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Table of Contents

Basic valency orientation, the anticausative alternation, and voice in PIE

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1. Introduction

In this paper, I discuss basic valency in the ancient IE languages, and its relation with the PIE voice system. I show that the middle voice played a role in the anticausative alternation, and suggest that this was the original function of voice alternation. Before that, the distribution of active and middle verbs was arguably lexical. The paper is organized as follows. In sec. 2 I discuss basic valency as defined in NICHOLS/PETERSON/BARNES 2004, and its connection with the anticausative alternation. Then I review the data from ancient IE languages, and show how their basic valency can be defined (sec. 3). In sec. 4 I discuss the relation between valency, the anticausative alternation, and lexical aspect, and in sec. 5 I show how the anticausative alternation and lexical aspect relate with the IE middle voice. Sec. 6 contains the conclusion.

2. Basic valency orientation

2.1 Valency orientation and the anticausative derivation

NICHOLS/PETERSON/BARNES 2004 propose that languages can be classified based on their basic valency and its possible orientation. Basic valency relates to the way in which events that can be conceived as happening spontaneously (as in *The windowpane broke*) or as being brought about by some external entity (as in *The boy broke the windowpane*) are encoded.

This type of alternation is also known as anticausative or causative-inchoative (HASPELMATH 1987, 1993, NEDJALKOV 1969), and it typically involves transitivity alternations: verbs that refer to spontaneous events are mostly intransitive, while verbs that refer to externally caused events are transitive, as in English *die* vs. *kill*. This pair of verbs is also an example of non-oriented valency in the terms of Nichols and her associates, as the two verbs are morphologically simple, unrelated to each other, and there is no way in which one can be said to be more basic than the other. Notably, the lexical strategy instantiated by the English verb pair is the one most readily adopted for this couple of meanings cross-linguistically.

Often languages display morphological, rather than lexical, strategies for the encoding of the alternation. When this happens, it may be the case that either the transitive verb is morphologically more complex than its intransitive counterpart or the other way around. Such different cross-linguistic tendencies have been observed based on a sample of 21 languages in HASPELMATH 1993. Using a larger sample (80 languages), NICHOLS/PETERSON/BARNES

2004 further refine the classification, and distinguish between oriented and non-oriented strategies. The former include:

(a) Transitivizing languages: basic form is intransitive; transitive form is morphologically more complex. Augmented correspondences; example: Nanai (Tungusic)
(special case: the basic form is an adjective)

(b) Detransitivizing languages: basic form is transitive; intransitive form is morphologically more complex. Reduced correspondences; example: Russian (Indo-European)

Non-oriented strategies include the following types:

(c) Undetermined correspondence:
Suppletion (*die/kill*)
Ambivalent (labile) (*break/break*)
Conjugation class change

(d) Neutral correspondence:
Ablaut (*fall/fell*)
Double derivation (equipollent)
Auxiliary change (*ho affondato/è affondato* 'sink')

Spontaneous:	'learn'	'fear'	'hide' (go into hiding)
Caused:	'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'*

Table 1: Verb pairs in Nanai and Russian (Adapted from NICHOLS/PETERSON/BARNES 2004: 151)

Transitivity here must be understood as a semantic rather than syntactic concept, following HOPPER/THOMPSON 1980, as the sample includes among verbs indicating spontaneous events items such as *eat* that are syntactically transitive in many languages. NICHOLS/PETERSON/BARNES 2004 acknowledge this possible terminological problem, and use the terms plain vs. induced rather than intransitive vs. transitive. HASPELMATH 1993 uses the terms inchoative and causative instead.

