titulus
Grammaticalization of Semitic case relators
huius textus situs retis mundialis
http://www.christianlehmann.eu/publ/gr-n_semitic_case.pdf
dies manuscripti postremum modificati
10.01.2011
occasio orationis habitae
3rd IACS Meeting, Turin, 3 – 5 October, 2008
volumen publicationem continens
Olmo Lete, Gregorio del (ed.), *Proceedings of the 3rd IACS Meeting, Turin, 3 – 5 October, 2008*.= *Aula Orientalis* (Barcelona) 29
annus publicationis
2011
paginae
9-26

Grammaticalization of Semitic case relators

Christian Lehmann

Universität Erfurt

Abstract

Basic principles of the theory and methodology of grammaticalization and of diachronic typology are brought to bear on three problems of genetic relatedness of case relators in Semitic languages: 1) the origin of the Akkadian allative suffix *-iš*; 2) genetic relations of the Mari preposition *iš*; 3) the genetic relationship between the Akkadian pronominal accusative suffix *-ti* and the Hebrew *nota accusativi 'et*. In all three cases, reconstructions that are in conflict with well-established laws of grammaticalization and word-order change are cast in doubt, and alternative hypotheses are confirmed.

1 Introduction

The purpose of this contribution is to examine a couple of problems of historical-comparative Semitic grammar in the light of recent theories of grammaticalization and diachronic typology. It will be seen that in certain cases, these theories permit us to select among competing hypothesis about cognacy of grammatical formatives and grammatical changes connecting them.

The remainder of this introduction briefly reviews some important appearances of grammaticalization theory in Afro-Asiatic linguistics. Sections 2 - 5 combine the theoretical issue of the role of grammaticalization and degrammaticalization in language with the object domain of Semitic case relators. First of all, the fate of Semitic case relators will be sketched along the most general, millenary lines. Subsequently, a couple of particular cases will be analyzed in more detail which have been used in the literature as examples of degrammaticalization. Since the possibility and status of degrammaticalization is a hotly debated issue, it will be interesting to see what the contribution of Semitic to this problem area is.

The theory of grammaticalization developed in the 19th century in occidental historical-comparative linguistics in the field of Indo-European languages (cf. Lehmann 2002, ch. 1). Traditional Arabic grammar, although dealing extensively with morphology, "was rigidly synchronic" (Owens 2000:72) and consequently does not appear to have developed the idea of grammaticalization.[1] Occidental Semitic linguistics, however, did not take long to catch up.

[1] Goldenberg 2008 adduces the following quotation, which may be taken to evince an embryonic theory of grammaticalization: "as the [Arabic] verb would not be devoid of an agent and, necessarily, would not dispense with it, a personal pronoun was attached to it which became like one of its letters, and the sentence became one word" (al-Zağğāğğī, ʔīḍāḥ 75, 5-6).

In Brockelmann's *Grundriß* (1908-13; cf. Voigt 1999, §2), the concept of grammaticalization is already taken for granted, although the term is yet missing. In his treatment of prepositions (p. 359), Brockelmann proposes the by now well-known grammaticalization path shown in S1:

S1. *Grammaticalization path for prepositions*

grammaticalization	weak	→		strong
stage	1	2	3	4
category	N_{rel}-OBL.CASE	prepositional adverb	secondary preposition	primary preposition

Brockelmann uses 'loss of concrete semantic content' (from stage #1 to #2), 'fossilization' (from stage #2 to #3) and 'reduction to purely grammatical function' (from #3 to #4) as descriptive concepts. He finds that the relational nouns of stage #1 are generally body part nouns (p. 421-424) and proposes a passage from local via temporal to purely structural (= relational) function of prepositions (p. 362). Even the concept of persistence, explicitly introduced into grammaticalization theory no sooner than Hopper 1991, is prefigured in Brockelmann's remark (p. 360) that even the primary prepositions still betray their denominal character in their syntactic behavior.

Another figure in the history of Afro-Asiatic linguistics that deserves being singled out for interest in grammaticalization is the Egyptologist and Africanist Carleton T. Hodge. In his paper "The linguistic cycle" (1970), he distinguishes two stages in the grammatical evolution of a language, one with heavy syntax and little morphology (Sm) and another with little syntax and heavy morphology (sM). The two stages are connected by grammaticalization: 'sM' becomes 'Sm' by reduction of existent inflectional morphology and accompanying fixation of syntactic patterns into periphrastic constructions; and 'Sm' in turn becomes 'sM' by agglutination of grammatical words and corresponding syntactic autonomy of the word form. Hodge's point is essentially an empirical one: he adduces the history of Egyptian as factual proof for the hypothesis that a single language can pass through a full cycle 'sM > Sm > sM'. His slogan "that one man's morphology was an earlier man's syntax" (p. 3) is echoed by Talmy Givón's "Today's morphology is yesterday's syntax" (1971:413), which is the central thesis of his article "Historical syntax and synchronic morphology: An archaeologist's field trip" (cf. Lehmann 2002:6). Being a slogan, the formulation, of course, grossly simplifies the picture; but it embodies an important principle of methodologically sound reconstruction. Meanwhile, entire volumes have been dedicated to grammaticalization in Semitic languages, in particular Rubin (ed.) 2005.

2 Typological prerequisites for Semitic case relators

The typology of syntactic relations may be established chiefly in terms of the strategy of marking, i.e. head marking vs. dependent marking (= concentric vs. eccentric structure) and in terms of ergativity vs. accusativity. These will not be our main concern here. As a presupposition to the study of the sequential order of case relators, it suffices to note the following: The Proto-Semitic strategy is a combination of head marking with dependent marking. Both are deeply entrenched in the grammar. The most grammaticalized form of head

marking is subject agreement of the verb by circumfixes. The most grammaticalized form of dependent marking is a triptotic case system. In possessive attribution and adpositional government, there is dependent marking by the genitive; however, a (highly grammaticalized) trace of head marking may be discerned in the construct state. Moreover, there is head marking in the form of oblique pronominal suffixes on verbs and possessed nouns, which, however, are used for cross-reference only with topicalized or focused nominal constituents (s. Buccellati 1997 for Akkadian). All in all, the distribution of head and dependent marking is fairly standard: head marking for the central grammatical relation, viz. the subject; dependent marking for inferior and semantically more concrete relations. As for the alignment of fundamental relations, Afro-Asiatic is clearly accusative rather than ergative. There have been various attempts to reconstruct an ergative case out of the nominative marker. That is possible, but would concern some Pre-Proto-Afro-Asiatic which cannot be systematically reconstructed.

