Reconstructing passive and voice in Proto-Indo-European*

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This article examines various aspects of the reconstruction of the passive in Proto-Indo-European (PIE), foremost on the basis of evidence from the Indo-Aryan (Early Vedic) and Greek branches. In Proto-Indo-European the fundamental distinction within the verbal system is between the active and middle, while specialized markers of the passive are lacking and the passive syntactic pattern is encoded with middle inflection. Apart from the suffix *-i̯(e/o)- (for which we cannot reconstruct a passive function in the proto-language) and several nominal derivatives, we do not find sufficient evidence for specialized passive morphology. The role of the middle (and stative) in the expression of the passive in ancient IE languages raises important theoretical questions and is a testing ground for the methods of syntactic reconstruction. We will examine the contrast between non-specialized and specialized markers of the passive in Early Vedic and Greek. Most Indo-European languages have abandoned the use of middle forms in passive patterns, while Greek is quite conservative and regularly uses middle forms as passives. In contrast, Indo-Aryan has chosen a different, anti-syncretic, strategy of encoding detransitivizing derivational morphology, though with the middle inflection consistently preserved in passive *ya*-presents. These two branches, Indo-Aryan and Greek, arguably instantiate two basic types of development: a syncretic type found in many Western branches, including Greek, and an anti-syncretic type attested in some Eastern branches, in particular in Indo-Aryan.

Keywords: Proto-Indo-European, syntactic reconstruction, Vedic, Greek, syntactic pattern, passive, stative, middle

1. Introduction

The aim of this article is to identify the problems of reconstructing the category of the passive in Proto-Indo-European (PIE), with a focus on evidence from Early Vedic and Greek. We will examine the non-specialized markers of the passive in Early Vedic and Greek in order to show their role in the development of the

encoding of the passive pattern. More specifically, we will show that the change from non-specialized to specialized passive markers indicates a morphological parallelism with regard to the evolution of markers of valency-changing categories such as causative.

For the purposes of the present survey, we will primarily follow the approach developed by the Leningrad/St. Petersburg Typology Group, which offers a useful calculus of relationships between the two main levels of representation of the structure of a clause.[1] These levels include: (i) the level of semantic 'macroroles' (for example, Actor or Undergoer; see, among many others, Dowty 1990) and (ii) the level of syntactic functions, such as Subject [S], Direct Object [DO], Indirect Object [IO], Oblique Object [Obl], which are often directly corresponding to case-marking (nominative, accusative, dative).[2]

Section 2.1 presents the main characteristics of the passive (syntactic) pattern and passivization following the Leningrad/St. Petersburg Typology Group and focusing on Vedic and Greek data. Section 2.2 discusses the marking of the passive in different IE languages and shows the role of the mediopassive conjugation in ancient IE languages as well as the lack of evidence for specialized markers for the passive pattern. Section 3 supports the claim of the absence of specialized markers for the passive pattern using evidence from Greek. In Section 4, we analyze the Vedic passive, which again is expressed by both non-specialized and specialized markers. We argue that middle morphology in Vedic is not regularly used for the passive syntactic pattern, as well as that middle morphology is not the only morphology found for the passive syntactic pattern. Section 5 concludes the main remarks of the article regarding the problems in reconstructing the passive and presents a sketch of a hypothesis about the PIE sources of the passive and the syncretic vs. anti-syncretic types in the development of the PIE verb.

2. Background

2.1 Passive and Passivization

The most important theoretical concept that can be determined regarding the two levels of representation (semantic and syntactic) and that enables us to capture the rich variety of voices is that of SYNTACTIC PATTERN, which is a pattern of mapping semantic roles onto syntactic functions, cf. the concept of 'diathesis' in the terminology of the Leningrad/St. Petersburg Typology Group (see e.g. Geniušienė 1987) and the notion of 'valence pattern' (Haspelmath & Müller-Bardey 2004). The pattern in which the Actor is mapped onto the Subject and the Undergoer is mapped onto the Direct Object is the most common, unmarked way of representing an

event and therefore can be regarded as the basic, or the neutral, syntactic pattern of a simple transitive verb (for the notion of basic pattern, see, in particular, Shibatani 2006: 257ff.). This pattern is illustrated by the following Ancient Greek and Sanskrit (Vedic) sentences:

