How a subordinate marker changed the West-Semitic TAM

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It has been argued that subordinate clauses are more conservative than main clauses, primarily because subordinate clauses are less likely to contain vehicles of change, such as topicalization, focalization, and other manipulative constructions. In this paper we examine this question in the Semitic languages and argue that the subordination marker in East Semitic, *-u*, which was restricted to subordinate verbal predicates, became an indicative marker in West Semitic, with no syntactic restriction on its distribution. Furthermore, the locus of the change must have been subordinate sentences, because verbal predicates, which originally carried the subordination marker, could only be indicative verbs. We examine additional contributing factors to the change from subordination to mood (e.g. restrictions on distribution, redundancy, etc.). We conclude that subordinate clauses can be the locus of some major changes, and in the case that we discuss here, change in fact could only have started in subordinate clauses.

KEYWORDS: historical syntax, subordination, Semitic, Tense-Aspect-Mood.

1. Introduction

There is cross-linguistic evidence that subordinate clauses are generally more conservative than main clauses (a.o. Givón 1977, Bybee *et al.* 1994: 230-32; see the introduction to this issue); indeed, a number of scholars have argued that subordinate clauses are less likely sites for innovation than main clauses (Bybee 2002). For example, the development of an indicative marker, $b=$, which is combined with the imperfect in Modern Arabic dialects (e.g. Levantine Arabic $b=ti\text{-}ktob$ [PRS=2SG.M-write]), stranded the old imperfect in primarily subordinate positions, where it is no longer used for any indicative functions. This innovation started in main clauses and spread to subordinate clauses. Two main types of arguments have been proposed to explain why innovations are more likely to originate in main clauses: a syntactic argument, which posits that subordinate clauses are less likely to contain important vehicles of change, such as topicalization, focalization, and other manipulative constructions (e.g. Hopper & Thompson 1973; Salaberri 2021: 279-80); and a pragmatic argument, which claims that subordinate clauses are harder to process, precluding, or at least hampering, further manipulation that may bring about change (e.g. Matsuda 1998; Bybee 2002: 5). Many of the examples provided to support this assumption rely on the generalization that the

meaning of subordinate clauses is dependent on the main predication; this is exemplified in the development of new verbal forms, for example. Furthermore, many triggers of change, such as fronting and topicalization, are not easily operative in subordinate contexts; this is the reason word order change is usually initiated in main clauses.

This hypothesis downplays or disregards the role of other triggers of syntactic change, which are not restricted to non-subordinate contexts, such as reanalysis. The tendency for old and defunct morphology and syntax to accumulate in subordinate clauses can make them appear as repositories of archaic linguistic material and give the impression that they are inherently conservative. But *post hoc ergo propter hoc* is a logical fallacy; if the result we observe, namely relics in subordinate environments, is a side effect of innovation in main clauses, it does not suggest or confirm that subordinate clauses resist innovation. On the contrary, relic'ed patterns may rather increase the pressure for innovation. As many scholars have noted, when morphemes become obsolete, they may either disappear or acquire new functions (Lass 1990). This process has been labeled 'exaptation' or 'refunc-tionalization' (Van de Velde & Norde 2016). Refunctionalization can oper-ate in any context and is not barred from subordination. For example, the old Dutch negation *en* was slowly pushed out by the new negation *niet*, until it eventually became restricted to subordinate clauses. The negation *en* was subsequently re-functionalized as a non-negative subordination marker in some dialects of Dutch (van der Auwera 2012: 413):

(1) *toen*   *we*   *bij*   *de*   *poort*   *en*   *kwamme*
     when   we   at   DEF   gate   SUB   come
     'When we arrived at the gate.'

The functional shift that Dutch *en* underwent could only have hap-pened in subordinate clauses because at the time the change began, this negation was blocked from appearing in main clauses. It is precisely the seemingly conservative nature of the subordinate environment that provides the context and impetus for refunctionalization and, therefore, innovation. This example suggests that innovation in subordinate clauses is not only possible, but in some cases even likely.[1]

In this paper, we present a more complex example of this phenom-enon, where a conservative morpheme was refunctionalized and subse-quently spread from subordinate clauses to main clauses. Specifically, we will show how an old functionally eroded morpheme, a suffix which originally marked verbs in subordinate clauses, was repurposed to mark verbal mood in any position in West Semitic, one of the two main branches of the Semitic language family.

Below, in §1.1, we provide some background on the verbal morpho-syntax of the main branches of the Semitic language family. In §2, we provide a description of a major change: the East Semitic subordination marker was reanalyzed as a TAM marker in West Semitic. In §3, we propose a diachronic scenario to account for the change. §4 concludes and contextualizes the Semitic evidence.

