in word order display a basic foreground/background distinction and that tense, aspect and the topicality of full NPs and pronouns all affect word order. In line with Brustad, VS syntax was seen to dominate in narratives, while SV is more common in dialogues and descriptions.

Givón (1977, 1984) lays the groundwork for understanding word order variation and change in the Semitic family through the historical and quantitative study of word order in Hebrew and other languages. In a manner repeated elsewhere in the Semitic languages, the history of Hebrew is also characterized by a gradual shift to SV patterns in syntax. This shift is found not only between Biblical Hebrew and Modern Hebrew, but between the early and late phases of Biblical Hebrew.

Givón (1977:187) argues that the shift from VS to SV is motivated by two facts: "(a) the subject is the most topical element in the sentence, and (b) that at least for some language types - probably most - Bolinger's (1952) principle holds by which older or more-topical information tends to be presented first." In Early Biblical Hebrew there is a connection between topic continuity and VS syntax on the one hand and topic switching and SV syntax on the other. According to Givón, the forms which are most commonly used for topic-shifting, such as the perfect and the participle, are in the vanguard of the shift to SV syntax, while the forms used more frequently in topic continuity contexts, such as the imperfect, retain VS patterns. The correlation between the form used and the word order persists into later phases of Biblical Hebrew, but the relative frequencies of the forms have changed. The perfect and participle take over the continuity functions of the imperfect, specifically the converted imperfect, and the imperfect retains only its irrealis functions.

Givón highlights the importance of individual constructions in the process of word order change. Word order would appear to be largely a feature of particular constructions. Change in word order operates not through changing existing constructions, but through the creation of new constructions or the expansion of existing constructions with the new word order.

5.3.3.1. Word order generalizations in the Semitic languages

The basic generalizations about word order in Arabic and Hebrew proposed above by Givón (1977, 1984), Dahlgren (1998) and Brustad (2000) are also supported by patterns in other Semitic languages. In many cases, the evidence we have is limited by the small number of texts in a small number of genres, in existence for particular Semitic languages. Many of the existing corpora involve very simple, short and frequently repetitive texts. Even languages with more extensive corpora do not have the available richness of living languages or languages like pre-Modern Hebrew, Classical Arabic or Syriac with their rich and varied literary traditions.

Nearly all Semitic languages, with the exceptions already described, have two main characteristics with respect to word order. First, a degree of word order flexibility is very common. While word order flexibility is nearly universal, some varieties, such as Imperial Aramaic, appear to allow even greater flexibility. Second, VSO word order plays an important role in almost all the relevant varieties of Semitic. Following both Dahlgren and Brustad, we

expect to find VS structures with more frequency in narratives and SV structures more in dialogues or descriptions. Because of this distribution, the availability of particular genres within a corpus might provide a distorted view of the actual word order patterns.

Eblaite, Amorite and Ugaritic

Beside Akkadian, the earliest attested Semitic languages are Eblaite, Amorite, the West Semitic language of the El-Amarna letters and Ugaritic. Because of their antiquity, these languages offer important clues to the original word order patterns of the Semitic family, patterns that are generally similar to the ones described already.

Eblaite is particularly useful because it is the oldest well-attested Semitic language beside Akkadian. Eblaite and Old Akkadian are roughly contemporary varieties. The period of Old Akkadian is between 2350 and 2200 BCE (Buccellati 1997), while Eblaite is dated to a period from around 2300 to 2250 BCE (Gordon 1997). Because of this, considerable weight must be given to Eblaite in the reconstruction of Proto-Semitic. Word order in Akkadian is strongly SOV. Logically there are two likely explanations for SOV word order in Akkadian. SOV could represent the older situation with VSO of West Semitic being an innovation. Conversely, VSO could be the original basic word order with SOV being an innovation.

As argued earlier, the second scenario fits the available evidence better. The shift from VSO to SOV can be attributed to the clear source of influence from Sumerian and displays clear parallels with other well-established cases of contact-induced shifts from VSO to SOV in Ethiosemitic and some Arabic dialects. In contrast, a shift from SOV to VSO in Semitic has neither clear contact source nor a clear internal motivation. The strongest arguments for the original status of SOV derive from the age of Akkadian in relation to the generally much later West Semitic. In light of Eblaite, as well as to a lesser degree Amorite, the El-Amarna letters and Ugaritic, this argument loses much of its persuasiveness. Eblaite appears to pattern more with West Semitic with verb initial syntax as a common arrangement. Gordon (1997) describes word order as “rather free” but states that the verb frequently begins the sentence. Edzard (1984) considers the syntax of verbal sentences to be P(redicate)-S(ubject), as illustrated in the following example.

- (44) wa i-gub EN gaba ^dKu-ra wa DU₁₁-GA
 and⁷¹ 3SG-step.PRET lord before Kura (deity) and spoke
 “der Herrscher trat vor Kura hin und sprach” (Edzard 1984:116)

Eblaite personal names also appear to reflect verb initial syntax. Since some of these names are phrasal or sentential names, some grammatical information can be inferred from them. Examples of sentential personal names with verb initial syntax include *Iq-bù-ul-Ma-lik* ‘the divine king has accepted’, *Ìr-kab-Ar* ‘Ar rides’, *Ra-ga-ma-Il* ‘God has spoken’ (Gordon 1990:128 and 132), *I-bi-Da-mu* ‘Damu has called’ and *Iḫ-ra-Ma-lik* ‘the divine king chose’ (Archi 1987:14).

The evidence from Amorite is restricted to personal names in Babylonian from the second millennium BCE, but like Eblaite can offer valuable grammatical information. Amorite also would appear to have had verb initial syntax based on names like *Ḥa-ya-Su-mu-ú-A-bi-im*

⁷¹ Gordon (1987:21-22) argues that *wa* functions as a tense marker as in the Hebrew *waw* consecutive and that the use as a conjunction is an innovation.

‘Father’s name lives on’, *Ha-a-ya-A-bu-um* ‘Father lives’, with very common Semitic roots and with expected case endings, and *Ya-šu-ub-dI-pu-uḥ* ‘*I-pu-uḥ* has returned’ (Gordon, 104).

Evidence from Eblaite and Amorite shows clearly the existence of verb initial syntax in the earliest Semitic varieties in contrast to the situation in Akkadian. The West Semitic language of the Amarna letters and Ugaritic provide evidence not only of the existence of verb initial syntax, but also evidence of word order variations between VS and SV syntax similar to that found in later Semitic varieties.

The treatment of word order in verbal clauses in Rainey (1996) presents a situation very similar to that of Arabic and Hebrew. VS order is described as “[characterizing] the progress of the action’ (3:265) and is thus found in narrative sections of texts.

(45)

- a. tu-uṣ-ša ERÍN.MEŠ LUGAL EN-ia
 3F-come-FPL army king lord-1SG
 ‘the army of the king, my lord, came forth’ (Rainey 1996, 3:265; EA 234:19-20)
- b. ù a-nu-ma ia-aš-pu-ra ¹Su-ta ana ia-ši
 and now 3MSG-write Shuta to 1SG-DAT
 “and now Shuta has written to me” (Rainey, 3:265; EA 234:24-26)

SV order is found at the beginning of narratives or other contexts where a new topic is being established. The first example below heads a short passage from which two of the examples above are taken.

(46)

- a. [¹Zi-ir]-dam-ia-[a]š-da p[a-]-tá-ar iš-t[u] [¹B]ir₅-ia-wa-za
 Zirdamyashda desert.PERF from Biryazawa
 “Zirdamyashda deserted from Birzayawza” (Rainey, 3:265; EA 234:11-13)
- b. ù a-na-ku-ma ù ìr-ḥe-ba nu-kúr-tu₄
 and 1SG-ENCL and ṣAbdi-Ḥeba 1PL-fight.IMPF
 i-na LÚ.ṣAṣ.GAZ
 with the.ṣApîrû
 ‘but it is ṣAbdi- Ḥeba and I who are fighting the ṣApîrû’ (Rainey, 3:267-8, EA 366:19-21)

Verbal sentences in Ugaritic exhibit a wide range of possible word orders (Sivan 2001). The flexibility is likely related in part to the preservation of the system of case marking also found in Akkadian and Classical Arabic. Sivan describes Ugaritic word order in verbal sentences as most frequently involving the subject before the verb. However, verb initial syntax is found in Ugaritic. A large number of sentences have pronominal subjects which are reflected in the inflection of the verb, leaving the verb in initial position in narrative texts like those in Parker (1997).

(47) Verb initial syntax with PRO subject

- a. t-ph-n mlʔak ym
 3MPL-perceive.impf-PL messenger.PL Yamm
 “They perceive Yamm’s messengers” (KTU 1.1 I, 22; Parker 1997:99)
- b. y-bky w-y-šnn y-tn g-h
 3MSG-cry.IMPf and-3MSG-cry.bitterly.IMPf 3MSG-give.IMPf voice-POSS.3MSG
 “He cries, cries bitterly; he utters (lit. gives his voice)...” (KTU 1.16 I, 12-13, Parker 1997:31)
- c. y-θb l-ksʔ-i mlk
 3MSG-sit.IMPf to-seat-GEN kingship
 “He sits on the throne of his kingship.” (KTU 1.16 VI, 23, Parker 1997:40)

Of greater importance, verb initial syntax is encountered with full NP subjects in the same narrative texts.

(48) Verb initial syntax with full NP subjects

- a. aʔr t-mgy-n mlʔak ym
 then 3MPL-arrive.IMPf-PL messenger.PL Yamm
 “then Yamm’s messengers arrive” (KTU 1.1 I, 30; Parker 1997:100)
- b. y-tmr bʕl bnt=h
 3MSG-see.IMPf Baal daughter=POSS.3MSG
 “Baal sees his daughters” (KTU 1.3 I, 22-23; Parker 1997:106)
- c. y-rtqʂ ʂmd b-d-bʕl
 3MSG-leap.IMPf weapon from-hand-Baal
 “The weapon leaps from Baal’s hand” (KTU 1.1 IV, 15; Parker 1997:102)

Wilson’s (1982) study of word order in the Keret text presents numerous examples of both SV and VS word orders, although it does not attempt to account for word order variation due to discourse factors. The SV word order tendency referred to by Sivan (2001) may reflect biases in the range of discourse types found in the extant texts and not a more meaningful pattern. The prevalence of subject initial syntax might stem from the fact that many of the texts are short and non-narrative. The evidence available from “narrative poetry” is generally consistent with the basic discourse function of word order variation described already.

Hebrew

Givón (1977) focuses on the word order patterns in two periods of Biblical Hebrew, during which the frequency of word order patterns are shifting in favor of SV order. In Biblical Hebrew, the occurrence of VS pattern is sufficient for Joüon and Muraoka (2000:579) to claim that VSO is “[t]he statistically dominant and unmarked word order” (Joüon and Muraoka 2000:579). VSO word order is amply attested in Biblical Hebrew, particularly in passages representing Early Biblical Hebrew like those below.

(49) Verb initial syntax in Biblical Hebrew

- a. mālak dāwid ʕal-yiśrāʔēl ʔarbāʕīm
rule.PERF David over-Israel Forty
“David ruled over Israel forty years.” (1 Kgs 8:25)
- b. yē-lek-nā ʔādōnāy bəqirb-ēnū
3MSG-go.JUSS-PREC the.Lord with-1PL
“Let the Lord go with us.” (Exod 34:9)
- c. y-ōsēf yhw l-ī bēn ʔahēr
3MSG-add.JUSS the.Lord to-1SG son other
“May God add to me another son.” (Gen 30:24)

Verb-initial syntax is also supported by other early examples of Hebrew. VS(O) order is common in early Hebrew epigraphic texts. In line with the assumed discourse function of word order, SVO syntax commonly occurs at the beginning of texts. The most common set of examples involves one of the frequently used greeting formulae at the beginning of letters.

(50)

- a. ʔḥ-k ḥnnyhw šlh l-šlm ʔlyšb
brother-2MSG Hananyahu send.PERF to-greetings Elyashib
“your brother, Hananyahu, sends greetings to Elyashib...” (Arad 16:1-2)
- b. bn-k yhwkl šlh l-šlm gdlyhw
son-2MSG Yehukal send.PERF to-greetings Gedalyahu
“your son, Yehukal, sends greetings to Gedalyahu...” (Arad 21:1)
- c. bn-km gmr[yhw]⁷² w-nḥmyhw šlh[-w l-šlm]
son-2MPL Gemar[yahu] and-Neḥemyahu send[-3MPL to-greetings]
- mlkyhw
Malkiyahu
“Your son, Gemaryahu, and Neḥemyahu send greetings to Malkiyahu”
(Arad 40:1-3)
- d. ʕbd-k hwšʕyhw šlh l-hg[d lʔd]ny y[ʔ]w[š]
servant-2MSG Hoshayahu send.PERF to-report Yaush
“your servant sends a report to Yaush” (Lachish 3:1-2)

⁷² Reconstructed on the basis of name in Arad 31:8.

