Basic valency orientation and the middle voice in Hittite

Abstract

The paper discusses basic valency orientation in Hittite, based on the typology proposed in Nichols et al. (2004). Verb pairs usually employed for testing basic valency indicate a clearly transitivizing character of this language; a closer scrutiny of intransitive verbs further reveals the existence of a three-fold distinction featuring two intransitive verbs, a basic stative one (or an adjective), and an overtly marked intransitive change-of-state, in addition to a transitive counterpart overtly marked as causative. The high productivity of causative derivation is shown by the fact that morphologically marked causatives are not only derived from stative verbs, but also from telic intransitive, as well as from transitive verbs. In the case of telic intransitive verbs, a minor pattern is also attested, whereby valency alternation is encoded through voice alternation, with intransitive forms inflected in the middle voice and transitive forms in the active. Since neither voice can be considered derived with respect to the other, verbs that display this behavior are indeterminate as to basic valency orientation. In spite of the limited extent to which voice indicates valency alternation, this finding becomes more significant when set into the framework of valency alternation in the early Indo-European languages, and sheds some light (or rises more questions) on the original function of the Hittite and of the Indo-European middle voice, a typologically puzzling category.

1. Introduction[1]

In this paper, I give an overview of transitivity alternations in Hittite (Anatolian), an ancient Indo-European language (extant texts cover about six centuries in the second millennium BCE), based on the notion of basic valency orientation, as proposed in Nichols et al. (2004). The paper by Nichols and associates, which provided a typological overview of a large language sample, opened the way to a sizable trend of research on basic valency in individual languages, partly aimed at a more in-depth description of languages already included in the original sample, partly describing more languages (Narrog 2009, Plank, Lahiri 2009, van Gelderen 2011). With the present study, I also aim at improving the understanding of basic valency orientation across languages by describing a language which is hardly accessible to non-specialists and which presents a rare pattern connected with conjugation change. In doing so, I briefly describe the semantics of the Hittite middle voice, which displays various peculiarities even when compared to the middle voice of the other ancient Indo-European languages. I also suggest that such peculiarities might be indicative of the original meaning of the PIE middle voice, which was indeed very different from the prototypical middle voice described in Kemmer (1993) and known from other Indo-European languages, such as Ancient Greek.

As we will see, the vast majority of verb pairs that I analyze in the paper attests to a clearly transitivizing character of the Hittite language throughout its history. However, a minor pattern also emerges which points toward a relevant role of voice

[1] I thank Leonid Kulikov and especially H. Craig Melchert for their insightful comments on a previous version of this paper and for helpful discussion on several issues related with valency and voice, which helped me improve the quality of the paper. Remaining shortcomings are my responsibility.

alternation (middle/active) in this connection. This latter pattern is an example of a type only marginally taken into account by Nichols and her associates and apparently very infrequent, whereby valency alternation is indicated by conjugation change. Crucially, in Hittite neither voice can be said to be basic or derived with respect to the other, thus yielding an indeterminate pattern (see sec. 2 for the terminology).[2]

The paper is organized as follows. In section 2 I discuss the notion of basic valency orientation, list the verb pairs analyzed by Nichols et al. (2004) with the additions in Nichols (2007), and briefly examine the findings in Nichols et al. (2004) regarding the Indo-European languages contained in their sample, also in the light of further research on diachronic developments in some of these languages. As Hittite is remarkably rich in transitivizing strategies, I devote section 3 to the distribution and the semantics of individual transitivizing affixes. In section 4 I discuss basic valency orientation in Hittite based on the relevant verb pairs, and add some further evidence for transitivizing strategies with the addition of some other verb pairs. Section 5 is devoted to the Hittite middle voice. In this section, I show how voice alternation may be relevant to basic valency orientation, attempting a description of the notoriously intricate semantics of the Hittite middle voice, in connection with the distribution of voice between media and activa tantum as well as verbs that can be inflected in both voices. The data seem to hint to an increasing role of voice alternation in diachrony, even though its impact on the coding of basic valency alternation remains hard to assess. In

[2] The sample used by Nichols et al. (2004) includes Modern Greek, a language that preserves an inflectional middle voice inherited from Ancient Greek, and ultimately going back to the PIE middle. The author regard the Modern Greek middle as derived with respect to the active, and accordingly consider it a detransitivizing strategy. Indeed, there are reasons to regard the middle voice as secondary, if not derived, already in Ancient Greek (cf. below, fn. 24), but this is not the case in Hittite, as I discuss in sec. 5; see further sec. 6 on the middle in PIE and other ancient Indo-European languages.

section 6 I frame the findings from the preceding sections with evidence from other Indo-European languages and show that both the basic transitivizing character, and the more limited, but still relevant role of voice alternation were features that not only characterized Hittite, but were spread across the other languages as well. Section 7 contains the conclusions.

2. How to determine basic valency orientation

The notion of basic valency orientation refers to the typology of valency alternation proposed in Nichols et al. (2004), who argue that languages differ depending on their tendency to have transitivizing vs. detransitivizing strategies. In transitivizing languages, intransitive verbs are more 'basic' than transitive ones, i.e. they are morphologically lighter and less complex than transitive verbs, which display extra marking. In detranzitivizing languages, on the other hand, things work the other way around: transitive verbs are basic, while intransitive ones are morphologically more marked and complex.

Before proceeding, a note on the terminology is in order, in particular on the use of the notion of 'transitivity' and related terms. Indeed, transitivity as used here is a partly semantic rather than strictly syntactic notion (cf. Nichols et al. 2004: 150 fn. 2), as verbs such as *eat* are included in the intransitive group, even though they frequently take a direct object across languages. This problem is acknowledged by Nichols and associates, who propose the terms 'plain vs. induced': plain refers to verbs that indicate

non-induced, mostly spontaneous events,[3] while induced indicates events initiated by an external agent. In view of syntactic transitivity of individual verbs in specific languages, I adopt Nichols et al.'s terminology in the remainder of this paper.

Based on a sample of 18 verb pairs, Nichols and her associates distinguish between augmented correspondences, i.e. those in which valency increase is encoded through the addition of a morpheme, and reduced ones, i.e. cases in which valency decrease is overtly marked through the addition of a morpheme. The first pattern of correspondence is typical for example of Nanai, a Tungusic language, while the second is typical of Russian. Examples are given in Table 1.

TABLE 1: PLAIN-INDUCED VERB PAIRS IN NANAI AND RUSSIAN

PLAIN:	'learn'	'fear'	'hide'(go into hiding)
INDUCED:	'teach'	'frighten, scare'	'hide' (put into hiding)
Nanai	*otoli-*	*mian-*	*siri-*
	otoli-wa:n-	*mian-bo-*	*djaja-*
Russian	*učit'-sja*	*bojat'-sja*	*prjatat'-sja*
	učit'	*pugat'*	*prjatat'*

(Adapted from Nichols et al. 2004: 151)

A third possible pattern in which the plain predicate is an adjective while the induced one is a verb is regarded by the authors as a special type of augmentation.

[3] Plain verbs in Nichols et al.'s sample are indeed a heterogeneous category: most of them indicate spontaneous (i.e. uncontrolled) events, but a few do not, most notably 'eat'; many are cross-linguistically most often represented by inchoative verbs and indicate change of state, but this is not always the case: 'laugh', for example, often indicates an activity, 'see' indicates a state, etc. For this reason, I decided to use 'plain' as a cover term for this group, as it does not add any semantic specification, which would be misleading. Note in particular that plain verbs in this group only partly coincide with so-called 'inchoative' or 'anticausative' verbs discussed in Haspelmath (1993), which are all change-of-state verbs denoting spontaneous (uncontrolled) events.

Augmentation or reduction are not the only possible patterns of correspondence. Six other patterns are listed, which, according to the authors, do not contribute to making languages detransitivizing or transitivizing, since the direction of derivation cannot be assessed. Especially for some verb pairs, suppletion is frequent across languages: for example, for the pair *die/kill* most languages seem to present suppletion (see Haspelmath 1993: 106). Double derivation, involving both augmentation and reduction, is also a possible strategy, as is auxiliary change. In addition, languages may have ambivalent, or labile verbs, that is, verbs which can be used both intransitively and transitively without overt marking. A language which is especially rich in labile verbs is English, which displays numerous verbs such as *break*, *turn*, *open*, *hang*, *hide* and so on. Finally, two patterns of alternation especially relevant for the ancient Indo-European languages, that is vowel alternation or ablaut and conjugation class alternation, are also included.

Thus, basic valency orientation depends on the way in which languages combine the above patterns, consistingly displaying either of the first two more frequently than the other. In the case that double derivation, auxiliary change or ablaut prevail, basic valency orientation is neutral; if the prevalent patterns include suppletion, lability or conjugation change basic valency orientation is considered indeterminate. In addition, the languages inspected point toward a difference between verbs that typically take human subjects and verbs that typically take inanimate ones, that is, animate and inanimate verbs in Nichols et al.'s terminology: German, for example, is detransitivizing with animate verbs, whereas with inanimate ones the higher extent of lability makes it indeterminate.

Nichols (2007) later added a number of 'proxies', i.e. semantically related verbs which can be used as alternative if some of those in the original list are unavailable.

Selected verb pairs and their proxies are listed in Table 2.

TABLE 2: VERB PAIRS FOR BASIC VALENCY TEST

	ANIMATE (HUMAN) SUBJECTS		
	PLAIN	INDUCED	PROXY
1	laugh	make laugh, amuse	cry
2	die	kill	
3	sit	seat, have sit, make sit	lie down; go to bed, put to bed
4	eat	feed, give food	drink, give to drink
5	learn	teach	understand, find out, grasp
6	see	show	
7	be(come) angry	anger	annoy(ed)
8	fear, be afraid	frighten, scare	
9	hide, go into hiding	hide, conceal, put into hiding	
	INANIMATE SUBJECTS		
	PLAIN	INDUCED	PROXY
10	(come to) boil	(bring to) boil	cook
11	burn, catch fire	burn, set fire	be aflame; char
12	break	break	split, shatter, smash
13	open	open	close
14	dry	(make) dry	wet, clean; black, white
15	be(come) straight	straighten	crooked, long, round, flat
16	hang	hang (up)	lean (incline), extend, project, protrude
17	turn over	turn over	turn, turn around, rotate, revolve, roll; shake, tremble; move; ascend, rise
18	fall	drop, let fall	fall down, fall over, etc.; sink

(from Nichols 2007)

The Indo-European languages included in the sample are Russian, German, Modern Greek, Portuguese, Ossetic, and Western Armenian. They are classified as shown in Table 3.