(1)   Homeric Greek (Hom. Od. 3.379)
hḗ   toi   kaì patér'   esthlòn   en
REL.NOM.SG.F you:DAT.SG and father:ACC.SG noble:ACC.SG.M among
Argeíoisin   etíma
Argive:DAT.PL honor:IMPF.ACT.3SG
'who honored your noble father too among the Argives'

(2)   Vedic (RV 9.109.11)
táṃ   te   sotā́ro   rásam   mádāya
that:ACC.SG.M your presser:NOM.PL sap:ACC.SG intoxication:DAT.SG
punánti   sómam   mahé   dyumnā́ya …
purify:PRS:3PL.ACT Soma:ACC.SG great:DAT.SG.M/N intoxication:DAT.SG
'The pressers purify that sap of yours (= Soma) for great intoxication, they purify Soma for great splendor …'

Syntactic patterns can be conveniently presented in tabular form. Thus, the syntactic pattern exemplified by examples (1–2) can be schematized as in (3):

(3)   Basic transitive pattern

Semantic argument level (role)	X (Actor)	Y (Undergoer)
Syntactic function level (case)	S (NOM) (*hḗ*; *sotā́ro*)	DO (ACC) (*patér'(a)*; *rásam*)

Syntactic changes affecting transitivity can be described in terms of modifications of syntactic patterns (which may be accompanied by certain changes in verbal forms, as in the case of the category of voice; see below). Thus, the modification of the basic (neutral) transitive pattern that results in the passive equivalent of a transitive clause typically suggests the following two syntactic phenomena: (i) the promotion of the initial Direct Object to the Subject (= the Subject of the passive pattern), and (ii) the demotion of the initial Subject (usually an Actor). The demotion of the Subject may amount either to its being realized as an Oblique Object (passive Actor) or to its removal from the clause. These phenomena (i–ii) are partly independent from each other, since the demotion of the initial Subject is not necessarily accompanied by the promotion of the initial Direct Object, as in the case of the impersonal (backgrounding) passive; see, for instance, Kulikov (2011a: 376 ff., and references therein). This change in pattern is exemplified by the passive examples in (4–5) and presented in tabular form in (6):

(4)   Homeric Greek (Hom. Od. 7.69)

hòs keínē   perì   kêri   tetímētai   ék te
so   that:NOM.SG.F above heart:DAT.SG honor:PRF.MP.3SG by PTC
phílōn   paídōn
beloved:GEN.PL.M child:GEN.PL.M
'So she has been honored exceedingly by her beloved children'

(5)   Vedic (RV 9.86.12)

s̯v-āyudháḥ   sotŕ̥bhiḥ   pū-ya-te   vŕ̥ṣā
well-armed:NOM.SG.M presser:INS.PL purify-PRS.PASS-3SG.MID bull:NOM.SG
'[Soma], the well-armed bull, is being purified by pressers'

(6)   Passive pattern

X	Y
S	DO

⇒

Y	X
S	Obl/–

In languages in which the correspondence between syntactic functions and case-marking is relatively straightforward, pattern modification can also be formulated in terms of changes in case-marking. Thus, scheme (7) describes passivization in Ancient Greek and Sanskrit:

(7)   Passivization in Ancient Greek and Sanskrit

X	Y
S (NOM)	DO (ACC)

⇒

Y	X
S (NOM)	Ancient Greek: Obl (DAT, *hupó/ek…* + GEN)/–
	Sanskrit: Obl (INS)/–

The technical concept of SYNTACTIC PATTERN was primarily introduced to reach a more accurate definition and a reasonable formalization of the traditional concept of VOICE, and, eventually, to determine its linguistic content. The category of VOICE is determined based on the concept of syntactic pattern as follows: VOICE IS A REGULAR ENCODING OF SYNTACTIC PATTERNS THROUGH VERBAL MORPHOLOGY. Thus, many languages encode the passive pattern outlined above using a VERBAL MORPHEME, which, accordingly, is interpreted as the marker of the passive. In Sanskrit, these are the present passive suffix *-yá-* and the middle inflection (for details, see below); in Latin (in the present, imperfect and future tenses), the passive voice is expressed by special series of endings ('mediopassive' inflection); cf. 3SG.PASS *-tur* ~ 3SG.ACT *-t*. Furthermore, in Latin (in the tenses derived from the perfect stem — that is, in the perfect, pluperfect and future perfect) and in many modern Romance and Germanic languages, the passive is expressed using the auxiliary verb 'be' (or 'become') (Latin *esse*, Italian *essere*, French *être*, English *be*, German *werden* etc.) and the past (perfect) participle. Of course, defining the

passive and other voices primarily in terms of syntactic patterns puts the focus on one particular aspect of voice, capturing such features as detransitivization, but leaving in shadow other aspects and functions of voice and passive, such as, in particular, change in topicality (see, above all, Givón 1981, Barðdal & Molnár 2003).

