The Hittite suffix -ške/a- between verbal aspect and pluractionality: a typological approach

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Syntax of the World’s Languages 8 (INALCO, Paris, September 3-5 2018)

1. The role of aspect in the Hittite verbal system

- Hittite is a synthetic and fusional language. Finite verbal forms are made up by a root, one or more optional derivational suffixes, and personal endings.

zi-nu-ški-zzi
cross-CAUS-IPFV-3SG.PRS

⇒ The root carries the lexical meaning of the verb;
⇒ Derivational suffixes with various functions attach to the root to form a verbal stem (Hoffner & Melchert 2008: 175-179):
  - Suffixes that attach to adjectives, verbs, and nouns: -nu- (causative), -aḫḫ- (factitive), -āi- (denominative), -ešš- (fientive), -e- (stative/fientive)
  - “Imperfective” suffixes, only attach to verbal stems (including already derived ones): -ške/a-, -šša-, -anna/i-.
⇒ Inflectional endings attach to the stem and express the following grammatical features: tense (present, preterite), person (1, 2, 3), number (singular, plural), mood (indicative, imperative), voice (active, medio-passive).

- Hittite has a monothematic verbal system, in which all inflected forms of the verb derive from a single stem; aspect is not morphologically encoded by the distinction between present (imperfective) and aorist (perfective) stems common to other IE languages such as Ancient Greek (but see Melchert 1997).
- “Any basic verbal stem in Hittite may be read as perfective or imperfective, provided that its inherent meaning and the context are appropriate” (Hoffner & Melchert 2008: 317).

(1) PERFECTIVE
   namma=aš  INA  HURSAG Zakkuki  EGIR-pa  uet
   then=3SG.NOM to mountain.Z back come:PST.3SG
   “Then he came back to Mt. Zakkuki.” (KBo 5.6 i 1)

(2) IMPERFECTIVE
   nu  kuitman  m.GIŠGIDRU-LŪ-iš  ĮŠTU  KUR  JRU  Mizri  EGIR-pa  uet
   while  H.:NOM from land Egypt back come:PST.3SG
   “While Hattusaziti was coming back from the land of Egypt.” (KBo 5.6 iii 26)

- Aspect and actionality constitute a relatively understudied topic in Hittite linguistics (cf. Cotticelli-Kurras 2015, Inglese forthc.).
  - Derivational suffixes: -ške/a-, -šša-, and -anna/i-. The three “synchronically […] function effectively as suppletive allomorphs of a single morphem” (see Melchert 1998: 414; see further Hoffner & Melchert 2002 and extensive discussion in Pisanollo 2016)
  - Periphrastic ‘perfect’ constructions with ḫark- ‘have’ and eš- ‘be’ plus participle (cf. Cotticelli-Kurras 2015, Inglese & Luraghi forthc.)
The use of **sentence particle** and **preverbs**, e.g. use of ‘perfective’ =*kan* (Josephson 2008, 2013, Cotticelli-Kurras 2014).

2. The suffix -*ške/a-*

- The existence of a suffix -*ške/a-* has been identified since the beginning of Hittitology (cf. Hronzý 1917; see Cambi 2007 for a comprehensive overview of previous scholarship; see Oettinger 1979: 315–29 for the morphology).

**Questions:** what are the **functions** that the suffix performs? Can one single out a **core** meaning? Does the suffix operate within the domain of **lexical** or **grammatical** aspect?

- **Distributional facts**
  - The suffix is optional: base forms can occur in contexts in which they have the same meaning as -*ške/a-* forms (cf. Dressler 1968, Daues 2009: 84-85)
  - According to Bechtel (1936: 62) and Cambi (2007: 121-122) the suffix is incompatible with adverbs meaning ‘X times’. This view is partly unwarranted: whereas it is clear that the majority of adverbials of the type ‘X times’ occur with simple verbs, a few -*ške/a-* forms do occur in such contexts, e.g. (14a) below.
  - The suffix is unavailable to stative verbs (cf. Bechtel 1936; seen as **neutralization** by Cambi 2007); however, this is a common behavior of pluractional markers in the languages of the world (cf. Mattiola 2017a: 177, 208)
  - Suffixed forms of the ‘supine’ (a non-finite verbal form) are systematically employed in an progressive construction ‘begin to X’ with the verbs *dai-* ‘put’ and *tiya-* ‘step’ (Hoffner & Melchert 2008: 322, 338)