We now turn to the typology of case relators. A relator is a grammatical formative that provides an asymmetric grammatical relation between two constituents (s. Lehmann & Stolz 1992). A case relator is a relator that combines with the dependent to form a syntagm that may modify the superordinate constituent. In other words, case relators presuppose and function in dependent marking. A case relator s.s. governs an NP or noun, as opposed to a subordinator, which governs a clause. Preverbs are relators, but not case relators. Case relators s.s. comprise adpositions and case inflection.[2]

The typology of case relators refers primarily to two of their grammatical properties:

- their degree of grammaticalization, on a scale from secondary adposition to primary adposition to agglutinated case affix to fusional case inflection (cf. S1);
- their sequential order, more precisely their position relative to the dependent nominal constituent that they govern. While the traditional terms of *regens ante rectum* and *rectum ante regens* are entirely appropriate in the domain of government, they do not generalize to attribution and adjunction (as these are forms of modification, not of government). If one wants a word order typology that comprises all of the syntactic relations, the terms are *right-branching* (including properly *regens ante rectum*) and *left-branching* (including properly *rectum ante regens*).

In terms of this typology, Proto-Semitic is mixed. There is a more archaic layer of case relators in the form of the declension, which displays left-branching order (the stem precedes the suffix). And there is a more recent layer in the form of adpositions, which display right-branching order (they are prepositions rather than postpositions). Left-branching order is fossilized, unproductive and recedes already in the history of the ancient Semitic languages. Right-branching order is productive, and during historical times, functions that used to be fulfilled by case suffixes are taken over by prepositions. This is certainly true of the ancient Semitic languages; things are different for Ethio-Semitic, which we will turn to in §4.1.2.

Changes from postpositions to prepositions are not documented during the language history and consequently must be assumed, if at all, for some prehistorical stage of Semitic. Likewise, there is no productive formation of postpositions and of case suffixes throughout the documented history of East Semitic. Since the oldest Semitic languages display case suffixes and since case suffixes originate by grammaticalization of postpositions, this must have

[2] If the case relator is a suffix on a noun stem, the government relation between them is morphologized.

happened at some prehistoric stage of Semitic which did use postpositions. Such a stage is assumed by many specialists, more or less along the following lines (cf. Lipinski 1997:41-47): Omotic – assuming that it does belong to the Afro-Asiatic phylum – and Cushitic have mostly or exclusively left-branching word order, while Chadic, Egyptian, Berber and Semitic have mostly or exclusively right-branching word order (for the partial exception of Akkadian, see §4.1.3). The former set of languages is geographically closer to the homeland of Proto-Afro-Asiatic, while the members of the latter set are more or less distant. These latter have therefore moved away. They are, thus, exposed to new language contact and may renew their syntax, while Omotic and Cushitic have no motivation to change their syntax and therefore more probably preserve the original state of affairs. In other words, Proto-Afro-Asiatic may have had left-branching syntax. Semitic and the other migrants acquired right-branching syntax during their migrations and emerge in history as languages with right-branching syntax, but with morphological remnants of original left-branching grammar, among them importantly a suffixal case system.

Just for the sake of completeness, let us consider the logical alternative to this scenario: Proto-Afro-Asiatic had right-branching word order, which was preserved in Chadic, Egyptian, Berber and Semitic, while Cushitic and Omotic changed to left-branching. Such a hypothesis meets at least with two problems of diachronic typology:

- If Proto-Afro-Asiatic was right-branching, then it remains inexplicable where the case suffixes attested in the most ancient Semitic languages come from, given that case suffixes come from postpositions and, thus, instantiate (earlier) left-branching order.
- If Proto-Afro-Asiatic was right-branching, then one would expect remnants of such an order in the Cushitic and Omotic languages. For instance, we would expect remnants of case prefixes on nouns and of former auxiliaries attaching as tense-aspect prefixes on verbs. Such things are not found.

We will therefore assume that the former hypothesis is correct and review, on its background, the possible cognacy of some case relators and the possible grammatical changes connecting them. The starting point will be provided by Akkadian case suffixes. The archaic layer mentioned before comprises the well-known triptotic case system. At the outset, it is important to have clarity on the nature of the morphemes constituting it: they are suffixes, not postpositions. This is clearly shown by a variety of facts:

- The relative order of inherited case morphemes and attributes: Since an attribute is a constituent of a nominal group, while an adposition governs a nominal group, the adposition precedes or follows, in phrase structure, the entire group including the attribute. Examples such as Hebrew *bēṯā Jōsef* (house:ACC Joseph) ‘to the house of Joseph’ prove that the case morpheme does go between the head and the attribute.
- Akkadian noun-phrase internal agreement: Examples like Akk. *ana šarrim dannim* (to king:GEN mighty:GEN) “to the mighty king” prove that the case morpheme attaches to the nominal stem, not to the nominal group; otherwise it could not be resumed in noun-phrase internal agreement.
- Inherited cases – more precisely, the genitive – are governed by prepositions. This clearly proves that case suffixes are older, while prepositions form a more recent layer.

The case suffixes are, in fact, highly grammaticalized. This is in line with the small size of their paradigm, which during the history of the languages in question never expands, but only shrinks.

Besides this triptotic system, the ancient Semitic languages display a couple of suffixes that have been classified as case relators. Two of these will be of interest presently:

- The suffix *-iš* on nouns is traditionally called 'terminative-adverbialis'.
- The suffix *-ti* on (independent) personal pronouns marks the accusative.

The issue is whether and how such suffixes can be related to phonologically and functionally similar prepositions appearing in the same or other Semitic languages. Given the above general scenario of diachronic typology, we can say at the outset:

- Framing conditions for a change from postpositions to prepositions obtained during the Semitic separation from their Afro-Asiatic homeland up to their arrival in Mesopotamia.
- Framing conditions for a change from prepositions to postpositions obtained never during the entire span from Proto-Afro-Asiatic down to the last East Semitic language.

This is the background on which the fate of the two suffixes will be analyzed. On the way, the relatedness of the Mari preposition *–iš* to the homonymous Akkadian suffix will be discussed.

3 The Akkadian allative suffix *-iš*

The Akkadian suffix which is traditionally called 'terminative-adverbial' will here be called 'allative'. It is common to the most ancient dialects, including the Mari dialect. It is illustrated by E1:

E1. ipš-iš pī-šunu
OLD AKK deed-ALL mouth:GEN-POSS.3.PL
'for their utterances' (lit.: for the deed of their mouths) (Riemschneider 1984:134)

The problem of the present section is the grammatical nature of this morpheme. In the most ancient period, the suffix is essentially used in the functions enumerated in T1 (Gensler 1997:133):

T1. *Ancient functions of -iš*

function	**example**	**meaning**
allative	*qāt-iš-šu*	"(in)to his hand"
destinative[3]	*amār-iš*	"(in order) to see, for seeing"
denominal	*šallat-iš*	"as booty"
adverbializer	*dann-iš*	"strongly"

Other known uses include the locative and the comparative of equality; but they are younger. It seems clear that the basic meaning (German *Grundbedeutung*) of the morpheme is allative, while its generic meaning (*Gesamtbedeutung*) is adverbialis. The most plausible way of dynamicizing this picture in terms of grammaticalization implies that the original function of the morpheme was allative "to".[4] The other functions are acquired on a well-established grammaticalization path displayed as S2:

[3] This case function was traditionally called 'final/finalis'. This term is still used in German. In English, it was dropped because of the homonymy it generated, and largely replaced by 'purposive' in the past decades. The term 'destinative' had been established in Basque and Finno-Ugric linguistics since much earlier.