VSO occurs in most other contexts, particularly in narrative contexts

(51)

- a. hšb ʕbd-k h-spr-m
return.PERF servant-POSS.2MSG DEF-letter-PL
“Your servant returns the letters” (KAI 195:6-7)
- b. w-šw-k ḥnnyhw ʕl bʔršbʕ
and-order.PERF-2MSG Ḥananyahu to Beersheba
“Ḥananyahu (hereby) orders you to Beersheba...” (Arad 3:2-4)
- c. yrd šr h-šbʕ bn ʔlntn l-bʔ mšrym-h
go.down.PERF commander DEF-army son Elnatan to-enter.INF Egypt-DIR
“...the commander of the army, the son Elnatan, went down in order to enter Egypt”
(Lachish 3:14-16)

In Mešad Ḥashavyahu 1, a series of VSO sentences follow one another in a short narrative describing an alleged wrong. The first sentence within this passage uses SV order to establish *ʕbdk* as a topic. All the subsequent subjects follow the verb.

(52) Passage from Mešad Ḥashavyahu 1 illustrating word order patterns

[S	V]	[V	S	Comp]
ʕbd-k	qšr	hyh	ʕbdk	b-ḥšr ʔsm
servant-2MSG	harvest.ACT.PART	be.PERF	servant-2MSG	in-Ḥašar-Asam

[V	S]
w-y-qšr	ʕbdk
and-3MSG-harvest.PRET ⁷³	servant-2MSG
	w-y-kl
	and-3MSG-finished.PRET ⁷⁴

w-ʔsm	k-ym-m	lpny	šbt	kʔšr
and-store.PERF ⁷⁵	like-day-PL	before	stop.INF	when

[V	S	0]
kl	[ʔ]bd-k	ʔt
finish.PERF	servant-2SG	OBJ
	qšr	w-ʔsm
	harvest.INF	and-store.PERF

⁷³ This would appear to be an example of the Hebrew “waw- consecutive”, a form that resembles the imperfect, but is in fact a reflex of an original preterite form which is found in Akkadian and traces of which are found in Arabic *lam yadrus* ‘he did not study’.

⁷⁴ This would appear to be an example of the Hebrew “waw- consecutive”, a form that resembles the imperfect, but is in fact a reflex of an original preterite form which is found in Akkadian and traces of which are found in Arabic *lam yadrus* ‘he did not study’.

⁷⁵ This could also be an infinitive absolute, see Waltke and O’Connor 1990 for a discussion of this form.

	[V		S]		
k-ym-m	w-y-b?		hwšʕyhw	bn	šby
like-day-PL	and-3MSG-come.PRET		Hoshayahu	son	Shabay

[V		O]			
w-y-qḥ		ʔt	bgd		ʕbd-k
and-3MSG-take.PRET		OBJ	garment		servant-2MSG

“Your servant was harvesting. Your servant was in Ḥaṣar-Asam. Your servant harvested, finished and stored (the grain) days before stopping. When your servant finished harvesting, Hoshavyahu son of Shabay came and took your servant’s garment.”

VSO is also found in most examples of sentences expressing a hope or a wish. Most of these sentences involve YHWH as a subject. Since YHWH in these contexts has low topicality, it is not surprising that SVO patterns are generally missing. In addition to the cases below there are many other examples of VSO in this type of construction, e.g. Ketef Hinnom 1:14-15, 1:17-18, 2:5-7, Lachish 2:5-6, 3:2-3, 4:1-2, 5:7-9, 6:1-2, 8:1-2, 9:1-2.

(53)

- a. y-šlm yhwh l-ʔdn-[y]
 3MSG-reward.JUSS the.Lord to-lord-POSS.1SG
 “may the Lord reward my lord” (Arad 21:4)
- b. y-ʔr yh[wh] pny-w [ʔl]y-k
 3MSG-shine.JUSS the.Lord face-3MSG upon-1SG
 “may the Lord shine his face upon me” (Ketef Hinnom 2:8-10)
- c. y-bṛk-k YHWH b-šlm
 3MSG-bless.JUSS the.Lord in-peace
 “may the Lord bless you in peace” (Moussaïef Ostarcon 2:1)
- d. y-šmʕ yhwh ʔt ʔdn-y šmʕt šlm
 3MSG-inform.JUSS the.Lord OBJ lord-1SG news well-being
 “may the Lord inform my lord of good news” (Lachish 2:1-2)

There are also a few examples of this same construction with a subject other than YHWH. These examples also conform to VSO order.

(54)

- a. y-šmʕ ʔdn-y h-śr ʔt dbr ʔbd-h
 3MSG-hear.JUSS lord-1SG DEF-official OBJ plea servant-3MSG
 “may my lord the official hear the plea of his servant” (Mešad Ḥashavyahu 1:1-2)

- b. y-šmṣ ʔdn-y h-šr̥ ʔt ʔmt-ḳ
 3MSG-hear.JUSS lord-1SG DEF-official OBJ maidservant-2FSG
 “may my lord the official hear your maidservant” (Moussaïef Ostarcon 2:1-2)

Only one exception to this pattern is found in the epigraphic texts where the subject precedes the verb.

- (55) yhwh y-šʔl l-šlm-k
 YHWH 3MSG-seek.JUSS to-well.being-2MSG
 “may the Lord seek your well being” (Arad 18:2-3)

Although the details of the grammar of early epigraphic texts are not always clear, given the small number of texts with meaningful linguistic information and the general brevity of these same texts, the information that can be gleaned about word order variation is quite substantial.

Other Northwest Semitic Languages

Northwest Semitic, particularly in the older varieties, also contributes greatly to our understanding of the diverse linguistic situation, while still supporting many of the basic patterns observed in other Semitic languages. Garr (1985) divides the Northwest Semitic dialects into two groups depending on the character of word order in the languages. The first group follows the already well-established patterns of West Semitic in which verb-initial syntax can be considered basic but other word orders are found depending on the discourse context. This group includes Epigraphic Hebrew, as we have already seen, as well as Phoenician, northwestern dialects of Aramaic, Samalian, Ammonite and Moabite.

As in many other Semitic languages, the position of the subject and the verb varies with respect to their position in relation to one another. Krahmalkov describes variation as constrained by both the form and the function of the verb. The main formal distinction is between a suffixing form, which corresponds to the West Semitic perfect, and a prefixing form, which corresponds to the West Semitic imperfect. A further set of distinctions is made for the prefixing conjugation, which Krahmalkov designates the prefixing forms A through C. Phoenician appears to preserve many of the prefix form distinctions which are eventually lost in many other West Semitic varieties. Form A is used for the indicative imperfect as in Classical Arabic *yaqtulu* ‘he kills’. Form B has two functions as a past perfective (or preterite) or as a jussive or optative. These two forms may reflect a set of forms that were originally distinguished. Hetzron (1969) has proposed the two forms were originally distinguished by the placement of stress, preterite *yáqtul and jussive *g. These forms correspond to the Classical Arabic jussive *yaqtul* ‘may he kill’. Form C also has the function of a jussive, optative or cohortative and is connected to the Hebrew cohortative marked by -ā^h and the Classical Arabic subjunctive *yaqtula*. Just as the prefixing form B has two possible functions, the suffixing form is also described as having two distinct functions, either as a “present perfective”, which is often used with performative verbs, or a past perfective.

The “present perfective” use of the suffixing form and prefixing form A and the modal uses of prefixing forms B and C are described as having no restrictions with regard to word order, allowing both VS and SV patterns. In contrast, the “past perfective” uses of both the suffixing form and the prefixing form B would appear to be in complementary distribution with respect to word order patterns. The “past perfective” suffixing form does not occur sentence initially.

(56)

a. w-kl šlh yd
 and-all send-PERF hand
 “and each extended his hand” (KAI 24.6; Krahmalkov 2001:171)

b. ʔnk tmk-t mškbm l-yd
 1SG grasp-1SG mškbm to-hand
 “I took the *mškbm* by the hand” (KAI 24.13; Krahmalkov, 171)

In stark contrast, the “past perfective” prefixing form B only occurs in initial position.

(57)

a. y-ʕl h-gbr zʔ ʔ[ʕ]šy
 3MSG-go-up.PRET DEF-warrior this Alasia (Cyprus)
 “This warrior went up to Alasia” (KAI 30:1-2; Krahmalkov 2001:188)

b. w-y-lk (/ye-lek-ū/) rb-m ʔdnbʕl bn grskn h-rb
 and-3M-march.PRET-PL general-PL Idnibal son Gisco DEF-great

w-ḥmlk bn ḥnʔ h-rb ʕlš
 and-Himilco son Hanno DEF-great dawn
 “Generals Idnibal son of Gisco the Great and Himilco son of Hanno the Great
 marched at drawn” (CIS I 5510:9-10; Krahmalkov, 293)

This pattern has clear parallels with the patterns in Early Biblical Hebrew. In a quantitative analysis of the word order distribution, Givón (1977) finds that in “continuity” contexts the imperfect (in most cases the *waw*-consecutive representing the preterite) is found overwhelmingly with VS order and the perfect is found in the great majority of cases with SV order.

A similar distribution of word order and verb forms is found in Moabite. Many grammatical patterns in Moabite closely resemble those of Hebrew, to which it is considered to be closely related (see Garr 1985:228-229). Although Moabite is severely limited in terms of variety and number of texts, the Mesha stele is comparatively long and provides some rich detail about Moabite narrative structure. The Mesha stele is a historical text set up by Mesha, the king of Moab, which commemorates events that took place during his reign. Most of the text is in the first person (from Mesha’s perspective) and much of it appears to use a verb form close to the Hebrew “*waw* consecutive”. Beside the “author” Mesha, three other figures are prominent in the passage, the God Kemosh, and two kings of Israel, Omri and Omri’s son. In this text, VS syntax dominates as might be expected given similarities between Moabite and Biblical Hebrew. In most cases, the verb is inflected for the first person and lacks an overt subject. The cases of VS(O) syntax occur exclusively with the Moabite “*waw* consecutive”, i.e. the old preterite form. As in Hebrew and Phoenician, there appears to be a strong connection between this verb form and VS(O) word order.

(59)

- a. ʔb-y mlk ʕl mʔb šlšn št w-ʔnk mlk-ty
 father-1SG rule.PERF over Moab thirty year and-1SG rule.PERF-1SG

ʔhr ʔb-y
 after father-1SG

“My father ruled over Moab for thirty years and I ruled after him” (KAI 181:2-3)

- b. w-ʔš gd yšb b-ʔrš ʕtrt m-ʕlm
 and-men Gad settle.PERF in-land Ataroth from-long.time
 “and the men of Gad had settled in the land of Ataroth long ago” (10)

- c. w-mlk yśrʔl bnh ʔt yḥš
 and-king Israel build.up.PERF OBJ Jahaz
 “and the king of Israel fortified Jahaz” (18-19)

The only example not following the pattern where VS syntax is associated with the prefix conjugation preterite and SV syntax is associated with the suffix conjugation perfect. In the following example the subject of the preterite verb form comes before the verb.

- (60) ʕmry mlk yśrʔl w-y-ʕnn ʔt mʔb ym-n rb-n
 Omri king Israel and-3MSG.oppress.PRET OBJ Moab day-PL many-PL
 “Omri, king of Israel, oppressed Moab for many days” (KAI 181:4-5)

Whether we consider this example as an exception depends crucially on the interpretation. If we assume that <mlk yśrʔl> is in apposition to <ʕmry> as is done above and in Gibson (1971), then this case is an exception. However, Donner and Röllig (1973 2:172) interpret the above as consisting of two clauses, the first a nominal clause “Omri was king of Israel” and the second a verbal clause. Following this interpretation, this example would not constitute an exception.

The distribution of verbs with particular forms and functions in Phoenician are described by Krahmalkov (2001). The patterns that emerge show striking similarities to the patterns described by Givón (1977) for Biblical Hebrew and attested in epigraphic Hebrew texts. These similarities are not surprising given the generally assumed closeness of Hebrew and Phoenician within a common Canaanite branch.

While a general drift toward SVO has been described for other Semitic groups, Punic and Neo-Punic maintain verb-initial syntax in many cases. Examples from these two later varieties of Phoenician demonstrate the resilience of the word order patterns in this branch. The following examples illustrate the continued use of verb initial syntax with the “past perfective” or preterite use of prefixing form B in Punic and Neo-Punic.

(61)

Punic

- a. šlm bdʕštrt bn bdʔšmn ʔyt nndrm
 fulfil.PERF Bostar son Bodesmun ACC vow
 “Bostar son of Bodesmun fulfilled his vow” (KAI 115.1-2)

- b. w-y-lk rb-m ʔdnbʕl bn grskn
 and-3MSG-walk-PRET general-PL Idnibal son Grisco
- h-rb w-ḥmlk bn ḥnʔ h-rb ʕiʕ
 DEF-great and-Himilco son Hanno DEF-great dawn
 “Generals Idnibal son of Grisco the Great and Himilco son of Hanno the great marched at dawn.” (CIS I 55 10.9/10)

Neo-Punic

- c. fel th-ybur Licini Piso
 make-PERF ACC-tomb Licinius Piso
 “Licinius Piso made this tomb” (*Africa Italiana* 1 1927 p. 233 lines 1-2)
- d. sab sib-en Mycne
 surround.PERF militia-POSS.1PL Mycne
 “Our militia surrounded Mycne.” (D 6)

Garr’s (1985) second class involves languages where the word order is relatively free, although even in these languages verb initial orders are found. This group is represented by the southern and eastern dialects of Aramaic, as well as the Deir Alla dialect, which shares other features with Old Aramaic. Since it is essentially only Aramaic which deviates from the more general pattern, this group requires special attention.