In many languages, the morphemes labeled 'passive' include the functions of non-canonical passive(s) or even non-passive patterns, such as the reflexive or the anticausative, which justifies a more morphologically oriented (i.e., form-oriented) study of voice.

2.2 The passive in ancient Indo-European languages

Scholars agree on the content of the category of the middle (mediopassive) conjugation in the ancient IE languages (and thus, presumably, in the IE proto-language), which is represented in Figure 1 (see, e.g., Neu 1968a, 1968b, Jankuhn 1969, Flobert 1975, Gonda 1979, Allan 2003, and, most recently and with particular focus on Greek and Indo-Iranian, Benedetti 2006).

Passive
Anticausative
Reflexive
Reciprocal
Auto-benefactive (subject version)

Figure 1. Mediopassive conjugation in ancient IE languages

The evidence for the passive use of middle (mediopassive) forms in the (ancient) IE languages is ample and does not require much discussion (see, for example, Leumann & Hoffman 1928 for Latin, Friedrich 1967, Neu 1968a, 1968b, and Hoffner & Melchert 2008 for Hittite, and Krause 1968 for Gothic).[3]

More limited is the evidence for the existence of specialized passive morphemes. Thus, although there is no doubt that the present formative suffix *-i̯(e/o)- can be safely reconstructed for the proto-language (see, e.g., Szemerényi 1990: 295ff.), evidence for its passive function is limited to three Eastern branches:[4]

- Indo-Aryan (Vedic): suffix -yá- + middle inflection
  yuj 'yoke, join': *yunak-ti* 'yokes, joins' ~ *yujyáte* 'is (being) yoked, joined'
  bhṛ 'bear, carry': *bhára-ti* 'carries' ~ *bhriyáte* 'is carried'
- Iranian (Avestan): suffix -iia-
  bar 'carry' ~ *bairiiate* 'is carried'
  kar 'make' ~ *kiriieiti* 'is made', *kiriieinti* 'are made' (note active inflection)
- Armenian: present formant -i-
  berem 'I carry' ~ 1sɢ *berim* 'I am carried', 3sɢ *beri* 'is carried'

The IE proto-language must also have had some nominal formations that were regularly used to mark passive patterns. These include, above all, the perfect (resultative) participles with *-to-, *-no-, reflected, for instance, in the Indo-Aryan (Vedic) -ta-/-na- participles (cf. *yuj* 'yoke, join': *yuk-tá-* 'yoked, joined'; *bhr̥* 'bear, carry': *bhr̥-tá-* 'carried'), in the Greek -to-s participles (cf. *didáskō* 'teach': *didak-tó-s* 'taught, learned'), in the Latin perfect passive participles in -tus and in the Slavic -t-/-n- participles (cf. Old Church Slavonic *bi-ti* 'hit': *bi-tъ* '(is) hit' or *nes-ti* 'carry': *nes-enъ* '(is) carried'). Periphrastic passives with participles are also common in Hittite (see Hoffner & Melchert 2008: 304–305). However, this formation cannot be qualified as a specialized passive in the strict sense of the word, since the resultative participles with the suffixes *-to- and *-no- can also be derived from intransitive verbs (cf. Vedic subject resultatives *úpa-sanna-* '(having) set, sat near/upon' or *gatá-* 'gone' derived from *úpa-sad* 'sit near/upon' and *gam* 'go').

3.   Lack of specialized passive morphology in IE: Evidence from Greek

The supposed lack of a specialized passive marker in PIE finds its direct continuation, in particular, in Ancient Greek. We will show that there is no specialized passive marker in Ancient Greek, contrary to the traditional assumption (among others, Allan 2003, Gildersleeve 1900, Goodwin 1978 [1894], Humbert 1945, Kühner & Gerth 1963 [1898–1904], Meillet & Vendryes 1924, Schwyzer & Debrunner 1950, Smyth 1984 [1920], Stahl 1907) that Ancient Greek has **three voice paradigms**: ACTIVE, MIDDLE, and PASSIVE. The middle and passive paradigms are distinguished only in the future and the aorist; hence, the contrast is between active and mediopassive in all tenses except for future and aorist.