As noted above, the relevant verb pairs refer to events that can be conceived as happening spontaneously or as being brought about by an external entity. As Haspelmath highlights by using the term 'inchoative' for verbs denoting spontaneous events, both types of event are telic and imply a change of state. Indeed, HASPELMATH 1993 carried out his study on 31 verb pairs, which do not include stative verbs. Remarkably, however, NICHOLS/PETERSON/BARNES 2004 also include in their cross-linguistic survey plain verbs that indicate states, rather than

change of state, and adjectives fulfilling the same function of plain verbs as derivation base. Concerning this issue, they write:

> Among other cross-linguistic differences, we found that verb pairs, and languages, vary as to whether it is stative or inchoative plain verbs that are most often formally paired with induced verbs: … induced 'straighten' to 'be straight' or 'become straight' ... Since it is the valence-related pairing that is at issue in this study, and not aspect categories, we sought pairings with either stative or inchoative plain members, whichever could be found. (NICHOLS/PETERSON/BARNES 2004: 156–157).

As I will discuss in sec. 4, there is in fact a relevant semantic difference between deriving causative or induced verbs from stative or from telic verbs, which in IE languages crucially relates to the function of the middle voice (sec. 4 and 5).

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	
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

Table 2: Verb pairs for basic valency test

Table 2 contains the verb pairs used in NICHOLS/PETERSON/BARNES 2004 along with their proxies, i.e. verbs that can be used as an alternative, as indicated in NICHOLS 2007. Animate verbs are those whose subjects tend to be animate, while inanimate verbs tend to have inanimate subjects. Cross-linguistically, transitivizing strategies tend to prevail with inanimate verbs, while animate verbs tend to feature detransitivizing strategies more often.

This tendency follows from the universal preferred lexicalization principle (NICHOLS/PETERSON/BARNES 2004: 172; cf. HASPELMATH 1993): "Other things being equal, languages prefer to lexicalize as basic verbs that typically select animate subjects."

2.2 Establishing basic valency in IE languages

NICHOLS/PETERSON/BARNES' 2004 sample includes a number of modern IE languages. In particular, out of 80 total languages, they analyzed the following:

- Russian Detransitivizing
- German Detransitivizing
- Modern Greek Detransitivizing/Undetermined (suppletion, lability)
- West Armenian Transitivizing
- Hindi Transitivizing
- Portuguese Undetermined (suppletion)
- Ossetian Undetermined (lability)/Transitivizing

The frequency of labile verbs in certain languages somewhat blurs the picture, still one can detect an areal distribution, whereby western languages tend to be detransitivizing, while eastern languages tend to be transitivizing. If one considers the strategies employed by the western languages in the sample, one finds that languages such as German and Russian make use of the so-called reflexive middle, as shown above in Tab. 1.

In a recent paper, PLANK & LAHIRI 2015 argued in favor of the opposite view, whereby German is rather to be considered transitivizing. Along with verb pairs which adopt a detransitivizing strategy, relying on the reflexive middle, such as *setzen* 'set' vs. *sich* setzen 'sit down', *ärgern* 'make angry' vs. *sich ärgern* 'become angry', they mention verb pairs such as *liegen* 'lie' vs. *legen* 'lay' or *fallen* 'fall' vs. *fällen* 'fell'. This last verb pair is considered undetermined and non-oriented by Nichols and her associates. However, Plank and Lahiri show that even synchronically ablauting verbs can be shown to be derived. Among other differences, intransitive verbs are strong, while transitive verbs are weak, they are historically derived from intransitive verbs and, according to the authors, they are also felt as derived synchronically by speakers. Plank and Lahiri further note that even in verb pairs considered in NICHOLS/PETERSON/BARNES 2004, the choice of the intransitive member is sometimes arbitrary: thus, rather than contrasting *setzen* with *sich setzen*, one could contrast it with *sitzen* 'be seated'. Note that the latter verb is stative: this remark uncovers again the inconsistency already pointed out in sec. 2 in singling out the plain member of verb pairs. (Remarkably, derivation of a causative ceased to be productive in German long ago, while derivation of an anticausative by the reflexive is productive: this seems to show that Plank and Lahiri's argument is fallacious. Note however that, even if Modern High German is to be considered transitivizing, it remains true that basic valency orientation may be assessed differently depending on the verb pair one chooses.)