Aramaic

The situation in Aramaic is more complicated than that of other Semitic groups. As described above (section 5.3.2.1), Aramaic varieties vary considerably according to the flexibility of word order. The variation would appear to be due to both contact and internal developments. Still, many varieties of Aramaic exhibit the basic patterns found in other Semitic languages. In Old Aramaic, verb initial syntax occurs commonly in some of the inscriptions in and around Aleppo. The Sefire inscriptions provide several examples of verb initial syntax.

(62)

- a. w-hn y-šqr mtʕʔl br ʕtrsmk
 and-if 3MSG-be.false.IMPF Matī‘el son ‘Attarsamak
 “And if Matī‘el, son of ‘Attarsamak, is false...” (KAI 222:14)
- b. w-y-šlh-n ʔlh-n mn kl mh ʔkl
 and-3M-send.JUSS-PL god-PL from all what eat.ACT.PART
- b-ʔrpd w-b-ʕm-h
 in-Arpad and-in-people-3FSG
 “and may the gods send against Arpad and its people all those which devour”
 (KAI 222:30)

- c. w-hn y-rb br[-y] zy yšb ʕl
 and-if 3MSG-quarrel.IMPF son-[1SG] REL 3MSG-sit.IMPF upon
- khsʔ-y ʕd ʔh-w-h
 throne-1SG One brother.PL-3MSG
 “and if [my] son who sits on my throne quarrels with one of his brothers...”
 (KAI 224:17)

In contrast, Kutscher’s (1970) “Eastern type” has more fluid word order with many common word orders in addition to verb-initial orders.

This fluidity in word order is found in many Imperial Aramaic texts. Muraoka and Porten (1998) describe Egyptian Aramaic as having free word order with examples of SVO, SOV, VSO and a number of more minor patterns being encountered. Though perhaps not the most common arrangement, a more rigid VSO order is well attested even in the varieties of Aramaic in Egypt. The Elephantine papyri (Kraeling 1953) provide many cases where the syntax follows the presumed inherited Semitic patterns. The second papyrus in the collection is particularly illustrative of these syntactic patterns. In verbal sentences, verb-initial syntax occurs in almost every case. In sentences where the subject is expressed pronominally and is incorporated into the form of the verb, the verb occurs before objects and other complements.

(63)

- a. šnʔ-t l-tmt ʔntt-y
 divorce.PERF-1SG OBJ-Tamut wife-POSS.1SG
 “I divorce Tamut, my wife” (BAP 2:7)
- b. t-ntn l-ʕnny ksp šql-n 7
 2FSG-give to-Anani silver shekel-PL seven
 “She will give seven silver shekels to Anani” (2:10)
- c. w-hn hnšl-t-h mnk ʔ-ntn l-ʕnny
 and-if take-1SG-3MSG from-2MSG 1SG-give.IMPF to-Anani
- ksp krš-n 5
 silver karsh-PL five
 “and if I take him from you, I will give to Anani 5 silver karsh” (2:14)

In cases where there is a full NP subject, the verb precedes both the subject and the complements as in the following examples. While the text itself is not a narrative text, many of the examples can still be considered as having a narrative function.

(64)

- a. ʔmr ʕnnyh br ʕzryh ... lmšlm bar zkwr
 say.PERF Ananiah son Azriah ... to-Mešullam son Zakkur
 “Ananiah son of Azriah ... said to Mešullam son of Zakkur” (BAP 2:1-2)

- b. hnʕl-t l-y tmt b-yd-h lbš 1
bring.PERF-FSG to-1SG Tamut In-hand-POSS.3FSG garment one
“Tamut has brought into me in her hand one garment...” (2:4)
- c. mħr ʔw ywm ʔħrn y-qwm ʕnny bʕdh
tomorrow or day other 3MSG-rise.up.PERF Anani on.account-3FSG
“If tomorrow or another day Anani rises up on account of her...” (2:10)
- d. mħr ʔw ywm ʔħrn y-mwt ʕnnyh
tomorrow or day other 3MSG-rise.up.PERF Ananiah
“If tomorrow or another day Ananiah dies...” (2:10-11)
- e. ktb ntn br ʕnnyh spr-ʔ znh
write.PERF Nathan son Ananiah document-DEF this
“Nathan son of Ananiah wrote this document” (2:14-15)

The one exception to VS order occurs in a case where special emphasis is clearly being placed on the subject, as is indicated by word order, the appearance of the independent subject pronoun and the appositive personal name.

- (65) w-ʔnh mšlm mħr ʔw ywm ʔħrn lʔ ʔkl
and-1SG Mešullam Tomorrow or day other NEG be.able

ʔnšl l-plty mn tħt lbb-k
take.away OBJ-Palṭi From under heart-POSS.2MSG
“Tomorrow or another day I, Mešullam, will not be able to take Palṭi from under your heart...” (BAP 2:13-14)

Emphasis also plays a role in the fronting of other constituents, as is seen with the fronted object in the example below from the same text.

- (66) w-kl zi hnʕl-t bydh t-hnpq
and-all REL bring.PERF-3FSG in-hand-3MSG 3FSG-take.out
“and she will take out all she brought in her hand” (BAP 2:10)

Despite the diversity of word order patterns, there is still relatively strong evidence for the existence of original patterns similar to those described for the other Northwest Semitic. The above evidence provides the grounds for assuming that both verb-initial syntax and discourse driven word order variation are features of Proto-Central Semitic.

South Semitic

The patterns of word order variation also appear to be as robust in the southern branch as they are in Central Semitic. Many of the same problems encountered in early Northwest Semitic languages are also found in South Semitic. Our knowledge of Old South Arabian (OSA) is limited by the relatively modest size and often repetitive nature of the corpus. Despite these difficulties, there is still clear evidence of similar basic word order patterns even in OSA. Ge‘ez,

Classical Ethiopic, with its larger and more varied corpus, further demonstrates the existence of many of the relevant patterns in South Semitic.

Sabaic, a form of OSA, allows for word orders involving the subject either preceding or following the verb. Beeston (1984) describes a general pattern where the subject will precede the verb at the beginning of a text but more commonly follows the verb later in texts. Kogan and Korotayev (1997) make the same observation about word order variation. The following data does not directly bear on the question of the discourse function of word order variants but demonstrates the common occurrence of VS syntax.

(67)

- a. kwn tqdm-n
take.place.PERF battle-DEF
“the battle took place” (Rad Miṣsāl 4:9; Beeston, 18)
- b. hydṣ-hw bṣl ḥrnm bṣbr ḡhy-hw
make.known.PERF-3SG lord Ḥrnm on.account.of brother-3SG
“the lord of Ḥrnm gave a declaration on account of⁷⁶ her brother”
(J 784:9; Beeston, 56)
- c. hbr ḡ-rydn w-mṣyrt ḥmyr
come.out.PERF PTCL-Raydan and-forces Himyarite
“he of Raydan and the Himyarite forces made a sortie” (J 576:16; Beeston, 44)
- d. w-bṣd-hw f-yḏbʔn bṣly-hmw mlk-n
and-after-3SG and-3MSG-fight.IMPF against-3MPL king-DEF
“subsequently, the king conducted military operations against them” (J 577:11; Beeston, 20)
- e. kn ḥṭb ykrbmlk
thus decree.PERF Ykrbmlk
“Thus has Ykrbmlk decreed.” (CIS 601:1; Beeston 1985:17)
- f. l-hwfr-n-n ḡtt-hmw w-bn-hmw
JUSS-make.pilgrimage-PL-n wife.PL-3MPL and.children-3MPL

ṣdy mḥrm-n
to sanctuary-DEF
“their wives and children must make a pilgrimage to the temple” (J 669:14; 15; Beeston, 15)

The subject can also precede the verb. Both of the following cases may involve some sort of emphasis or topicalization.

⁷⁶ Beeston points out that *bṣbr* may also mean “through the agency of”.

(71)

a. ʔigziʔəbħer wəhəbə-kimu zə-ʕilət-ə sənbət
 God give.PERF-2MPL this-day-CONST sabbath
 “God gave you this Sabbath day” (Exod 16:29; Dillmann, 504)

b. ʔəʔiʔət-iyə ʔi-zekkər yom
 sin-1SG 1SG-remember.IMPF day
 “my sin, I will remember this day” (Gen 41:9; Dillmann, 504)

c. laʕle-ya yi-kun mərgəm-ikə
 upon-1SG 3MSG-be.JUSS curse-NOM.2MSG
 “upon me be your curse” (Gen 27:13; Dillmann, 504)

The word order of the modern Ethiosemitic languages has shifted under the influence of Cushitic languages to SOV, but verb initial syntax is still found in Modern South Arabian languages. The Modern South Arabian languages display both VSO and SVO word orders (Simeone-Senelle 1997:411). Simeone-Senelle points out that if the subject is an independent pronoun it always precedes the verbal predicate. This is in line with the general discourse function of word order in the Semitic languages given the general function of independent pronouns as indicators of topic switching and emphasis in the Semitic languages.

The stories collected in Müller 1907 provide several examples of word order in narrative texts. Many of the texts are given in parallel versions in German, Arabic and several MSA languages, providing a comparison between a local variety of Arabic and the MSA languages. All the languages have broadly similar patterns with some deviations. The sensitivity of word order to discourse is found in the story “Die Portia von Gischin”. SV word order is used in all varieties at the beginning of the story, but VS is used in a very similar construction soon after where the subject has already been introduced and is definite.

(72)

SV order

Ḥaḍramī Arabic: rijjāl sār wa-maʔ-úh weléd-uh
 man go.PERF and-with-3MSG son-3MSG

Mehri: ǵajj jihēm wa-ših ʔibré-h
 man go.PERF and.with.3MSG son-3MSG

Jibbāli ǵaig ǵad be-šiš bré-š
 man go.PERF and.with.3MSG son-3MSG

Soqotri ʕaig ʕod we-šiš di-hé mǔǵšem
 man go.PERF and.with.3MSG PTCL-3MSG son
 “a man went with his son” (Müller 1907:23)

VS order

Ḥaḍramī sār weled-úh
 Arabic: go.PERF son-3MSG

Mehri: jihēm ḥibré-h
 go.PERF son-3MSG

Jibbāli ġad bré-š
 go.PERF son-3MSG

Soqotri ʕod di-hé múgšem
 go.PERF POSS-3MSG son
 “his son went” (Müller, 24)

In some cases, different word orders are used, perhaps reflecting subtle differences between languages or the individual translator’s choices. These examples show that the version do not simply involve calquing. The following example illustrates a case where word order varies between languages

(73)

Languages with SV order

Ḥaḍrami Arabic: al-bunáyyah beké-t
 DEF-girl weep.PERF-3FSG

Mehri: ġajinôt bukû-t
 girl weep.PERF-3FSG

Languages with VS order

Jibbāli: beké-t ġabgót
 weep.PERF-3FSG girl

Soqotri: béše-h ʕeugénoh
 weep.PERF-3FSG girl
 “the girl wept” (Müller 1907:12)

While considerably more work remains to be done on the distribution of word order in the MSA languages, a cursory examination clearly shows that the basic patterns of MSA are similar to those in other Semitic branches and languages.

Together with the evidence from Eblaite, an East Semitic language, and the Central Semitic languages, the South Semitic evidence from the OSA languages, Ge ‘ez and the MSA languages provide a fairly clear argument for the Proto-Semitic origin of verb-initial syntax as well as the types of word order variation due to discourse and pragmatic factors.

5.3.3.2. Nominal sentence word order

Nominal sentences in the Semitic languages frequently involve the simple juxtaposition of the subject and predicate. In other cases a copula, often an independent pronoun, is found. In both

cases, subject-predicate order is the basic order for nominal sentences, although other orders are common in specific contexts.

Classical Arabic illustrates these features. The occurrence of a copula is partly determined by the definiteness of the subject and predicate. Definiteness can also play a role in the order of the subject and predicate. Subject typically occurs before the predicate when the subject is definite. When the predicate is also definite, there is often a copula based on the independent pronoun between the two constituents. When the subject is indefinite, and particularly when the predicate is a PP, the predicate precedes the subject.

(74)

Subject-Predicate

a. yūsuf-u marīd-un
Joseph-NOM sick-NOM
“Joseph is sick” (Wright 1896-1898:258D)

b. zayd-un fī l-mašjid-i
Zayd-NOM in DEF-mosque-GEN
“Zayd is in the mosque” (252D)

Subject-COP-Predicate

c. ?ulā?ika hum waqūd-u n-nār-i
DEM.M.PL 3MPL fuel-NOM DEF-fire-GEN
“these are fuel for the fire” (259A)

d. zayd-un huwa ?afḍal-u min ʕamr-in
Zayd-NOM 3MSG excellent.EL-NOM from Amr-GEN
“Zayd is more excellent than Amr” (259B)

Predicate-Subject

e. fī d-dār-i raǰul-un
in DEF-house-GEN man-NOM
“there is a man in the house” (261A)

f. taḥta raʔs-ī sarǰ-un
under head-GEN.1SG saddle-NOM
“there is a saddle under my head” (261B)

The subject-predicate order of Classical Arabic is also found in pre-Islamic Arabic inscriptions as well as most modern Arabic dialects. In the Nemara Inscription, ca. 328 CE, there is at least one clear nominal sentence.

(75) ty nfs mr ?lqys
FSG.DEM monument Imru al-Qays
“This is the funerary monument of Imru al-Qays ...” (Bellamy 1985)

And, there is possibly another instance if we follow the interpretation of Bellamy and not Dussaud (1902).