TABLE 3: BASIC VALENCY ALTERNATION IN SOME INDO-EUROPEAN LANGUAGES[4]

LANGUAGE	ANIMATE VERBS		INANIMATE VERBS	
	TYPE	PREVAILING PATTERN	TYPE	PREVAILING PATTERN
Russian	*Detrans*	*Reduce*	*Detrans*	*Reduce/Suppl*
German	*Detrans*	*Reduce/Abl*	*Indet*	*Ambi*
Modern Greek	*Detrans/Neut*	*Reduce/Double*	*Detrans*	*Reduce/Ambi*
Portuguese	*Indet*	*Suppl*	*Indet*	*Ambi*
Ossetic	*Indet*	*Ambi*	*Indet*	*Ambi*
W. Armenian	*Trans*	*Augm/Adj*	*Indet*	*Conj/Adj*
Hindi	*Trans*	*Augm*	*Trans*	*Augm*

(based on Nichols et al. 2004)

The results in Table 3 point to a high extent of indeterminacy in the Indo-European languages, especially on account of a wide spread of lability. However, leaving this result aside, and concentrating on the relative frequency of transitivizing vs. detransitivizing strategies, the latter prevail. In the first place, three out of six languages are detransitivizing at least for one of the two groups of verb; detransitivizing patterns are also reported from Portuguese and Western Armenian, while transitivizing patterns are only reported from Ossetic (and to a smaller extent Portuguese), in addition to Western Armenian and Hindi. Moreover, an areal pattern emerges whereby western languages tend to be detransitivizing, while eastern ones display the contrary tendency.[5]

The results in Nichols et al. (2004) have been challenged for various languages, including non-Indo-European ones. As for the languages in Table 3, Plank and Lahiri

[4] Abbreviations: Detrans=detransitivizing; Neut=neutral; Indet=indeterminate; Trans=transitivizing; Reduce=reduction; Abl=ablaut; Double=double derivation; Suppl=suppletion; Ambi=ambivalence (lability); Adj=adjective; Conj=conjugation change.

[5] This tendency is even higher than in Tab. 3, due to frequent usage of reflexives as detransitivizing devices, not only across the Slavic and many Germanic languages, but also in the Romance languages. In the latter, reflexives have replaced the Latin synthetic medio-passive in its valency changing function. As remarked in Nichols (2006), "[b]oth detransitivization and its implementation with a reflexive clitic are European linguistic hallmarks"; see further Haspelmath (1993: 102-103) and Comrie (2006).

(2009) convincingly argue that German must be regarded as transitivizing. In particular, Plank and Lahiri consider pairs of weak and strong verbs such as *fallen* (strong) 'fall' vs. *fällen* (weak) 'fell', or *sinken* (strong) 'sink' vs. *senken* (weak) 'lower', and argue that "[i]n all contemporary cases of a causative verb bearing some phonological similarity to a non-causative counterpart, ... the causative verb will be weak and the non-causative strong" (2009: 3). Verb pairs listed by Plank and Lahiri mostly involve ablaut, a strategy that is considered neutral (i.e. neither detransitivizing nor transitivizing) by Nichols and her associates on account of alleged impossibility to determine the direction of derivation synchronically. On the contrary, Plank and Lahiri show that not only are weak verbs derived from strong verbs via suffixation in Old High German, but even in Modern High German phonological alternation (umlaut) works in such a way that transitive verbs (weak, with umlaut) are arguably derived. Thus, German is shown to be transitivizing at all stages: at the stage of OHG through an additive strategy, and at the present stage through umlaut.

That older stages of some Indo-European languages provide more evidence for the prevalence of transitivizing patterns can also be argued based on data from the Slavic languages. Nichols (2006) shows that, in the case of stance verbs (i.e. verbs such as 'sit', 'stand', 'lie'), detransitivizing strategies have been developing starting from Old Church Slavic, and interacting with verbal aspect. She remarks that the same pattern exists in Baltic, and indicates as an archaism possibly inherited from PIE a system with a three-fold distinction among static vs. change-of-state (or punctual) vs. transitive, whereby "forms [are] not straightforwardly built on each other", but the fact that the root aorist is punctual (i.e. intransitive) points to the derived nature of transitive forms.

3. Transitivizing strategies in Hittite

In this section, I describe morphological transitivizing strategies in Hittite. As is well known, Hittite has a number of derivational suffixes usually labeled 'causative', which in the case of some media tantum have been shown to supply an active counterpart to patient (or theme)-oriented verbs (Neu 1968a: 53), thus supplementing inflectional voice (which infrequently encodes the passive, see below, sec. 5.4). The most common causative suffixes are *-nu-* (mostly deverbal) and *-ahh-* (mostly deadjectival). Below, I illustrate these and other transitivizing devices.

3.1. -nu- *suffixation*

The suffix *-nu-* is usually attached to verbs; to a limited extent, it can also be suffixed to adjectives and perhaps to nouns. As a deverbal suffix, it builds transitive verbs from intransitives, which can be stative or mostly stative, as *tarranu-* 'make powerful' from *tarra-* 'be able', *puqqanu-* 'make hateful' from *pugga-* 'be hateful', *sas(sa)nu-* 'put to sleep' from *ses-* 'sleep, be asleep'; or change-of-state, as: *ninganu-* 'drench, make drunk' < *nink-* 'soak, get drunk' and *samenu-* 'eliminate' from *samen-* 'disappear'. Denominal verbs are rare: apparently the only example is *esharnu-* 'to make bloody' < *eshar-* 'blood' (see Hoffner, Melchert 2008: 175 and fn. 10). In some cases, *-nu-* can also be suffixed to adjectives, as in *parganu-* 'make tall' from *parku-* 'tall', *sallanu-* 'make great' from *salli-* 'great', *maknu-* 'make numerous' from *mekki-* 'much', 'many'. Since adjectives can function as predicates, and they clearly indicate states, *-nu-* suffixation of adjectives has the same effect as *-nu-* suffixation of stative verbs.

Remarkably, such verbs are usually paired by so-called 'fientive'[6] change-of-state verbs formed by suffixing *-ess-* to the adjective, as *parkuess-* 'become high' or *makkess-* 'become numerous'. This pattern reflects a three-fold distinction stative (adjective) vs. intransitive change-of-state vs. transitive, similar to the one reconstructed by Nichols (2006) as a possible PIE inheritance in Old Russian (see sec. 2 and 6 for further discussion). In some cases, a basic verb is also attested, as in *hat-* 'to be(come) dry', *hatess-* 'to become dry', *hatnu-* 'to dry up (tr.)'. Note that in this case the basic verb is not strictly speaking stative: rather, it can be understood as stative or change-of-state depending on the context, and is best described as being neutral with respect to stativity; however, the *-ess-* fientive suffix adds an overtly marked change-of-state component to its meaning (see further sec. 4.1). Similarly, from the basic (stative or change-of-state) verb *lalukke-* 'be(come) luminous' the *-ess-* suffixed fientive is built, while the transitive counterpart is built on the fientive form: *lalukkešnu-* 'give light, illuminate'.

In addition, the suffix *-nu-* can also derive causatives of verbs that indicate actions, including transitive, such as *memiyanu-* 'let talk' from *mema/i-* 'talk', 'tell' or *linganu-* 'let swear' from *link-* 'swear'. Note that *-nu-* causatives are usually not ditransitive; the only exception is a single occurrence of *zainu-, zinu-* 'let cross' < *zai-* 'cross' in Old Hittite[7] (in KBo VI 2 ii 30'; see Luraghi 1993: 166, 2010a: 148 fn. 15).

[6] The term 'fientive' is traditionally used in Hittite grammatical description for these verbs, which contain the meaning 'X becomes Y' (with Y being an adjective); this term has also been introduced in typology by M. Haspelmath (see Haspelmath 1987: 33). Here, I use it only when I need to keep *-ess-* verbs distinct from other telic intransitive verbs denoting uncontrolled (spontaneous) events. Elsewhere, I use change-of-state as a cover term.

[7] Three stages of the Hittite language are usually kept distinct: O(ld) H(ittite), M(iddle) H(ittite), and N(ew) H(ittite). As scribal habits were often such that texts were partially updated when copied from originals of older stages, copies are not always reliable, and especially if one tries to describe peculiarities

Remarkably, several *-nu-* verbs from transitive verbs seem to have the same meaning as the non-derived verb, as for example *pahsanu* 'protect' < *pahs-* same meaning (see Kronasser 1966, Luraghi 1993: 168-169 and *CHD s.v.*), in sharp contrast with *-nu-* verbs from intransitive verbs, which always display the transitivizing value of the suffix.[8] This points toward a primacy of transitivization as basic function of the suffix, in spite of the fact that *-nu-* causatives are productively built from transitive verbs at all language stages including Old Hittite. Indeed, evidence from the other Indo-European languages points in the same direction since, as argued in Šackov (2008), cognate suffixes usually occur with intransitive verbs, as in Skr. *ṛṇóti* / Gr. *órnumi* 'carry' < PIE **or-n-* from **or-* 'set in motion'. This verb also exists in Hittite; I discuss it below, sec. 4.2.1.

3.2. -ahh- *suffixation*

Most frequently, transitive verbs are derived from adjectives by addition of the suffix *-ahh-*, as in *suppiahh-* 'purify' from *suppi-* 'pure', *ikunahh-*' make cold' from *ekuna-*

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of OH it is crucial to rely on an accurate chronology. The dating criterion for texts is the script, whereby a distinction is made among O(ld) S(cript), M(iddle) S(cript), and N(ew) S(cript). Only sources from OH/OS can be considered fully reliable for the earliest stage. In this paper, I follow the chronology established in the *CHD* when available.