1.1. The Semitic Verbal System

The Semitic family has two main branches: East Semitic and West Semitic (Figure 1). The East Semitic languages, Akkadian and Eblaite, are attested from the 24th century BCE; Akkadian is attested until the first century BCE. Textual material from this branch is abundant and diverse, but we will use primarily private and administrative letters, to avoid the pitfalls of standardized literary style.[2]

The West Semitic branch is attested later but, unlike East Semitic, has modern living descendants. Direct attestation of this branch started appearing in the second millennium BCE, but indirect attestation, through personal names and borrowed words, can be found in earlier East Semitic texts. Since textual materials form individual West Semitic languages are less abundant, we will use any available attestation from this branch.
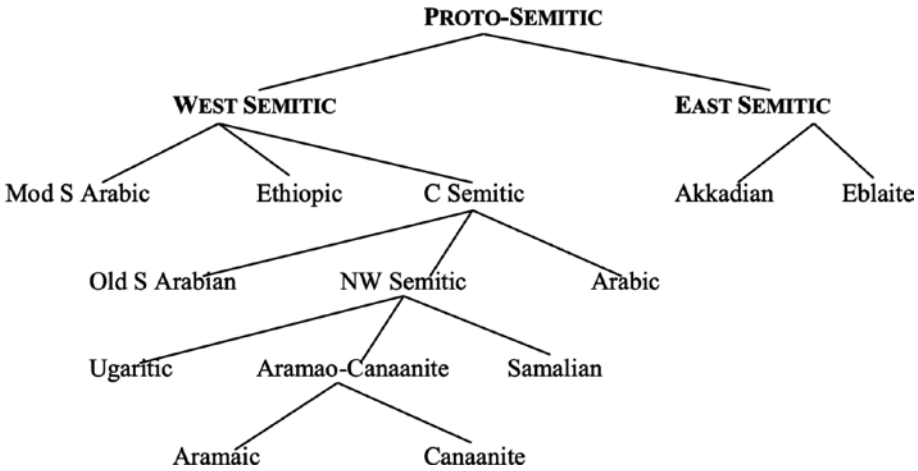

Figure 1. The subgrouping of Semitic (based on Huehnergard & Pat-El 2019: 3).

The main set of isoglosses distinguishing East Semitic and West Semitic pertains to the verbal system (Table 1). Beside the imperative, Proto-Semitic originally had two main verbal forms, one with

gemination of the second root consonant, marking non-past events, and another without such gemination, marking (indicative) past events (Huehnergard 2019: 62). Both forms use the same set of person-gender prefixes and gender-number suffixes; verbs with person-gender prefixes will be referred to as 'the prefix conjugation'. This system was fully preserved in East Semitic, and in relics in the West Semitic sub-branches of Ethiopic and Modern South Arabian.

	Proto-Semitic	East Semitic	West Semitic
Preterit	*ji-KTvB	i-KTvB	KaTvBa
Perfect		i-KtaTiB	
Non-past indicative	*ji-KaTTvB	i-KaTTvB	ja-KTvB-u
Injunctive	*la ji-KTvB	l=i-KTvB	ja-KTvB[3]
Stative (not verbal)	*KaTvBa	KaTvBa	

Table 1. The verbal system in Semitic.[4]

The system in East Semitic is similar to the situation in Proto-Semitic, with a number of differences, primarily the innovation of the 'perfect', a form with an infixed *t*. In this branch, mood was syntactically marked, for example via choice of negation (modal *la:*, *vs* indicative *ul*), or a special proclitic (*lv-*). The only morphologically marked modal form was the imperative. Clause status, namely whether the clause is main or not-main, in East Semitic, and likely in Proto-Semitic, was morphologically marked by adding the morpheme *-u* to any subordinate verbal form.[5] Subordinate non-verbal predicates were originally unmarked.

West Semitic shows several major innovations in the verbal system, which sets it apart from both East Semitic and Proto-Semitic:

- The old preterit, *ja-KTvB* (*ji-KTvB*), took over the non-past functions of *ji-KaTTvB*, and eventually replaced it.
- A new past tense verbal form, *KaTvBa*, grew out of a predicative verbal adjective with person suffixes, a construction that was not part of the verbal system in Proto-Semitic or early East Semitic. This verbal form will be referred to as 'the suffix conjugation'.
- A new set of mood morphemes is used with the inherited prefix conjugation: *-u* for indicative, *-a* or zero for modal forms.

Mood morphology in West Semitic is a major innovation, and it is this innovation and its background in Proto-Semitic and East Semitic that we will be discussing here.

2. The morpheme -u *in Semitic*

2.1 East Semitic

Akkadian has two main dialects: Babylonian in southern Mesopotamia, and Assyrian in northern Mesopotamia.[6] Texts in both dialects are diverse and abundant. To remain as attuned as possible to actual usage, evidence for this paper was taken from private and administrative letters from the Mesopotamian heartland. In the discussion below, we will only deal with finite subordination, namely clauses that include full predication, whether the predicate is verbal or not.

Akkadian has verb-final word order in main and subordinate clauses; the verb is always at the right-most position of the clause. The language has two past tense verbs, whose distribution is as follows: the old past tense ('preterit') is retained in relative clauses, while in main clauses the new past tense ('perfect') eventually becomes the preferred form. As is clear from (2) below, subordinate verbal predicates, like *a:muru*, are marked with a vocalic suffix *-u*, indicating their status as non-main verbs.[7] This morpheme has a purely syntactic function – marking any form of verbal subordination – and has no role in determining TAM-features. (Note that we use deitalicized script for emphasis in the examples.)