- (76) w-lqb-h ḏw ʔsd w-[m]ḏhj
 and-title-POSS.3MSG master.NOM Asad and- Madḥij
 “And his title was master of Asad and Madḥij” (Bellamy 1985)

There are further examples of nominal sentences in the Northern Old Arabian languages. The vast majority of examples of nominal sentences in Safaitic inscriptions indicate possession and concepts similarly expressed and thus have a prepositional phrase preceding a noun phrase. There are hundreds of inscriptions with this same basic pattern.

(77)

- a. l-ʕzr bn ʔswr h-dr
 to- ʕzr son ʔaswar DEF-camping.place
 “This camping-place belongs to ʕzr so of ʔaswar” (IFSC 3366)
- b. l-ʕḏr bn sdq mhr
 to-ʕaḏar son SDQ colt
 “Aḏar son of SDQ has a colt” (1285)
- c. l-mḥnn bn qdmt h-nšb
 to-Muḥannan son Qudāmat DEF-monument
 “The monument is for Muḥannan son of Qudāmat” (2195)
- d. l-h h-ḥṭṭ
 to-3MSG DEF-drawing
 “This drawing is by him” (2109, this inscription is accompanied by a drawing)

The few cases that exist that do not follow this specific pattern have the expected structure without a copula and with the subject preceding the predicate.

(78)

- a. w-rd-h h-ḡnmt ʕz
 and-desire-POSS-3MSG DEF-booty precious
 “His desire is for the booty which is precious” (IFSC 1796a)
- b. h-ʔyt l-ʔḥwf
 DEF-sign to-ʔaḥwaf
 “the sign is by ʔAḥwaf” (IFSC 1549a)

In Modern Arabic dialects nominal sentences consistently follow subject-predicate order. Subject-predicate is the unmarked order in Egyptian dialects (Woidich 2006, Gamal-Eldin, Saad M. 1967), Iraqi dialects (Abu-Haidar 1991, Erwin 1963), Arabian and Gulf dialects (Ingham 1994, Holes 1990, Johnstone 1967), Levantine dialects (Cowell 1964), and Western dialects (Owens 1984, Cohen 1975a, Harrell 1962), including Maltese (Borg 1981).

(79)

Christian Baghdadi: bənət axū-yi l-əzġēġi bə-m-madġasi
 daughter brother-POSS.1SG DEF-younger in-DEF-school
 “My brother’s youngest daughter is in school.” (Abu-Haidar, 122)

Cairene: bēt it-tāġir kibīr
 house DEF-merchant big
 “the house of the merchant is big” (Woidich, 103)

Eastern Libyan: kill-hun maʕru:f-i:n
 all-3MPL known-MPL
 “All of them are known” (Owens, 216)

Qaṭari: šuġəl-hum fi ʕ-ʕeef simač
 work-POSS.3MPL in DEF-summer fish
 “their work in the summer is fish” (Johnstone, 165)

Jewish Tunisian: əṛ-ṛāžəl mṛīd
 DEF-man sick
 “the man is sick” (Cohen, 137)

Hassaniya (Mali): n-naas muslim-a
 DEF-people Muslim-FSG
 “the people are Muslim” (Heath 2003b:160)

Maltese: Ġanni t-tabib
 John DEF-doctor
 “John is the doctor” (Borg, 28)

Damascene: l-ʔblād taḥt ʔl-ḥəkm ʔl-ʕərʕi
 DEF-country under DEF-rule DEF-martial
 “the country is under martial law” (Cowell, 402)

Christian Baghdadi Arabic also has an optional construction of nominal sentence with a copula.

(80)

a. ənta šāṭəġ
 2MSG clever
 “you are clever” (Abu-Haidar 1991:122)

b. ənta šāṭəġ yā-k
 2MSG clever COP-2MSG
 “you are indeed clever” (122)

Beyond Arabic, the same pattern generally holds. Ugaritic, one of the earliest well documented Northwest Semitic varieties, clearly exhibits the same pattern as Classical Arabic. Nominal sentences occur in which the subject noun phrase and the predicate are simply juxtaposed without a copula and the subject precedes the predicate.

(81)

- a. mt ʕz bʕl ʕz
 Mot strong Baal strong
 “Mot is strong, Baal is strong.” (KTU 1.6 VI, 20)
- b. kptr ksʔ-u θbt-h
 Kaphthor seat-NOM dwelling-POSS.3MSG
 “Kaphthor is the seat of his dwelling.” (1.3 VI, 14-15)
- c. spr ʔilmk
 scribe Ilmilku
 “The scribe is Ilmilku” (1.6 VI, 54)

Later Northwest Semitic languages also show similar word order patterns in nominal sentences. In Biblical Hebrew there are a number of well-attested variations in the word order of nominal sentences. Still, subject-predicate order accounts for roughly two thirds of all nominal clauses based on estimates obtained by Andersen (1970) from portions of the Bible.

(82)

- a. ʔānī yôšēp
 1SG Joseph
 “I am Joseph” (Gen 45:3)
- b. wa-ʔdōn-ī ḥākām
 and-lord-POSS.1SG wise
 “and my lord is wise” (2 Sam 14:20)
- c. YHWH ʕimm-əkā
 the.Lord with-2MSG
 “The Lord is with you” (Judg 6:12)

Subject-predicate is also the most common order in early epigraphic texts in Hebrew (Gogel 1998).

In Phoenician and Punic, Canaanite languages related to Hebrew, subject-predicate order is found, but Krahmalkov (2001) argues that predicate-subject order is somewhat more common. Some examples of subject-predicate order are found below.

(83)

- a. z mʕbt bʕlšmr
 DEM.FSG stele Baalsamor
 “this is the stele of Baalsamor” (Umm el-Awamid 6.1; Krahmalkov 2001:77)

- b. ily gubul-im l-asibith-im
 DEM.PL limit-PL of-residence-3MSG
 “these are the environs of his residence” (Poen. 938; Krahmalkov 2001:77)
- c. yn⁷⁸ byn u-i by-marob syll-ochom
 son brother-1SG in-custody POSS-2MPL
 “my brother’s son is in your custody” (Poen. 932/933; Krahmalkov 2001:129)
- d. h-sml z mš ʔnk ytnbʕl
 DEF-image DEM statue 1SG Yatonbaal
 “this image is a statue of me, Yatonbaal” (Umm el-Awamid 6.1; Krahmalkov 2001:142)

The same is also the case for the Aramaic languages. In the same letter from Egypt discussed above with respect to verbal clause word order, there are several examples of nominal clauses. Nominal clauses in this letter consist simply of the subject followed by the predicate without a copula.

(84)

- a. hy ʔntt-y w-ʔnh bʕl-h
 3FSG wife-POSS.2SG and-1SG husband-POSS.3FSG
 “She is my wife and I am her husband...” (BAP 2:3-4)
- b. ksp šnʔ b-rʔš-h
 money divorce on-head-POSS.3MSG
 “the divorce money is on his head” (2:8)
- c. tmt šlyṯh bkl nks-n zy
 Tamut have.power.PASS.PART on-all possession-PL REL
- y-hw-wn byn ʕnny w-tmt
 3MPL-be.IMPF-3MPL between Anani and-Tamut
 “Tamut will have power over all the possessions which are between Anani and Tamut” (2:11)

In South Semitic, the same patterns that are found in central Semitic are also attested. In the Old South Arabian languages nominal sentences follow the same pattern with the subject usually preceding the predicate (Beeston 1984; Kogan and Korotayev 1997). The following examples from Qatabanian illustrate this arrangement:

⁷⁸ presentative particle

(85)

a. w-ðn ʔbyt w-ʔrdt
 and-DEM.MSG house.PL and-territory.PL(?)
 “these are the houses and territory...” (RES 3858, 5-6; Kogan and Korotayev 1997:231)

b. w-ṭbn-n s¹m s²ʕb-n ms³wd-n
 and-landowner.PL-DEF 3MPL community-DEF council-DEF

w-ṭbn-n
 and-landowner.PL-DEF
 “and the landowners are the community, council and the landowners” (RES 3566, 5; Kogan and Korotayev 1997:238)

The second example also exhibits the use of the independent pronoun as a copula, a feature of Ge‘ez and to a lesser extent Classical Arabic.

In Ge‘ez, the syntax of nominal sentences is somewhat complicated by the wide employment of personal pronouns as copulas. Lambdin (1978) outlines three separate arrangements of nominal sentence using the contrived examples:

(86) Nominal clause arrangements in Ge‘ez (Lambdin 1978)

a. yoḥənnis mək^wənnin
 John judge
 “John is a judge”

b. yoḥənnis mək^wənnin wiʔitu
 John judge 3MSG/COP
 “John is a judge”

c. yoḥənnis wiʔitu mək^wənnin
 John 3MSG/COP
 “John is a judge”

However, Dillmann (1907) provides few examples that conform to the first arrangement without copula, still the basic arrangement of subject and object are maintained in many examples. The most typical pattern involves the subject-predicate order with a copula, based on the independent pronoun, separating the two parts.

(87)

a. ʔillu ʔəmmuntu dəqiq-ə ʔelema
 DEM.MPL 3MPL child-CONST.PL Oholibamah
 “these are the children of Oholibamah” (Gen 36:14; Dillmann 1907:498)

- b. *bizuḥ-an* *ʔimmuntu* *ʃiwuṣ-an*
 many-PL 3MPL call.VA-PL
 “many are called” (Matt 20:16; Dillmann 1907:498)
- c. *ʔanə* *wəʔətu* *ʔāmlakä* *ʔābrəham*
 1SG 3MSG God Abraham
 “I am the God of Abraham” (Gen 26:24; Dillmann 1907:499)

In contrast to Ge‘ez, the Modern South Arabian languages exhibit many examples of a simple juxtaposition of the subject and predicate with that order.

(88)

Jibbali: *qelēbis* *qoṣereh (dīndit)* *be-ḥút* *leḥīm*
 bride.price basket.of.dates with-fish shark
 “the bride-price is a basket of dates and a shark” (Müller 1907:23)

Mehri: a. *da-källa-hem* *ār* *ḥadāmye*
 DEM-all-3MPL only servant.PL
 “they all are only servants” (33)

b. *išê-k* *hi-ní*
 supper-POSS.2SG for-1SG
 “your supper is for me” (13)

Soqotri: *deš* *qáṣer* *ʔáam* *di-hó* *qaṣer*
 DEM.DIST.FSG house big PTCL-1SG house
 “That big house is my house” (76)

The structure of nominal sentences has a clear and common character throughout the Semitic family. When there is variation, the main types within and between languages have their ultimate source in discourse. One of the most important factors in word order variation in the Semitic languages involves the definiteness of the subject and the predicate. For example, in Classical Arabic, as described above, an indefinite subject typically follows a PP predicate, while a clause with both a definite subject and predicate are separated by a copula form. Languages can differ in terms the particular relation between features such as definiteness and word order. The most important type of variation for historical development would appear to be that which occurs in nominal clauses with pronominal subjects. The next section deals with the formation of new verbal inflections. In one of the types of cases the formation of new verbal inflections is deeply connected with the word order patterns associated with nominal sentences that have pronominal subjects.

5.4. New verb forms in Aramaic

A series of morphological changes has fundamentally restructured the verbal system in the Modern Aramaic languages. The chief types of change that have occurred are reanalysis, grammaticalization and analogy. For example, predicative uses of adjectival or nominal forms have been reanalyzed as primarily verbal. Enclitic forms of pronouns have been reinterpreted as verbal inflection by way of grammaticalization. And, finally, existing verbal inflection has been

extended to the new verb forms by analogy. In each case the change has proceeded without reference to the internal morphological structure of the base. Yet, the consequences for the system of nonconcatenative morphology are considerable. Since the nominal and adjectival forms in question involve nonlinear morphological alternations, the changes described above have served to introduce new nonlinear alternations into the core of the verbal system. At the same time these new forms may come to replace or circumscribe the original Semitic verb forms, thus eliminating some pre-existing nonlinear morphological alternations. In a process analogous to that of petrification in nature, the substance of the morphology is radically transformed while the basic shape of the morphological system is retained. The system of nonconcatenative morphology undergoes changes in the specific nonlinear alternations but does not lose its basic root-and-pattern character.

By comparing the modern varieties of Aramaic with both the older varieties of Aramaic and other Semitic languages, we can reconstruct the history of the verbal system in these languages. The verbal systems of the oldest forms of Aramaic adhere fairly closely to the patterns established elsewhere in Central Semitic. The basic stem of the verb has two main forms, the prefix conjugation imperfect **yaqtulu* and the suffix conjugation perfect **qatala*. The remaining verbal forms, including the imperative form and modal forms like the jussive/preterite and volitive, are of secondary importance because they are formed on the same base **qtul* as the imperfect **yaqtul*. In addition to the verbal forms proper, there also exists a set of nominal and adjectival forms related to the verb that are both fairly regular and productive. These include the active and passive participles and the infinitive. These deverbal forms have served primarily as the seeds for the innovative verbal forms in the Modern Aramaic languages. For example, the active participle, which we have already shown to have a strong tendency toward being reinterpreted as a verbal form in other Semitic languages, has undergone widespread reanalysis in Aramaic with clear forerunners present in Classical Aramaic and fully elaborated verbal forms in the modern languages.

Differences between the verbal systems of the modern varieties of Aramaic can largely be attributed to two separate but not entirely independent factors: (i) the innovation of verbal forms and inflections through various specific processes of reanalysis, grammaticalization and analogy, and (ii) the loss of older verb forms due to competition with newer verb forms.