3. Basic valency in some ancient IE languages

In this section, I review valency alternations in select ancient IE languages. I discuss evidence from Homeric Greek, Hittite, Gothic, and Sanskrit.

3.1 Homeric Greek

Basic valency and the anticausative alternation in H(omeric) G(reek) has been described by SAUSA 2016, who found that its most frequent instantiation is through voice alternation, whereby the middle voice indicates spontaneous events, while the active has a causative meaning. In particular, voice alternation is the unique or one possible strategy for four animate and seven inanimate verb pairs with a total of 11 out of 18 verb pairs. Sausa considers verb alternation as a detransitivizing strategy: this implies considering the active voice as basic and the middle voice as morphologically derived. This may well be the case for HG (see also ALLAN 2003), however, note that voice opposition was still on the rise: indeed, various Homeric media tantum also show active forms in Classical Greek, while several verbs that are only active in Homer later develop a middle. This indicates that, whatever the synchronic status of the voice opposition in HG might have been, its starting point in PIE must not have been one at which a full-fledged voice opposition was available.[1] Note further that animate verbs show a less clear orientation: HG features a number of undetermined correspondences, mostly due to suppletion with animate verbs (a case in point is the *die/kill* pair, Gr. *thnḗskō/kteínō*). On the other hand, inanimate verbs are more consistent in encoding the anticausative alternation via voice alternation.

3.2 Hittite

In LURAGHI 2012, I showed that the Hittite data points toward a completely different situation. Hittite is a consistently transitivizing language, with so-called *-nu-* causatives providing the induced counterpart of morphologically basic plain verbs. This pattern is featured by four animate verb pairs and seven inanimate among those indicated by NICHOLS 2007, and by numerous other verb pairs, both animate and inanimate. Examples are *ze-/zanu-* 'boil (intr./tr.)', *werite-/weritenu-* 'fear/frighten', *pukka-/puqqanu-* 'be/make hateful', *tarra-/tarranu-* 'be able to/make powerful' and many others (see LURAGHI 1993, 2012). As the four verb pairs mentioned, many verbs with *-nu-* correspondences are stative (see the discussion in LURAGHI 2012: 16 on the actionality of *ze-*).

Notably, the anticausative alternations can be encoded by voice alternation in Hittite too, though to a limited extent. Among the verb pairs indicated in NICHOLS/PETERSON/BARNES

[1] Remarkably, with original media tantum the active voice has causative meaning, and the active/middle opposition instantiates the anticausative alternation. With original activa tantum, on the other hand, the middle voice has passive meaning, that is, it indicates controlled, rather than uncontrolled events.

2004, only two encode the alternation through voice, *munnai-* 'hide' (act.) / 'go into hiding' (mid.) and *duwarna-* 'break' tr. (act.') / intr. (mid.). The former is an animate verb, the latter an inanimate one; the plain member of the pair indicates in both cases a telic (change of state) event. Other verbs that encode the causative alternation through voice are not numerous. They mostly tend to have inanimate subjects, and all of them indicate telic events. They include: *harp-* 'split', *irha-* 'finish', *lazziya-* 'prosper, set straight', *luluwai-* 'survive/sustain', *marriya-* 'melt', *nai-* 'turn', *pars-* 'break', *suwai-* 'fill', *zinna-* 'finish' (see LURAGHI 2012: 17 for details and chronology). In LURAGHI 2012, I tentatively suggested that voice alternation in Hittite be considered as an undetermined pattern, for reasons that I will discuss in sec. 5.

Among verbs that encode the causative alternation with *-nu-* derivation, we find some telic, change of state verbs, but we also find a sizable number of stative verbs, as those mentioned above. Thus, we see a clear difference in Hittite between verbs pairs that have augmented derivation and are transitivizing, and verbs that feature voice alternation: while the former can have both stative and non-stative (telic, change of state) plain members, the latter only allow telic verbs as plain members.