[4] This solution assumes that the target situation of the destinative (as in the example given in T1) is like an abstract place. However, if the destination is originally human, the function is benefactive. In that case, the development may be from benefactive to allative, as in Portuguese *para* 'for' > 'to'.

S2. *Grammaticalization path for allative*

allative	↗	locative	→	adverbializer
	↘	destinative		

This morpheme is called 'dative' by Gelb (1969:88f), followed in that by Kienast (2001, §155). However, the enumeration of its functions in T1 is exhaustive. No evidence has ever been produced of *-iš* being used in any of the functions constitutive of the dative, viz. recipient (of a transfer), addressee (of a communicative act) and experiencer (of some sensation).[5] The first part of the grammaticalization path S2 could, in fact, lead from allative to dative; but it did not in East Semitic. Quite on the contrary, the morpheme ends up as an adverbializer, while the dative function is taken on by the preposition *ana* 'to'. Therefore the term 'dative' is misleading and should be avoided. Even the label 'terminative' is not particularly fortunate because it is usually, and appropriately, applied to a case relator meaning 'up to, until'.

Gelb and Kienast might answer that originally – at some Proto-Semitic stage – *-iš* was a dative morpheme whose functions included all of the above, but then it became unproductive, and only the more concrete functions happened to survive in more or less fossilized forms. Now while it is true that the overall development of this morpheme can be characterized as fossilization, this particular scenario is impossible. In order to see why, we have to spell out the extended Old Akkadian case system as it is proposed in the handbooks (e.g. in Kienast 2001, ch. 1.III.D.3 under the label 'old nominal inflection'). There the triptotic declension is united into one complex case paradigm with other suffixes such as *-iš* DATIVE, *-hā* TERMINATIVE and *-u(m)* LOCATIVE. The result may be represented for Old Akkadian as in T2.[6]

T2. *Extended Akkadian case system*

category	**case**	**suffix**
structural	nominative	-u
	genitive	-i
	accusative	-a
concrete	dative	-iš
	locative	–u(m)
	…	…

Such a case system in itself would be typologically unremarkable. However, in the face of known Akkadian grammar and linguistic history, it does present problems. First, the suffix *-iš* may be followed by other case-like suffixes. From the demonstrative *annû* 'this', an adverb

[5] While Lipinski (1997:306) sees "no evident connection" between the allative suffix and the pronominal ending *-šim*, Kienast 2001:170 wants *-iš* to be an allomorph of the pronominal "dative" ending *-šim*. However, the use of the two morphemes is totally different: *-šim* occurs conditioned and governed by the preposition *ana* in prototypical dative functions, whereas the suffix *-iš* is not so used.

[6] The terminative is left out because it does not appear in Akkadian.

meaning 'hither' may be formed by appending first the allative, then the accusative to the root, as in E2.

E2. ann-iš-am
AKK this-ALL-ACC
'hither'

Formally analogous are *ūmišam* 'daily' from *ūmu* 'day' and a couple of similar formations. This latter type is not really conclusive evidence that what we are seeing is the accusative suffix; but let us, for the sake of argument, assume it is. There is also a rather convincing example[7] of *-iš* followed by the locative suffix, spelt out here as E3.

E3. kir-iš-um turda turda-ma ana kir-im
OLD AKK orchard-ALL-LOC go.down\PRT-DU go.down\PRT-DU-CONN to orchard-GEN
'to the orchard they [two] went down, they went down to the orchard' (ap. Lipinski 1997:262)

Now it is immediately clear that the suffixal morphemes assembled in T2 cannot form one paradigm, because some of them can co-occur in one word form. Instead, there is a subset of suffixes occupying the first position after the stem and another subset occupying the following position. *-iš* is, for the time being, the sole member of the first subset, while the others form the second subset. Putting it in a simple way, if nominative, genitive, accusative and locative are cases, then the allative is not a case in the same system.

Several handbooks on comparative Semitic grammar claim unisono that those morphemes that figure in the 'concrete' category of T2 are postpositions rather than suffixes.[8] Now in principle that would be a possible solution to the puzzle offered by formations like those in E2 and E3, since postpositions, like adverbs, may be grammaticalized forms of cased nouns, and many of them still show, at least in etymology, their former case ending. There are also quite a few languages such as Hungarian which feature two postnominal morphological positions, the first to be occupied by more postposition-like concrete case suffixes and the second to be occupied by more grammaticalized case suffixes. However, in Akkadian there is not the slightest piece of evidence that elements like *-iš* are postpositions. Instead, by arguments similar to ones used in the previous section concerning the triptotic system, they are suffixes:

- A postposition should govern an oblique case on the noun it attaches to (just as a preposition in Semitic governs the genitive). At advanced stages of grammaticalization of the case relator system, a common consequence of that case government is that primary or structural cases attach directly to the noun stem, whereas secondary or concrete cases attach to some special oblique stem, precisely one that embodies the case formerly governed by that case relator. Nothing of that is to be seen in Semitic.
- An adposition differs from a case affix by its structural scope: while a case affix typically attaches to a noun, an adposition may govern an entire NP. The latter can be observed for

[7] Some of the other examples adduced in the handbooks (Buccellati 1997:78, Lipinski 1997:267, Kienast 2001:171) are rather obscure.

[8] The categorization of Akkadian *-iš* as a postposition first appears in Gelb 1969:93. It is treated as well established in Lipinski 1997:261 and Kienast 2001: 129 *et pass*. Buccellati (1997:79) calls elements of the category of *-iš* 'postfixes'. Since there is not the slightest evidence for such an analysis, the suspicion is that these authors use the term 'postposition' in order to facilitate their analysis of the Mari preposition *-iš* as a positional variant of it.

Semitic prepositions. It is, however, not the case for the alleged postpositions; these attach directly to the noun stem. Old Akk. *qāt-iś-śu* (hand-ALL-POSS.3.SG) 'into his hand' clearly illustrates this: if *-iś* were a postposition, the form would have to be something like *qāt(-i)-śu iś* (hand-GEN-POSS.3.SG ALL).

- If the complement of an adposition is a pronoun, then it may attach to the adposition as a pronominal affix. That is exactly what happens with Semitic prepositions, which take pronominal complements in the form of oblique personal suffixes. The alleged postpositions do nothing of the sort. Nor could they ever do so, because they are not words.