The diversity of verbal forms in the Modern Aramaic languages reflects the individual histories of languages and branches in which different processes have taken place. The active and passive participles were reanalyzed as verbal at a fairly early stage within the development of the Aramaic languages. Thus, verbal forms derived from earlier active participles are found in all the Modern Aramaic languages. Beyond this important commonality, the different branches of modern Aramaic have diverged. For example, the Eastern and Western branches of Neo-Aramaic have developed different inflectional systems for the participle-based verb forms. In the Eastern branch the inflectional suffixes arose through the grammaticalization of the enclitic forms of the independent pronouns. In the Western branch the inflectional prefixes were taken by analogy from the prefixes of the Semitic imperfect. Also, Northeastern Neo-Aramaic and the Ṭuroyo-Mlaḥsô group have an innovative preterite/perfect formed by the grammaticalization of a construction involving the passive participle and the conjugated forms of the preposition *l-* which is not found in Modern Mandaic, any other member of the Eastern branch, or Western Neo-Aramaic. Other innovative forms also occur which are shared by a group of branches or just a single branch.

Despite the great abundance of innovative verbal forms, the fate of the inherited Semitic verbal forms is of equal importance for the general character of the Modern Aramaic verbal systems. A summary of the reflexes of the verbal forms in Western Neo-Aramaic and the three branches of Eastern Neo-Aramaic are provided in (89).

(89) Reflexes of Middle Aramaic Verbal Forms in Modern Aramaic

	Western Neo-Aramaic	Mlḥasō	NENA (Hertevin)	Modern Mandaic
Perfect *qatal	Past iḵtal			Perfect gətal (geṭal)
Imperfect *yaṭul	Subjunctive yiḵṭul			
Imperative *qṭul	Imperative iḵṭul ~ḵṭōl	Imperative dmax	Imperative ploṭ	Imperative gəṭol
Active Participle *qāṭil	Present ḵōṭel	Present/ Imperfect domex/ṣobézo	Present/Imperfect napeq/napeqwa	Present/ Future qa-gāṭel
Passive Participle *qaṭīl	Perfect iḵṭel	Preterite dmixle	Perfect/Preterite dmeḥ(ḥek)/npeqle	Present Passive geṭelye

To some degree in all modern varieties the innovative forms have replaced the original Central Semitic verb forms. The extent, however, varies considerably from group to group. Both Northeastern Neo-Aramaic varieties and the Ṭuroyo-Mlḥsō group have completely eliminated reflexes of both the Central Semitic perfect and imperfect from the inventory of verbal forms. The only remnant of the older verbal system is the imperative form, which is generally retained throughout. In contrast the West Semitic perfect has been retained at the extremities of the family's geographic range in Western Neo-Aramaic and Modern Mandaic. The Central Semitic imperfect has fared even more poorly. The prefix conjugation imperfect has been retained only in Western Neo-Aramaic where the verb form, based on the active participle, has taken over the basic present tense functions. The original imperfect has been relegated to a subjunctive form. In the more innovative group (consisting of Ṭuroyo, Mlḥsō and the Northeastern Neo-Aramaic varieties) preterite/perfect verb forms based on the passive participle are likely ultimately responsible for the loss of the reflexes of the West Semitic perfect.

5.4.1. History and classification of the Aramaic languages

The new verb forms in Modern Aramaic did not arise out of nothing but represent the accretion of centuries of change. The developments in the Modern Aramaic languages must be understood in the context of related developments in Semitic and as the culmination of developments in earlier varieties of Aramaic where many of the modern forms exist or have clear predecessors. In order to give greater context to the developments described in this paper and to clarify the terminology being used, it is necessary to provide a sketch of the history of Aramaic and a brief discussion of classification issues.

Fortunately, the history of Aramaic is one of the richest available to us. Aramaic has been in written use almost continuously for nearly three millennia. In this time its fortunes as a written language have been substantially dictated by the course of history. Aramaic went through periods of both great international prestige and more restricted local use. The periods of wide use were characterized by a high degree of standardization while the periods of more limited use were commonly associated with a degree of diversity. These patterns, which undoubtedly had some impact on the spoken use, are nevertheless largely independent of them. The development of the spoken varieties of Aramaic most likely proceeded along very similar lines across the periods with local differentiation occurring even when the official or literary language was moving in the opposite direction toward homogenization. Unfortunately, our knowledge of the spoken language is limited and indirect and we must rely solely on written language until the most recent period.

While there is consensus in the general breakdown of the periods, terminology is fairly unevenly applied to the periods. For the sake consistency, the outline and names of periods put forward by Fitzmyer (1979) will be used:

- (90) Old Aramaic (925 - 700 BCE)
- Official Aramaic (700 - 200 BCE)
- Middle Aramaic (200 BCE - 200 CE)
- Late Aramaic (200 - 700 CE)
- Modern Aramaic

Kaufman (1997) and Kutscher (1970) both follow Fitzmyer fairly faithfully, except that Kaufman uses the term “Imperial Aramaic” in addition to “Official Aramaic” and both deviate slightly on a few points concerning the dates assigned to the periods.

Old Aramaic consists of the epigraphic inscriptions from the first half of the first millennium BCE. The inscriptions of this period and the varieties they represent are associated with small political entities. According to Kuhrt (1995:394), “[i]n Syria and Upper Mesopotamia, the most striking feature is the existence of a number of small states, centered on a capital city”. This left Aramaic, which was used in several small states, without a single center from which a unifying influence could be exerted. In this period, we can speak not only of the existence of dialects within Aramaic but also of the placement of Aramaic within the context of a Northwest Semitic dialect continuum (see Garr 1985). Beside “Old Aramaic” (Fitzmyer, Kaufman, Greenfield 1978, Gibson 1975, Moscati, Spitaler, Ullendorf, and Soden 1964), this period is also referred to as “Early Aramaic” (Lipiński 1997) or “Früharamäische” (Segert 1975). Often the terms “Old Aramaic” or “Altaramäische” are used to cover larger periods which can include all of the pre-modern periods or simply a subset. Bergsträsser (1928:59n) describes three different senses of the term “Altaramäische” in increasing narrowness: (1) a group which contrasts with the living varieties of Aramaic, (2) the varieties up to about 100 BCE, and (3) the varieties up to about 400 BCE. The first sense is the one used by Bergsträsser, while less restricted senses are found in Rosenthal (1964), Segert and somewhat ambiguously in Moscati, Spitaler, Ullendorf, and Soden. These three also contrast with the sense used here, which is even narrower.

The next phase, Official Aramaic, is marked by a great expansion in use due to the adoption of Aramaic as an official language in the Neo-Babylonian and Achaemenid Persian Empires. The replacement of the much more politically fragmented situation in the Near East

and the privileged position of Aramaic in the new empire created a situation that favored a great degree of uniformity in the Aramaic of this period. While there is evidence of regional dialectal differences, these differences are lost to a large degree in the written standard language. Thus in this period we can speak of Aramaic as a single language more than in any other period. This language is commonly known as either “Official Aramaic” (Fitzmyer, Greenfield, Gibson, Kaufman) or “Imperial Aramaic” (Gibson, Kaufman; Moscati, Spitaler, Ullendorf & Soden), “Reichsaramäische” in German (Segert 1975, Rosenthal 1964), but is also referred to as “Classical Aramaic” (Moscati, Spitaler, Ullendorf & Soden).

With Alexander’s conquest of the Achaemenid Empire and the rise of Greek in the Hellenistic successor states, the period of Middle Aramaic was ushered in. In time new smaller states arose in the Levant in which Aramaic was the official language. Thus, the number of new local written varieties proliferated, while Greek replaced Aramaic as the international language. Differences are reflected not only in the grammar, but also in the paleography. The scripts used by various groups diverged considerably in this period. The varieties of this period include Palmyrene, Nabatean, Hatran and other varieties represented by epigraphic texts as well as the Aramaic portions of Daniel, Aramaic documents from Qumran and Targums Onkelos and Jonathan. This period has been at various times either grouped with the earlier periods or the later one. Rosenthal (1964) places Palmyrene and Nabatean with earliest inscriptions and Imperial Aramaic in Old Aramaic. In contrast, Segert classifies Palmyrene and Nabatean together with later Aramaic languages as “the younger Aramaic languages”⁷⁹.

The final phase of pre-Modern Aramaic is Late Aramaic or Jungaramäische, terms used by Kaufman, Lipiński and Rosenthal. These languages are closely associated with the development of Near Eastern religious communities in the first millennium CE, particularly the rise of Christianity and Rabbinic Judaism following the destruction of the Second Temple in 70 CE. This period is often referred to as “Classical Aramaic” (Kaufman) because these varieties have retained a central position in the literature and liturgy of modern adherents of Rabbinic Judaism, some Eastern Christian churches and the Mandaean religion. This is also the first period in which a major dialectal division is typically proposed for Aramaic. The traditional division (Lipiński, Rosenthal) is between an Eastern branch including Jewish Palestinian Aramaic, Christian Palestinian Aramaic and Samaritan Aramaic and a Western branch including Syriac, Jewish Babylonian Aramaic and Mandaic. Some scholars (Moscati, Spitaler, Ullendorf & Soden; Segert) also include Middle Aramaic languages in the Late Aramaic period, although the varieties of Middle Aramaic are classified in the Western branch. Kaufman, in contrast, argues that a tripartite division is more appropriate dividing Late Aramaic into Palestinian, Syrian and Babylonian branches.

After the Arab conquests, Aramaic as a written language receded further from prominence, being retained mainly for religious use in select communities. As a spoken language Aramaic continued to evolve mainly among religious minorities in the Middle East. These languages were rediscovered for the most part in the last century through fieldwork. Like Late Aramaic, Modern Aramaic is generally divided into two main branches, a Western and Eastern branch. The Eastern branch following Hoberman (1989) can further be divided into three groups: (1) Ṭuroyo and Mlaḥsô, (2) Northeastern Neo-Aramaic, and (3) Modern Mandaic. Although the Modern languages are separated from the older Aramaic languages by many centuries, the connections between these languages is clear. The variety of branches and the

⁷⁹ “die jüngeren aramäische Sprache”

older forms can help us reconstruct the history of morphological change in these languages and provide suitable cases for examining the character of the specific changes.

5.4.2. New forms derived from participles

The reanalysis of the active participle as a verbal form is of interest for a number of reasons. First, this development represents a continuation of developments in earlier forms of Aramaic and parallels similar developments in both Hebrew and Arabic. Thus it provides further evidence of what appears to be a recurrent pattern in the formation of new verbal forms. Second, while new verbal forms from the active participle are found in all varieties, the specific ways in which these new forms have been incorporated morphologically into the verbal system exhibit differences. The variable outcomes can give us a more nuanced picture of the historical and morphological processes at work, i.e. what kinds of processes are common or possible. In line with my basic thesis, I argue that the established processes of grammaticalization, reinterpretation and analogy can account for new forms without needing to refer to explanations involving motivations which are vague, unnecessarily complicated or impossible either to disprove or confirm.

5.4.2.1. Enclitic pronouns and the nominal inflection of the participle

In Hebrew and Arabic the inflection of the active participle retains its basic nominal character even when the form functions as a verb syntactically. In contrast, Aramaic displays a degree of incorporation into the morphological system of the verb not found in other Semitic languages. Like Hebrew and Arabic, Aramaic has inherited the basic nominal inflection of the participle distinguishing both number and gender. Syriac, representing Aramaic, differs from both Hebrew and Aramaic in phonologically predictable ways except that the FPL form exhibits an innovative suffix.

(91) Nominal inflection of participles

	Arabic	Hebrew	Syriac
MSG	qātil-un	qōṭēl	qātel
FSG	qātilat-un	qōṭēlā or qōṭelet	qātlā
MPL	qātil-ūna	qōṭēlīm	qāṭlīn
FPL	qātilāt-un	qōṭēlōt	qāṭlān

In the Modern Aramaic languages the verbal forms based on the participle indicate the subject person in addition to the inherited gender and number. The Eastern and Western branches have achieved the same end in very different ways. In Eastern Aramaic the new inflection was formed by grammaticalization of enclitic forms of the independent pronouns. In Western Aramaic the inflection of the imperfect has been extended by analogy to the forms of the prefix conjugation imperfect.

By Late Aramaic the participles are not only treated as verbs syntactically but they are beginning to be incorporated into the morphological system as well. Two facts were conducive to the development of a new set of pronominal verb endings in the Eastern branch: (i) word order and (ii) the development of independent pronoun clitics. For example, Syriac and Classical Mandaic, two Eastern Late Aramaic languages, are characterized by a great flexibility in the word order (Noldeke 1904:258-259, Macuch 1965:443-444), although with a general trend from VSO to SVO, as in later forms of Hebrew and Arabic. Together word order and the clitic forms created contexts in which the clitics could be reanalyzed as subject markers.

The development of enclitic forms of the independent pronouns is found throughout Late Aramaic.