First, in Classical Greek, middle and (traditionally named) "passive" suffixes, in the future and the aorist where they are distinguished, are used interchangeably ("in free variation") without any difference in meaning. In other words, "passive" morphology is not identified with the passive pattern; rather, it can have a reflexive or anticausative interpretation. Furthermore, the middle ending is also not identified with a specific syntactic pattern (reflexive or anticausative); instead, it can also mark the passive pattern.[5] In example (8), a "passive" form is used in an intransitive non-passive construction (with a psych-verb), while in example (9), a middle form is used in a passive pattern.

(8)   Classical Greek (Isoc. Or. 12.20.1; 5–4 BC)
      hōs mèn oûn elupéthēn   kaì sunetarákhthēn
      how PTC PTC grieve:AOR.PASS.1SG and disturb:AOR.PASS.1SG

akoúsas …
hear:PTCP.AOR.ACT.NOM.SG.M
'How much I grieved and how much I was disturbed on hearing …'

(9)   Classical Greek (Xen. Hell. 7.5.18; 5–4 BC)
ekeînoi   poliorkḗsointo   hupò tôn   antipálōn
that:NOM.PL.M besiege:OPT.FUT.MID.3PL by   ART.GEN.PL adversary:GEN.PL
'They would be besieged by their adversaries.'

Second, regarding the morphological analysis of these types, in the future, both the "passive" morpheme *-(th)ē-* and the mediopassive *-omai* express the mediopassive voice (and mark passive or non-passive patterns as we have observed above); that is, we have a **double marking** of voice in these cases. In contrast, the aorist has only the "passive" morpheme *-(th)ē-*. The suffix *-ē-* in the aorist has been considered (by Humbert 1945, Jannaris 1968 [1897], Kühner & Gerth 1963 [1898–1904], Schwyzer & Debrunner 1950, Smyth 1984 [1920], among others) to be a suffix that marked the aorist with active verbs of the conjugation *-mi* and was later used in reflexive and anticausative (but not passive) patterns with verbs with active morphology (see also Allan 2003, Luraghi 2010a). The suffix *-ē-* was primarily used in reflexive and anticausative (but not passive) patterns in Homer; Delbrück (1897) states that only two (out of the 22 examples) forms in *-ē-* have a purely passive interpretation (*eplḗgēn* 'I was struck, smitten', *etúpēn* 'I was beaten'), and Grosse (1889) claims that, of the 129 examples with *-thē-* that he notes, 30 forms have a purely passive interpretation (for example, *ktathênai* acquire:AOR.PASS.INF, *dotheíē* give:OPT.AOR.PASS.3SG). Similarly, Allan (2003) notes that of the 66 examples of passive aorists in *-thē-* in Homer, 19 examples have a passive interpretation, whereas of the 34 examples of passive aorists in *-ē-*, nine examples have a passive interpretation.

Three aspects of the distribution of active and mediopassive voice reveal the role of "passive" voice (thus called in accordance with tradition) and its non-specialized status in Ancient Greek. First, mediopassive morphology is frequently used with transitive verbs and denotes that the result of the verbal action concerns the subject (i.e., an auto-benefactive meaning; we refer here only to voice alternating verbs — the mediopassive is also used with deponents, but deponents cannot be in the active voice), see (10). Verbs with a reflexive (and active) reading and mediopassive morphology can also take a direct object in the accusative case in Ancient Greek, see (11), if the object is directly related to the subject (the construction is ungrammatical after the Hellenistic Greek period, when mediopassive verbs with a reflexive interpretation are obligatorily intransitive).

(10) Classical Greek (Xen. Mem. 4.4.19; 5–4 BC)
hóti hoi   ánthrōpoi   autoùs   éthento?
that ART.NOM.PL man:NOM.PL 3PL.ACC.M set:AOR.MID.3PL
'[Could you say] that men made them [=those laws] for themselves?'