[8] A few intransitive verbs have occasionally intransitive *-nu-* derivatives: *wahnu-*, which normally functions as causative counterpart of *wah-* 'turn (intr.)', and accordingly means 'turn (tr.)', can also be intransitive: note however that this mostly happens in combination with the preverb *appa* 'back' in *appa wahnu-* 'turn back'; the verb *nuntarnu-* 'to hasten' is also intransitive (see Luraghi 1993: 166 and cf. *nuntariya-*, same meaning, and the adverb *nuntaras* 'quickly'). Remarkably, this verb is only attested from texts in NS (cf. *CHD s.v.*), and can be taken to represent the increasing tendency for *-nu-* derivation not to alter the meaning of the base, more frequent in the case of transitive verbs.

'cold', *idalawahh-* 'harm, injure' from *idalu-* 'evil'.[9] Usually, such verbs also have -ess- suffixed change-of-state counterparts: *suppess-* 'become pure', *idalawess-* 'become evil'. Thus, in the case of *-ahh-* suffixation to a much higher extent than in the case of *-nu-* suffixation, the emerging pattern is three-fold: stative (adj.) vs. change-of-state vs. transitive. In a few cases, pairs of *-ahh-* and *-ess-* verbs exist alongside a basic stative verbs, as in the case of *nakke-* 'be important' vs. *nakkiyahh-* 'regard/ treat as important' and *nakkess-* 'become important, troublesome'. The basis for derivation is the adjective *nakki-* 'important, hard': note that the meaning of the stative verb is virtually the same as the meaning of the (predicative) adjective.

3.3. -nin- *infixation*

Another transitivizing affix is also attested, the nasal infix *-nin-*, which is not productive and limited to *harnink-* 'destroy' from *hark-* 'perish' and *istarnink-* 'make sick' from *istark-* 'get sick'. The latter verb is peculiar, as it is a so-called impersonal, which in origin took an accusative experiencer, as shown in (1):

(1.) *m*]*ān antuhsan* SAG.DU-*ŠU istara*[*kzi*] *n*= *an nassu apenissan*
if man:ACC head-his be.sick:PRS.3SG.ACT CONN 3SG.ACC whether similar
ista[*r*]*akzi*
be.sick:PRS.3SG.ACT
"If a man has head pains, or if he has some similar illness." KUB 8.36 ii 12-13.

[9] The choice between *-nu-* and *-ahh-* for deadjectival transitive verbs is morphologically based; see Oettinger (1979: 238-255).

The *-nin-* causative counterpart has the effect that a nominative agent is added, while the experiencer remains in the accusative, as shown in:[10]

(2.) *takku* LÚ.ULÙ.LU-*an kuiski* *hunikzi* *n=* *an*
if man:ACC INDEF.NOM injure:PRS.3SG.ACT CONN 3SG.ACC
istarnikzi
make.sick:PRS.3SG.ACT
"If someone injures a man and makes him sick." KBo 6.3 i 25.

As a transitive counterpart of *hark-* 'perish', the *-nu-* suffixed *harganu-* is also attested, thus confirming the productivity of *-nu-* suffixation. I discuss this verb and its derivatives below, sec. 5.3. In addition, two other *-nin-* verbs, *sarnink-* 'to make compensation' and *ninink-* 'to mobilize, set in motion' also exist, which do not have non-suffixed counterparts.

3.4. Reduplication

Verbal reduplication sporadically occurs in Hittite, sometimes connected with onomatopoeic words or indicating intensive/iterative meaning (see van Brock 1964,

[10] The verb *istark-* sometimes also appears with a nominative subject, typically the word for 'illness' (see Luraghi 2010b), but this is clearly a secondary pattern. Thus, it is incorrect to say that this verb is "an active impersonal", and that the *-nin-* verb is "its reinforcing personal causative" (*HED s.v. harnink-*). Compare the completely different implications of *=an istarakzi* in (1) and *=an istarnikzi* in (2): the former indicates a spontaneous event ('he is/becomes ill'), while the latter indicates external causation ('he [sc. someone else] makes him ill'). Note further that the accusative experiencer may be taken to function as a (non-canonical) subject in (1), while it is a true direct object in (2).

Oettinger 1998). In the case of *ases*-'seat' from *es*- 'sit (down)', though, reduplication works as a transitivizing device.[11] In addition, a verb *lilakk*- 'fell' is also sporadically attested, connected with *lak*-. The latter verb is transitive in the active voice, and means 'knock down', 'turn': its meaning is not the exact causative of the middle, which means 'fall'. A (possibly later) -*nu*- causative *laknu*- also exists, see below, sec. 4.2.2. and 5.2.

4. Basic valency orientation in Hittite

4.1. The 18 verb pairs

In this section, I examine the Hittite equivalents of the verb pairs selected by Nichols and her associates. Finding and selecting verbs in a dead language is not an easy task. In some cases, more that one verb pair is available which can be considered equivalent to an English verb pair. In addition, given the limited size of the extant sources (which are sizable enough to allow for a thorough understanding of the grammar, but not even comparable to the corpus of some other, more familiar ancient languages, such as Latin or Ancient Greek), some verbs are simply not attested: for example, in the case of 'laugh/make laugh' (and its proxy 'cry/make cry') I have not been able to provide the causative member of the pair. In spite of these limitations, the data clearly point in the direction of transitivization, as one can see in Table 3. (For the sake of completeness, I also give the proxies, when available.)

[11] Reduplication is also sporadically connected with valency alternation in Homeric Greek as shown in Sausa (2011) regarding the aorist forms *daômen* 'we learn' (subj.aor.1pl) vs. *dédae* 's/he taught'

TABLE 3: HITTITE VERB PAIRS

		ANIMATE VERBS		
		MEANING	PLAIN	INDUCED
1.	?	laugh cry	*hahhars-* *wiya-*	- -
2.	indeterminate	die	*ak-*	*kuen-*
3.	transitivizing transitivizing	sit sleep	*es-* *ses-*	*ases-*, *assessanu-* *sas(sa)nu-*
4.	transitivizing transitivizing	eat drink	*et-* *eku-*	*adanna pai-* *akuwanna pai-*
5.	?	learn	*istamas-* 'hear'	-
6.	indeterminate	see	*aus-/u-, sakuwaya-*	*tekkussa-, tekkussanu-*
7.	transitivizing transitivizing	be angry worry	*kartimmiya-* *lahlahhiya-*	*kartimmiyahh-* *lahlahhinu-*
8.	transitivizing	fear	*nah-, nahsariya-*	*nahsarnu-*
9.	indeterminate	hide	*munnai-* (mid.)	*munnai-* (act.)
		INANIMATE VERBS		
		MEANING	PLAIN	INDUCED
10.	transitivizing	boil	*ze-*	*zanu-*
11.	transitivizing	burn	*war-*	*warnu-*
12.	indeterminate	break	*duwarna-* (mid.)	*duwarna* - (act.)
13.	transitivizing	open	*hassanza* (adj.)	*hass-*
14.	transitivizing/equip.	dry	*hat-, hatess-*	*hatnu-*
15.	equipollent (trans.)	become long	*dalukess-*	*daluganu-*
16.	transitivizing	hang	*agank-*	*(anda) ganganu-*
17.	transitivizing	turn over	*weh-*	*wahnu-*
18.	indeterminate	fall	*mauss-*	*pessiya-*

(data from Luraghi 1993, 2010a)

Even though some verb pairs cannot be found in the sources, and in spite of some uncertainty in the choice of the specific verb pair when more than one is available with similar meanings, the transitivizing character emerges unmistakably from the data in Tab. 3. Indeed, the extent to which transitivizing strategies prevail is clear to anyone who has some acquaintance with the Hittite language, as I will show in the next section.

Before moving on to examining more verbs, however, another peculiarity must be highlighted here, which I have anticipated in sec. 3.1 and 3.2, that is, the high extent to

(ind.aor.3sg). This and a few other occurrences might perhaps be taken as evidence for a limited transitivizing function of reduplication in PIE.

which intransitive verbs are stative, so that transitivizing devices also add dynamicity and telicity. Indeed, while some verbs which are most often stative, such as *nah-* 'fear', also occur in passages in which they must be taken as change-of-state (cf. *CHD s.v.*), this is not true of all stative verbs: this is especially clear in the case of equipollent verb pairs, in which both the change-of-state and the causative are derived through augmentation (suffix *-ess-* vs. *-nu-*) from a basic verb which is clearly underspecified for telicity, or from adjectives, which function in very much the same as stative predicates in nominal sentences. If one extends the sample of verbs to those which bear the suffix *-ahh-*, which are almost all deadjectival, this picture emerges in an even clearer manner, as remarked in sec. 3.2.

In a few cases, the transitive/intransitive alternation is connected with voice. The verbs *munnai-* 'hide' and *duwarna-* 'break' (n. 9 and 12) are intransitive in the middle voice and transitive in the active. Note that these two verbs indicate change of state, that is, intransitive forms are telic, rather than stative (and hence atelic). The pattern is not always so neat, as some other verbs attest to possible lability (but apparently mostly after OH, see sec. 5.2 and 5.3), however it looks quite consistent when more verbs are taken into consideration, as well as in the light of the development of voice alternation after the OH period (lability seems to be increasing with time, cf. Hoffner, Melchert 2008: 303 and below sec. 5.2).

4.2. Further evidence for transitivizing strategies

According to Nichols et al. (2004), the general tendency in the distribution of transitivizing vs. detransitivizing strategies is for the former to prevail with animate verbs, and the latter with inanimate verbs. This is not the case in Hittite, a language in

which transitivizing patterns largely outnumber detransitivizing ones with all types of verb. Accordingly, in this section I add some further evidence for transitivizing strategies, by listing other verb pairs that attest to it.