(92) Independent and enclitic pronouns in Syriac, Mandaic and Jewish Babylonian Aramaic

	<i>Syriac</i>		<i>Mandaic</i>		<i>Jewish Babylonian Aramaic</i>	
	Ind.	Encl.	Ind.	Encl.	Ind.	Encl.
3MSG	hu	-w or -u	hu		hū	
3FSG	hi	-y or -i	hʿ		hī	
2MSG	ʔat	-t	anat	-it	ʔat (rarely ʔant)	-at
2FSG	ʔat	-t	anat		ʔat (rarely ʔant)	-at
1SG	ʔenā	-nā	ana	-na	ʔānā	-nā
3MPL	hennon	-ʔennon	hinun		ʔīnnūn	
3FPL	hennēn	-ʔennēn	hinin		ʔīnhi	
2MPL	ʔatton	-tton	anatun	-tun	ʔattūn	-itūn
2FPL	ʔattēn	-ttēn	anatin	-tīn		
1PL	ḥnan	-nan	anin	-nin	ʔanan (rarely ʔānaḥnā)	-inā (also -inān and -inīn)

In Syriac (Nöldeke 1904, Muraoka 1997) Mandaic (Nöldeke [1875] 1964, Macuch 1965) and Jewish Babylonian Aramaic (Levias 1900), which are classified in the Eastern branch, the series of enclitic pronouns can be easily derived from the corresponding independent pronouns, as the table above clearly shows.

The Western branch, represented by Christian Palestinian Aramaic (Müller-Kessler 1991), displays similarly transparent relationships between independent and enclitic pronouns.

(93) Independent and enclitic pronouns in Christian Palestinian Aramaic

	<i>independent</i>	<i>enclitic</i>
3MSG	hū	-u
3FSG	hī	-i
2MSG	ʔat	-at
2FSG	ʔatti	-ati
1SG	ʔāna	-na
3MPL	hinnon	-(h)on
3FPL	hinnen	-(h)en
2MPL	ʔatton	-ton
2FPL	ʔatten	-ten
1PL	ʔānan, ʔāna	-nan, -na

As will be seen later, these same enclitic pronouns have become the standard inflectional markers of forms derived from the active participle and to some extent the passive participle in the Eastern branch of the Modern Aramaic languages.

5.4.2.2. Variations in nominal sentence word order

The development of new inflectional patterns depended on the existence of variations in word order. Minor differences between languages arise due to the impact of various features on word order and the subsequent reanalysis of particular patterns. Semitic languages can be divided into at least two groups with respect to the behavior of pronominal subjects in nominal sentences. While a full noun mostly occurs before the predicate, in most languages a pronominal subject will instead follow the predicate. In other languages, nominal sentences with a pronominal subject follow the same patterns as nominal sentences with full NP subjects.

(94)

Predicate-Pronoun Order

Ugaritic: ʕbd-k ʔn
 servant-POSS.2MSG 1SG
 “I am your servant” (KTU 1.5 II 12, 19)

Ge‘ez: məret ʔəntə
 dust 2MSG
 “You are dust.” (Dillmann 1907:498; Gen 3:19)

Old Aramaic: ʕš ʕnh ʔnh
 man humble 1SG
 “I am a humble man” (Segert 1975:422; KAI 202:2)

Pronoun-Predicate Order

Old North Arabian: w-ʔn (w)ʕl
 and-1SG (W)aʕl
 “and I am Waʕl.” (IFSC 3625)

Christian Iraqi həyyi həlwi
 Arabic: 3FSG pretty
 “*She is pretty*” (Abu-Haidar 1991:122)

Mehri: hêt həywel
 2SG mad man?
 “*you are a mad man*” (Müller 1907:10)

Modern ani ha-rofe ka’an
 Hebrew: 1SG DEF-doctor here
 “*I am also a doctor*” (Coffin and Bolozky 2005:319)

Still others allow for both patterns depending on context. In Phoenician the pronoun usually precedes the predicate in main clauses but follows in subordinate clauses (Krahmalkov 2001).

(95)

main clause: ʔnk klmw
 1sg Kilamuwa
 “I am Kilamuwa” (KAI 24:1)

subordinate clause: k mlk ʂdq hʔ
 for king righteous 3MSG
 “for he is a righteous king” (KAI 10:9)

In Hebrew, the subject precedes the predicate when the predicate serves an identifying function but follows when the predicate serves a classificatory function (Waltke and O'Connor 1990).

(96)

identifying: hū ʔādōn-ī
 3MSG lord-POSS.1SG
 “he is my lord” (Gen 2:11)

classificatory: ṭāmēʔ hūʔ
 unclean 3MSG
 “he is unclean” (Lev 13:36)

The variations reflect the degree to which different word orders have been conventionalized in particular contexts and the degree to which the word orders are able to reflect aspects of information structure.

The rigidity of word order varies considerably among the Semitic languages. The relative flexibility or rigidity often appears to be closely connected with the existence of morphological means of distinguishing grammatical relations. Proto-Semitic is reconstructed as having a series of case endings that are well preserved in Akkadian, Ugaritic and Arabic, but are largely lost in later forms of Semitic. Even in languages where the case system has broken down, different grammatical relations may still be indicated by other means such as grammaticalized prepositions, e.g. direct object markers in Hebrew {ʔet-} or Syriac {l-} which is also a preposition meaning “to” or “for. Because the general trend has been for the loss of the system of case marking, there is a parallel trend toward greater rigidity in word order in many later varieties. This trend may be further reinforced by the influence of non-Semitic languages which might also have more rigid word order patterns. It should be noted that word order patterns can be conventionalized in languages even where morphological markers already indicate grammatical relations and that some degree of flexibility can still be maintained in languages where the morphological markings are significantly reduced.

Even in languages where word order is relatively rigid, a number of different word orders are still possible depending on the context. A certain degree of variation can be maintained without necessarily leading to ambiguity. This is particularly true of the word order patterns present in the verbal sentence. Both VS(O) and SV(O) orders are widely encountered in Semitic languages.

One important context for reanalysis was that of pronominal subjects in nominal sentences. In both Syriac and Mandaic, the predicate typically precedes a pronominal subject.

(97)

Syriac

- a. ʕamm-āk ḥnan
 people-2MSG.POSS 1PL
 “we are your people” (Aphr. 488:9)
- b. en ḥakim att
 if wise 2MSG
 “if you are wise” (Prov 9:12)

Mandaic

- c. rurbia anatun
 great 2MPL
 “you are great” (Oxf. III, 75a)

The word order may be modified for discourse reasons in both Syriac and Mandaic. Nöldeke (1904:247) claims that the order with the subject pronoun preceding the predicate conveys “a certain emphasis”.

(98)

Syriac

- a. kad enā šbar yalud
 when 1SG child suckling
 “when I was a suckling child” (Apost. Apocr. 274:9)
- b. w-hi mšawwr-ā
 and-3FSG leap.PART-FSG
 “and she leapt” (Sim. 273)
- c. ʔatt gēr msākkē wa-msabbar
 2SG for expect.PART and-hope.PART
 “for you are expecting and hoping” (Aphr. 341, 6)

Mandaic

- d. anatun rurbia
 2MPL great
 “you are great” (Gy 292:1)
- e. anatun gabar-i-a w-anin mkik-i-a
 2MPL mighty-PL-DEF and-1PL laid.low-PL-DEF
 “you are mighty ones and we are laid low” (Oxf. II, 27)

In many cases the pronominal subject is realized as one of the pronominal clitics described above.

(99)

Syriac

- a. zakāy=nā
innocent=1SG
“I am innocent” (Job 33:9)
- b. yaqir-ā=y
precious-F.ABS=3FSG
“she is precious” (Prov 3:15)
- c. qūm nāfq-ī=nan w-bāt-ī=nan
rise-IMPV go.out.PART-MPL=1PL and-pass.the.night.PART-MPL=1PL
“get up in order to go out and pass the night!” (Jos St. 29, 11)

Mandaic

- d. zuṭi=tun
little=2MPL
“you are little” (Gy 292:1)
- e. tabi=tun
good=2MPL
“you are good” (Gy 292:1)
- f. hakim=it u-basim=it
wise=2MSG charming=2MSG
“you are are wise and charming” (Oxf. I 274, 17; Nöldeke [1875] 1964)

In Mandaic this sort of emphasis can also be indicated by the use of both an independent pronoun preceding the predicate and an independent or enclitic pronoun following the predicate.

(100)

- a. ana rab-na
1SG great-1SG
“I am great” (DM 9b)
- b. anin abdia anin
1PL servants 1PL
“we are servants” (LM I, 63, 16)
- c. ana br rbia ana
1SG son the.Great 1SG
“I am the son of the Great” (LM I, 94, 5)

In cases where the predicate involves complements, the enclitic is typically attached to the head of the predicate phrase. Thus we find the enclitic attached to the head noun in noun phrase predicates like those below.

(101)

Syriac

- a. da-br-ā=w d-alāhā
 COMP-son-DEF=3SG PTCL-God
 “that he is the son of God” (Ov. 163, 12)
- b. nāṭūr-eh=na gēr d-āḥ-Ø
 keeper-POSS.3MSG=1SG however PTCL-brother-POSS.1SG
 “Am I then my brother’s keeper?” (Gen 4:9)
- c. d-talmīd-ē=ʔennon da-mšīḥ-ā
 COMP-disciple-PL.DEF=3MPL PTCL-Christ-DEF
 “that they are the disciples of Christ” (Ov. 177, 4)

Mandaic

- d. šliḥ-a ana d-nhur-a
 messenger-DEF 1SG PTCL-light-DEF
 “I am the messenger of the light” (LM I, 64, 20, 23)
- e. šliḥ-a ana kušṭan-a
 messenger-DEF 1SG truth-DEF
 “I am the truthful messenger” (LM I, 64, 21)
- f. abd-i-a anin d-ḥaṭayi-a
 servant-PL-DEF 1PL PTCL-sin-DEF
 “We are the servants of sin” (LM I, 63, 15)

This same arrangement is also found in predicate phrases which have a participial head. Like the participle in Hebrew and many Arabic dialects, the participle in Aramaic has come to be reanalyzed as clearly verbal in many contexts. Thus, the possibility for the reinterpretation of the enclitic pronouns as verbal inflection arose when these enclitic pronouns were combined with the participial forms which were already serving verbal functions in these languages. This trend and the reinterpretation of these clitics as inflectional marker may have been further reinforced by word order. Based on the surface arrangement it is impossible to distinguish participles with pronominal subject enclitics from verbal sentences where the subject is only expressed by the inflection of the verb. With the exception of adverbs and particle, the participle typically occurs first in the sentence followed by its complements. The examples below illustrate the situation for participles in Syriac.

(102)

a. ʔāp hāšā mqabbel=na pūqdān-eh
 also now receive.PART=1SG command-POSS.3MSG
 “now also I receive his command” (Ov. 172, 5)

b. šābē=na d-apīs-āk
 want.PART=1SG COMP-convince-2MSG
 “I want to convince you” (Aphr. 345, 1)

c. la-mhār ḥāzē=at l-eh
 tomorrow look.at.PART=2MSG to-2MSG
 “tomorrow you will see him” (Ephr. III, XLIII mid.)

d. elā d-yāheb=nā l-hon mayā
 but COMP-give.PART=1SG to-3PL water
 “unless I give them water” (Ephr. I 218, F.)

This same word order is also common in sentences where the subject is expressed in the verb.

(103)

a. zakê-t l-hon
 conquer.PERF-1SG to-3MPL
 “I conquered them” (Mart. II, 233, 1)

b. kad ḥnā d-alāhā mallel ʕamm-eh
 when see.PERF.3MSG COMP-God speak.PERF.3MSG with-3MSG
 “when he saw that God has spoken to him” (Aphr. 236, 19)

c. šbaq-ton l-bāroy-ā
 forsake.PERF-2MPL to-creator-DEF
 “you have forsaken the Creator” (Mart. I, 124)

d. ʔen t-ahpek ʔappay-k
 if 2MSG-turn.IMPF face-2MSG
 “if you turn your face away” (Aphr. 493)

The reinterpretation of participle forms as verbal forms has passed through a series of different stages. The first stage of reinterpretation is familiar from Hebrew and Arabic and seems to have occurred fairly early in the history of Aramaic. This stage involves the syntactic reinterpretation of participle forms as primarily verbal, at least in certain contexts. Gordon (1982) argues that this has led to a situation in which participles can clearly be classified as either verbal or nominal. As a verb form, the participle is usually used in independent clauses to indicate a time reference concurrent with its utterance, replacing one of the main functions of the imperfect form, which is then typically restricted to future tense or modal uses. Belying its basically tenseless origins, a number of uses of the participle with varying tense references are found in dependent clauses. In Hebrew and Arabic the development of the participle goes no further than

this stage. Even though the participle comes to serve an important role in the system of tense distinctions and has a distribution which is similar to other verbs, morphologically the participle retains its basically nominal character. The developments discussed in this section mark the early stages in the incorporation of the participle forms into the verbal system. The enclitic forms of the independent pronouns, which are missing in Official Aramaic, including the Aramaic sections of the Bible, created a situation from which a new verbal paradigm could be formed.

5.4.2.3. Grammaticalization and the formation of new paradigms in Eastern Aramaic

Already in Late Aramaic, represented by Syriac, Mandaic and Babylonian Jewish Aramaic, the participles with the enclitic pronouns can be conceived of as forming new verbal paradigms. In Classical Mandaic the pronominal markers can be attached to both the active and the passive participles.

(104) “Conjugation” of participles in Mandaic (Macuch 1965)

	<i>active participle</i>	<i>passive participle</i>
3MSG	napiq	lgiṭ
3FSG	napqa	lgiṭa
2SG	napqit	lgiṭit
1MSG	napqina	lgiṭna
1FSG	napqana	
3MPL	napqin	brikin
3FPL	napqan	brika(n)
2MPL	napqitun	brikitun
2FPL	napqitin	
1PL	napqinin	brikinin

The related forms from Modern Aramaic exhibit much the same pattern. The great similarity between the inflected forms in the various Modern Aramaic languages is a strong argument for the common origin of these forms.