(2)   *iʃtu*   *u:mi:=ma*   *ʃa*   *unnedukka=ka*   a:-mur=u
      from   day.GEN=FOC   REL   letter=your   1SG-see.PRET=SUB
      [...]   *ana*   *a:l*   *Sabum*   e:-terub
           to   city_of GN   1SG-enter.PF
      'On the day that I read your letter, [...] I entered Sabum.'
      (RA 102, p.55 (no. 6): 7-11, Old Babylonian)

In Assyrian Akkadian, there is another subordination marker, *=ni*, which can be attached to verbs already marked with *-u*, but also to any other element, as long as it is the right-most element in the subordinate clause (Bjøru & Pat-El 2021). These are separate morphemes which can, and often do, co-occur.

(3)   *iʃti*   *Ennum-Assur*   *adi*   *kasp-am*   *ni-ʃakk'ul=u*   *l-i-bʃi*
      with   PN   until   silver-ACC   1PL-pay.PRS=SUB   MOD-3SG-exist.PRET
      'It should stay with Ennum-Assur until we pay the silver.'
      (Kt j/k 686: 15-17, Old Assyrian)

(4)   *aʃar*   *wasm-at=ni*   *lu:*   *n-e:puʃ*
      where   appropriate.STAT-3SG.F=SUB   MOD   1SG-do
      'Let us do whatever is suitable.'
      (CCT 2, 47b: 15-16, Old Assyrian)

Subordinate clauses in Akkadian include relative clauses, adverbial subordination, and content clauses, which are frequently objects of verbs of speech and cognition. They all share the same internal syntax, which shows some conservative features, such as the restriction of the old Semitic negation *la:* in Babylonian Akkadian to subordinate clauses, while in main sentences an innovative negation *ula:* or *ul* is used.

(5)   *adi*   *be:l=i:*   la: *i-ʃpur=am*   *iʃte:n*   *awi:l-am*
       until   lord=my   NEG   3SG-send.PRET=to_me   one   man-ACC
       ana   *mamman*   ul   *a-naddin*
       to   someone   NEG   1SG-send.PRS
       'I will not send a single man to anyone until my lord instructs me.'
       (RA 102, p.53-54 (no. 5): 13-15, Old Babylonian)

The suffix *-u* is excluded from main clauses. Thus, in (2) above, the verb in the subordinate clause, *a:mur*, carries the morpheme, but not the main verb, *e:terub*. Similarly, in (6) below from Old Assyrian, the verb *aʃme* is subordinate and is, therefore, marked as such, while the same verb in (7) is the main predicate, and therefore remains unmarked.[8]

(6)   *ina*   *ʃamʃ-i*   *t'uppa=ka*   *a-ʃme=*u
       in   sun-GEN   tablet=your   1SG-hear.PRET=SUB
       'On the day I heard your letter'
       (CCT 2, 44a: 6-7, Old Assyrian)

(7)   *anna:kam*   *murs'-am*   *ʃa*   *Tamuria:*   *a-ʃme*
       here   illness-ACC   of   PN   1SG-hear.PRET
       'Here, I heard about Tamuria's illness'
       (AAA 1, 13a: 3-5, Old Assyrian)

The distribution of the subordination morpheme *-u* on verbal forms is quite peculiar. It is systematically blocked by gender-number morphemes, which are all final long vowels, which means that it is consistently missing from half the verbal paradigm of any form: all the plural forms except 1PL, and the 2SG.F form.[9] Hence, in (8) below, the PL.F form, *ikkala:*, remains unmarked although it is subordinate, and it does not differ from the form in a main clause in (9).

(8)   *immer-a:ti:=ʃunu*   *ʃa*   *ina*   *Lask'-im*   *i-kkal-a:*
       sheep-PL.F=their   REL   in   GN-GEN   3-graze.PRS-PL.F
       'Their sheep that graze in Lasqum'
       (ARM 2, 102: 11-12, Old Babylonian)

(9) *immer-a:t-um   ʃa   xana:y-i: adi Lask'-im   i-kkal-a:*
   sheep-PL.F-NOM   of   bedouin-PL.GEN   until GN-GEN   3-graze.PRS-PL.F
   'The sheep of the Bedouin graze all the way to Lasqum.'
   (ARM 14, 81: 7-8, Old Babylonian)

In Table 2 below, the grayed cells are the forms where the morpheme is possible.

	SINGULAR		PLURAL	
	Main	Subordinate	Main	Subordinate
1C	*a-prus*	*a-prus-u*	*ni-prus*	*ni-prus-u*
2M	*ta-prus*	*ta-prus-u*	*ta-prusu:*	*ta-prusu:*
2F	*ta-prusi:*	*ta-prusi:*	*ta-prusa:*	*ta-prusa:*
3M	*i-prus*	*i-prus-u*	*i-prusa:*	*i-prusa:*
3F	*ta-prus*	*ta-prus-u*	*i-prusa:*	*i-prusa:*

Table 2. The distribution of *-u* (*para:su* 'to send').