- **Actional hypothesis:** the suffix’s function lies within the domain of actionality:

- **Aspectual hypothesis:** -*ške/a-* forms are dedicated to the encoding of imperfective aspect, as opposed to neutral unmarked base forms (Bechtel 1936, Puhvel 1991, Cambi 2007);

- **Hybrid hypothesis:** -*ške/a-* forms operate at the interface between lexical and grammatical aspect, and is associated both to imperfective (progressive, continuous, habitual) and perfective (inceptive) aspect (Melchert 1998, Hoffner & Melchert 2002, 2008);

- **Verbal plurality:** “the meaning of -*šk-* forms can be described according to the model of verbal plurality” (Dressler 1968: 228, transl. I&M); according to Yates & Linquivdust (forthc.: 60) the Hittite suffix functions as “iterative, habitual, and **pluractional**” (emph. I&M).

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Durative</td>
<td>Durative</td>
<td>Durative</td>
</tr>
<tr>
<td>Customary action</td>
<td>Usitative</td>
<td>Habitual/Gnomic</td>
</tr>
<tr>
<td>Progressive/descriptive</td>
<td>-</td>
<td>Progressive/descriptive</td>
</tr>
<tr>
<td>Iterative</td>
<td>Iterative</td>
<td>Iterative</td>
</tr>
<tr>
<td>Distributive</td>
<td>Distributive</td>
<td>Distributive</td>
</tr>
</tbody>
</table>

**Table 1:** Functions of the suffix -*ške/a-*
Differences among individual accounts are also due to the authors’ different understanding and definitions of the complex notions of ASPECT and ACTIONALITY!

Functions according to Hoffner & Melchert (2002):

- **PROGRESSIVE/DESCRIPTIVE**: “An action is described as ongoing (often as setting the scene for another action-so-called ‘backgrounding’)”
- **DURATIVE**: “An activity may be understood as continuing over an extended period of time.”
- **ITERATIVE**: “An action is described as repeated, either continually (in immediate succession) or on separate occasions.”
- **HABITUAL/GNOMIC**: “The marked -ške/a- stem or equivalents may also express habitual, customary, or characteristic behavior.”
- **DISTRIBUTIVE**: “An action may be performed once each on a series of objects (the action is thus from a certain point of view iterated).”
- **INCEPTIVE**: “In the case of verbs that refer to activities or accomplishments, the -ške/a-form or equivalent may focus on the beginning of the activity.”

3. Pluractionality: a cross-linguistic perspective

- **Dressler (1968)** proposed a first definition of *verbal plurality*, drawing from the comparison of 40 unrelated languages, and identified most of the functions typically associated to markers of verbal plurality.
- The term *pluractionality* was originally coined (for Chadic languages) by Newman (1980) and firstly defined by Newman (1990: 53): “the essential semantic characteristic of such verbs [i.e. pluractional verbs, I&M] is almost always plurality or multiplicity of the verb’s action”.
- **Mattiola** (forthc.) offers the following definition of the comparative concept for *pluractionality*:

  “**Pluractionality** is defined by a morphological modification of the verb (or a pair of semantically related verbs) that primarily conveys a plurality of situations that involves a repetition through time, space and/or participants.”

- In the languages of the world, pluractional markers (PMs) can express a broad range of functions, which can be distinguished into **CORE** and **ADDITIONAL** functions.
- **CORE FUNCTIONS**: those functions that specifically characterize PMs (Mattiola 2017b: 123-124)
  - **ITERATIVE**: “when the repetition occurs within a single occasion (usually a short time frame)”
  - **FREQUENTATIVE**: “when the repetition takes place over several occasions (usually a longer time frame)”
  - **SPATIAL DISTRIBUTIVE**: “plurality of the situations occurring in different places” (Mattiola forthc.)
  - **PARTICIPANT PLURALITY**: “plurality of situations that affects several participants” (Mattiola forthc.)
- **ADDITIONAL FUNCTIONS**: those functions that a PM can additionally express (Mattiola 2017b: 124-127)
- **Event-Internal Plural:** “a singular situation that is internally complex, i.e., it is composed of several repetitive phases”
- **Continuative:** “externally singular situations that are extended in time” (Mattiola forthcoming)
- **Habitual:** “situations repeated on different occasions, but the occasions occur in a time frame (which may or may not be directly specified), the situation are seen as typical of that time frame”
- **Generic Imperfective:** “it encodes a situation that occurs always; for example, it can be a property or a quality of an entity or a gnomic truth”
- **Intensive:** “a degree modification of the normal development of the situation”
- **Complete:** “a situation that is performed in its entirety, completely”
- **Emphasis:** “a situation performed with emphasis or affectedness”
- **Reciprocal:** “plurality of situations performed by at least two different participants reciprocally”