(105) Verbs based on the participle in Eastern Neo-Aramaic

	Mlaḥsô (Jastrow 1994:44)	Hertevin (Jastrow 1988:68)	Arbel (Khan 1999:124)	En Nune (Khan 2007:316)	Qaraqosh (Khan 2007:316)	Mandaic (Macuch 1965:280)
3MSG	domex	napeq	palíx	qāṭil	qāṭəl	qa-gāṭel
3FSG	domxo	napqa	palxá	qaṭla	qaṭla	qa-gaṭla
2MSG	domxet	napqet	palxét	qaṭlit/qaṭleti	qaṭlət	qa-gaṭlet
2FSG	domxat	napqat	palxát	qaṭlit/qaṭlati	qaṭlat	
1MSG	doméxno	napqen	palxen	qaṭlin	qaṭlən/ qaṭəlna	qa-gaṭelnā
1FSG		napqan		qaṭlan	qaṭlan	
3PL	domxi	napqi	palxí	qaṭli	qaṭli	qa-gāṭlen
2MPL	domxítun	napqiton	palxétun	qaṭlitu	qaṭlitu	qa-gaṭletton
2FPL						qa-gāṭletten
1PL	domxína	napqaḥ	palxéx	qatlix	qatlix	qa-gāṭlennī

The differences between the inflection of the originally participial forms in Eastern Neo-Aramaic languages is small and to a large extent attributable to predictable changes such as shifts in vowel quantity and quality.

The most common change affecting the bases involves originally long vowels which have been either universally or conditionally shortened. The Western branch of Eastern Neo-Aramaic, consisting of Mlaḥsô and Ṭuroyo, and some North Eastern Neo-Aramaic varieties consistently realize original long vowels as short vowels, *qāṭel or *qāṭil > Ṭuroyo *qoṭil* (Siegel 1923), Hertevin *napeq* (Jastrow 1988), Arbel *palix* (Khan 1999). In Mandaic and the other Northeastern Neo-Aramaic languages, the long vowel is retained in some contexts, typically open syllables, but is otherwise widely shortened, *qāṭel or *qāṭil > Mandaic (*qa*)-*gāṭel* (Macuch 1965), En Nune *qāṭil (Khan 2007), Qaraqosh qāṭəl (Khan 2007) but *qāṭ(e)l-at > Mandaic (*qa*)-*gaṭla*, En Nune *qaṭla*, Qaraqosh *qaṭla*.

An important quality change has occurred in Mlaḥsô and Ṭuroyo where original /ā/ has shifted to /o/. This change reflects the geographically and linguistically intermediate status of this group of languages between the Western and Eastern branches of Neo-Aramaic. The shift of /ā/ to /ō/ is characteristic of the Jacobite (Western) tradition of Syriac and the Western Neo-Aramaic varieties, e.g. Maṣlūla *qōṭel* < *qāṭil*, as well as the Canaanite languages, e.g. Heb. *qōṭēl*.

The new verbal inflections of Eastern Neo-Aramaic have their origin in earlier syntactic structures. The Aramaic independent subject pronouns had a distribution that often resulted in their occurrence immediately after the head of non-verbal predicates. Coupled with a general trend toward the reanalysis of the participial forms as verbal, new verbal paradigms have emerged in the Eastern Neo-Aramaic languages.

5.4.2.4. Analogy and the formation of new paradigms in Western Neo-Aramaic

The Western Neo Aramaic languages also exhibit a reanalysis of the participial forms as verbal, but these languages have not followed the same path of grammaticalization for the pronominal enclitic forms. Instead new verbal paradigms have been formed based on the existing paradigm of the prefix conjugation verbs. The inflection of the participle with personal prefixes is described in Spitaler (1938), Jastrow (1997) and Arnold (1990).

(106) Prefix conjugations in Maṣlūla (data from Jastrow 1997:342-3)

	<i>present (participial)</i>		<i>subjunctive</i>	
3MSG	ṭōṣen	‘he carries’	yi-fṭuḥ	‘that he open’
3FSG	ṭōṣn-a	‘she carries’	či-fṭuḥ	‘that she open’
2MSG	č-ṭōṣen	‘you MSG carry’	či-fṭuḥ	‘that you MSG open’
2FSG	č-ṭōṣn-a	‘you FSG carry’	či-fṭuḥ	‘that you FSG open’
1MSG	n-ṭōṣen	‘I M carry’	ni-fṭuḥ	‘that I open’
1FSG	n-ṭōṣn-a	‘I F carry’		
3MPL	ṭōṣn-in	‘they M carry’	y-fuṭḥ-un	‘that they M open’
3FPL	ṭōṣn-an	‘they F carry’	y-fuṭḥ-an	‘that they F open’
2MPL	č-ṭōṣn-in	‘you MPL carry’	č-fuṭḥ-un	‘that you MPL open’
2FPL	č-ṭōṣn-an	‘you FPL carry’	č-fuṭḥ-an	‘that you FPL open’
1MPL	n-ṭōṣn-in	‘we M carry’	ni-fṭuḥ	‘that we open’
1FPL	n-ṭōṣn-an	‘we F carry’		

In the third person, the present is expressed by the expected participle forms. In the first and second person form the inflection has been extended from the prefix conjugation which is retained only as a subjunctive form. The following table shows the paradigm for the present verb *tōʕen* ‘he carries’ and the subjunctive *yifθuh* ‘(that) he open’. The present inflection is clearly based on the prefix conjugation inflection. The new present has characteristics both of the prefix conjugation and the participle from which it is historically derived, such as distinctions in gender for all forms.

This same extension of the inflectional prefixes is also found in the forms of the derived stems. The same relationship is also found in languages besides that of Maʕlūla.

(107) Prefix conjugations of *sōfar* in Baxʕa (data from Arnold 1990:134)

	<i>present (participial)</i>		<i>subjunctive</i>	
3MSG	msōfar	‘he travels’	y-sōfar	‘that he travel’
3FSG	msōfr-a	‘she travels’	ć-sōfar	‘that she travel’
2MSG	ći-msōfar	‘you MSG travel’	ć-sōfar	‘that you MSG travel’
2FSG	ši-msōfr-a	‘you FSG travel’	š-sōfar	‘that you FSG travel’
1MSG	ni-msōfar	‘I M travel’	n-sōfar	‘that I travel’
1FSG	ni-msōfr-a	‘I F travel’		
3MPL	msōfr-in	‘they M travel’	y-sōfr-un	‘that they M travel’
3FPL	msōfr-in	‘they F travel’	y-sōfr-un	‘that they F travel’
2MPL	ći-msōfr-in	‘you MPL travel’	ć-sōfr-un	‘that you MPL travel’
2FPL	ći-msōfr-in	‘you FPL travel’	ć-sōfr-un	‘that you FPL travel’
1MPL	ni-msōfr-in	‘we M travel’	n-sōfar	‘that we travel’
1FPL	ni-msōfr-in	‘we F travel’		

The extension of the inflection by analogy represents a process very different from the path of grammaticalization found in Eastern Neo-Aramaic. Still, both processes represent possible mechanisms for the creation of new inflectional paradigms and both have potential applications to the reconstruction of Proto-Semitic.

5.5. The development of the West Semitic perfect

The processes of change in phonology, morphology and syntax can provide insights into the development of the West Semitic perfect, a suffix conjugation form. The development of this verb form would appear to have followed a path very similar to that described above for the Aramaic present. Like the Aramaic present forms, which are based on the active participle, the West Semitic perfect appears to have its origin in an earlier adjectival form. The inflection of the form would also appear to be related to earlier enclitic forms of independent pronouns.

The West Semitic suffixal perfect appears to be an innovation which has replaced the earlier prefixal perfect. Haupt (1878), Bergsträsser (1918-1922, 1928, 1982) and Kuryłowicz (1949) all argue for a more recent origin of the West Semitic perfect with respect to the prefix conjugation and suggest that the perfect form is the result of the reanalysis of a verbal adjective as primarily verbal.

(108) The Akkadian predicative construction and the West Semitic perfect

	Akkadian	West Semitic	Arabic
3MSG	maruṣ-Ø	*katab-a	katab-a
3FSG	marṣ-at	*katab-at	katab-at
2MSG	marṣ-āta	*katab-ta	katab-ta
2FSG	marṣ-āti	*katab-ti	katab-ti
1SG	marṣ-āku	*katab-ku	katab-tu
3MPL	marṣ-ū	*katab-ū	katab-ū
3FPL	marṣ-ā	*katab-ā	katab-na
2MPL	marṣ-ātunu	*katab-tumū	katab-tum
2FPL	marṣ-ātina	*katab-tinna	katab-tunna
1PL	marṣ-ānu	*katab-nu	katab-nā

The verbal adjective in Akkadian has the forms *paris*, *paras* and *parus*, with *paris* being by far the most common. These forms in Akkadian as well as any nominal or adjectival forms can occur with a set of enclitic pronouns in the so-called Akkadian “predicative construction”. These enclitic pronouns are clearly related to the suffixes of the Central Semitic perfect. The main differences between the two conjugations are the appearance of a long vowel /ā/ in Akkadian and those that are predictable from the independent pronouns.

In this section, I will make two primary arguments about the development of the West Semitic perfect. First, I will argue that the existence of suffix conjugations in other Afroasiatic branches does not support the antiquity of the suffix conjugation, but rather points to a set of starting conditions and process that were favorable to the independent development of these types of verbal forms. Second, I will argue that the Akkadian verbal adjective and the predicative construction are insufficient for explaining the development of the West Semitic perfect and will propose other mechanisms that are responsible for the attested outcome.

5.5.1. The origin of the West Semitic perfect inflection in the independent pronouns

Although both prefix and suffix conjugations are found in many branches of Afroasiatic. A clear pattern can be discerned with respect to the relationships between these inflectional affixes and other pronominal forms. The prefix conjugation inflection, as argued in section 2.3., displays a great degree of similarity across branches of Afroasiatic. If not a feature of Proto-Afroasiatic, the form is at least common to a subset of branches with the possible exception of Chadic. In contrast, the inflection of the suffix conjugation does not display as clear similarities and frequently shows greater similarities to the independent pronouns than it does to suffix conjugations in other languages.

(109) Comparison of suffix conjugations⁸⁰

	Middle Egyptian	Cushitic (aorist forms)				Berber	Semitic	
		Beja	Bilin	Somali	Dahalo ⁸¹		Akk.	CA
3MSG	-(w) (/ə/)	-ì	-əx ^w	-ay	-Ci	-Ø	-Ø	-a
3FSG	-t(i) (/t/)	-tì	-tì	-tay	-Vto	-ǎt	-at	-at
2MSG	-t(i) (/t/)	-tii-`a	-rəx ^w	-tay	-Vto	-ət	-āta	-ta
2FSG	-t(i) (/t/)	-tii-`					-āti	-ti
1SG	-kwi (/-ku/)	-ì	-əx ^w	-ay	-o	-ǎε	-āku	-tu
3MDU								-ā
3FDU								-atā
3FDU								-atā
2DU								-tumā
3MPL	-(w) (/ū/)	-iin	-nəx ^w	-een	-Cen	-it	-ū	-ū
3FPL						-it	-ā	-na
2MPL	-tywny	-tiina	-dənəx ^w	-teen	-Vten	-it	-ātunu	-tum
2FPL	(/-t̃n/)					-it	-ātina	-tunna
1PL	-wyn (/-uw̃n/)	-nì	-nəx ^w ən	-nay	-Vno	-it	-ānu	-nā

I will here focus on the internal processes responsible for the formation of the West Semitic perfect and the similarities that exist between the independent pronouns and the perfect inflection. Both the long and short forms of the 1SG pronoun described in section 2.3.3.2 should be reconstructed for Proto-West-Semitic and depending on assumptions about the classification of Eblaite⁸² also for Proto-Semitic as a whole. The long form, which must be reconstructed regardless, is clearly related to the 1SG marker of West Semitic perfect and the Akkadian stative, as are all the first and second person independent pronouns and perfect inflectional endings. The consistent similarities between these two forms can be explained by assuming that the perfect inflection arose by way of enclitic forms of the independent pronouns being reanalyzed as verbal inflection.

Within specific languages these similarities are particularly salient. In Akkadian the endings of the independent pronouns are completely identical to those of the stative

⁸⁰ Egyptian (Callender 1975), Beja (Appleyard 2007a), Bilin (Appleyard 2007b), Somali (Saeed 2007), Dahalo (Tosco 1991), Berber (Kossmann 2007), Akkadian (Diakonoff and Kogan 2007) and Arabic (Fischer 2002).

⁸¹ The Dahalo pattern is easier to discern in a paradigm:

	sg	pl
3m	lúbo	lúbben
3f	lúbuto	
2	lúbuto	lúbuten
1	lubbi	lúbuno

⁸² If we assume that Eblaite is part of East Semitic along with Akkadian, following Huehnergard (1992), then the existence of the short form in Eblaite suggests the Proto-Semitic origin of this form. If, however, we follow the assumption that Eblaite is West Semitic or even a precursor of Canaanite (Pettinato 1975), then we can only reconstruct the short form as far back as Proto-West Semitic.