The subordination morpheme is also blocked by another clitic, called 'ventive', which is a marker of directionality or telicity, typical with verbs indicating movement. The ventive does not block any other suffix or clitic. In (10) below, the subordination morpheme on the subordinate verb, *aʃpur*, is absent because the verb carries a ventive morpheme, *-am* (which assimilates to the following *-k*).

(10) *ʃa   a-ʃpur*＝ak＝*kum*
    REL   1SG-send.PRET＝VENT＝you
    'what I sent you'
    (AbB 11, 108: 44, Old Babylonian)

The subordination marker is not blocked by pronominal objects, which are positioned after it:[10]

(11) *ana awi:l-im   ʃa   Marduk   u-ballat'*＝u:＝*ʃu*
    to   man-GEN   REL   DN   1SG-keep_alive.PRS＝SUB＝him
    'To a man whom Marduk has kept alive'
    (AbB 2, 85: 1, Old Babylonian)

In summary, the subordination marker in East Semitic exhibits the following features:
- The vocalic morpheme's sole function is to mark a verb as subordinate.
- It cannot occur on non-subordinate verbs.

- It is blocked by the gender-number suffixes and the directional ventive, but not by accusative or dative pronominal objects.

1.2 West Semitic

The West Semitic system differs from East Semitic in several crucial ways. In this branch, the vocalic suffix, *-u*, marks non-past verbs as indicative. Such verbs can occur in both subordinate, (12), and main clauses, (13).

(12) *k'ad*   *samiʕ-a*   *lla:h-u*   *k'awl-a*
      PAST   hear.PAST-3SG.M   god-NOM   speech-ACC
      llati: *t-uʒa:dil-*u = *ka*   *fi:*   *zawʒ-i* = *ha:*
      REL.SG.F   3F-confront.PRS-IND = you   on   spouse-GEN = her
      'God has heard the speech of the woman who confronts you about her husband'
      (Q 58:1, Arabic)

(13) *j-uri:d-*u   *l* = *ʔinsa:n-u*   *li* = *ja-fʒur-a*   *ʔama:ma* = *hu*
      3SG.M-want.PRS-IND   DEF = man-NOM   MOD = 3SG.M-deny.PRS-SUBJ   before = 3SG.M
      'A man wishes to deny what is in front of him'
      (Q 75:5, Arabic)

Mood is not morphologically indicated on past-tense verbs, which, as has been noted above, are an innovation of West Semitic and developed from predicative adjectives. Past tense verbs are only marked for person, either in subordination, (14), or in the main clause, (15).

(14) *ʔinna*   *llaði:na*   kafar-u: *bi* = *ʔaja:t-i*   *lla:h-i*
      surely   REL.PL.M   reject.PAST-3PL.M   in = sign-GEN   god-GEN
      la = *hum*   *ʕaða:b-un*   *ʃadi:d-un*
      to = them   punishment-NOM   severe-NOM
      'Those who reject God's signs, will suffer severe punishment.'
      (Q 3:4, Arabic)

(15) xalak'-a   *as* = *samaw-a:t-i*   *wa* = *l* = *ʔardˤ-a*   *bi* = *l* = *ħakk'-i*
      create.PAST-3SG.M   DEF = sky-PL-OBL   and = DEF = earth-ACC   in = DEF = truth-GEN
      'He created the heaven and earth in truth.'
      (Q 16:3, Arabic)

The same restrictions on the distribution of the *-u* morpheme in East Semitic are also observed in West Semitic; namely, present tense verbs with gender-number suffixes cannot host the morpheme. This includes all the plural forms except first person, and 2SG.F.[11] Compare table 3 below to table 2 above; the distribution of the morpheme *-u* in East Semitic and West Semitic is identical. West Semitic languages use a different indicative suffix, *-na*, with 2SG.F and 2/3PL.M forms, but not on the PL.F forms.

	Singular	Plural
1c	*ʔa-ʃrab-u*	*na-ʃrab-u*
2m	*ta-ʃrab-u*	*ta-ʃrabu:-na*
2f	*ta-ʃrabi:-na*	*ta-ʃrab-na*
3m	*ja-ʃrab-u*	*ja-ʃrabu:-na*
3f	*ta-ʃrab-u*	*ja-ʃrab-na*

Table 3. The distribution of the indicative marker in Arabic (ʃRB 'drink').

Like in East Semitic, pronominal objects in West Semitic are compatible with the *-u* morpheme and can be attached to it.[12] In (16) below, the 3PL.M pronominal object =*hum* is positioned after the indicative marker *-u* on the verb *naħðˤur* in the main sentence; in (17), the 2SG.M pronominal object =*ka* is positioned after the indicative marker *-u* on the verb *tuʒa:dil* in a relative clause.