Thus, the elements of the category 'concrete' in T2 cannot be analyzed as postpositions. *-iš* in particular does not appear to be a case relator at the same synchronic stage that the triptotic system belongs to.

Another observation points in the same direction. Forms ending in *-iš* appear in positions where a construct state is expected (Kienast 2001:170), as in E4:[9]

E4. dār-iš ūm-i
AKK lasting-ALL day-GEN
'forever'

This even more clearly excludes the hypothesis that *-iš* is a case suffix. Under these circumstances, it rather seems that *-iš* behaves like a derivational suffix.

Third, there are prepositional phrases of the structure in S3; some examples (from Kienast 2001:171) are in E5:

S3. [$[X]_{Prep}$ Y–*iš* $]_{PrepP}$

E5. a. *ana dāriš* 'forever'

b. *ina labiriš* 'in old times'

c. *ištu labiriš* 'since old times'

Now Akkadian prepositions govern the genitive; they cannot on occasion govern a different case. The immediate conclusion from this is that *-iš* cannot be a case at the stage that the formation of E5 belongs to. Instead, words like *dāriš* and *labiriš* are adverbs. Adverbs may be governed by a preposition, as in English *for ever, from here* and *since yesterday*. And since adverbs are indeclinable, they cannot show the case governed by the preposition. Nor need they do so, since they embody a synchronically unidentified ("adverbial") case. In short, examples like those in E5 (used as evidence for a dative case function in Kienast 2001:170f) constitute another argument to the effect that *-iš* has become an adverbializing derivational suffix.

[9] Kienast l.c. adduces *qāt-iś-śu* (hand-ALL-POSS.3.SG.M) 'into his hand' as another example of the same construction. This is consistent with his earlier (p. 44) contention that possessive suffixes attach to the construct state of the noun. However, that is only so for possessed nouns that function as subject or direct object, i.e. ones that would be in the nominative or accusative if the possessive suffix were absent. If the possessed noun is in the genitive, then the possessive suffix attaches to the genitive case, e.g. *alapšunu* 'their neat (cow) (nom./acc.)' – *alpišunu* 'of their neat' (Riemschneider 1984:40). Consequently, a form such as *qātiśśu* unfortunately proves nothing for the derivational or case function of *-iš*.

Finally, a brief glance at the history of the suffixes appearing in T2 shows that while the triptotic case system is vigorous in Old Akkadian, formations in *-iš* are fossilized or fossilizing from the beginning of historical documentation. Uses as an allative case survive only in the poetic language in a few locutions such as E1 and *qāt-iš-šu*. Now if the triptotic system were the subsystem of structural cases, while *-iš* belonged to a subsystem of more concrete cases and were more like a postposition, the diachrony would have to be the other way around: the most grammatical morphemes disappear first, the semantically more specific morphemes get grammaticalized and acquire a wider distribution. Sure enough, exceptions to diachronic laws are possible, and Akkadian might present one. However, it is a safe methodological principle not to base a reconstruction on the assumption of an exception to a law (Lehmann 2004, §2.3). So the conclusion is, again, that *-iš* is not a postposition. It probably was a case at some Proto-East-Semitic stage, but then got isolated from the case paradigm (s. Paul 1920, §132 on morphological isolation). It survived as a case suffix in a few fixed locutions, but otherwise turned into an adverbializing derivational suffix.

At the end of this discussion, it should be added that while a derivational allative suffix and an allative case suffix are morphologically distinct, they are not much apart in terms of function. As remarked above, an adverb functions syntactically like a cased noun, except that the case function it embodies is none of the inflectional case paradigm. The difference between the two concepts is a structural one: a derivational allative suffix – something like English *-ward* in *southward* – is not part of the inflectional case paradigm. Being part of word formation, an adverbializer has no syntactic relevance. Diachronically, it is not grammaticalized from an adposition. If it originates at all by grammaticalization, then it generally stems from something that functions as an adverb, i.e. either an adverb or a noun in an adverbial case (like English *-ly* and Romance *-mente*). The path leading from Proto-East-Semitic to Akkadian *-iš* is not, however, grammaticalization, but morphological isolation.

4 The Mari preposition *iš*

The Akkadian dialect of Mari has a preposition written *iš*, which is synonymous with *ana* ‘to’. Its use is illustrated by E6:

E6.	iš	šīm-i-šu	12 GÍN	KÙ.BABBAR	iddiššum
MARI	for	price-GEN-POSS.3.SG	12 shekel	silver	3.SG:give(PRT):IO.3.SG

‘as its price, he gave him 12 shekel of silver’ (legal text, ap. Gensler 1997:131)

Such a preposition does not occur elsewhere in Akkadian. Now this preposition *iš* and the Akkadian suffix *-iš* discussed before have similar, although not identical functions. Since the early work by I.J. Gelb, it has been regarded as obvious that the two morphemes must be identical.[10] If so, then the question naturally arises whether the suffixal or the prepositional use is the original one.[11] Gelb (1969:93) launched the hypothesis that this case relator started out as a preposition, later, still before Akkadian documented history, shifted to a postposition and agglutinated as a case suffix to its noun. The other logical possibility is defended in Kienast 2001:171: *iš* started out as a postposition, but was used as a preposition in Mari, illustrating the shift of postpositional to prepositional order in Semitic. In examining these

[10] Lipinski 1997:464: “This preposition is obviously the same as the postposition *-iš*”.

[11] Lipinski 1997:261f, 463f takes no stand on the issue and speaks of “double use of a particle as preposition and postposition” (p. 261), adducing one questionable parallel example which is not even an adposition.

alternative hypotheses in detail, we will keep the framing conditions in mind which were set out at the end §2: Original postpositions may have been replaced by preposition in the period between Proto-Afro-Asiatic and the historical Semitic languages; there is no room for a replacement of earlier prepositions by postpositions.

4.1 From preposition to postposition?

4.1.1 Some principles of diachronic word-order typology

Gelb's hypothesis raises the question: can a preposition become a postposition?[12] To answer it in the affirmative, it does not suffice to allude to cases like the Proto-Indo-European adpositions, which show up as postpositions in Hittite, but as prepositions in Greek. Those were initially adverbs which accompanied a cased NP in apposition on either side. Only later did this construction freeze into adpositional government in one or the other sequential order. The question here is precisely: Can a word that is exclusively a preposition at one stage of a language become a postposition at a later stage? The answer is: in principle no; exceptions require very special framing conditions. In order to see this, we have to review some principles of diachronic word order typology:

(1) The autonomy of the linguistic sign – including syntagmatic variability – diminishes with its grammatical level.[13] In other words: While there is relatively free word order at the highest grammatical level, especially at the sentence level, it becomes ever more rigid the lower the level of the construction. At the word level, the order of morphemes is fixed; a prefix cannot become a suffix.