“conjugation”. In contrast the possessive suffixes share similarities but also display small but significant differences. For example, the 1PL possessive suffix /i/ is found in place of /ū/ in both independent pronouns and the stative inflection.

(110) Akkadian stative inflection and other pronominal forms

	<i>independent pronouns</i>	<i>stative inflection</i>	<i>possessive suffixes</i>
1SG	anāku	-āku	-ya, ī
2MSG	ʔatta	-āta	-ka
2FSG	ʔatti	-āti	-ki
1PL	nīnū	-ānū	-ni
2MPL	ʔattunū	-ātunū	-kunū
2FPL	ʔattinā	-ātinā	-kinā

Eblaite provides little evidence of this relationship because of a lack of attested forms of the “suffix conjugation” although the basic similarities between the independent pronouns and the possessive suffixes can be made out.

(111) Eblaite pronominal forms (Archi 1987, Diakonoff 1990, Gordon 1997)

	independent pronouns		stative inflection		possessive suffixes	
	assumed form	attested forms	assumed form	attested forms	assumed form	attested forms
1SG	anā	<ANA ^{na} >, <an-na>	?	?	-iyV	<-i>
2MSG	anta	<an-da>	?	?	-ka	<-ga>
2FSG	?	?	?	?	-ki	<-gi>
1PL	?	?	?	?	?	?
2MPL	antanu	<an-da-nu>	?	?	?	?
2FPL	?	?			?	?

The basic pattern of Akkadian is also seen in Northwest Semitic. In the older varieties these similarities are particularly strong, although often obscured by the defective nature of the writing. In the Amarna letters, there are both standard Akkadian forms and West Semitic forms.

(112) Amarna suffix inflection and other pronominal forms (Rainey 1996, Ebling 1909)

	<i>independent pronouns</i>	<i>suffix inflection</i>	<i>possessive suffixes</i>
1SG	anāku <a-na-ku>	-ti <-ti>	-ya, -ī
2MSG	atta <at-ta>	-ta <-ta>	-ka
2FSG	?	?	?
1PL	ninu <ni-nu-u ₁₆ >	-nu <-nu-u ₁₆ >	-nu
2MPL	attunu <at-tu-nu>	?	?
2FPL	?	?	?

The Ugaritic forms follow the same patterns for the most part as that of the Amarna letters, although in Ugaritic the final vowel of 1SG is identical to the ending of the 1SG marker of the stative.

(113) Suffix inflection and other pronominal forms in Ugaritic (Sivan 2001)

	independent pronouns		suffix inflection		possessive suffixes	
	assumed form	attested forms	assumed form	attested forms	assumed form	attested forms
1SG	ʕanāku	<ʕank>, <a-na-ku>	-tu	<-t>	-ī, -ya	<-y>
	ʕanā	<ʕan>				
2MSG	ʕatta	<ʕat>, <at-ta>	-ta	<-t>	-ka	<-k>
2FSG	ʕatti	<ʕat>	-ti	<-t>	-ki	<-k>
1PL	ʔ		ʔ		-na	<-n>
2MPL	ʕantum(ū)	<ʕatm>	-tum(ū)	<-tm>	-kum(ū)	<-km>
2FPL	ʔ				-kin(nā)	<-kn>

In Biblical Hebrew and Aramaic (later Northwest Semitic languages) these similarities are still strong.

(114) Suffix inflection and other pronominal forms in Biblical Hebrew and Biblical Aramaic

	Biblical Hebrew			Biblical Aramaic (Rosenthal 1995, Segert 1975 for both Biblical and Imperial Aramaic)		
	independent pronouns	stative inflection	POSS suffixes	independent pronouns	stative inflection	POSS suffixes
1SG	ʔānōkî, ʔānî	-tî	-ī	ʔānā ^h	-ēt	-î
2MSG	ʔattā ^h	-tā, -tā ^h	-əkā	ʔant, <ʔnth>	-t, tā	-k
2FSG	ʔat, ʔattî	-t, -tî	-ēk	IA: <ʔnty>	IA: <-ty>	IA: <-ky>
1PL	ʔanaḥnû, naḥnû	-nû	-ēnû	ʔānaḥnā ^h , ʔānaḥnā ^ʔ	-nā ^ʔ	-nā ^ʔ
2MPL	ʔattem	-tem	-əkem	ʔantûn	-tûn	-kôm, -kôn
2FPL	ʔattēn(ā ^h)	-ten	-əken	ʔ	IA: <-tn>	IA: <-kn>

Arabic also displays similarities, especially for second person forms, although the independent pronouns and the perfect have diverged in the first person.

(115) Suffix inflection and other pronominal forms in Classical Arabic

	<i>independent pronouns</i>	<i>perfect inflection</i>	<i>possessive suffixes</i>
1SG	ʔanā	-tu	-ī, -ya
2MSG	ʔanta	-ta	-ka
2FSG	ʔanti	-ti	-ki
2DU	ʔantumā	-tumā	-kumā
1PL	naḥnu	-nā	-nā
2MPL	ʔantum	-tum	-kum
2FPL	ʔantunna	-tunna	-kunna

The same pattern is also clear in South Semitic with the substitution of /k/ for /t/ in the second person forms. The substitution of /k/ in the second person brings about similarities between the perfect inflection and the possessive suffixes. It is impossible to discount the possibility that the innovative perfect suffixes are modeled in part on the possessive suffixes.

(116) Suffix inflection and other pronominal forms in South Semitic

	OSA (Kogan and Korotayev 2007)			Ge'ez (Dillmann 1907)		
	independent pronouns	perfect inflection	possessive suffixes	independent pronouns	perfect inflection	possessive suffixes
1SG	<ʔn>			ʔənə	-ku	-yə
2MSG	<ʔt>, <ʔnt>	<-k>	<-k>	ʔəntə	-kə	-kə
2FSG				ʔənti	-ki	-ki
1PL	<ʔn>			niḥnə	-nə	-nə
2MPL	<ʔntmw>	<-kmw>	<-kmw>	ʔəntimu	-kimu	-kimu
2FPL				ʔəntin	-kin	-kin

It is assumed that the closer the stative inflection is to the forms of the independent pronouns, the more recent the common origin of the two forms. In the case of the prefix conjugation where the similarity is slight, the period of their common origin must be remote. Since the forms of the West Semitic Perfect and the Akkadian stative are almost identical to the independent forms, the common period must be substantially closer. In later forms of Semitic we find a progressive weakening of the relationship between the suffix inflection and the independent pronouns, as one would expect. The similarity between the suffix conjugations in other Semitic languages might also be explained by similar developments instead of a common suffix conjugation, just as we can clearly call the verbal conjugations based on participle in Aramaic separate developments even though they share resemblances with other suffix conjugations. Since the morphology can easily be explained by reference to available synchronic and comparative material, this is the most appropriate analysis.

5.5.2. Reanalysis and Analogy in the formation of the West Semitic perfect

The reanalysis of the verbal adjectives with enclitic pronouns can serve as the kernel for the development of the West Semitic perfect, but it does not account for most verbal forms. This scenario does not explain why the thematic vowel /a/ came to be the most common vowel for active verbs in the West Semitic perfect, even though /a/ is comparatively rare as the vowel of

the verbal adjective. The thematic vowel /a/ is also the most common thematic vowel for the derived stems. The verbal adjective forms of the derived stems are not obviously the precursors of the West Semitic perfect forms.

(117) Comparison of derived stem verbal adjectives in Akkadian and West Semitic perfects

	Akkadian verbal adjectives (Soden 1969)	Proto-West-Semitic perfect (see sections 1.3.2 and 4.3.1)
D-stem	purrus, parrus	*qabbar
Š-stem	šuprus, šaprus	*šaqbar
T-stem	pitrus	*t(a)qabar
Dt-stem	putarrus	*taqabbar
Št-stem	šutaprus	*štaqbar
N-stem	naprus	*naqbar

Preexisting verbal forms are one possible source of the stem with the thematic vowel /a/ that is used in the perfect conjugation. In Akkadian, the present *i-párras* and the perfect *i-ptaras* frequently have /a/ where the preterite/jussive *i-prus* has /u/. If we assume the form *yV-*qátal* as a proto-form for the Semitic present and as the input to Akkadian perfect formation, then we have a potential source for the stem of many West Semitic perfect forms. It would appear that this stem or a similar one may have been used to extend active verbs to the new suffix conjugation.

A closer comparison can be made between the present and in some cases also the perfect or preterite forms in Akkadian and the West Semitic perfect forms. If you ignore the doubling in basic stem verbs, T- and N-stems, the stems of the Akkadian present are identical to the stems of the West Semitic perfect.

(118) Comparison between suffix perfect and Akkadian verb forms (Soden 1969)

	Proto-West-Semitic perfect	Akkadian present	Akkadian perfect	Akkadian preterite
Basic (u ~ a class)	*qabar	i-parras	i-ptaras	i-prus
D-stem	*qabbar	u-parras	u-ptarris	u-parris
Š-stem	*šaqbar	u-šapras	u-štapis	u-šapis
T-stem	*tqabar/*qtabar	i-mtaḥḥaṣ	i-mtathāṣ	i-mtaḥaṣ
Dt-stem	*tqabbar	u-ptarras	u-ptatarris	u-ptarris
Št-stem	*štaqbar	u-štapras	u-štatapris	u-štapis
N-stem	*naqbar/*nqabar	i-pparras < i-nparras	i-ttapras < i-ntapas	i-pparis

If we assume that the doubling of the middle radical is a secondary change related to the placement of stress, then it is possible that a form existing in Proto-West-Semitic could have served as the analogical source of many of the perfect forms with thematic vowel /a/.

The scenario proposed here involves processes attested elsewhere in Semitic and the Afroasiatic languages. The first stage involves the reanalysis of verbal adjectives with nominal inflection or pronominal clitics as stative verbs of the form *qatil-a*. This development is parallel to the reanalysis of participles in many Semitic languages described in the preceding sections of this chapter. These stative verbs with a new perfect **qatil-a* and an already existing **ya-qtal* were extended to active basic stem verbs and the derived stems by way of an analogy. An existing present *ya-qátal* and various derived stem forms served as the base for the new suffix perfect. The existence of paradigms present *ya-qátal*, preterite/jussive *ya-qtal* and perfect *qatil-a* would serve as the model for the creation of new perfect forms with /a/. The existence of leveling and extension of the stem are provided by many of the cases in Chapter 4 and by the formation of new paradigms based on the participle in Western Neo-Aramaic (section 5.4.2.4). This analysis dispenses with unconstrained teleological explanations in favor of processes and forms that are independently attested.

Chapter 6. Summary and conclusions

The Semitic verbal system in all its varieties should be accounted for by reference to independently attested processes and structures. The simpler explanation, in terms of the assumed motivations for the change and the role of complex morphological structures, is to be preferred except in the case where no other satisfactory explanations exist. Teleological explanations pervade much of the literature on Semitic languages. When examining a change in a single language in isolation, one may assume that the change was in some way predetermined when in fact it is just one of a range of possible outcomes. In some cases the path may be determined largely by chance. In other cases the outcome may represent a common one due to the existence of a common type of reanalysis or grammaticalization path.

A major aim of the present work was to determine which changes represented common and recurrent paths of development. Chapter 3 dealt with several types of phonological alternations that could lead to the morphologization of that alternation or in some way affect the existing patterns. Several types of alternations were shown to be common, including alternations due to the phonological features of segments, with a palatal and labial spreading or assimilation being the most common, and alternations due to the prosodic properties of words and the subsequent effects on the quantity and quality of vowels. Chapter 4 explored sets of changes observed in the evolution of the system of derived stems in Semitic. First, one major contributor to the loss of derived forms was competition from overlapping derived forms and other constructions. Within derived stems, the occurrence of leveling between the stems of different forms was seen to be particularly common, not only in deriving languages from Proto-Semitic but also in the subsequent evolution of branches. Chapter 5 dealt with the processes of syntactic reanalysis and grammaticalization which was key to the development of new verbal forms and thus for enriching the verbal morphology. These developments were seen in the development of new verbal paradigms in Neo-Aramaic and were applied with other processes to the reconstruction of the development of the West Semitic perfect.

A central theme throughout this work was the indifference of many of the historical processes to the root-and-pattern morphology. Whether in the domain of phonology, morphology or syntax, the processes followed principles of language change that were often independently motivated in languages outside Semitic and Afroasiatic languages. The development of the unusual morphological system of the Semitic languages was something of a historical accident made possible by the conjunction of a series of favorable conditions. Once the system was in place, it continued not because of any overarching desire to maintain that system, but simply because the existence of these alternations served as input into new processes which served constantly to modify and reinvigorate the system. The health of nonconcatenative morphology does not derive out of any fundamentally conserving impulse but rather out of a sort of momentum of alternations. The processes frequently involved a simultaneous weakening or loss of an alternation and the creation of a new alternation. The processes themselves are not strictly restricted to nonconcatenative morphology, but frequently take on new significance when applied to a language with such alternations.

The ultimate origin of nonconcatenative morphology is undoubtedly in the types of phonological alternations described in Chapter 3. However, this type of system did not simply come into being through the process of a couple of changes. The system of morphology in the Semitic languages represents a long process of morphologization of non-local phonological

alternations and the subsequent morphological and syntactic reanalyses that made possible the extensive elaboration of the system. This work has provided a starting point for examining these processes and their results in the Semitic languages.

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