(16) *wa-yawm-a   na-ħʃur-u=hum   ʒami:ʕ-an*
       and-day-ACC   1PL-gather.PRS-IND=them together-ACC
       θumma   na-k'u:l-u
       then   1PL-ask.PRS-IND
       'On the day we gather them all together, we will say…'
       (Q 6:22, Arabic)

(17) *huwa   llaði: yu-sˤawwir-u=kum*
       he   REL.SG.M   3SG.M-fashion.PRS-IND=you
       fi: l-ʔarħa:m-i   kayfa   ya-ʃa:ʔ-u
       in   DEF-womb.PL-GEN   as   3SG.M-wish.PRS-IND
       'He is the one who fashions you in the womb as he sees fit'
       (Q 3:6, Arabic)

In summary, the mood morpheme in West Semitic exhibits the following features:

- The morpheme marks indicative only on the prefix conjugation but is not otherwise part of the verbal morphology;
- The morpheme is compatible, and indeed obligatory, with both main and subordinate verbs;
- It is blocked by gender-number suffixes, but not by clitics (pronominal objects).

The hosts of the morpheme in East Semitic and West Semitic are identical (the prefix conjugation), but the morpheme's function differs between the two branches. This state of affairs presents us with a

number of questions: what is the original function of the morpheme and what diachronic process may explain its transformation?

3. Proposed historical scenario

Since the two morphemes are phonologically identical and subject to the same morphological restrictions, it is highly likely that they are related. The difference between them is only functional: in West Semitic, the morpheme expresses TAM, while in East Semitic it marks the syntactic status of the verb. There are several reasons to assume that the subordination marker is original. First, mood is not a morphological category in East Semitic and several West Semitic languages, and therefore likely not in Proto-Semitic either. Mood is instead marked syntactically in both branches of Semitic, and, therefore, likely in Proto-Semitic also (Huehnergard 1983). Second, the modal function of *-u* in West Semitic is attested only in one of its sub-branches, Central Semitic, while subordination can be reconstructed to Proto-East Semitic. It is possible that this morpheme is not attested in all West Semitic languages for phonological reasons; final short vowels tend to be reduced in most of the languages in this branch. The available evidence is at least indicative that morphological mood was innovated internally in West Semitic, after the split between East and West Semitic. We, therefore, suggest that mood marking is the innovated function, and subordination marking is the original function.[13]

But how can a subordination marker shift to mark mood? We suggest that the change from subordinate marker to indicative marker was due to a number of contributing factors, which we will review below.

3.1 Redundancy
Subordinate sentences containing finite verbs are syntactically marked in Semitic with either of two possible strategies, both of which are inherited from Proto-Semitic (Pat-El 2020):

- a subordination marker, the most explicit of which is a relative marker whose gender-number-case inflection mirrors the morphology of its antecedent in the main clause (see Table 4, examples (12) – *llati: –*, (14) – *llaði:na –*, and (17) – *llaði: –* above). Another common marker is used with content clauses (Akkadian *ki:ma*, Hebrew *ki:*, etc.).
- morphologically marking the nominal antecedent as the head of the clause – see examples (15-17) below.

	M.SG	**F.SG**
Nominative	*ðu:*	*ða:tu*
Genitive	*ði:*	*ða:ti*
Accusative	*ða:*	*ða:ta*
	M.DU	**F.DU**
Nominative	*ðawa:*	*ð(aw)a:ta:*
Oblique	*ðaway*	*ð(aw)a:tay*
	M.PL	**F.PL**
Nominative	*ðawu: / ʔulu:*	*ðawa:tu / ʔula:tu*
Oblique	*ðawi: / ʔuli:*	*ðawa:ti / ʔula:ti*

Table 4. A reconstruction of the relative marker in Semitic (Huehnergard & Pat-El 2018).

In the example below, the antecedent is marked as head through a special marker, originally an accusative bound morpheme, (18), lack of final nasalization, (19), which marks a noun as having no dependents ('construct' or 'bound'), or through the overt feminine marker -*t*, (20), which is only used when its host is bound.

(18)   *ba-mawa:ʕəl-a*   *yə-kwennan-u*   *masa:fənt*
      on-day.PL-BND   3M-rule-PL   judge.PL
      'During the time the judges ruled'
      (Ruth 1:1, Classical Ethiopic)

(19)   *ʔila:*   *jawm-i*   *yu-bʕaθ-u:-na*
      to   day.SG.M-GEN.BND   3M-raise.PRS.PASS-PL-IND
      'Until the day they are raised [from the dead]'
      (Q 7:14, Arabic)

(20)   *ɬəpa-t*   *lo:*   *jɔdaʕ-ti:*   *ʔeʃmɔʕ*
      lip.F-BND   NEG   know.PAST-1SG   1SG-hear.PRS
      'I hear a language I do not know'
      (Psa. 81:6, Biblical Hebrew)

In such a system, a dedicated morphological marker of subordination is functionally redundant, as the context of subordination is clear from particles or syntactic relationship that are unambiguous. Redundant morphemes are prone to refunctionalization, whether we wish to call such a process 'exaptation' or something else (Lass 1990; Gaeta 2019: 193), and that is, we claim, exactly what happened to the subordination marker -*u*.