(11) Classical Greek (Hdt. 4.75.7; 5 BC)
ou gàr dè loúontai   húdati   tò   parápan
NEG PTC PTC wash:PRS.MP.3PL water:DAT.SG ART.ACC.SG absolutely
tò   sôma
ART.ACC.SG body:ACC.SG
'For they never ever wash their bodies with water.'

Second, in Homeric Greek, constructions with active verbs, an Actor argument in a PP or in the dative case, and an Undergoer argument as subject are possible. The role of the active voice in these examples was first discussed in detail by Jankuhn (1969), although Jankuhn did not try to account for them. Similar syntactic patterns (examples with intransitive verbs with active morphology and a PP or a dative denoting an Actor, with a passive interpretation, or a Cause, with a passive or anticausative interpretation) are also attested in Classical Greek (George 2005). Hence, in Classical Greek, sentences with verbs with active morphology, the Undergoer argument in the subject position, and an Actor in the dative case or in a PP are possible.

(12) Classical Greek (Xen. Cyr. 7.1.48; 5–4 BC)
oud' autoí   ge apéthnēiskon   hupò hippéōn
NEG 3PL.NOM.M PTC die:IMPF.ACT.3PL by   cavalry:GEN.PL
'They were not killed by any of the [enemy's] cavalry.'

It should be noted that Luraghi (2010a) has argued that the Ancient Greek data only show increasing grammaticalization of the passive (rather than the beginning of its introduction). According to Luraghi, the creation of the new value of passive for the voice category must be traced back to some late stage of PIE in which the middle voice sporadically began to be interpreted as a passive, depending on the context. Following Luraghi, we have to assume that the active/passive opposition developed in Ancient Greek when the mediopassive inflection became increasingly obligatory as a marker of transitivity alternations for every verb that can take an object.

Third, in Classical Greek, many examples of mediopassive verbs in passive patterns can also be found. The Actor in these structures is only present in exceptional cases (Ernout 1908–1909: 329 ff., Schwyzer 1943) despite its presence in intransitive patterns which are marked with active morphology, see (12) above. The necessity or not for an Agent (in a PP or NP in the dative) for the analysis of a construction as passive in Classical Greek has been the subject of discussion in

the literature (George 2005, Jankuhn 1969, Kuryłowicz 1935, 1964, Meillet 1964 [1903], Schmidt 1963a, 1963b, Wackernagel 1904). In the examples where a PP appears, the choice of the PP depends on the following (George 2005): (a) the semantic class to which the verb belongs — verbs meaning 'give' and 'send' are accompanied by *ek*, *pará* + Genitive, while verbs meaning 'think' are accompanied by *prós*, *pará* + Dative; and (b) on the finiteness of the verb — participles frequently take different PPs from those attested with finite verbs.

Furthermore, in Classical Greek, the presence of the following arguments in the position of the subject of mediopassive verbs (and the assignment of nominative case to them) is possible: (a) an Actor + Benefactive; the person who acts and benefits from the action or the interested person (13a), (b) an Undergoer (Theme) or Recipient (13b), (c) a Recipient that is in the dative or accusative in the corresponding transitive pattern; in this case, the Undergoer (Theme) remains in the accusative because the mediopassive does not block the assignment of the accusative to the Undergoer (14).

(13) Classical Greek
    a. (Soph. OT 1143; 5 BC)
        hōs emautôi   thrémma   threpsaímēn   egő
        so myself:DAT.SG foster-child:ACC.SG rear:OPT.AOR.MID.1SG 1SG.NOM
        'So that I would rear (him) as my own foster child.'
    b. (Xen. Hell. 2.3.15; 5–4 BC)
        eí   tis   etimâto   hupò toû
        because INDF.NOM.SG.M/F honor:IMPF.MP.3SG by   ART.GEN.SG
        démou
        commons:GEN.SG
        'because somebody was honored by the commons.'

(14) Classical Greek (Thuc. 1.140; 5 BC)
    (humeîs) állo   ti   meîzon   euthùs
    2PL.NOM other:ACC.SG.N INDF.ACC.SG.N bigger:ACC.SG.N immediately
    epitakhthḗsesthe
    impose:FUT.PASS.2PL
    'You will be immediately imposed some greater demand.'