Mattiola (2017b) describes the multifunctionality of PMs by adopting the semantic map model (Croft 2001; Haspelmath 2003; Georgakopoulos & Polis 2018):

- This conceptual space is based on a large-scale typological investigation of PMs in the world’s languages (cf. Mattiola 2017b). This work compared a variety (and convenience) sample of 246 languages;
- The conceptual space is built according to the standards of ‘first generation’ or ‘classical’ semantic maps (cf. van der Auwera 2013);
- **Advantages:** the use of the semantic map model allows for the consistent treatment of apparently widely diverse functions within a single framework, and to treat aspectual and actional functions as belonging to the same functional domain (ultimately, the map suggests a unidimensional approach to aspect/actionality as pursued by Croft 2012)

4. **A new approach to Hittite -ške/a-**

Building on Dressler’s (1968) proposal that Hitt. -ške/a- functions as a marker of verbal plurality, we evaluate to what extent the suffix can be described as a PM, and whether it complies with the conceptual space of pluractionality set up by Mattiola (2017b).
**Corpus:** original Old (OH) and Middle Hittite (MH) texts (cf. Goedegebuure 2014 and HPM for dating criteria): total of 68 lemma analyzed (7 are attested in both phases)

<table>
<thead>
<tr>
<th>Dating</th>
<th>Types</th>
<th>Tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>OH</td>
<td>25</td>
<td>59</td>
</tr>
<tr>
<td>MH</td>
<td>50</td>
<td>144</td>
</tr>
</tbody>
</table>

⇒ As already observed by Cambi (2007), there appears to be little or no inner-Hittite diachronic variation in the use of the suffix: further data from New Hittite are needed to substantiate this claim!

**Methodology:** comparison with non-derived forms and collocations with temporal adverbs (cf. already Sommer & Ehelolf 1924, Bechtel 1939, Bertinetto & Cambi 2006, Cambi 2007)

**Limit(s):** Hittite belongs to the ‘corpus languages’, i.e. languages that are “no longer anybody’s native language[s] and what we can know of [them] as [...] living language[s] is to be traced in the written material still at our disposal” (Cuzzolin & Haverling 2010: 25), thereby resulting in a partial and fragmentary picture (cf. Joseph & Janda 2003: 15-19)

### 4.1. Functions

The following functions are attested in our corpus of OH and MH texts:

(3) CONTINUATIVE

\[ \text{takku} \ \text{LÚ-aš} \ \text{GU₄=ŠU} \ \text{ÍD-an} \ zí-nu-ški-zzi \ \text{tamaiš=an} \]

If man:NOM ox:3SG.Poss river:ACC cross:CAUS-IPFV-PRS.3SG other:NOM=3SG.ACC šu[weazzi] push:PRS.3SG

"If a man is making his ox cross a river, and another man pushes him off (the ox’s tail)."

(KBo 6.2 ii 30, OH)

⇒ The form zīnuškizzi “provides a background to the following action” (Josephson 2008: 137); a BACKGROUNDING function also fits well with the occurrence of several suffixed verbs in a row in narrative texts as well as in relative clauses (cf. Daues 2009; on the backgrounding value of the imperfective cf. Comrie 1976: 3; see further Caudal 2012 and Carruthers 2012 for extensive references)

⇒ From an aspectual construal perspective, the event denoted by the verb is construed as an activity, i.e. as a “durative, unbounded process” (cf. Croft 2012: 60).