(2) Grammaticalization shifts a construction down the hierarchy of grammatical levels. It may convert a complex sentence into a clause and a phrase into a word form. By principle #1, this involves fixation of the order of its components.

(3) The word order patterns of a language may be more or less consistently left-branching or right-branching at all grammatical levels. By principle #1, a word-order pattern cannot change to the opposite type by simply inverting the order in existing constructions all the way down the grammatical hierarchy. By principle #2, instead, it can pass over to the opposite type by first making use of order freedom at the highest level and then grammaticalizing the constructions with the new order in order to obtain opposite-order counterparts to earlier lower-level constructions (cf. Lehmann 1993).

Since an adpositional phrase is at a relatively low grammatical level, we can deduce from the above that a Proto-Akkadian change from a preposition *iš* to a postposition *iš* is not possible by general mechanisms of word-order change. Now as is well known, a change from Proto-Semitic prepositions to postpositions did occur at historical stages, viz. in the Ethiopian languages. It is therefore worth examining how those historical facts fit into the picture.[14]

---

[12] The following account is based on Gensler 1997.

[13] This principle was first codified in Ross 1973:397 as the Penthouse Principle: "More goes on upstairs than downstairs."

[14] The following account is based on Greenberg 1980:235-238 and the summary in Gensler 1997, §5.

4.1.2 Left branching in Ethio-Semitic

Proto-Semitic was a consistently right-branching language. The Ethiopian languages, however, became superstrates to the Cushitic languages, which are equally consistently left-branching. Now the Ethiopian languages adapted to the word-order pattern of their substrates to different degrees. We will here briefly review the word-order pattern of four constructions, which are at four different syntactic levels:

- main constituent order in the clause, i.e. the order of verb (V), subject (S) and direct object (O),
- the relative order of the adjective attribute (Adj) and its head noun (N),
- the relative order of the possessive attribute (Gen) and its head noun (N),
- the order of the adposition (Adp) and its complement (N), i.e. the nature of the adposition as either preposition or postposition.

These four constructions will be examined in five Ethiopian languages. Were it not for principle #1 in the preceding subsection, any subset of these four constructions could be left-branching in a language, while the others remain right-branching. Given principle #1, however, this is not what happens. The actual facts may be tabulated in T3:

T3. *From right- to left-branching word order in Ethiopian languages (after Gensler 1997:139)*

language construction	**Ge'ez**	**Tigre**	**Tigrinya**	**Amharic**	**Harari**
VSO / SOV	VSO	SOV	SOV	SOV	SOV
N Adj / Adj N	N Adj	N Adj ~ Adj N?	Adj N	Adj N	Adj N
N Gen / Gen N	N Gen	N Gen	N Gen ~ Gen N	Gen N	Gen N
N Adp / Adp N	Adp N	Adp N	Adp N	Adp N + N Adp	N Adp

As is apparent, change from (black) right-branching to (blue) left-branching syntax proceeds stepwise from left to right and from top to bottom in T3. Ge'ez has, in principle, still Proto-Semitic word order, with left-branching orders only occurring as optional variants. Harari, at the other pole, displays the final stage of the change, where even the lowest-level constructions are left-branching. The four constructions form an implicational hierarchy constituted by principle #4, which is in consonance with the other three principles:

(4) If at a given historical stage, a construction at a given level of the hierarchy acquires a new word order, then all the constructions at higher levels have acquired that order at earlier stages.

Thus, word-order change in the lower-level constructions presupposes corresponding word-order change in higher-level constructions. The introduction of postpositions is the last step in this set, which presupposes all the others.

This hierarchy of constructions – being part of grammar – is not wholly universal, but also involves traits of specific languages or of the linguistic type. In the case at hand, this concerns the relationship of adjective attribution to genitive attribution. There are languages where these are variants of one construction, for instance Latin. There are other languages like English and German, where the possessive attribute is more loosely bonded than the adjective attribute, so that we may have possessive attributes either in prenominal or in postnominal position, but only prenominal adjective attributes. Here then the possessive attribute is at a

higher syntactic level than the adjective attribute. Contrasting with these, adjective attribution in the Ethiopian languages, just as in Semitic in general, is a loose, appositive construction, while genitive attribution is based on the construct state of the head noun. The latter is a construction so tight that it might even be regarded as the Ancient Semitic surrogate for compounding. That is why in T3, genitive attribution in the Semitic languages ranges at a lower level of grammatical structure than adjective attribution.

On the other hand, the construction of an adposition with its complement follows the model of genitive attribution in many languages quite independently of their linguistic type, provided that adpositions are of denominal origin. This is certainly the case in Semitic, and consequently adpositional constructions share all their features with genitive attribution.

Thus, if prepositions change to postpositions, the above principles determine that it is not the identical word which is used as a preposition earlier and as a postposition later. Instead, the entire construction is created anew, with new items being recruited for use as postpositions, while earlier prepositions fall out of use. This is generally borne out by the Ethio-Semitic facts. There are, however, two counterexamples to this generalization that must be mentioned: The inherited Semitic prepositions *le* "to" und *be* 'in', both even proclitic from the beginning, appear as postpositions in Harari, first optionally and then, in Modern Harari, obligatorily.[15] So Harari does have two cases of "adposition hopping". However, this only happens after the language has formed a whole new paradigm of postpositions in the way explained before. Thus, the inherited prepositions are not spontaneously reshuffled, but join a meanwhile dominant pattern by analogy.

After this summary typological and genetic-comparative survey, it is worthwhile to take a brief look into the history of one of the languages involved, Amharic. The following comparison between Ge'ez and Amharic (two languages appearing in T3) is taken from Voigt 1999, §6. E7.a – c from Ge'ez illustrate the following three constructions: (a) primary preposition with its complement,[16] (b) possessive attribution and (c) secondary preposition with its complement.

E7. a. bä-wəst
GE'EZ in-middle
'in the middle'

b. wəst-ä bet
middle-of house
'the middle of the house'

c. bä- wəst-ä bet
in-[middle-of house]
'in the middle of the house'

All of these constructions are right-branching. Now in Amharic, the primary prepositions of Old Ethiopian remain untouched, so that E7.a appears in the form of E8.a.