As can be seen from comparison of example (13b) with example (14), both canonical passives (where the accusative object of the active sentence is promoted to the passive subject) and passives with the subject of a Recipient (corresponding to the dative or the accusative of the active sentence) are possible. In the latter case (and if the verb is ditransitive), the Undergoer (Theme) remains in the accusative case in spite of the mediopassive form of the verb. This shows again that the mediopassive (and the "passive") morphology does not encode a detransitivizing process in

Ancient Greek (since a "direct object" in the accusative case can appear in spite of the passive pattern and the (medio)passive morphology).

4. Evidence from Vedic: Traces of IE passive?

In Old Indo-Aryan (Vedic), the relationship between the passive pattern and specialized forms is not straighforward either. Within the three main tense systems of the Vedic verb — present, aorist, and perfect — the passive is expressed by specialized forms (some of which take middle endings, however) and, only exceptionally, by non-specialized (bare) middle forms. Specialized passive formations include the following: (i) in the **present**, passives with the accented suffix *-yá-* and middle inflection (e.g., *yuj* 'yoke, join', 3sg. *yujyáte* 'is (being) yoked, joined', 3pl. *yujyánte* 'are (being) yoked, joined', participle *yujyámāna-*, etc.); (ii) in the **aorist**, mediopassive aorists with the endings *-i* and *-ran* (*-ram*) (3sg. with *-i* and 3pl. with *-ran*/*-ram*, e.g., *yuj* 'yoke, join', 3sg. *áyoji*, 3pl. *ayujran*); and (iii) statives with the endings *-e* and *-re*, which form passives, lacking in the **perfect** (e.g., *hi* 'impel', 3sg. *hinvé* '(it) is/has been impelled', 3pl. *hinviré* '(they) are/have been impelled'; for details, see Kümmel 1996 and Gotō 1997).[6] Both mediopassive *i*-aorists and statives have defective paradigms.

The system of passive formation in early Vedic (that is, above all, in the language of the Ṛgveda), includes, according to the *communis opinio*, in addition to specialized passive formations (*-yá*-presents, *i*-aorists, and statives), a number of non-specialized middle forms in all three tenses that purportedly encode the passive pattern. These non-specialized ('bare') middle forms (that is, present formations with middle inflection but without the suffix *-yá-*, middle aorists different from *i*-/*ran*-aorists, and middle perfects) are depicted by the narrow shadowed column in Table 1; the table shows that, together with specialized passive formations (*-yá*-presents, *i*-aorists, and statives), they are used in passive constructions.

Table 1. Passive in Vedic, traditional view

	Non-Passive			Passive
Present	Active	Middle		*-yá*-presents
Aorist	Active	Middle		aorists in *-i*/*-ran*
Perfect	Active	Middle		statives in *-e*/*-re*

As argued in Kulikov (2006a, 2006b, 2009), briefly recapitulated below, non-specialized middle forms are rarely used in passive constructions. The two large groups of non-specialized middle forms (which can be called 'bare middles', that is, middle forms without specialized passive morphology) employed in passive

patterns, middle perfects and middle athematic participles with the suffix *-āna-*, have the special paradigmatic status of being grammatically ambiguous — that is, such forms are members of two paradigms (for instance, *hinvāná-* belongs to the paradigm of the middle present and to that of the stative, and *all* forms attested in passive constructions should be qualified as belonging to the latter; see below for details). Accordingly, such forms (for instance, *hinvāná-*) should be discarded as evidence for the passive usage of the non-specialized middle forms (in the case of *hinvāná-*, middle present formations without the passive suffix *-yá-*) in the passive pattern.

Athematic middle participles with the suffix *-āna-* exhibit unusual syntactic properties in early Vedic, particularly in the language of the Ṛgveda (RV). Whereas the corresponding finite forms are used only transitively, the *-āna-*-participles are attested both in transitive and intransitive (passive) patterns (see already Delbrück 1888:264). For instance, the participle *hinvāná-* (root *hi* 'impel'), taken by all grammars as the middle participle of the nasal present with the suffix *-nó-/-nu-* (class V in the Indian tradition), occurs 18 times in intransitive (passive) patterns, as in 15a, and ten times in transitive patterns, as in 15b, in the Ṛgveda):

(15)   Vedic
    a. (RV 9.12.8)
        sómo   **hi-nv-ānó**   arṣati
        Soma:NOM.SG impel-PRS-PTCP.MID:NOM.SG.M flow:PRS:3SG.ACT
        'Soma, being impelled, flows.'
    b. (RV 9.97.32)
        índrāya   pavase …   **hi-nv-ānó**
        Indra:DAT.SG purify:PRS:2SG.MID impel-PRS-PTCP.MID:NOM.SG.M
        vācam   matíbhiḥ   kavīnā́m
        speech:ACC.SG thought:INS.PL poet:GEN.PL
        'You (sc. Soma) purify yourself for Indra … impelling (your) speech with the (religious) thoughts of the poets.'