- UNDIRECTED activity: šanb- ‘search’ > šanbi-ški-t ‘he was looking (for your death)’
- DIRECTED activity: warš- ‘harvest’ > wara-ška-nzi ‘they are harvesting (the crops)’

(4) FREQUENTATIVE

\[ \text{namma} \ \text{ÉRIN.MEŠ-an} \ \text{MU-ti} \ \text{MU-ti} \ \text{pi-ška-nzi} \]

then troop:ACC year:DAT year:DAT give-IPFV-PRS.3SG

“And they will keep providing troops year after year.” (KUB 23.72+ obv. 18, MH)

⇒ The frequentative reading is strongly supported by the occurrence of the distributive adverbial expression MU-ti MU-ti ‘year after year’

⇒ Frequentatives include the construction with the inhibitive negation lē ’stop…-ing’ (Hoffner & Melchert 2008: 319-320)

(5) n=ašta  ÚL  laḥlahḥi-ški-ši
(6) Iterative

\textit{nu $\text{LÚ}$.ZA $\text{ḫukki-ški-zzi}$}

"(Then gold-spear-man holds a plated spear, and a physician holds a sistrum. They march together), and the ‘physician’ repeats the invocations." (IBoT 1.36 ii 46, MH)

(7) Habitual

\textit{karù 1 MA.NA KÙ.BABBAR pi-šker kinuna 20 GÍN KÙ.BABBAR}

Formerly 1 mine silver give-IPFV-PST.3PL now 20 shekel silver

\textit{pāi}

give:PRS.3SG

"Before they used to give 1 mine of silver, now he gives 20 shekels of silver." (KBo 6.2 i 10, OH)

⇒ Habitual reading compatible with the occurrence of \textit{karù ‘formerly’} (cf. Bertinetto & Cambi 2006)

(8) Plurality of Participants

\textbf{a. Plurality of objects}

\textit{nu $\text{DUMU.MEŠ}=\text{ŠU}$ andan zikiet}

\textit{CONN son(PL)=3SG.POSS inside put-IPFV-3SG.PST}

"(She coated baskets with oil) and she placed her sons (one after the other) therein." (KBo 22.2 obv. 3, OH)

\textbf{b. Plurality of A subjects}

\textit{mān LUGAL-waš peran šie-ška-nzi}

\textit{when king:GEN in.front.of shoot-IPFV-PRS.3PL}

"And when they shoot with their bows at the presence of the king (whoever wins, they give him wine to drink." (KBo 3.34 ii 33, OH/NS)

\textbf{c. Plurality of S subjects (not in our corpus)}

\textit{mān=kan ŠA KUR$^T_{1}$ akki-ski-ttari}

\textit{if=PTC inside land die-IPFV-PRS.3SG}

"If in the land people die." (HT 1 ii 18, NH/NS)

⇒ The choice between base and derived forms is driven by \textit{construal} of the \textbf{structural schematization} type (Croft & Cruse 2004: 63-64). This is a case of \textit{derivational construal} (Croft 2012: 17). Compare (8c) and (9):

\begin{itemize}
  \item base verbs construe the relevant participants as a homogeneous group/set to which the event denoted by the verb applies uniformly;
  \item -ške/a- forms construe the participants as constituting a set of distinguishable individual entities, to which the verbal event may not apply uniformly (in place and/or time).
\end{itemize}

★ This construal alternation is similar to the \textit{mass vs. count} distinction in the nominal domain (cf. Mithun 1988: 232 on group vs. individuation in nominal number marking)

(9) $\text{Ü}$ $\text{LÚ}^{ME}$ $\text{URU}^{L\text{IM}}$ nattu pianzi šu=uš tameššir

\textit{CONN man(PL) city NEG give:PRS.3PL CONN=3PL.ACC oppress:PST.3PL}
š=e  
akir
CONN=3PL.NOM die:PST.3PL
"And the men of the city do not surrender (them), and they (the king’s army) defeated them (the men of Zalpa) and they died.” (KBo 22.2 rev. 12-13, OH/OS)

(10) INTENSIVE? (cf. Dressler 1968: 188 ff.; difficult to assess in a corpus language)
š=an  ē-šši-(š)k-er
CONN=3SG.ACC do-IPFV-IPFV-PST.3PL
“(And then they took him away), they took ‘good care’ of him (so that he died).” (KBo 3.34 ii 7, OH/NS)

(11) INCEPTIVE:
šeš-(š)ki-ška-nzi=ya=at=za
sleep-IPFV-IPFV-PRS.3PL=CONJ=3PL.NOM=REFL
“The horses eat all night long and they go to sleep?” (KUB 29.54 i 10, MH)
⇒ The inceptive reading is only available to atelic predicates, cf. also iya- ‘march’ vs. iy-anna- ‘begin to move’ (cf. Hoffner & Melchert 2002: 384-385).
⇒ The inceptive function clearly emerges in the in inceptive supine construction, which also involves non-stative predicates.