3.3 Gothic

Since the earliest attestations, Germanic languages do not display a middle voice: only Gothic has an inflectional passive that, however, does not fulfill the typical functions of the IE middle voice, but only has passive meaning. Modern Germanic languages mostly rely on the reflexive middle typical of German (see sec. 2.2). English, which does not have a reflexive middle due to early loss of pronominal clitics, has a high number of labile verbs, and lability is an increasing trend in other Germanic languages as well.

Gothic does not feature the reflexive middle typical of other Germanic languages, which was likely a later development. The anticausative alternation is encoded by the causative suffix *-ja-* (cf. SUZUKI 1989; OTTOSSON 2013), with fourth class *-na-* verbs indicating spontaneous, change of state events (BRAUNE & EBBINGHAUS 1981: 125). Typical verb pairs that instantiate the anticausative alternation are: *drobjan* 'stir up' – *drobnan* 'become restless'; *usgaisjan* 'frighten' – *usgeisnan* 'be astonished'; *afhwapjan* 'choke' – *afhwapnan* 'be choked'; *fraqistjan* 'destroy' – *fraqistnan* 'be destroyed'; *afslauþjan* 'perplex' – *afslauþnan* 'be amazed'. They point toward a non-oriented strategy for encoding valency alternation (ambivalent). However, this might not have been the original situation. According to OTTORSSON 2013, causatives in *-ja-* are older, attest to basic transitivizing orientation, while *-na-* anticausatives were a later development in Proto-Germanic, partly connected with loss of PIE inflectional middle. At an earlier stage, *-ja-* causatives were made from inactive verbs, semantically anticausative, as one can still see in the couple *ganisan* 'be healed, be saved' (basic form) / *ganasjan* 'save (someone)' (*-ja-* causative).

3.4 Sanskrit

According to KULIKOV 2009: 76, "the causative/anticausative distinction is the only valency-changing derivation which ... is quite regularly expressed by the active/middle opposition, at least in early Vedic." Kulikov mentions verb pairs as med. *várdhate* 'grows' ~ act. *várdhati* 'makes grow, increases', med. *réjate* 'trembles' ~ act. *réjati* 'makes tremble'. Several other verb pairs can be added, which give the impression that voice is the main strategy for encoding the anticausative alternation, in much the same way as in HG. However, the situation is more complicated. As Kulikov notes, "in most cases, the middle type of inflexion is not the only marker of anticausative, being supported by the stem opposition ... transitive-causative presents with nasal affixes with the active inflexion are mostly opposed to middle thematic root presents ... cf. *pávate* 'becomes clean' ~ *punáti* 'makes clean'; *ríyate* 'flows, bubbles' ~ *rināti* 'makes flow, makes bubble'." (See further KULIKOV 2000.) As the nasal affix is a causative affix of IE origin, the data points toward an original transitivizing strategy, in which transitivization was indicated by suffixation, and the occurrence of middle or active endings had the function of reinforcing the opposition between spontaneous or caused event, but were not the primary markers of this opposition.

4. Valency and lexical aspect

As is well known, the PIE media tantum included a number of stative verbs (DELBRÜCK 1911). This is also true in Hittite, in which over half of the original media tantum (NEU 1968: 52) are stative. These verbs normally also have *-nu-* counterparts. Notably, when a *-nu-* derivative is made of a stative verb, it does not only add control, as with an intransitive, change-of-state verb denoting a spontaneous event, but it also adds telicity and a dynamic component. Thus, the semantic operation is more complex, and treating stative and non-stative verbs alike as NICHOLS/PETERSON/BARNES 2004 do can be risky.