3.2 Reduced distribution

Verbs typically have ten paradigmatic slots: five singular forms and five plural forms (1C, 2M, 2F, 3M, 3F). Even in the original system, still attested in East Semitic, the subordination marker could only occur with half of the verbal paradigm and was blocked on 2SG.F and all the plural forms, with the exception of 1PL.[14] In Proto-West Semitic, following major changes in the verbal system and the introduction of a new verb, the suffix conjugation (*kataba*), there were even fewer verbal forms that could host the morpheme, since the suffix conjugation, which took over most of the non-present indicative functions, cannot host the subordination morpheme at all. The reason for this restriction is possibly its origin as a predicative adjective; the subordination morpheme can only be hosted by verbs, not nominal predicates.[15]

Thus, while in East Semitic 50% of the verbal forms could host the morpheme, in West Semitic languages, only 25% of the forms could do so, as this morpheme had only one possible host: the non-past prefix conjugation with no person-gender suffix (*jaktub*). Therefore, in Proto-West Semitic the subordination marker is not only functionally redundant but also has a very limited distribution.

3.3 Mood in subordination

In East Semitic, and likely in Proto-Semitic, only indicative forms are allowed in subordinate clauses, while modal verbal forms are blocked from this environment (Cohen 2005, §4.2.2.2). Note that in Proto-Semitic, modal verbs are essentially indicative forms that are marked as modal syntactically, typically via the proclitic *lu:*, while the indicative proper is unmarked. This particle, *lu:*, is used with innovative verbal forms as well, for example the innovative West Semitic suffix conjugation can be marked as modal syntactically by means of the particle *lu:* (Arabic *law*). As a result, subordinate verbs are invariably indicative verbs. The verbal host of the subordination marker *-u* can therefore only be interpreted as an indicative verb.

3.4 Proposed reconstruction

Given the reduced functionality of *-u* and its limited distribution, we suggest that subordinate verbal predicates marked with *-u* were reinterpreted as non-modal, and slightly later as indicative forms. If, as we have suggested (see §3.1), the morphological marking of verbs as subordinate was redundant since they were already syntactically marked as such, it was possible for speakers to associate *u*-carrying verbs with the indicative mood, rather than with subordination. Such a functional shift of existing morphemes is well documented across various grammatical categories

cross-linguistically (Van de Velde & Norde 2016). A stimulating factor of this process is reduction in functionality or even redundancy, which allows for shifts between functions. Most studies on refunctionalization, or 'exaptation', concentrate on refunctionalization of morphemes which gradually become obsolete in declining categories, such as case systems.[16] The case of subordinative -*u* in Semitic is interesting because the redundancy of subordination marking is highly stable in East Semitic. We argue that the functional shift was made possible by a combination of factors.

This development likely started taking shape in Proto-West Semitic, where after the innovation of the suffix conjugation the available hosts for this morpheme were significantly reduced, since the morpheme was completely blocked from the innovated forms. Thus, while in East Semitic, the morpheme was blocked from half of the verbal system, in West Semitic, 75% of verbal forms were not possible hosts. We suggest that the change took place as follows: subordinative **θv: jiktub-u* (Proto-Semitic) > non-modal **θv: jiktub-u* (Proto-West-Semitic) > indicative *jaktub-u* (West or Central Semitic). We hypothesize the non-modal stage as a possible bridging phase between the attested forms in East Semitic and West Semitic, assuming that the change was incremental. This process accounts for the available evidence and relies on known grammatical features in both branches. The result in West Semitic is not a category innovation, but rather an innovation of the morphological material used to mark an existing category. Mood in Semitic was already marked syntactically in Proto-Semitic (see Table 1). In West Semitic, however, this category is now marked morphologically.

Some support for this scenario comes from Mari Akkadian, where we may possibly observe the process unfolding. Mari is a Syrian independent city-state located on the border of modern-day Syria and Iraq on the western bank of the Euphrates (at Tell Hariri). It was a major trade post between Mesopotamia and the Levant in the 3rd and early 2nd millennium BCE. The inhabitants of the city used a dialect of Akkadian which shows some peculiarities not found in the major dialects of Mesopotamian Akkadian. In texts from Mari, there are several instances where -*u* appears on main-clause predicates, which is not otherwise possible in Akkadian (Finet 1956: 262-263). On the other hand, there are examples of subordinate clauses where the predicative verb lacks the expected subordinative marker, which is obligatory in contemporary Mesopotamian Akkadian (Streck 2014: 87).

In (21) below, the morpheme -*u*, lengthened before a pronominal suffix in this case, marks the indicative present tense verbal predicate of the main clause (*immar*).[17] There are no overt markers of subordination in the sentence, e.g. subordinators, relative marker, or special negation:

(21) *ʃipr-um*   *ʃu:*   *ma:diʃ*   *damik'*
work-NOM   DEM   very   good.STAT
be:l=i: *i-mmarr-u:=ʃu*
lord=my   3SG.M-see.PRS=?=-?=him
'That work is excellent. My lord will see it (for himself).'
(ARM 6: 13 11-12, Mari Old Babylonian)

Example (22) below is an unmarked conditional clause, commonly formed without the regular conditional marker *ʃumma* 'if'. Conditional clauses in Akkadian do not trigger the use of the subordinate marker and are not generally treated as subordinate (Kouwenberg 2010: 227). In this example, the predicate is 3SG.M stative (*waʃib*), which was not a possible host of the subordination marker in earlier stages of Akkadian.