[15] although there are, in Harari, traces of the original prepositional use, too

[16] E7.a and E8.a are rather artificial, since the noun 'middle' occurs exclusively in construct state in possessive constructions (G. Goldenberg p.c.). However, the examples are only meant to illustrate a structure. I let that particular word stand in order to simplify them

E8. a. bä-wəsṭ
AMH in-middle
'in the middle'

b. yä-bet wəsṭ
of-house middle
'the middle of the house'

c. bä-bet wəsṭ
in-[housemiddle]
'in the middle of the house'

Possessive attribution, however, is renewed. Preposing of the possessive attribute, as in E8.b, is achieved by a fresh combination of two constructions inherited from Proto-Ethio-Semitic. The first of these is the combination of a substantival demonstrative pronoun in construct state – the form *yä* – with its postnominal possessive attribute – *bet* in E8.b. The second construction is an apposition of two coreferential nominal expressions, viz. the two words in E8.b. In the new complex construction consisting of these two inherited constructions, the demonstrative is cataphoric to the final constituent. The grammatical structure of E8.b, thus, corresponds to something like 'the one of the house, the middle'.[17] However, since cataphora inside a noun phrase is not actually needed, grammaticalization of this construction involves reduction of the introductory particle. This happens, in the first place, when the construction becomes dependent on a primary preposition, such as *bä* in E8.c, which would yield *bä-yä bet*. Suppression of *yä* here is certainly fostered not only by phonology, but also by the fact that the particle *yä* functions grammatically just like a primary preposition.

Given the nature of the head noun in this particular possessive attribute construction, further grammaticalization leads to its reduction to a postposition. At the beginning of this new introduction of postpositions into the language, they still combine with old prepositions in one adpositional phrase, yielding circumpositions like bä-… wəsṭ 'in the midst of' in E8.c (cf. Greenberg 1980:233-238). Circumpositions are, thus, an intermediate step in the transition from prepositions to postpositions.

4.1.3 Left branching in Akkadian

After this digression into the conditions of word-order change, we may come back to Akkadian. As we have seen, it requires specific typological and areal conditions for prepositions to become postpositions, and it requires even more exceptional circumstances for an existent preposition to hop into the postpositional slot. Such conditions were certainly absent in Old Akkadian. Old Akkadian is, in fact, another example to prove the set of principles #1 – 4: It, too, meets with a left-branching substrate, Sumerian. And it adapts one of the four constructions to the left-branching pattern, viz. main constituent order.[18] Apart

[17] The idea of such a possessive construction was probably Pan-Semitic. It existed, only with inverted order of the two constituents of the apposition, in Akkadian, too. The attributor there is *ša*, the construct state of the demonstrative *šu*. See already Ungnad 1905:41f.

[18] Kienast (2001:180) categorically denies this possibility for historical reasons and instead regards Akkadian SOV order as an archaism. This is, however, even less possible. As explained above, prehistoric change in the lower level patterns towards right-branching – assumed by Kienast just as by most specialists – presupposes the corresponding change in main constituent order.

from this change, Akkadian is a thoroughly conservative ancient Semitic language. There is no possibility for a preposition to become a postposition in this language.

4.2 From derivational suffix to preposition?

The alternative hypothesis about the historical connection between the Old Akkadian suffix *-iš* and the Mari preposition *iš* is that the latter developed out of the former. This is not quite the form in which the hypothesis is suggested in Kienast 2001:171, since he (just like Lipinski 1997:261f, 463f) wants the suffix to be a postposition. Thus, what he hypothesizes is a transition of a postposition to a preposition. Generalizing over seemingly similar cases, Kienast (2001:165, 178f) says that "demonstrably" "quite a few" postpositions, elements of the "old nominal inflection", were secondarily used as prepositions.

We may first recall here from §3 that *-iš* not only is not a postposition in Old Akkadian, but there is no evidence that it ever was one since Proto-Semitic. Apart from the Mari preposition, it is only attested as a nominal suffix. Thus, what we are talking about here is not only a word order change from postposition to preposition, but first of all the degrammaticalization of a suffix to a postposition. Suffice it here to summarize almost three decades of debate on degrammaticalization (s. Haspelmath 2004, Lehmann 2004, Norde 2009): convincing historical evidence of degrammaticalization is extremely scant, and certainly not a single case of the change of a nominal suffix to a postposition has been demonstrated. Thus, there would be no empirical basis for assuming such a change in prehistorical East Semitic.

Now for the word-order change from postposition to preposition, essentially the same reservations apply as in the opposite case reviewed in section 4.1. All depends on the dominant word-order pattern at that stage of the language history, on the degree of grammaticalization of the erstwhile postposition and the degree of fixation of the postpositional phrase. Take German as an example. From time to time (see Lehmann & Stolz 1992 for more precision), grammaticalization of a participle or some other suitable source leads to a postposition. German *entsprechend* 'according to' and *betreffend* 'concerning' are relevant examples. Now German word order is predominantly right-branching, all primary and most secondary adpositions have been prepositions for thousands of years. The large paradigms of prepositions and the prepositional phrase as a construction consequently exert analogical suction on the handful of postpositions popping up erratically. Thus, the two words mentioned and a couple of similar ones join the class of prepositions, and while that happens, they may be used either as prepositions or as postpositions. Is that a model for the East Semitic case? Obviously the conditions for East Semitic *-iš* are completely different. A more appropriate analogy from German would be a comparison of the dative ending *-n* appearing, e.g., in *Herrn* 'master (dat.)', with the preposition *an* 'at', which contains an /n/ and has a similar function as the suffix. The hypothesis that *an* evolved out of the suffix *-n* is like the hypothesis that the preposition *iš* evolved out of the suffix *-iš*.

4.3 Conclusion for Mari *iš*

The primary result of this application of the theory of grammaticalization and of diachronic word-order typology to Mari *iš* is negative: The allative preposition and the allative suffix have nothing to do with each other. Gensler (1997, §§7f) proposes an Afro-Asiatic etymology

for the allative suffix, while launching a rather bold conjecture for the preposition: *iš* in this function is just a use of the character *iš* as a logogram for the preposition *ana*. This seems a plausible solution, whose truth or falseness, however, is completely independent from the truth of the above analysis in terms of grammaticalization and diachronic typology.

5 Akkadian *-ti* and Hebrew *'et*

The paradigm of Akkadian pronominal declension features a suffix whose allomorphs are *-āti* ~ *-āta* ~ *-ūti* and which appears in the genitive-accusative of all free pronoun forms and the accusative plural forms of the pronominal suffixes. The relevant section of the paradigm is displayed in T4 (after Riemschneider 1984:293); the free nominative forms are omitted, as they contribute nothing to the analysis.