The same remark also concerns adjectives. In Hittite, adjectives are systematically involved in double derivation, with inchoative *-es-* forms indicating uncontrolled events (so-called 'fientive') and *-nu-* or more frequently *-ahh-* forms indicating induced events, as in *suppi-* 'pure' / *suppess-* 'become pure' / *suppiahh-* 'purify', *idalu-* 'evil' / *idalawess-* 'become evil' / *idalawahh-* 'harm, injure'. Both suffixes have parallels elsewhere in IE languages, cf. e.g. Latin fientive derivatives in *-ēsc-*, such as *rubēscō* 'I blush' from *ruber* 'red', *rubeō* 'I am red, blushing', and the Latin de-adjectival causative suffix *-ā-*: *novāre* 'renew' from *novus* 'new' (WATKINS 1971). Similarly, in Gothic one finds several verb pairs involving an intransitive *-na*-verb and a transitive weak *-ja*-verb that are both derived from adjectives, such as *fulljan* 'fill' – *fullnan* 'become full' (*fulls* 'full'), *gaqiujan* 'make alive' – *gaqiunan* 'become alive' (*qius* 'alive'), *dauþjan* 'kill' – *gadauþnan* 'die' (*dauþs* 'dead') and so on.

As noted in sec. 2.2, basic valency and its orientation can change depending on the intransitive verb selected. This is true in e.g. German, where one finds a transitivizing

strategy if the plain verb is stative, as in *sitzen/setzen*, and a detransitivizing strategy with an inchoative plain verb as in *sich setzen/setzen*. In Russian, with the same verb pair, the inchoative plain verb occurs in a detransitivizing correlation, *sadit'-sja* 'sit down'/*(po-)sadit'* 'seat'. However, with respect to the stative plain verb *sidet'* 'be sitting', the strategy is again transitivizing (see NICHOLS 2006).

In HG, which preserves a much older language and a stage much closer to PIE, we find stative *hézomai* 'be sitting', inchoative *hízomai* 'sit down', and induced *hízō* 'seat'. Notably, this last verb is the active counterpart of *hízomai*, while *hézomai* is a medium tantum of PIE origin, from the root **sed-*, the same of German *sitzen* and Russian *sidet'*. The form *hízō* is a reduplicated present from the same verbal root **sed-:*si-sd-e/o-* > *hízō*. Thus, even if Greek does not display the derivational strategy attested in Hittite to encode the anticausative alternation, and makes extensive use of voice alternation instead, the couple *hézomai/ hízomai* neatly shows that the middle voice can have a role in the anticausative alternation only with verbs that indicate change of state, and not with stative verbs. Indeed, stative verbs are often media tantum, meaning that they cannot have active counterparts.

5. The anticausative alternation, the middle voice, and valency orientation

In this section, I discuss the relation between the PIE middle voice and the encoding of the anticausative alternation in the light of the meaning of the PIE media tantum. I argue that voice alternation at its onset was a non-oriented strategy of valency change.

5.1 The PIE media tantum

As remarked in sec. 4, the PIE media tantum included a number of stative verbs. However, this does not mean that all media tantum were stative: dynamic verbs also featured prominently among them, in particular verbs that indicated a spontaneous event, most often an accomplishment (change of state), or less frequently an activity (so-called *Vorgangsmittel*, cf. DELBRÜCK 1911). Even though these two groups of verbs displayed different actionalities, they were characterized by the common feature of lack of control.

Several scholars have suggested that the active and the middle did not start out as a system of inflectional voice, but that at an early stage their distribution was lexical, that is, that all verbs were basically either activa or media tantum. This approach finds support in the fact that voice opposition extended during the attested history of the most ancient languages, such as Greek (sec. 3.1), Hittite (LURAGHI 2012), and Indo-Aryan (sec. 3.4), with the earliest stages featuring a relevant number of media and activa tantum (in Old Hittite, they were the majority).

I would like to suggest that voice alternation was first introduced as a possible way of encoding the anticausative alternation besides transitivizing derivational means that were

already available. While the latter remained available for all verbs, no matter their lexical aspect, as well as for deadjectival verbs, voice alternation was restricted to non-stative verbs.