(22) *mati:ma*   *iʃte:n*   *awi:l-um*   *ina*   *libbi*   *ma:t-im*
ever   one   man-NOM   in   heart.BND   land-GEN
maxri:=ya   *waʃb-u:=ma*   *ana:ku*   *a-kalla*
before=me   stay.STAT-subord=and   I   1SG-detain.PRS
'(Should even) one man stay in the heartland, right before me, I will personally detain him.'
(RA 5, 35: 20-23, Mari Old Babylonian)

Neither example is formally subordinate, but pragmatically they may be understood as dependent on the adjacent clause. This may be the bridging context on the cline between formally subordinate and general indicative clauses. Additionally, subordinate sentences in Mari Old Babylonain seem to not consistently require the subordinative marker, unlike what can be observed in Mesopotamian Akkadian (Streck 2014: 87, §194). They are still used, but in lower frequency. In (23), the verb *u-sashar* follows the subordination particle *ki:ma,* and yet it does not carry the subordinative. Example (24) is more typical where the verbs (*i:ʃu*) following *ki:ma* carries a subordination marker, *-u.*

(23) *u*   *be:l-i:*   *i:de*   *ki:ma*   *iʃte:n*
and   lord-my   3SG.know.PRET   COMP   one
awi:l-im   *pi:*   *ma:d-u:t-im*   u-sashar
man-GEN   mouth.BND   many-PL-GEN   3SG-turn.PRS
'And my lord knows that a single man can twist the word of the many.'
(ARM 2, 31: 6'-7', Mari Old Babylonian)

(24) *ul*   *t-i:de*   *ki:ma*   *ulla:nu:=ka*   *ax-am*
NEG   2SG-know.PRET   COMP   beside=you   brother-ACC
la: i:ʃu:
NEG   1SG.have.PRET.SUB
'Do you not know that I do not have another brother than you?'
(TCL 17, 55: 4-5, Old Babylonian)

The evidence from Mari indicates a functional shift, the result of which is the use of *-u* in main sentence and initial signs that the use of *-u* in subordinate clauses is waning. Since Mari is geographically positioned closer to the center of the West Semitic speaking world in the Levant, it is possible that it was the locus of the spread of this innovation, at a time before we have direct evidence of West Semitic grammar.

4. Summary and conclusions

In this paper we have discussed a change in Semitic, whereby a subordination marker, reconstructable to Proto-Semitic, became a marker of indicative mood in one of the branches of the family. We argue that due to restrictions on the type of verbs which can be used in subordinate clauses, aided by the redundancy and low distribution of the morpheme in West Semitic, the morpheme was reinterpreted as an indicative marker, and this function spread to indicative verbs in non-subordinate contexts. None of the changes that we suggest above are remarkable in themselves, but this process could only have happened in the context of subordination.

While it is true that certain pragmatic operations are not available in subordinate clauses, other vehicles of change are possible, sometimes even more likely. Our analysis suggests that linguistic change can begin in subordinate sentences, exactly because they are repositories of conservative grammatical material. This tendency creates pressure to refunctionalize the morphology, once languages sufficiently move away from the old structure. As we have shown above, the innovation of the suffix conjugation, a form that cannot host this morpheme, cut the number of possible hosts by half. We, therefore, suggest that it may be a mistake to assume a-priori that main clauses are the primary locus of change.

Abbreviations

AAA = Annals of Archaeology and Anthropology; AbB = Altbabylonische Briefe in Umschrift und Übersetzung; ACC = accusative; AKT = Ankara Kültepe Tabletleri; ARM = Archives royales de Mari; BND = bound; C = common; CCT = Cuneiform Texts from Cappadocian Tablets in the British Museum; COMP = complementizer; DEF = definite article; DEM demonstrative; DN = divine name; DU = dual; F = feminine; FOC = focalizer; GEN = genitive; GN = geographic name; M = masculine; MOD = modal; NEG = negation; NOM = nominative; PASS = passive; PAST = past; PF = perfect; PL = plural; PN = personal name; PRET = preterit; PRS = present; Q = The Quran; RA = Revue d'Assyriologie et d'Archéologie Orientale; REL = relative; SG = singular; STAT = stative; SUB = subjunctive; TCL = Textes cunéiformes, Musées du Louvre; VENT = ventive.

Notes

1   For additional arguments rejecting the assumption of conservatism in subordinate clauses, see the introduction to this issue.