In contrast, the finite middle forms produced from the same stem (3pl.mid. *hinváte* etc.), with which *hinvāná-* is supposed to belong, can only be used transitively, meaning 'to impel sth.', as in (16):

(16)   Vedic (RV 9.65.11)
    hi-nv-é   vā́jeṣu   vājínam
    impel-PRS-1SG.MID prize:LOC.PL runner:ACC.SG
    'I spur on this runner [in the race] for prizes.'

Similarly, the participle *yujāná-* (root *yuj* 'yoke') occurs eight times in intransitive (passive) syntactic patterns (e.g., *rátho yuj-ānáḥ* 'a chariot that has been yoked')

and 14 times in transitive syntactic patterns (as in *yuj-ānó harítā ráthe* 'yoking two fallow [horses] to the chariot'). Vedic grammars treat *yujāná-* as a middle participle of the root aorist (see, for instance, Whitney 1885:132, Macdonell 1910:370). However, again, as in the case of *hinvāná-*, the corresponding finite forms (3sg. *áyukta* etc.) can only be used transitively. Kulikov (2006a, 2006b) has demonstrated that the grammatical characteristics of such passive *-āna*-participles should be reconsidered; here, we will only briefly summarize the conclusions of these articles. These participles are grammatically ambiguous, that is, they belong to the following two paradigms: (1) to the paradigm of (middle) root aorist and mediopassive aorist and (2) to the paradigm of (middle) present and stative. Thus, the participle *hinvāná* in its transitive use, meaning 'impelling', belongs to the paradigm of the transitive nasal present (*hinváte*, etc.), but it is a member of the paradigm of the stative (3sg. *hinvé*, 3pl. *hinviré*), i.e., a stative participle, when used intransitively (in a passive syntactic pattern), meaning 'impelled'. Similarly, *yujāná-* is a member of the paradigm of the (transitive) root aorist (*áyukta*, etc.) when used transitively ('yoking'), but it is a member of the paradigm of the passive aorist (3sg. *áyoji*, 3pl. *ayujran*), that is, a passive aorist participle, when used in passive syntactic patterns ('yoked'):
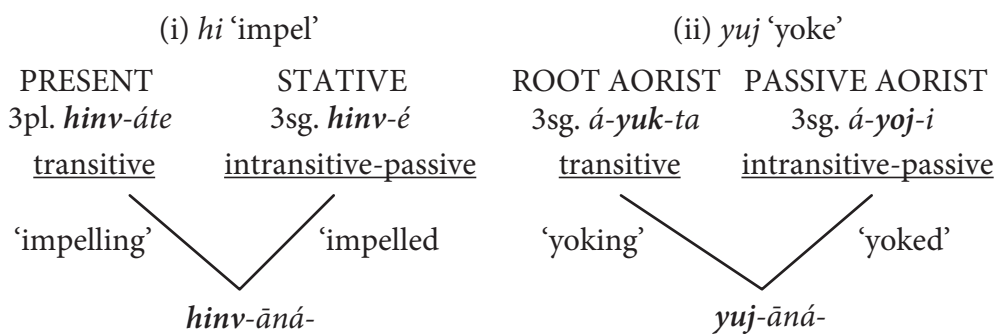

Figure 2. Syntax of the participles *hinv-āná-* (*hi* 'impel') and *yuj-āná-* (*yuj* 'yoke')

All in all, these data show that the *-āna*-participles attested in passive constructions cannot be considered non-specialized middle forms (e.g., middle present participles, in the case of *hinvāná-* 'impelled', or middle aorist participles, in the case of *yujāná-* 'yoked'), and therefore should be discarded as evidence for the passive usage of non-specialized middle forms. As members of the paradigms of the specialized passive formations, that is, statives and passive aorists, forms such as *hinvāná-* '(that has) been impelled' or *yujāná-* '(being) yoked' should be treated separately from the homonymous middle present participles (*hinvāná-* 'impelling') or middle aorist participles (*yujāná-* 'yoked'), which can never be used in passive patterns.