5.2 Oriented or unoriented?

The scenario outlined above leads to the issue of orientation. If the original situation was such that verbs were either active or middle, one necessarily has to question the assumption that, once voice alternation was created, it constituted a detransitivizing strategy. In sec. 3.1 I said that this is commonly done for HG, on account of the bigger morphological complexity of middle endings over active ones. But is this really the case for PIE? From the point of view of morphology, the earliest reconstructed stage of verbal endings does not show any evidence that the middle endings could be considered more complex/derived with respect to active. However, at a later stage, the middle endings were indeed re-modeled after the active. This is the stage attested in HG, in which the present middle ending *-mai* owes its nasal to analogy with the active (COTTICELLI-KURRAS & RIZZA 2015; for a different view see BEEKES & DEVAAN 2011).

Thus, one can consider the active as basic in Greek, but this is by no means the original situation in PIE at the onset of active-middle alternation. The two sets of endings were independent of each other; moreover, neither of them was more complex. For this reason, it seems safe to assume that voice started being used for the encoding of the anticausative alternation as a non-oriented strategy, in the terms of NICHOLS/PETERSON/BARNES 2004 as a neutral correspondence instantiating conjugation class change.

6. Conclusion

According to KULIKOV 2009: 76, "the middle diathesis ... is usually said to function as a syncretic marker of several intransitive derivations: passive, anticausative (de-causative), reflexive, reciprocal ... However, one of the oldest documented Indo-European languages, Vedic Sanskrit, seems to attest the decay of the original system," as the encoding of the anticausative alternation is the only productive, valency changing function of the middle voice (see sec. 3.4 and KULIKOV 2013). Notably, Vedic Sanskrit is not the only ancient IE language in which the middle voice does not conform to the so-called 'middle prototype' (MEISER 2010). In Hittite, too, we find that the reflexive, reciprocal, and passive meanings of the middle are marginal (HOFFNER & MELCHERT 2008; LURAGHI 2012), and that the anticausative alternation, although instantiated by a limited number of verbs, is the valency changing alternation most consistently encoded by voice.

It must be noted that the middle prototype, as assumed in typological literature (KEMMER 1993) and as often thought to apply to the PIE middle, is based on Ancient Greek. The fact that two of the most ancient branches of the IE language family do not conform to this prototype indicates that, rather than attesting to the decay of the original system, as suggested by Kulikov, the middle voice and the voice system of Ancient Greek are an

innovation. In this perspective, Vedic Sanskrit and to an even larger extent Hittite are more conservative, and point to an earlier stage, when voice alternation (oppositional middle) first encoded the anticausative alternation, rather than other functions commonly thought of as being typical of the middle voice in general and of the PIE middle voice in particular (KEMMER 1993, MEISER 2010). The introduction of voice alternation for the encoding of the anticausative alternation was based on the tendency for middle verbs to indicate spontaneous event, and complemented the causative derivation.

Concerning basic valency orientation in PIE, one can reconstruct an earlier situation in which PIE was transitivizing, and used derivational strategies to derive induced verbs from plain ones. This strategy was available both to stative and to change-of-state verbs. As many change-of-state verbs denoting spontaneous events were middle, at a later stage, voice opposition started also being used for encoding the anticausative alternation. At this stage, neither voice could be considered derived or more complex, either morphologically or semantically, with respect to the other. Voice alternation started out as a non-oriented strategy for valency change; only later with the further built-up of the voice system did the middle voice become conceivably 'derived' with respect to the active (LURAGHI 2012). Notably, stative verbs continued to only have the causative derivation as a possible transitivizing strategy.

Such a scenario implies viewing the reciprocal and reflexive meanings of the IE middle voice as a later development with respect to the anticausative derivation, and has important implications for linguistic typology, as the reflexive meaning is usually thought of as constituting the semantic core of the middle voice (KEMMER 1993). As already pointed out in LURAGHI 2012, such a scenario, which contradicts commonly held theories about the directionality of language change, characterizes the PIE middle as a typological rarity.

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