2   The letters we have consulted for this study come from two corpora: (i) The letters of the Old Babylonian city states and kingdoms from ancient Iraq and surrounding areas, ca. 2000-1500 BCE, including the royal archives of the city of Mari in modern-day Syria. The approximately 5,400 letters known from the period are mostly published in the series AbB and ARM (see the Abbreviations list). Additionally, we use editions from RA 5 and 102. (ii) The 22,300 documents of the Old Assyrian trading colony at Kaneš, modern-day Kültepe in Turkey, dating to 1930-1720 BCE, a large portion of which are business letters. They are published across different Assyriological venues, of which we have cited AAA 1 and CCT 2. For the convention of citing texts by excavation number (e.g. Kt j/k 686), see Kouwenberg (2017: xlv).

3   This form also functions as preterit in restricted contexts, for example in negation in Arabic, and narrative past in Hebrew. Another injunctive form, *ja-ktub-a,* exists in some Central Semitic languages and is a later innovation. It will not be discussed here.

4   Capital Letters represent the root. We use the root KTB 'to write' to represent verbal conjugation; a *v* represents any vowel. The table is organized by functions, not morphology.

5   Another subordination marker is -*ni*; however, it is restricted to the Assyrian dialects and is most likely an innovation of this dialect branch (Bjøru & Pat-El 2020).

6   Akkadian was also a lingua franca across the Ancient Middle East, but we do not draw on chancellery texts written by speakers of other languages, like Egyptian, Hittite, Hurrian. The grammatical distribution of these morphemes is well known and documented; see Kouwenberg (2010: 220-227; 2017: 505-510); Streck (2014: 86-87); Bjøru & Pat-El (2021).

7   The morpheme is not used with nonverbal predicates anywhere in East Semitic. These predicates typically remain unmarked in Babylonian (and Eblaite), although some predicative adjectival constructions ('stative') acquire the morpheme in later phases of the language.

OB *adi   balt'-at   erre:t-um   ina   ʃapt-i:=ʃa   la: i-ʃakkan*
  until   live.STAT-3SG.F   curse-NOM   on   lip-PL=her   NEG   3SG.M-place.PRS
  'While she lives, no curse must be put on her lips!'
(AbB 11, 75: 3'-4', Old Babylonian)

8   Unlike Babylonian Akkadian, in Assyrian Akkadian there is only one negation particle, *la:*, which is used in both subordinate and main sentences. Therefore, in Assyrian, negation is not a marker of clause status.

9   Note that short vowels do not block the subordination marker, but undergo regular contractions instead, e.g. *iʃme=u > iʃmu:*.

10   Third person suffixes condition a lengthening of the preceding vowel, hence the morpheme in (8) is *u:*, rather than *u*.

11   The ventive is not attested in West Semitic. There are some claims that it is found in relics, but this has no bearing on the current discussion.

12   Pronominal objects show properties of both affixes and clitics (Gensler 1998: 235), but we will treat them as clitics here.

13   This is also the consensus among scholars of Semitic languages. The hypothetical process of development from an East Semitic like function to the West Semitic was articulated in a much quoted and widely accepted paper by Andras Hamori (1973). Based on early work by Jerzy Kuryłowicz, Hamori (1973, 322) suggested that subordinate clauses are functionally similar to a circumstantial imperfective (*I saw a man reading ~ I saw a man who reads*). He argues that this functional overlap motivated

the spread of *-u* at the expense of the earlier verbal form **iparras*, until its eventual loss. This position gained consensus among Semitists, despite the fact that *iparras* continues to serve as a circumstantial in conservative West Semitic languages, like Ethiopic, and was not, in fact, lost.

[14]   In fact, the reduced distribution of this morpheme lead Kouwenberg (2010: 228) to suggest that its function could not have been a subordination marker originally, but rather TAM, as it does in Arabic. Kouwenberg assumes that there were originally two allomorphs, *-u* and *-u:na*, like in Arabic, which he suggests are related to Assyrian *-u* and *-u:ni*. As we have shown in Bjøru & Pat-El (2021: 59), Arabic *-u:na* is bimorphemic: *-u:* is a gender-number morpheme and *-na* is an indicative marker that can only be attached to forms ending in long vowels; Assyrian *-u:ni* is also bimorphemic: *-u(:)* is a subordination marker and *-ni* is also a subordination marker with a different distribution, but both forms can be attached to any verb that does not have a gender-number suffix. The distribution of these morphemes and their interaction with each other in Assyrian is very different from their distribution and interaction in Arabic.

[15]   The subordinative is attested on statives in Middle Assyrian, but the early signs of subordinative on 3SG.M stative forms are attested in Old Assyrian. We assume that West Semitic broke off the mother language before the attested period of East Semitic.

[16]   One of the properties of exaptation is 'unexpectedness', which Van de Velde & Norde (2016: 16) define as idiosyncratic and cross-linguistically infrequent. This property is what distinguishes grammaticalization, which is cross-linguistically recurrent. Since cross-linguistic frequency could very well be a feature of what type of linguistic work is being done on which languages, it seems like an imprecise diagnostic feature. Furthermore, if what distinguishes grammaticalization from exaptation is frequency, than the difference between them is of degree, not kind.

[17]   The spelling <i-ma-ar-ru-šu> suggests the /r/ is doubled, which is not expected.

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