4.2.1. Human subjects

As remarked above, verbs with human subjects frequently display transitivizing patterns. Among those listed below, some indicate change of state, such as *hass-* 'give birth', but the most part is constituted by verbs whose basic (i.e. intransitive) form indicates a state, such as *tarra-* 'be able' and *pugga-* 'be hateful'.

TABLE 4: OTHER ANIMATE VERBS

	BASIC/PLAIN	DERIVATIVE/INDUCED
1.	*(anda)impai-* 'worry'	*(anda) aimpanu-* 'make worry'
2.	*hass-,* 'give birth'	*hassanu-* 'bring to birth'
3.	*hassikk-* 'be satiated'	*hassikkanu-* satiate
4.	*hatuk-* 'be fearsome'	*hatuganu-* 'terrify'
5.	*huis-,* 'live'	*huisnu* - 'rescue', 'heal' 'let live'
6.	*merr-* 'get lost', 'go missing'	*mernu-* (NH) 'cause to disappear, dissolve'
7.	*nink-* 'soak', 'get drunk'	*ninganu-* 'drench'
8.	*pukka-* 'be hateful'	*puqqanu-* 'make hateful'
9.	*samen-* 'disappear'	*samenu-* 'make (something/-one) pass by, bypass, ignore (someone)'[12]
10.	*tarra-* 'be able to'	*tarranu-* 'make powerful'
11.	*tariya* - 'be(come) tired'	*dariyanu* - 'make tired'
12.	*wak(ki)ssya-* 'omit', 'be absent'	*waggasnu-* 'omit'
13.	*werite-* 'fear'	*weritenu-* 'scare'

The verb *hatuk-* also has a telic intransitive counterpart with the suffix *-ess-*: *hatukess-* 'become fearsome'. This verb illustrates neatly the three-fold pattern stative / change-of-state / transitive illustrated above for deadjectival verbs, which may well represent the original pattern also in cases such as verb pair 16 in Tab. 3 *hat-, hatess-* 'dry (intr.)' vs. *hatnu-* 'dry (tr.)', even though the basic form *hat-* is also attested with change-of-

[12] On the meaning of this verb see Kloekhorst (2008: 714) and *CHD s.v.*

state meaning according to the *CHD* (but the *-ess-* form is never stative).

In addition to the verbs in Tab. 4, another verb deserves to be mentioned, *ar-* 'stand'. This verb is considered an ancient medium tantum in Neu (1968b: 52). As pointed out by Neu, its meaning is most often stative, even though in some cases the verb can indicate change of position (but this happens especially with preverbs, which, as in other languages, may add telicity). Note however that an active counterpart also exists, which is considered etymologically related to the medium tantum: in other words, it is basically the same verb, as pointed out in *HED s.v.* The active verb is non-stative, it indicates displacement and is usually telic; its meaning can be glossed as 'arrive', 'get (somewhere)'. The *-nu-* causative derives from the active verb, and means 'bring'.

Remarkably, in the case of *ar-* it is voice alternation, i.e. conjugation change, rather than suffixation (augmentation) which adds the non-stative meaning to the basic form. This is not a frequent pattern: as we will see in more detail in sec. 5, verbs that rely on voice to encode valency alternations tend to have telic intransitive middle forms, just as the verbs already analyzed in sec. 4.1. According to *HED s.v.* the verb *ar-* was not basically stative, as stative meaning was not inherited from PIE: indeed, the same root in other languages, though displaying middle morphology, indicates displacement, cf. Latin *orior* 'I stand up' (medium tantum; a slightly different etymology is given in Mallory, Adams 2006: 391). A possible scenario then would be that middle voice acquired a stative meaning in Proto-Hittite, possibly on the analogy of other verbs of posture, notably *ki-* 'lie', and active voice, connected with telicity, developed in order to preserve the original meaning.[13]

[13] My interpretation is partly based on the etymologies in *HED* and Mallory, Adams (2006). According to other scholars, the verb *ar-* goes back to two different roots in PIE (see for example in Oettinger 1979:

1

2 4.2.2. Non-human subjects

3 Numerous other verbs with typically inanimate subjects also display transitivizing

4 patterns. Contrary to animate verbs, the verb pairs in Table 5 have an basic form that

5 indicates change of state, rather than a stative one.

6

7 TABLE 5: OTHER INANIMATE VERBS

	BASIC	DERIVATIVE
1.	*ars-* 'flow'	*arsanu-,* 'let flow'
2.	*hark-* 'perish'	*harganu-* 'destroy'
3.	*kist-* 'go out'	*kistanu-* 'put out'
4.	*lak-* 'be knocked down' (mid.)	*lak-* (act.) *laknu-* (NH)
5.	*lap-* 'glow'	*lapnu-* 'kindle'
6.	*mai-, miya-* 'grow', 'be born'	*miyanu-* 'let grow (vegetation)'
7.	*parkiya-* 'rise'	*parkiyanu-* 'make to rise'
8.	*samesiya-* 'burn (for fumigation) intr.' (mid.)	*samesiya-* 'burn (for fumigation) tr.' (act.) *samesanu-* 'burn' (only NH)
9.	*zappiya-* 'drop'	*zappanu-* 'let drop (liquid)'

8

9 Note that with verb pairs n. 4 and 8 the transitive/intransitive alternation is basically

10 connected with voice; the *-nu-* causatives have slightly different meanings and are only

11 attested in late texts.

12

13

14 **5. The Hittite middle**

404 fn. 13, 523-524 and Kloekhorst 2008: 196-7). The etymology is somewhat controversial, because one of the two reconstructed PIE forms has an initial laryngeal whose disappearance in Hittite rises some problems. From a synchronic point of view, I find it rather unlikely that the two (homophonous) verbs had not influenced each other and were kept sharply distinct in Hittite. In any case, it is remarkable that, whatever PIE verbal root must be reconstructed as the origin of *ar-* 'stand', this verb has no stative cognates in any other Indo-European language: as remarked, this provides further evidence for the assumption that its stative actionality was a Hittite innovation.

In the discussion above, we have seen that, in spite of prevailing transitivizing strategies, voice alternation, that is, conjugation change, is also involved to some extent in valency alternation. In this section, I discuss the Hittite middle conjugation and add more evidence for its connection with transitivity.

As shown in this section, Hittite middles have various meanings; connections with specific functions (e.g. detransitivizing) are at the best tendencies, and some meanings seem in contradiction with one another, partly because middle forms are sometimes labile, partly due to the existence of a small group of transitive media tantum. In short, the matter looks so complex that it has defied satisfactory explanation and even in-depth description: the only exhaustive study regarding the Hittite middle to date is constituted by the two volumes by E. Neu (1968a, b), which are by now largely outdated, especially in the light of later improvements in the dating of the texts. Scholars have also been puzzled by the fact that the middle does not fulfill some of the typical functions connected with middle voice, which constitute a trademark of the middle in other ancient Indo-European languages, most notably Ancient Greek, such as self beneficient, or fulfills them only to a limited extent, as in the case of reciprocal. Such meanings are rather taken over by the reflexive particle *-za* in Hittite (see Boley 1993, Josephson 2003, Luraghi 2010a: 149-150); moreover, the Hittite middle only marginally functions as a passive (Hoffner, Melchert 2008: 302-305).

5.1. Hittite media tantum

Neu (1968a: 52) lists the verbs in Table 6 as ‘original’ media tantum.

TABLE 6: MEDIA TANTUM

1.	*ā-*	'warm up'
2.	*ar-*	'stand'
3.	*es-*	'sit down'
4.	*iya-*	'walk'
5.	*isduwa-*,	'become known/apparent'
6.	*ki-*,	'lie'
7.	*kis-*,	'happen', 'become'
8.	*kist-*,	'go out, be extinguished'
9.	*pugga-,*	'be hated';
10.	*tarra-*,	'be capable of'
11.	*tugga-*,	'be visible'
12.	*war-*,	'burn'
13.	*ze-*,	'become cooked'

Neu further remarks that several of these verbs are 'stative', and mentions in particular n. 1, 2, 3, 4, 6, 10, 11 and 13. Later studies have shown that n. 3 is indeed a telic verb which means 'sit down', and always indicates a change of state in OH (see Boley 1993, Hoffner, Melchert 2008: 362 and Luraghi 2010a: 139).

A short digression is in order here regarding the verb *iya-* 'walk', and the use of 'stative' as an appropriate description for its actionality. This verb clearly indicates an activity; it does not indicate directional motion, but rather manner of motion, and is atelic. Hence, one might want to say that a better definition to cover this and other stative verbs in Table 6 should be 'atelic'. However, evidence for a distinction between telic and atelic verbs, whereby the class of atelic verbs includes more than just stative verbs, is scanty, and virtually limited to two verbs, *iya-* and *huwai-* 'run', possibly also indicating manner of motion.[14] Let us review some syntactic peculiarities of stative verbs.

[14] That *huwai-* is a manner of motion verb can be argued based on the fact that it never occurs with a direction expression in the directive case in Old Hittite; see Luraghi 2010a for further discussion. Note however that in later texts the same verb can certainly also indicate directional motion.

Stative verbs can be distinguished from other verbs because they do not have iterative (or progressive) forms in *-ske-*,[15] and based on the meaning of their participles. Hittite verbs have one participle, built with the suffix *-ant-*, which normally indicates a result: for example, the participle *panza* of the verb *pai-* 'go', which indicates directional motion and is telic, means 'gone'. The participle of stative verbs indicates a state, as in *tarranza* 'able' from *tarra-* 'be able, can', *aranza* 'standing' from *ar-* 'stand', and *asanza* 'being (there)' from *es-* 'be' (cf. the resultative meaning of a change of state verb such as *ak-* 'die': *akkanza* 'dead', not 'dying', or of a transitive verb such as *ep-* 'take, capture': *appanza* 'taken', 'prisoner').[16] Indeed, the participles of stative verbs basically have the same meaning of third person present indicative forms: compare a stative verb such *ar-* 'stand' with a telic one such as *pai-* 'go'. They display for example the following forms: *aranza* 'standing' with *arta* 'stands, is standing' vs. *panza* 'gone' with *paizzi* 'goes, is going'. The two manner of motion verbs mentioned above have participles that indicate an ongoing activity, similar to stative, rather than other verbs. Thus, the participle *iyanza* of *iya-* means 'walking', and is often used to indicate the sheep, as 'the walking one', and the participle *huwanza* from *huwai-* means 'running'. These two verbs offer a neat pattern; unfortunately, however, there is no

[15] Verb forms suffixed with *-ske-* are traditionally called 'iterative' even though this definition is unsatisfactory. Hoffner and Melchert (2008) regard the suffix as the marker of the imperfective aspect. What is relevant for stative/non-stative actionality, is the occurrence of *-ske-* forms in the periphrastic progressive with the auxiliary *dai-*, as in *memiskiwan dai-* 'start telling' (from *memai-* 'tell' + *-ske-*): clearly, stative verbs never occur in such periphrases.