The following functions are attested in texts that do not belong to our corpus:

(12) SPATIAL DISTRIBUTIVE
nu=kan 2-iš 8-taš makitaš akku-skē-ši
CONN=PTC twice 8:DAT.PL m.:DAT.PL drink-IPFV-PRS.2SG
“And you drink twice from 8 m. cups.” (StBoT 25, n. 110 ii 16, OH)

4.2. Hittite -ške/a- as a PM: patterns of polysemy
4.2.1. Constraints on the distribution of the suffix
Suffixed forms of the same verb can have a different interpretation based on the context, e.g. eku- ‘drink’ in (14a-c):

(14) a. ITERATIVE
nu=kan 2-iš 8-taš makitaš akku-skē-ši
CONN=PTC twice 8:DAT.PL m.:DAT.PL drink-IPFV-PRS.2SG
“And you drink twice from 8 m. cups.” (StBoT 25, n. 110 ii 16, OH)

b. HABITUAL
šuwāru kue GAL akku-ški-zi[i] much REL.NOM.PL.N cup(PL) drink-IPFV-PRS.3SG
“(The king drinks) from those cups from which he usually drinks a lot.” (StBoT 25, n. 25 iv 26, OH)

c. PLURALITY
n=ašta GAL GUŠKIN-[az GEŠ]TIN-nan parkuin akku-škē-wani
CONN=PTC cup gold:ABL wine:ACC pure:ACC drink-IPFV-PRS.1PL
“And each of us drink pure wine from a golden cup.” (StBoT 25, n. 40 rev. 6-7, OH)

QUESTION: can one detect constraints on the distribution of the individual functions?

A. Verbal tense: apparently strong correlation with the present tense 151 occurrences in the present vs. 52 in the preterite.

Table 3: Distribution of the functions across tenses

<table>
<thead>
<tr>
<th>Function</th>
<th>Present</th>
<th>Preterite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequentative</td>
<td>64</td>
<td>21</td>
</tr>
<tr>
<td>Continuative</td>
<td>27</td>
<td>5</td>
</tr>
<tr>
<td>Iterative</td>
<td>27</td>
<td>-</td>
</tr>
<tr>
<td>Plurality of participants</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>Habitual</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Inceptive</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Intensive</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Spatial distributive</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>52</td>
</tr>
</tbody>
</table>

The distribution is hardly significant, as it reflects textual biases in tense distribution: e.g. the frequentative function is more frequent in the present because it is strongly associated with ḫatrae-šk- 'keep writing me letters/greetings' in MH letters.

B. No correlation with transitivity: 153 transitive vs. 50 intransitive verbs, but the functions are equally distributed among the two.

C. Participant’s number: no significant pattern of distribution can be singled out.

Table 4: Grammatical number of core participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>31</td>
<td>19</td>
</tr>
<tr>
<td>O</td>
<td>68</td>
<td>84</td>
</tr>
<tr>
<td>A</td>
<td>77</td>
<td>76</td>
</tr>
</tbody>
</table>

The obvious constraint is that PLURALITY OF PARTICIPANTS is a reading only available when at least one of the core participants is plural. Number however does not affect the distribution of the other functions.

D. Lexical aspect: corpus data confirm the widespread observation that the suffix is unavailable to stative verbs.

⇒ Most functions occur with achievement verbs (except the INCEPTIVE), FREQUENTATIVE and CONTINUATIVE interpretations are also available for atelic activity predicates.
This complies with Mattiola’s (2017b: 135) observation that functions on the right side of the semantic map are unconstrained with respect to the lexical aspect of the verb they apply to, whereas “the functions on the left side express a semantics that sometimes can be incompatible with some of type of verbs.”

<table>
<thead>
<tr>
<th>Function</th>
<th>Accomplishment</th>
<th>Achievement</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequentative</td>
<td>3</td>
<td>71</td>
<td>11</td>
</tr>
<tr>
<td>Continuing</td>
<td>3</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>Iterative</td>
<td>12</td>
<td>15</td>
<td>-</td>
</tr>
<tr>
<td>Plurality of participants</td>
<td>9</td>
<td>18</td>
<td>-</td>
</tr>
<tr>
<td>Habitual</td>
<td>8</td>
<td>18</td>
<td>-</td>
</tr>
<tr>
<td>Inceptive</td>
<td>1</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Intensive</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Spatial distributive</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

### 4.2.2. A semantic map of Hittite -ške/a-

The range of functions of -ške/a- complies with the conceptual space of PMs set up by Mattiola (2017b), as shown in Fig. 1.