T4. *Akkadian oblique pronominal declension*

grammatical status		**free pronoun**		**pronominal suffix**		
number	**person**	**gen.-acc.**	**dative**	**possessive**	**accusative**	**dative**
singular	**1st**	jâti	jâšim	-ī, -ja, -'a	-ni	(-am, -nim)
	2nd m	kuâti, kâta	kâšim	-ka	-ka	-kum
	2nd f	kâti	kâšim	-ki	-ki	-kim
	3rd m	šuāti	šuāšim	-šu	-šu	-šum
	3rd f	šiāti	šiašim	-ša	-ši	-šim
plural	**1st**	niāti	niāšim	-ni	-niāti	-niāšim
	2nd m	kunūti	kunūšim	-kunu	-kunūti	-kunūšim
	2nd f	kināti	kināšim	-kina	-kināti	-kināšim
	3rd m	šunūti	šunūšim	-šunu	-šunūti	-šunūšim
	3rd f	šināti	šināšim	-šina	-šināti	-šināšim

In order to settle on the phonological form of the accusative suffix, we observe that there is an element *ti* preceded by a long vowel, just as there is a dative suffix *-šim*, in each person/number category preceded by the same long vowel. Moreover, apart from a few exceptions, the free pronoun forms appear to be based on the possessive pronominal suffixes, whose final vowel is lengthened and then either of the two case suffixes appended. The lengthening of the vowel may be a phonological effect of its position in a penultimate open syllable. This gives us an accusative suffix *-ti* (see also Kienast 2001:42). There are close cognates in Eblaitic and even in Ugaritic (o.c. 41), so that *-ti* may be reconstructed as a Proto-Semitic accusative suffix of personal pronouns. Lipinski (1997:305) also adduces forms from Qimant (Central Cushitic): yət 'me', *kut* 'you', *anät* 'us'. However, no Common Cushitic accusative pronominal suffix can be reconstructed, so that this connection between East Semitic and Central Cushitic remains doubtful and may be fortuitous.

Now this suffix has been compared repeatedly (Correll 1994, Kienast 2001:172) with the *nota accusativi*, i.e. the morpheme which is Hebrew *'et ~ 'ät* and which has close cognates in other West Semitic languages, viz. Old Aramaic, Moabitic and Phoenician/Punic (cf. Rubin 2005, ch. 5). This morpheme is a preposition which precedes a nominal direct object just in case the latter is definite. Consequently it also combines with pronominal suffixes. Syntactically and morphologically, it behaves like an ordinary preposition. As for its etymology, there is a proposal by Lipinski (1997:314). He adduces the Middle Babylonian "complement of appurtenance" *attu*, which if provided with possessive suffixes yields independent possessive pronouns ('mine, yours, his' etc.). Such forms would then have been used to refer to the possessor himself. That seems possible.[19] More in general, we may observe that the *nota accusativi* is employed for differential object marking, a phenomenon widely known in the languages of the world (see Bossong 1985 and Rubin 2005, ch. 5.2). Functional parallels may be adduced from other Semitic languages. Thus, Ge'ez has a remnant oblique case ending *-(h)ä*. However, if the direct object is definite, then instead of attaching the case ending, one can mark the object with the preposition *lä* while providing the finite verb with a personal clitic cross-referencing the direct object. *Lä* was originally a dative preposition, but is then obviously used for differential object marking (cf. Rubin 2005, ch. 5). The etymologically same preposition *lə* is also used in Biblical Hebrew and contemporary Aramaic to mark the direct object (Lipinski 1997:507f). There is, thus, in Semitic, clear historical evidence of the use of an erstwhile dative preposition in accusative function. By this analogy, we may propose, as an alternative to the Akkadian "complement of appurtenance", that the forerunner of the *nota accusativi* was a preposition of more concrete function, too.

Quite a different etymology is proposed by Kienast (2001:178): He traces the *nota accusativi* back to our pronominal suffix *-ti*, subsuming the latter under the set of case suffixes that have been reused as prepositions. This idea has already made its way into general linguistics and is there (Rubino 1994, Newmeyer 2001:208f) used as evidence of degrammaticalization. Its argumentative role may hardly be overestimated, since it serves Newmeyer as proof that "there is no such thing as grammaticalization" (p. 188).

We should first note here a considerable phonological discrepancy. The oldest documented form of the pronominal suffix is *ti* (or /t/ followed by some other vowel), whereas the West Semitic *notae accusativi* have the form *ʔVt*, where V is some vowel. A proto-form **ʔiyyāt* may be reconstructed rather confidently for these forms (Correll 1994, Rubin 2005, ch.5). Thus, the first problem for the degrammaticalization analysis is where the syllable(s) preceding the /t/ in the preposition come(s) from. Apart from that, however, we need a mechanism of syntactic change which motivates the reanalysis: a suffix which at an earlier stage exclusively marks the oblique case (genitive and accusative) on personal pronouns, at a later stage gets reinterpreted as a preposition marking nominal and pronominal definite direct objects. No such mechanism has been demonstrated by anybody. The functional difference might be considered as a generalization of function. The structural difference, however, i.e. the difference in word order and in grammatical status, remains unaccounted for. No mechanism of grammatical change is known in diachronic linguistics that would render such

[19] One might adduce as a parallel the grammaticalization of Ge'ez *rə's* 'head' plus possessive suffix to an independent personal pronoun referring to the erstwhile possessor (Rubin 2005:23f).

a connection plausible. And quite apart from that, once there are few if any historically attested cases of degrammaticalization, one should not found a reconstruction on degrammaticalization.

6 Conclusion

The preceding sections applied some basic principles of the theory and methodology of grammaticalization and of diachronic typology to a couple of specific hypotheses of historical-comparative Semitic studies concerning cognacy of grammatical morphemes of diverse languages and grammatical changes connecting them. Some of these hypotheses meet with considerable reservations because they clash with those theoretical and methodological principles. At the end of this paper, let me state these principles clearly (cf. Lehmann 2004).

In order to prove historical cognacy for signs S_1 and S_2 of two languages, one has to relate them by principles of phonological, semantic and structural/grammatical variation. The latter kind of variation is stated in terms of a transition between grammatical classes. That is, it is shown how the combinatory potential of S_1 changes to the combinatory potential of S_2. In other words, both S_1 and S_2 are analyzed in their syntactic context; and if these differ, then principles of structural variation are employed in order to motivate the transition. Among the relevant principles here are analogy, reanalysis and grammaticalization. To the extent that there remain structural differences between S_1 and S_2 unaccounted for by such principles, the cognacy is considered unproved and perhaps improbable.

General laws of grammatical change such as the principles of grammaticalization and the implicational laws of word-order typology have the status of theorems that are based on generalizations over historical data. They derive their methodological status of explanatory principles both from the weight of supporting empirical evidence and the coherence of the theory incorporating them. Since they are based on empirical generalizations, they may be falsified by contradictory historical evidence. They cannot, however, be falsified by hypotheses concerning cognacy or the reconstruction of protoforms. Quite on the contrary, such hypotheses ought to heed those general principles.

As just said, these theoretical principles are based on historical data. Naturally, if something does not occur in the documented history of known languages, this does not entail that it could not occur in other languages. After all, the languages with a documented history constitute just a small sample of the possible languages. The Uniformitarian Hypothesis (Comrie 2001)[20] requires that those conditions that obtain for living languages also obtained for prehistoric languages. This does not, of course, entail that the theory excludes the possibility of prehistoric languages possessing properties not attested in the sample provided by present languages. The Uniformitarian Hypothesis is nevertheless valid as a principle of prudent, responsible methodology, since we have no other basis for judging the plausibility of a reconstruction than the facts that we know about languages in general. That at least is the vantage point from which the above arguments are made.