[16] Often, participles of stative verbs have the same meaning of possible corresponding adjectives: thus, *pugganza* form *pugga-* 'be hated, be hateful' means 'hated, hateful'. The difference between these participles and participles of telic verbs is that the latter indicate a state achieved as the result of a change of state: *akkanza* 'dead' as a result of having died.

evidence for other atelic activity verbs to conform to it, possibly because of limitations in the written sources (other manner of motion verbs such as 'swim' are unattested). Hence I follow the tradition of Hittite grammatical description and treat these two verbs as stative. In any case, note that they do not show a special connection with voice, as *iya-* is a medium tantum, while *huwai-* is an activum tantum.

In addition, one can remark that *war-/ur-* 'be burning, be burned' is also normally atelic; it can indicate telicity, and mean 'burn up' in connection with the preverb *arha*. Similar to the verbs mentioned earlier, *war-* does not take the iterative suffix *-ske-* either (see further sec. 5.4 on the semantics of this verb). The verbs *ar-* 'stand' and *ki-* 'lie', especially in omens, are sometimes translated as indicating a change of state, in the sense of 'come to be in a certain position'; in addition, *ki-* often functions as lexical passive of *dai-* 'put, place' (see Friedrich 1960: 136, Hoffner, Melchert 2008: 305). However, the fact that a stative predicate can occur in a context in which our knowledge regarding the course of the events forces an inference that there has been a change of state does not *per se* change its basic actionality. Compare for example English occurrences such as the following:

(3.) *All of a sudden, he was silent.*

(4.) *He used to visit from time to time, then all of a sudden he was living here.*

The fact that one can find *be silent* or *live* in such contexts does not make them telic predicates: rather, our knowledge and beliefs regarding the normal course of events forces us to infer that there has been a change of state and that they indicate a result, but the result interpretation does depend on the meaning of these specific predicates, which remain stative (hence atelic). Regarding the Hittite verbs *ar-* and *ki-*, one can remark

that that the participle of *ar-* has the same meaning as third person indicative forms as illustrated above (the participle of *ki-* is not attested); in addition, they do not occur in periphrastic constructions with *dai-* and have no *-sk-* forms. For these reasons, I do not think there is enough compelling evidence for considering them both atelic and telic.

Finally, there is no agreement on the actionality of *ā-* and *ze-*. The verb *ā-* is considered stative by Neu (1968a, b) and Oettinger (1979: 514); *HED* and Kloekhorst (2008) translate it as 'be warm', thus also accepting this interpretation. In contrast, according to *HW s.v.* the verb indicates change of state and always means 'become warm' ('warm werden, heiss werden'). Neu (1968a, b) and Oettinger (1979: 515) also include *ze-* among stative verbs. Neu glosses it as 'kochen, gekocht/gar sein', in much the same way as Kloekhorst (2008: 1033), who translates 'to cook (intr.), to be cooked', suggesting that the verb can have both a stative ('be cooked') or a change-of-state ('cook') meaning. The absence of *-sk-* forms favors a stative interpretation for both verbs; however, contexts of occurrence can be stretched in the translation as to fit either interpretation, depending on one's theory.

Not all the above verbs are stative: in addition to *es-* 'sit down', which always indicates a change of state, *kis-* 'become' is telic and also indicates a change of state. Indeed, with many other verbs middle voice is not connected with stativity, as I discuss in the next section.

5.2. Active/middle alternation

In sec. 4.1 we saw that, in the case of some verb pairs, valency alternation is connected with voice alternation. Indeed, this connection can also be found with a number of other verbs, which I list below in Table 7 ('intransitive' in Tab. 7 always indicates change-of-

state verbs).

TABLE 7: ACTIVE/MIDDLE ALTERNATION

		meaning	active	Middle
1.	*harp-*	split	transitive	intransitive
2.	*irha-*	finish	transitive	intransitive
3.	*lazziya-*	prosper, flourish/set straight recover (only mid.)	transitive	intransitive from OH/OS
4.	*luluwai-*	survive/sustain	transitive from OH	intransitive from OH
5.	*marriya-*	melt down/melt	transitive from OH/NS	intransitive from OS
6.	*nai-*	turn	transitive from OS	intransitive from OS transitive NH
7.	*pars-*	break	transitive	transitive / intransitive from OH/NS
8.	*suwai-*	fill	transitive	intransitive
9.	*zinna-*	finish	transitive/ intransitive	intransitive

While some degree of lability affecting forms of both voices might blur the picture, a clear pattern emerges, whereby verbs that encode valency alternation through voice are all telic, in contrast with verbs that build *-nu-* causatives, which may be telic or atelic. Considering that the media tantum listed in Tab. 6 are by the most part stative, and that many of them have *-nu-* causatives, one could even discern an original function of derivational causatives as a device to add telicity and transitivity, as already indicated in sec. 4.1.

5.3. The diachrony of the Hittite middle

It has frequently been observed that verbs that inflect in both voices in Old Hittite original texts are not numerous. Indeed, clear attestations from OH/OS are available only for the three verbs in Table 8; as one can see in the glosses, middle voice is not connected to a single function even with these few verbs.

TABLE 8: VERBS WITH BOTH VOICES IN OH/OS

halzai-	'call out' (mid. impersonal)
nai-	'turn' (mid. reflexive)
suppiah-	'purify' (mid. reflexive)

(see Neu 1968a, Luraghi 1990: 135)

It may well be that this limited number is partly due to gaps in the written sources (Old Hittite original texts only cover a small percentage of the whole corpus); however, this cannot be the whole story. Several intransitive verbs which are only active in Old Hittite later also develop middle forms. Remarkably, the meaning remains the same, as in the case of *merr-/marr-* 'disappear', intransitive:

(5.) *man=kan* LU*MESHEDI=ma arha mirzi*

when PTC *M.* CONN PREV go.missing:PRS.3SG.ACT

'When the *MESHEDI* men go entirely missing ...' IBoT I 36 I 53 (OH**);**

(6.) *martari= war=at= kan nu= war=at= kan*

disappear:PRS.3SG.MID PTC 3PL.NOM PTC CONN PTC 3PL.NOM PTC

aszi

remain:PRS.3SG.ACT

"(Some) things get lost, (others) are left over." KUB XIII 35 IV 45-46 (NH).

(from Justus 2000)

Another intransitive verb that consistently displays active morphology, with only few middle forms occurring after the Old Hittite period, is *hark-* 'perish'. An example is given in (7), with a cause expression in the instrumental:

(7.) DUMU.LÚ.ULÙ.MEŠ DINGIR.MEŠ *-s=a kistantit harkiyanzi*

men gods:NOM and famine:INSTR perish:PRS.3PL.ACT

"Men and gods perish from hunger." KUB 17.10 i 17-18 (MH).

As I have already shown in sec. 3.3, this verb has two causatives: one, *harnink-* 'destroy', with active morphology from OH; the second, *harganu-* 'destroy', also with active morphology, is from NH. The latter causative builds a periphrastic passive with the participle and the verb 'be', as shown in (8):

(8.) KUR.KUR.MEŠ ^{URU}*Hatti IŠTU* ^{LÚ}KÚR *arha harganuwan esta*

land H. by enemy PREV destroy:PTCP be:PRET.3SG

"The land of Hatti had been destroyed by the enemy." KBo 6.28 obv. 6 (NH).

Note that the meaning is virtually the same as the meaning of the periphrastic perfect of intransitive *hark-* in example (9):

(9.) *kuit IŠTU* ^{LÚ}KÚR-*ŠU hargan esta*

rel.NOM by enemy-its perish.PTCP be:PRET.3SG

"(The country) which has been destroyed by its enemy [or: 'has perished because of the enemy']." KUB 19.11 i 12 (NH).

Remarkably, even the basic intransitive verb can co-occur with an agent phrase and convey basically the same meaning as the middle of the causative. Note that in (10) *harak-* has middle morphology, with no discernible difference from the meaning of active forms:

(10.) *ŠA* ^{LÚ}KÚR KUR.KUR-*TIM Labarnas kissaraz harkiyattaru*

of enemy lands L.:GEN hand:ABL perish:IMPER.3PL.MID

"May the enemy lands perish at Labarnas' hands" KUB 57.63 ii 6-8 (NH).

Similar to the text quoted in example (6), this text is also from New Hittite: as in the case of *merr-*, the verb *hark-* has intransitive active forms, and indicates an uncontrolled event. Only at a late stage are middle forms of both verbs also attested, which exhibit the same meaning as the active.

Lability of middle forms of some verbs also develops mostly after the Old Hittite period. In particular, at a late stage transitive middle forms also appear, as in the case of *nai-* 'turn'. In example (11), *nai-* is active and transitive; in (12), a text from an omen, the middle indicates change of state, and in (13) the middle is transitive:

(11.) *namma=an= kan* IGI.ḪI.A-*wa ANA* KUR ^{LÚ}KÚR *andan neianzi*

then 3SG.ACC PTC eyes to country enemy toward turn:PRS.3PL.ACT

"Then they turn it (with its) eyes toward the land of the enemy." KUB 7.54 iii 13-14;

(12.) *kes= kan neiaddat*

k.:NOM PTC turn:PRT.3SG.MID

"The *k.*-part of the leaver turned." KUB 16.16 obv. 22 (NH);

(13.) *n= ašta artartin neiari*

CONN PTC *a.*:ACC turn:PRS.3SG.MID

"He turns up the *a.*-plant." KUB 9.4 iii 30 (NH).