![Semantic Map of Hittite -ške/a-](image-url)

The semantic map can be ‘weighted’ by inserting the frequencies of the individual functions as detected from the corpus (cf. van der Auwera 2013).

<table>
<thead>
<tr>
<th>Function</th>
<th>Tokens</th>
<th>Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequentative</td>
<td>85</td>
<td>31</td>
</tr>
<tr>
<td>Continuing</td>
<td>32</td>
<td>18</td>
</tr>
<tr>
<td>Iterative</td>
<td>27</td>
<td>8</td>
</tr>
<tr>
<td>Plurality of participants</td>
<td>27</td>
<td>18</td>
</tr>
<tr>
<td>Habitual</td>
<td>26</td>
<td>8</td>
</tr>
<tr>
<td>Inceptive</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Intensive</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Spatial distributive</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The frequentative function is the most frequently attested both in terms of types and tokens.

Corpus selection bias: e.g. high incidence of *ḥatræ-šk*- ‘keep writing me letters/greetings’ in MH letters.
The gap concerning the EVENT INTERNAL PLURALITY function is not problematic: on the one hand, its absence might simply be accidental, on the other hand, evidence for the INTENSIVE function is rather scanty.

Where does the INCEPTIVE function belong?

- Not all functions attested for PMs ended up in Mattiola’s (2017b) map!
- The inceptive function as a minor function of PMs is also discussed by Cusic (1981: 74)
  - Iteration implies boundedness, i.e. the presence of a beginning and an endpoint of an event, so that when applied to atelic verbs it imposes a boundary on the beginning of the event.

4.3. The diachrony of -ške/a-: a sketch

**QUESTION:** How are the different functions of -ške/a- diachronically related? Can one pinpoint an original function and the pathways whereby the other functions arose in the first place?

**A. Etymological considerations**

Hittite -ške/a- continues PIE *-ške/o- (from earlier *-śke/o-? cf. Willi 2018: 480), with cognates in most ancient IE languages, e.g. Skt. -ccha-, Av. -sa-, Gr. -ske/o-, Lat. -sce/o-, OIr. -c-, OHG -sc- (Kloekhorst 2008 s.v.; see also Adams 2014 for a comparison of the suffixes in individual languages and discussion of possible Baltic, Armenian, and Albanian comparanda)

- The suffix is also (scarcely) attested in other ANATOLIAN languages:
  - CLuw. -zza-, HLuw. -za-: the Luwian suffixes express CONTINUATIVE, e.g. ta-za-tu ‘let last/endure, and INCEPTIVE, e.g. kappilazzata ‘became hostile’ (Melchert 2003: 205; PLURALITY OF PARTICIPANTS, ITERATIVE, and CONTINUATIVE are also associated with the suffix -š(š)a-)
  - The Lycian s-verbs do not display any semantic difference with the corresponding base verbs (cf. Serangeli 2018)

- **GREEK** and **INDO-IRANIAN**: outcomes of *-ške/o- form (imperfective) present stems as opposed to (perfective) aorist stems (on Greek see e.g. Rix 1992: 213-214 and Willi 2018: 479-488; on Sanskrit see Burrow 1973: 329-330; on the aspectual systems of Ancient Greek and Vedic see Napoli 2006 and Dahl 2010 respectively)
  - PROBLEM: Ionic -sk- preterites with iterative/intensive function? Most likely a secondary feature due to contact with Hittite (see Bianconi forthc. for a reassessment).

- **TOCHARIAN**: the suffix -āsk- in TochB. forms CAUSATIVES and INTENSIVES, the development of a causative meaning is likely a Tocharian innovation (Adams 2014); for a typological parallel see Khwe (Khoe-Kwadi, Khoe), where verbal reduplication encodes both causativity and pluractionality (cf. Kilian-Hatz 2008: 147, 161).