[20] The simple version of the Uniformitarian Hypothesis says: "things were in the past more or less as they are now" (Comrie l.c.). More precisely, the principle refers to the mechanisms operative in the past. Continuous operation of the same mechanisms over time may well lead to qualitatively different states.

Abbreviations in interlinear glosses

3	third person	IO	indirect object
ACC	accusative	LOC	locative
ALL	allative	PL	plural
CONN	connective	POSS	possessive
DU	dual	PRT	preterite
GEN	genitive	SG	singular

References

Bossong, Georg 1985, *Empirische Universalienforschung. Differentielle Objektmarkierung in den neuiranischen Sprachen*. Tübingen: G. Narr (Ars Linguistica, 14).

Brockelmann, Carl 1908-13, *Grundriß der vergleichenden Grammatik der semitischen Sprachen.* 2 Bde. Berlin: Reuther & Reichard.

Buccellati, Giorgio 1997, "Akkadian." Hetzron, Robert (ed.), *The Semitic languages.* London: Routledge (Routledge Language Family Descriptions); 69-99.

Comrie, Bernard 2001, "Typology and the history of language." Bisang, Walter (ed.), *Aspects of typology and universals*. Berlin: Akademie-Verlag (Studia Typologica, 1); 21-35.

Correll, Christoph 1994, "Ein neuer Anlauf zur Erklärung der Herkunft der «notae accusativi» in den klassischen semitischen Sprachen." Heinrichs, Wolfhart & Schoeler, Gregor (eds.), *Festschrift Ewald Wagner zum 65. Geburtstag. Bd. 1: Semitische Studien unter besonderer Berücksichtigung der Südsemitistik.* Stuttgart: i.K. F. Steiner (Beiruter Texte und Studien, 54); 21-42.

Gelb, Ignace J. 1969, *Sequential reconstruction of Proto-Akkadian*. Chicago: Chicago University Press (Assyriological Studies, 18).

Gensler, Orin D. 1997, "Mari Akkadian *iš* "to, for" and preposition-hopping in the light of comparative Semitic syntax." *Orientalia* 66(2):129-156.

Givón, Talmy 1971, "Historical syntax and synchronic morphology: An archaeologist's field trip." *Papers from the Regional Meeting of the Chicago Linguistic Society* 7:394-415.

Goldenberg, Gideon 2008, "Univerbated, morphologized, condensed, fused – and still autonomous." 3rd Meeting of the International Association of Comparative Semitics, Turin, 2 – 5 october 2008.

Greenberg, Joseph H. 1980, "Circumfixes and typologic change." Traugott, Elizabeth C. & LaBrum, Rebecca & Shepherd, Susan (eds.), *Papers from the 4th International Conference on Historical Linguistics. Stanford, March 26-30, 1979.* Amsterdam: J. Benjamins (Amsterdam Studies in the Theory and History of Linguistic Science, IV, 14); 233-241.

Haspelmath, Martin 2004, "On directionality in language change with particular reference to grammaticalization." Fischer, Olga & Norde, Muriel & Perridon, Harry (eds.), *Up and down the cline. The nature of grammaticalization.* Amsterdam: J. Benjamins (Typological Studies in Language, 59); 17-44.

Hodge, Carleton T. 1970, "The linguistic cycle." *Language Sciences* 13:1-7.

Hopper, Paul J. 1991, "On some principles of grammaticization." Traugott, Elizabeth C. & Heine, Bernd (eds.), *Approaches to grammaticalization.* 2 vols. Amsterdam & Philadelphia: J. Benjamins (Typological Studies in Language, 19); 1:17-35.

Kienast, Burkhart 2001, *Historische semitische Sprachwissenschaft*. Wiesbaden: O. Harrassowitz.

Lehmann, Christian 1992, "Word order change by grammaticalization." Gerritsen, Marinel & Stein, Dieter (eds.), *Internal and external factors in syntactic change*. Berlin & New York: Mouton de Gruyter (Trends in Linguistics, 61); 395-416.

Lehmann, Christian 2002, *Thoughts on grammaticalization*. Erfurt: Seminar für Sprachwissenschaft der Universität (ASSidUE, 9) (2nd revised edition).

Lehmann, Christian 2004, "Theory and method in grammaticalization." *Zeitschrift für Germanistische Linguistik* 32/2:152-187.

Lehmann, Christian & Stolz, Christel 1992, *Bildung von Adpositionen im Deutschen*. Erfurt: Seminar für Sprachwissenschaft der Universität (ASSidUE, 6).

Lipiński, Edward 1997, *Semitic languages. Outline of a comparative grammar*. Leuven: Peeters (Orientalia Lovaniensia Analecta, 80).

Newmeyer, Frederick J. 2001, "Deconstructing grammaticalization." *Language Sciences* 23:187-229.

Norde, Muriel 2009, *Degrammaticalization*. Oxford & New York: Oxford University Press.

Owens, Jonathan 2000, "Traditional Arabic grammar." Booij, Geert & Lehmann, Christian & Mugdan, Joachim (eds.), *Morphologie. Ein internationales Handbuch zur Flexion und Wortbildung. 1. Halbband.* Berlin & New York: W. de Gruyter (Handbücher zur Sprach- und Kommunikationswissenschaft, 17.1); 67-75.

Paul, Hermann 1920, *Prinzipien der Sprachgeschichte.* Tübingen: M. Niemeyer (5th ed).

Riemschneider, Kaspar K. 1984, *Lehrbuch des Akkadischen*. Leipzig: VEB Enzyklopädie (4. Auflage).

Ross, John R. 1973, "The penthouse principle and the order of constituents." Corum, Claudia et al. (eds.), *You take the high node and I'll take the low node. Papers from the Comparative Syntax Festival. The difference between main and subordinate clauses. 12 April 1973. A paravolume to Papers from the Ninth Regional Meeting.* Chicago: Chicago Linguistic Society; 397-422.

Rubin, Aaron D. 2005, *Studies in Semitic grammaticalization*. Winona Lake, IN: Eisenbrauns (Harvard Semitic Studies, 57).

Rubino, Carl 1994, "Against the notion of unidirectionality in lexeme genesis." *Linguistica Atlantica* 16:135-147.

Ungnad, Arthur 1905, „Zur Syntax der Gesetze Hammurabis“. *Zeitschrift für Assyriologie* 18:1-67.

Voigt, Rainer 1999, "Die Präpositionen im Semitischen - Über Morphologisierungsprozesse im Semitischen." Edzard, Lutz & Nekroumi, Mohammed (eds.), *Tradition and innovation. Norm and deviation in Arabic and Semitic linguistics*. Wiesbaden: O. Harrassowitz; 22-43.