Remarkably, it is not always possible to discern a diachrony of active vs. middle

intransitive forms. The verb *maus-* 'fall', for example, is inflected in both voices, and is only intransitive, that is, it always indicates a spontaneous event. As there are no occurrences that date back to texts in OS, one cannot understand whether middle forms are later, as in the case of *merr-* (see *HED* and *CHD s.v.*).

Another important issue regarding the OH middle is constituted by the occurrence of a number of verbs whose middle forms are exclusively active, including some media tantum, as *parsiya-* 'break' and *tuhs-* 'cut (off)'. Both verbs also have active forms, none of which attested in texts in OS; in addition, at a later period some of their middle forms are intransitive, that is, both display some degree of lability, at least for the middle, similar to *nai-* as reviewed above. It is not easy to evaluate the evidence provided by these verbs, even though one must add that transitive verbs occur among media tantum in other ancient IE languages as well. The association of the middle voice with uncontrolled events seems to be falsified by the existence of such transitive media tantum. Note however that, as I have already pointed out above, some verbs that indicate uncontrolled events are typically active in the IE languages: this does not alter the fact that the encoding of controlled events is associated with active voice, and that most media tantum, on the contrary, indicate uncontrolled events, either states or change of state.[17]

5.4. The Hittite middle beside media tantum

[17] Much more could be said on the diachrony of the Hittite middle voice, including morphological developments such as the distribution of forms ending in *-ri* vs. form without *-ri*, and the possible difference between *-a(ri)* and *-ta(ri)* type of forms, but this important issues go beyond the scope of the present paper. I refer the interested reader to Kloekhorst (2008: 150-152) for a recent discussion and further references.

As shown in Table 8, different verbs or verb forms in the middle can have different meanings. In this section, I illustrate those that are not connected to valency alternation as discussed thus far.

In the first place, third person singular middle forms can be impersonal. An example is *akkiskittari*, middle of the verb *akk-* 'die', usually only inflected in the active, which can be translated as 'there is dying', 'one (impers.) dies':

(14.) *nu= kan INA* ŠÀ KUR ^{URU} *hatti apezza* UD.KAM-*az akkiskittari*
CONN PTC in field land H. DEM.ABL day:ABL die:PRS.ITER.3SG.MID
"In the inner part of the Hatti country many people die from that day." KUB 14.14+ obv. 30.

Reflexive middles are also attested, even though they are most frequently accompanied by the reflexive particle *-za*. The examples below show middle forms of the verb *suppiahh-* 'purify' with reflexive meaning: in the first occurrence the verb is alone, in the second the reflexive particle also occurs.

(15.) *it* *suppiahhut*
go:IMPER.2SG purify:IMPER.2SG.MID
"Go, purify yourself!" KBo 3.16 iii 8;

(16.) *nu= za* ^{D}U *suppiahhut*
CONN REFL weather god purify:IMPER.2SG.MID
"Weather god, purify yourself!" KBo 15.30 iii 5.

To a limited extent, middle voice could encode reciprocal, as shown in example

(17):

(17.) *kinun=a= wa ehu nu= wa zahhiyawastati*
Now=PTC=PTC come CONN=PTC fight:PRS.1SG.MID
"Come on now, let's fight!" (i.e. "let's fight against each other") Kbo 3.4 ii 13.

This use is marginal, as reciprocal was most often expresses with the repletion of the numeral 'one', of the demonstrative, or with the particle *-za*, which also often accompany the infrequent reciprocal middles.

As already remarked, passive usage of the middle is infrequent. An example is the following:

(18.) *n= asta* MUL-*as nepisaz katta mauszi* KUR-*yas* A.ŠÀ
CONN PTC star:NOM sky:ABL down fall:PRS.3SG.ACT country:GEN field
kuras IZI-*it* *warnutari*
slice:GEN fire:INSTR burn:PRS.3SG.MID
"When a star falls down from the sky, the field of the country will be burned by fire." KUB 8.25 i 3 (NH).

The verb *warnutari* is a middle form of the causative of *war-* 'be burning, be burned'. Its meaning is similar to the meaning of the basic verb: indeed, *-nu-* causatives are commonly regarded as fulfilling the function of active counterparts of stative media tantum (Neu 1968a: 53). Compare example (18) with (19):

(19.) EGIR-*ŠU=ma* SILÁ *ambassi warani*

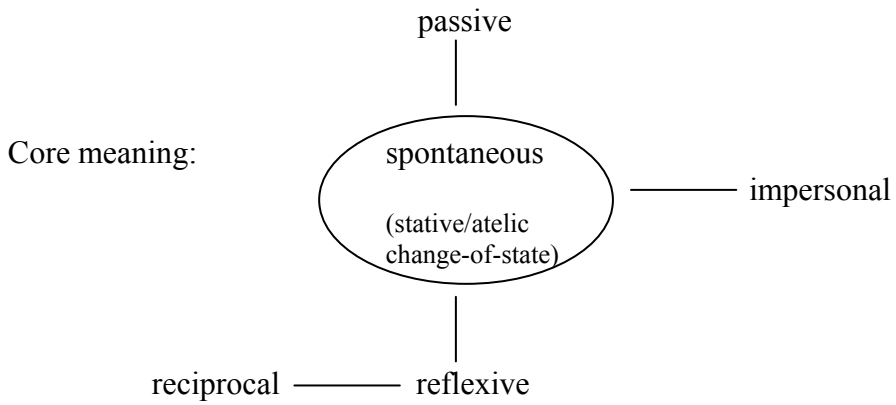
afterwards CONN lamb *a.*:DAT burn:PRS.MID.3SG

"Thereafter the lamb is burned at the *ambassi* [a kind of altar]." KUB 29.4 iii 58 (NH).

Remarkably, the lexical passive in (19) does not allow for an agent phrase, while the morphological passive in (18) does. In any case, even passive middles are rarely agented, while passive agents occur more frequently with periphrastic passives (see Hoffner, Melchert 2008; no examples date back to OH). It can also be added that the form *warnutari* is late, as it occurs in a New Hittite text. This seems to point to an ongoing development, whereby the grammatical voice opposition between active and middle was becoming increasingly connected with valency alternation.

In Figure 1 I give a graphic representation of the semantics of the Hittite middle voice. The core meaning, based on the semantics of media tantum, is constituted by the notion of uncontrolled or spontaneous. From this core meaning, semantic extensions lead to impersonal, passive, reflexive and reciprocal.

FIGURE 1: MEANING EXTENSION OF THE HITTITE MIDDLE



Before passing on to the discussion, it still needs to be stressed that the association of middle voice with verbs that indicate spontaneous/uncontrolled events is consistent only for stative verbs, which are very infrequently activa tantum (an exception is *huis*- 'live', a verb which is typically active in the Indo-European languages, cf. Benveniste 1966). Verbs that indicate change of state can equally well be media or activa tantum, especially in Old Hittite. Verbs that denote controlled events (actions) are usually active, in spite of a few exceptions constituted by transitive media tantum such as those mentioned in sec. 5.3.

6. An Indo-European perspective on Hittite basic valency

Based on the data reviewed above, one can safely say that Hittite is a highly transitivizing language. Transitivizing strategies apply to all types of intransitive verbs, but seem to be especially relevant for stative ones. Indeed, with change-of-state verbs another pattern of valency alternation also exists, whereby the middle voice is intransitive, and the active voice is transitive. In the next sections I review the data which I have analyzed above in the framework of valency alternation in some other ancient Indo-European languages.

6.1. Stative and change-of-state verbs

Voice alternation applies to a limited number of Hittite verbs. In the first place, especially in Old Hittite, many, perhaps most, intransitive verbs are either media or activa tantum. In addition, several transitive verbs have virtually no middle forms: this

certainly owes to the fact that the Hittite middle does not encode self beneficient and encodes passive voice only to a limited extent. The basic function of the middle seems to be to indicate uncontrolled events, often, but not only, states. For stative verbs and for adjectives, a frequent pattern features a three-fold opposition, whereby the stative verb was basic (or it was an adjective), and had both an change-of-state (fientive) and a transitive counterpart. Such pattern is remindful of similar patterns attested in other ancient Indo-European languages. In the first place, as I have already remarked in sec. 2, Nichols (2006) points to the existence of a three-fold correspondence concerning Old Russian stance verbs.[18] More relevant here, however, is the three-fold pattern attested in Gothic and to some extent in Old Norse, whereby both change-of-state and causative verbs can be derived from adjectives, by means of two suffixes: *-na-* for change-of-state and *-ja-* for causative, as in *fulljan* 'fill' - *fullnan* 'become full' from *fulls* 'full', *managjan* 'increase (tr.)' - *managnan* 'be plentiful, increase (intr.)' from *manags* 'many' (see Krahe, Meid 1967). Such derivatives are sometimes also built from stative verbs, as in *wakan* 'be awake', *wakjan* 'wake up (tr.), *waknan* 'wake up (intr.)' (these three verbs are only found in compounds).[19] Note that in Gothic the middle voice is attested, but it only has passive meaning; in Old Russian, as in the other Slavic

[18] As an example, Nichols mentions the verb **sed-e-* 'sit' (stative) vs. **sed-* 'sit down' and **sad-i-* 'let sit'. Leaving the causative form aside, one can note that the stative verb is indeed derived from the change-of-state one by addition of the suffix **-e-* from PIE **-ē-*, which was typical of stative verbs in ancient Indo-European languages as in e.g. Latin *sedeō* 'I sit, am sitting' from **sed-ē-*, exactly as the Slavic verb.