- **LATIN**: complex picture (Weiss 2009: 407)
  - Inherited PIE present formations: e.g. (g)nō-sc-ō ‘know’ > *ग्नेो-ške/o-, cf. Gr. (g)gnō-sc-ō ‘know’
Inner-Latin formations with inchoative-intransitive meaning, e.g. *caleō ‘I am hot’ >> calē-sc-ō ‘I become hot’

⇒ Core meaning of the Latin suffix (with unprefix verbs) is connected to the indication of durative and dynamic (atelic) events, including inceptives when based on stative verbs (cf. Haverling 2000)

- **FORMAL RECONSTRUCTION**: the suffix is used to form present stem verbs with zero grade roots and accent on the suffix: e.g. *gʷem-‘go’ > *gʷm-ške/o > Ved. gácchati, Gr. báske (cf. LIV² s.v.).

- **SEMANTIC RECONSTRUCTION**: Anatolian shows a remarkably wider range of usages of -ške/a-as compared to other IE languages, where the functions seem to be associated more with the right end of the semantic map, i.e. with imperfectivity and other more abstract functions.

  o Which of the two represents the original situations? “There seems no doubt, however, that Hittite preserves the original meaning and that meanings other than imperfectivity [i.e. pluractionality] are innovations.” (Adams 2014: 24-25)

B. **Common trends in the development of PMs?**

- There is no comprehensive **diachronic typology** on the origin of PMs in the world’s languages.

- Recent studies have shown that at least for some areas of the conceptual space, **directional** diachronic links can be established between some of the functions:
  
  - **Iterative > Continuative > Progressive > Imperfective and Iterative > Frequentative > Habitual > Imperfective** (Bybee et al. 1994: 172; see also Heine & Kuteva 2002)
  - Further research is needed to establish whether a cross-linguistic directional development can be established between iterative and plurality of participants (see e.g. Farjzyngier 1997 for Chadic languages vs. Mithun 1988 for Native North America languages)

- **Diachronic** information can be integrated in a **dynamic** semantic map (cf. cf. Narrog & van der Auwera 2011, Luraghi 2014)

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![Figure 2: A dynamic conceptual space of pluractional constructions](image-url)
Grammaticalization processes:

- Development of more grammatical (abstract) meanings (cf. Lehmann 2015): the more ‘grammatical’ functions have a lesser impact on the verbs’ lexical meaning;
- Class-host expansions (Himmelmann 2004): i.e. extension to previously unavailable verbs, chiefly atelic ones;
- Increase in subjectivity (Traugott 2010): (imperfective) aspect relates to the speaker’s viewpoint of events in discourse.

Based on the considerations in A and B we tentatively suggest the following diachronic scenario:

- The suffix PIE suffix *-ške/o- was originally a marker of iterative and/or plurality of participants, and therefore covered only the core PM functions;
- Starting from the core pluractional functions, the suffix extended its functional range towards the right end of the conceptual space;
  - In Anatolian (Hittite and possibly Luwian), the original core functions and the new ones coexisted, with a ‘layering’ of functions typical grammaticalization processes (Hopper 1991); “it is however not obvious that there was a full-scale grammaticalization of the -ške/a- form” (Josephson 2008: 138);
  - In core-PIE, the original functions were partly lost: the suffix evolved into a general maker of present stems (imperfectivity) and it also underwent language-specific developments (e.g. causative in Tocharian, inceptive in Latin).

C. Other PMs in Hittite?

- Verb reduplication in Hittite covers a range of functions similar to -ške/a- (Dempsey 2015): durative, habitual, iterative, repetitive, distributive, intensive/inchoative, and can be considered a PM.
- Verb reduplication is unproductive in historical times, with many reduplicated verbs being secondarily re-characterized through the addition of -ške/a- (Dempsey 2015), e.g. ku-kkureške/a- ‘cut, mutilate’ (distributive according to Hoffner & Melchert 2002: 384).
- This development is unsurprising: reduplication operates as a PM in some of the world’s languages (such as Pluractional derivation in Beja - Afro-asiatic, Cushitic -, cf. Vanhove 2017), and the replacement of reduplication as a PM with new PM attested for instance in Maa (Nilotic, Eastern Nilotic) (cf. Payne 2013 and Mattiola 2017a: 194-202 on the andative -āa in Maa).

References


HPM = *Hethitologie Portal Mainz* <http://www.hethport.uni-wuerzburg.de/HPM/index.html>