[19] The suffix *-na-*, which is etymologically related to causative suffixes in the other Indo-European languages, is not limited to adjectives, but can also be attached to verbs, including transitive ones, thus functioning as a detransitivizing device. See Ottósson (2009) for a thorough treatment of *-na-* suffixed verbs in early Germanic languages.

languages, it had disappeared. I will return on the possible significance of this development in section 6.2; here, I would like to remark that the three instances of stative / change-of-state / transitive opposition instantiated by Old Russian (limited to the verbs surveyed by Nichols 2006), Hittite and Gothic present some differences. In Old Russian, apparently the change-of-state verb was basic, while in Hittite and Gothic the basic form was a stative verb or an adjective. In addition, the Hittite and the Gothic suffixes involved in derivation are different; indeed, Gothic *-na-* and Hittite *-nu-* are etymologically related, but the Gothic suffix changed its meaning from the original causative into change-of-state.[20]

A closer parallel to Hittite is given by Latin fientive derivates in *-ēsc-* as in *rubēsco* 'I blush' from *ruber* 'red' or *senēscō* 'I grow old' from *senex* 'old'. Watkins (1971) showed that Latin *-ēsc-* corresponds to Hittite *-ess-* of fientive deadjectival verbs in sec. 3.2. As I have shown there, in a few cases a stative verb exists alongside such verbs and beside the adjective. This pattern is much more frequent in Latin, in which verbs as those shown above are accompanied by stative counterparts: *rubeō* 'I am red, blushing', *seneō* 'I am old, have grown old'. On the other hand, while factitive verbs in *-ahh-* are very productively derived from adjectives in Hittite, the Latin cognate suffix *-ā-* is less frequent; an example is *novāre* 'renew' from *novus* 'new', cf. Hittite *newahh-* 'renew'.

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[20] The causative meaning of the nasal suffix is attested across several other Indo-European languages, as for example Baltic. In Lithuanian, it can be used both with adjectives and with verbs: *báltas* 'white' vs. *báltinti* 'whiten'; *bùsti* 'wake up (intr.)' vs. *bùdinti* 'wake up (tr.)'. Note that Baltic has no traces of the Indo-European inflectional middle, which had been replaced by the reflexive middle at a stage preceding the first written sources. In much the same way as in Gothic, transitivizing strategies (through suffixation) constituted the most widespread pattern for valency alternation in the early languages, see Stang (1966).

is outside the scope of this paper: I mentioned the above evidence to show that, in spite of some differences, the tendency for intransitive verbs indicating spontaneous, or uncontrolled events to present a significant distinction between stative and change-of-state is clearly discernible, and, together with analogous data from Old Iranian and Old Indo-Aryan, points toward a PIE origin.

The transitivizing character of Hittite makes it similar to some modern, mostly eastern, Indo-European languages described in Nichols et al. (2004), such as Hindi, West Armenian, and to some extent Ossetic, as well as to earlier stages of nowadays possibly detransitivizing Indo-European languages, such as Russian and German. Based on this evidence and on the evidence reviewed above from several other ancient languages, it would be tempting to conclude that Proto-Indo-European was basically transitivizing (more evidence for transitivizing strategies is available from the ancient Indo-Iranic languages, i.e. the ancestors of Hindi and Ossetic). Indeed, this is often assumed: for example, according to Plank and Lahiri "From Indo-European to Proto-Germanic to contemporary German ... the story has been one of continuing transitivisation." (2009).

6.2. The middle voice

Obviously, any treatment of basic valency in PIE must take into account the function of the middle voice, an issue which is still debated. According to Benveniste (1966) the distribution of voice in PIE was lexical: verbs were divided into two conjugation classes, active and middle, based on their lexical meaning.[21] As we have seen above,

[21] For reasons of space, I am leaving completely out of consideration the issue of the Hittite *-hi* conjugation. Verbs in this inflectional class have been connected with the PIE perfect and/or middle

this is actually true of most verbs in Hittite. Moreover, even languages in which voice alternation is well established and the middle has developed into a real medio-passive attest to such an original situation, as for example Ancient Greek, in which some verbs developed active forms only later than middle forms (Delbrück 1900: 416-418).

Following this approach, one is led to reconstruct a stage at which voice was not a grammatical category in PIE, and active and middle were two morphologically different conjugations, most likely also displaying some semantic distinction, which however cannot be represented as the active vs. middle distinction in the ancient Indo-European languages. Possibly at a late PIE stage, some verbs started to be inflected in both conjugations, thus originating the process that led to the development of a voice system. Remarkably, extension of either conjugations to some verbs originally belonging to the other must have relied on different semantic cores associated with the two conjugations. As this paper is intended as a description of basic valency orientation in Hittite, and does not aim at a reconstruction of PIE, I am not going to pursue this issue further here; however, from the preceding discussion, it follows that the semantic core associated with the two conjugations had to do with control (or lack thereof).

Indeed, in virtually all the ancient Indo-European languages at least some verbs are inflected in both voices, in much the same way as in Hittite. Given the high number of media and activa tantum, it is impossible to decide, even in the case of such verbs,

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(Rose 2006). Synchronically, verbs in the *-hi* conjugation cannot be considered as belonging to a semantically coherent and well defined class; they have both active and middle forms, and, apart from morphological aspects, nothing keeps them distinct from verbs in the other inflectional class, the *-mi* conjugation. However, if they really go back to the PIE middle, their separation from other media tantum in Hittite (and Anatolian in general) should be accounted for in any assessment of the PIE middle voice. Unfortunately, regarding the way in which these verbs came to constitute a separate group there is no consensus; see further Jasanoff (2003).

which voice is basic and which is derived, especially in view of the fact that verbs for which historical evidence is available attest to both developments. What seems quite clear, is that voice alternation was connected with basic valency, and more specifically that middle voice indicated spontaneous events, while active voice, in cases of alternating verbs, implied control.[22] As for languages in which the middle voice no longer existed, as Slavic and Germanic (with the exception of Gothic, in which, as noted above, it only had passive meaning), at least at an early stage,[23] derivational patterns developed further, thus continuing the PIE tendency toward using derivation, rather than inflection, to indicate basic valency.

In conclusion, one can safely say that the Hittite data add to the evidence for the transitivizing character of PIE, but also for the (perhaps rising) relevance of voice alternation in this respect. Voice alternation developed to varying extents in the different branches of the Indo-European language family; in some of them, notably Ancient Greek, Latin, and Sanskrit, it was clearly connected with valency alternation.[24]

[22] Again, the fact that this connection exists does not mean that the totality of active verbs indicated control and that the totality of middle verbs indicated lack thereof. As I have repeatedly remarked in this paper, some media tantum were transitive and some activa tantum denoted spontaneous event; however, the association of the two voices with control or lack thereof is clearly borne out by the vast majority of verbs.

[23] As well known, both Slavic and Germanic later acquired a reflexive middle. I am not going to discuss this change here; see Ottósson (2009) for Germanic and Cennamo (1993) for similar developments in Romance.

[24] Classical Greek, in which valency alternation is most often indicated by voice (Sausa 2011), also offers the best example of a middle voice conforming to the prototype described in Kemmer (1993) as shown in Allan (2003); that it can be considered indicative of the original function of the PIE middle voice is doubtful, see Hirt (1928: 127-128). Sanskrit also offers evidence for various typical meanings of the

It attests to a valency pattern which, when it emerged, was neither transitivizing nor detransitivizing: even in these languages, the number of media and activa tantum makes it clear that it is impossible to consider either voice as generally basic. Only at a later stage one can discern evidence for middle voice having become secondary with respect to active voice, and thus constituting a detransitivizing device.[25] Thus, voice alternation as indicated by active/middle alternation in the ancient Indo-European languages must be considered as attesting to indeterminate basic valency.[26]

7. Conclusion

middle, such as self beneficient; however, its connection with valency alternation is strongly limited by the extent to which derivational transitivizing strategies prevail (see Kulikov 2009).

[25] How this exactly happened should be the matter of detailed studies devoted to individual languages. Regarding Ancient Greek, Sausa (2011) suggests that as one would expect derived paradigms to be inflectionally marked, and marked paradigms usually present a lower degree of morphological elaboration with respect to unmarked (basic) ones, active voice is indeed basic already in Homer. (Sausa refers to inflectional markedness as defined in Croft 1993: 77-81). Following this approach, one can say that a detransitivizing pattern was emerging at this stage in Ancient Greek.

[26] Remarkably, in the typological literature the PIE middle is often considered a detransitivizing device, but this is incorrect, as pointed out in this section. Comrie (2006: 315) writes that "Proto-Indo-European had both productive causative and anticausative formations, ... the middle voice ... having inter alia the function of detransitivization." This is a misunderstanding, based on the assumption that active voice is basic with respect to the middle: while this is certainly the case for reflexive middles of many modern Indo-European languages, the fact that in some of them the reflexive middle has substituted for the synthetic middle, as in Romance and Greek, should not mislead. Reflexive middles may well have the same function of the ancient synthetic middle (and in some cases they do, as in Greek), but the parallel ends there.

In this paper, I have described valency alternation in Hittite. I have shown that this language was heavily transitivizing: in particular, transitivizing affixes were used for deriving active counterparts both from stative verbs (and adjectives) and from verbs that denoted uncontrolled change-of-state events. Many intransitive verbs which served as basis for causative derivation were also characterized by being inflected in the middle voice: most of them were media tantum. Among verbs that indicate an uncontrolled event, stative displayed a higher degree of affinity with the middle voice, as they were by the large majority media tantum, contrary to change-of-state verbs, which, especially in Old Hittite, could be either media or activa tantum. The close connection between the middle voice and stative verbs is also shown by the fact that no stative verb allows for voice alternation (an apparent exception is *ar-* 'stand', on which see above, sec. 4.2.1). On the other hand, change-of-state verbs, though infrequently, could also encode valency alternation through voice, whereby middle forms were change-of-state and active forms were transitive. Even though this pattern remained limited in Hittite, also on account of frequent (and apparently increasing) lability, it acquires significance when set in the framework of the evidence from other ancient Indo-European languages.

The ancient Indo-European languages, similar to Hittite, provide evidence for both transitivization and voice alternation as relevant devices to encode basic valency. Regarding voice alternation, it must be stressed that, as neither voice can be considered derived with respect to the other, such pattern attests to indeterminate basic valency instantiated by conjugation change. While languages with an indeterminate basic valency are not rare to judge from the sample used in Nichols et al. (2004: 162), conjugation change seems to be most infrequent. Nichols et al. (2004: 162) report of only 7.5 tokens out of a total of 1280.5. Note that conjugation change as defined by Nichols and associates is a kind of mixed-bag category, including not only languages

that "have sets of allomorphs for inflectional paradigms" but also "lexically determined theme vowels, extensions, and the like" (2004: 159). The only language in which this pattern is reported to occur more than once, Western Armenian, does not have sets of different endings, but different theme vowels for transitive and intransitive verbs. The intransitive theme vowel *-i-* goes back to an Indo-European detransitivizing suffix, which is also found in the Indo-Aryan passive (see Meillet 1936: 107-108; Kulikov 2009), so it is not clear whether the relevant verb pairs provide a good example of an indeterminate pattern, even at the stage of the modern language.

In the light of these data, the Indo-European middle as a means for coding valency alternation through conjugation change can be said to constitute a typological rarity. From the evidence discussed in the preceding sections, it follows that the coding of valency alternation was not the only function of the middle voice, and not even the most relevant: languages that heavily rely on voice as a valency changing device have a highly elaborate middle voice, with an array of other functions such as passive, self beneficiary, reciprocal, reflexive etc. Crucially, these meanings seem to have developed at later stages from the original core meaning connected with ancient media tantum, that is, uncontrolled/spontaneous.

Hittite also points toward the existence of a distinction between two types of verb indicating spontaneous events, stative and non-stative or change-of-state, and the other ancient Indo-European languages provide more evidence for this state of affairs. The middle voice was frequently a hallmark of stativity: indeed, basic stative verbs presented valency alternation only in connection with derivational transitivization; they were often also paired by derivational change-of-state counterparts. Voice alternation apparently had a role in valency alternation only in connection with verbs that had no stative basic forms: such verbs, which indicated change of state, may well have been the

first ones to be inflected in both voices, perhaps in late PIE, thus opening the way for the grammaticalization of voice as grammatical category.

References

Allan, Rutger 2003. *The Middle Voice in Ancient Greek: A Study of Polysemy*. Amsterdam: Brill.

Benveniste, Emile 1966. *Problèmes de linguistique générale*, vol. 1. Paris: Gallimard.

Boley, Jacqueline 1993. *The Hittite Particle -z/-za*. Innsbruck: Institut fur Sprachwissenschaft.

Cennamo, Michela 1993. *The reanalysis of reflexives: A diachronic perspective.* Napoli: Liguori.

CHD = The Chicago Hittite Dictionary, Chicago: The Oriental Institute of the University of Chicago, 1980-.

Comrie, Bernard. 2006. Transitivity Pairs, Markedness, and Diachronic Stability. *Linguistics* 44:2.303–318.

Croft, William. 1993. *Typology and Universals*. Cambridge: Cambridge University Press.

Delbrück, Berthold 1900. *Vergleichende Syntax der indogermanischen Sprachen*, Strasburg: Trübner.

Friedrich, Johannes 1960. *Hethitisches Elementarbuch, 1. Teil: Kurzgefaßte Grammatik*. 2nd ed. Heidelberg: Winter

Gelderen, Elly van. 2010. Valency Changes in the History of English. *Journal of Historical Linguistics* 1/1: 106-143.

Haspelmath, Martin 1987. *Transitivity alternations of the anticausative type.* Universität

zu Köln (Arbeitspapiere N.F. 5).

Haspelmath, Martin 1993. Change-of-state/causative verb alternations. In B. Comrie, M. Polinsky (eds.) *Causatives and Transitivity*, Amsterdam/Philadelphia: Benjamins, pp. 87-120.

HED = Hittite Etymological Dictionary, Berlin-New York-Amsterdam: Mouton-de Gruyter, 1988-.

Hirt, Hermann 1928. *Indogemanische Grammatik, 4. Teil 4: Doppelung, Zusammensetzung, Verbum.* Heidelberg: Winter.

Hoffner, Harry A. and H. Craig Melchert 2008. *A Grammar of the Hittite Language*. Winona Lake: Eisenbrauns.

HW = Friedrich, Johannes 1952. *Hethitisches Wörterbuch: Kurzgefaßte kritische Sammlung der Deutungen hethitischer Wörter.* 1st ed. Heidelberg: Winter.

Jasanoff, Jay 2003. *Hittite and the Indo-European Verb.* Oxford/ New York: Oxford University Press.

Josephson, Folke 2003. The Hittite reflexive construction in a typological perspective. In B. L. M. Bauer, G. Pinault (eds.) *Language in Time and Space. A Festschrift for Werner Winter on the Occasion of his 80th Birthday*. Berlin/New York: Mouton de Gruyter, pp. 211-232.

Justus, Carol 2000. The Age of the Indo-European Present -R Person Endings. *Proceedings of the 11th UCLA Indo-European Conference*. *JIES Monograph* 35, 267-292.

Kemmer, Suzanne. 1993: *The Middle Voice.* John Benjamins Publishing Company, Amsterdam/Philadelphia.

Kloekhorst, Alwin 2008. *Etymological Dictionary of the Hittite Inherited Lexicon.* Leiden: Brill.

Krahe, Hans and Wolfgang Meid 1967. *Germanische Sprachwissenschaft*. Berlin: De Gruyter.

Kronasser, Heinz 1966. *Etymologie der hethitischen Sprache*, Wiesbaden: Harrassowitz.

Kulikov, Leonid 2009. Valency-Changing Categories in Indo-Aryan and Indo-European: A Diachronic Typological Portrait of Vedic Sanskrit. *Multilingualism*: *Proceedings of the 23rd Scandinavian Conference of Linguistics*, ed. by Anju Saxena & Åke Viberg, 75–92. Uppsala: Uppsala Universitet.

Luraghi Silvia, 1990. *Old Hittite Sentence Structure*. London-New York, Routledge.

Luraghi, Silvia, 1993. I verbi in *-nu-* e il loro valore causativo. In O. Carruba, a cura di, *Per una grammatica ittita*, Pavia, Iuculano, 153-180.

Luraghi, Silvia 2010a. Transitivity, intransitivity and voice in Hittite. In *Indoevropejskoe jazykoznahie i klassiceskaja filologija* –XIV, vol. 2. St. Petersburg, Nauka, 133-154.

Luraghi, Silvia 2010b. Experiencer predicates in Hittite. In R. I. Kim, E. Rieken, N. Oettinger, M. J. Weiss, eds., *Ex Anatolia Lux.* Beech Stave Press, Ann Arbor, 249-264.

Mallory, James and Douglas Q. Adams 2006. *The Oxford introduction to Proto-Indo-European and the Proto-Indo-European world*. Oxford: Oxford University Press.

Meillet, Antoine 1936. *Esquisse d'une grammaire comparée de l'arménien classique*. Vienna: Imprimerie des PP. Mekhitharistes.

Narogg, Heiko 2009. Synchrony and Diachrony in Transitivity Pairs. A paper delivered at ALT 8, Berkeley, July .

Neu, Erich, 1968a. *Das hethitische Mediopassiv und seine indogermanischen Grundlagen*, Wiesbaden, Harrassowitz.

Neu, Erich 1968b. *Interpretationen der hethitischen mediopassiven Verbalformen*. Wiesbaden: Harrassowitz.

Nichols, Johanna 2006. Stance verbs and the linguistic Europeanization of the Slavs**.** Paper read at the SLS Inaugural Meeting

Nichols, Johanna 2007 Lexical Valence Typology project: Instructions for elicitation of causative-noncausative verb pairs. http://lingweb.eva.mpg.de/fieldtools/pdf/Johanna-Nichols/TransDetrans_elic.pdf

Nichols, Johanna, David Peterson and Jonathan Barnes. 2004. Transitivizing and detransitivising languages. *Linguistic Typology* 8.2: 149-211.

Oettinger, N. 1979. *Die Stammbildung des hethitischen Verbums.* Nurnberg: Hans Carl

Oettinger, N. 1998. Skizze zur Funktion der Reduplikation im Hethitischen. In S. Alp and A. Suel. eds. *Acts of the IIIrd International Congress of Hittitology* edited by Ankara: Uyum Ajans, 451–56.

Ottosson, Kjartan 2009. The Anticausative and Related Categories in the Old Germanic Languages. Ms, University of Oslo

Plank, Frans and Aditi Lahiri. 2009. Microscopic and macroscopic typology: Basic valence orientation. Paper read at the 8th ALT Meeting, Berkeley, July 2009.

Rose, Sarah R. 2006. *The Hittite* -hi/-mi *conjugations. Evidence for an early Indo-European voice opposition*. Innsbruck: Institut für Sprachen und Literaturen der Universität Innsbruck.

Šackov, A. B. 2008. Chettskie glagoly s suffiksom -nu-. In *Indoevropejskoe jazykoznahie i klassiceskaja filologija* – XII Sankt Petersburg: Nauka, 471-474**.**

Sausa, Eleonora 2011. *L'orientamento della valenza in greco omerico.* MA Thesis, Pavia.

Stang, Chrristian 1966.*Vergleichende Grammatik der baltischen Sprachen*. Oslo-Bergen-Tromsø: Universitetsvorlaget.

van Brock, Nadia 1964. Les thèmes verbaux à redoublement du hittite et le verb indo-européen, *Revue Hittite et Asianique* 22/75, 119-165.

Watkins, Calvert 1971. Hittite and Indo-European Studies: The denominative statives in **-e-*. *Transactions of the Philological Society* 70/1, 51-93.

Edition of Hittite texts

KBo = *Keilschrifttexte aus Boghazköi*, Leipzig, Berlin 1916-

KUB = *Keilschrifturkunden aus Boghazköi*, Berlin 1921-