Another large group of middle forms used in passive syntactic patterns includes **middle perfects**. Most remarkably, only 3sg. and 3pl. middle perfects forms (with the endings *-e* and *-re*, respectively) are attested in passive constructions (for a detailed study of Vedic perfects, see Kümmel 2000). As argued in Kulikov

(2006a), all such forms should be taken as statives built on perfect stems, rather than as middle perfects proper. For instance, the form *dadhé* (root *dhā* 'put') should be taken to be a 3sg. form of the middle perfect when meaning 'has put', as in (17a), and a 3sg. form of the stative with the passive interpretation 'is put / has been put', as in (17b):

(17) Vedic
    a. (RV 9.18.4)
       yó   víśvāni   váryā   vásūni
       who:NOM.SG.M all:ACC.PL.N desirable:ACC.PL.N goods:ACC.PL
       hástayor   **dadh-é** …
       hand:LOC.DU put:PRF-3SG.MID
       'The one who **holds / has put** all desirable goods in his hands …'
    b. (RV 1.168.3)
       hásteṣu   khādíś   ca   kr̥tíś   ca   sám
       hand:LOC.PL brooch:NOM.SG and sword:NOM.SG and together
       dadh-é
       put:STAT-3SG.MID
       'Brooch and sword **is put** in [your] hands.'

Furthermore, there are some reasons to assume that stative *-āna*-participles could have active counterparts, that is, participles derived from the stem of stative with the active participle suffix *-ant*. It has frequently been noted (e.g., Watkins 1969: 142ff., Schaefer 1994: 45f.) that the form *stavánt-*, which occurs three times in the family maṇḍalas of the R̥gveda, at 2.19.5, 2.20.5, and 6.24.8 (only in the nom. sg. form *stavā́n*), is attested in a passive construction , which is quite unusual for an active form, cf.:

(18) Vedic (RV 2.20.5c)
       muṣṇánn   uṣásaḥ   sū́ryeṇa
       steal:PRS:PTCP.ACT:NOM.SG.M dawn:ACC.PL sun:INS.SG
       stavā́n
       praise:STAT:PTCP.ACT:NOM.SG.M
       'while (he), the **praised** one, abducted the dawns with the sun'

By virtue of its suffix accentuation and active morphology, this form cannot belong to the class I present *stávate*, which is only attested in the middle. However, its meaning and passive syntactic pattern plead for the connection of this form with the stative *stáve* as the active counterpart of the (middle) participle *stávāna-*.

    The assumption of the existence of **active** stative participles may elucidate the paradigmatic status of some other forms with *-ant-* (most of which are traditionally regarded as adjectives). Watkins, who first drew attention to these formations

(1969: 142ff., see also Schaefer 1994: 45f.), assumed that they represent active participles with the secondary accent shift marking their passive syntactic pattern. These participles may include the following, in addition to *stavánt-*: (i) *járant-* 'old' (i.e. '(having) grown old'); (ii) *pépiśat-* 'adorned' (RV 10.127.7, see Schaefer 1994: 45, 152f.; this form may point to the unattested stative **pépiśe* 'is adorned' of the type *cékite*, on which see Schaefer 1994: 44); (iii) *mahánt-* 'great' (whose parallelism with *stavánt-* was noted by Watkins 1969: 144) that may belong with the hapax stative *mahe* 'is able' (RV 7.97.2); and some others (see Kulikov 2006b: 59ff. for details). These forms represent a good structural parallel to Hittite participles with *-ant-* that form passives for transitive verbs (but hitherto have generally been considered isolated phenomena, without parallels in other IE branches), such as *kunant-* 'killed' (*kuen-* 'to kill') or *dant-* 'taken' (*dā-* 'to take'); see, in particular, Hoffner & Melchert (2008), Šackov (2008), and Luraghi (2010b).

The hypothesized existence of active participles in the stative paradigm, which, in spite of their 'active' morphology, were employed in passive constructions, still further supports the connection between the stative formation and passive syntactic pattern on the one hand, and, on the other hand, serves as additional evidence against the traditional assumption on the straightforward connection between middle morphology and passive syntax in Vedic and thus, eventually, against taking such forms as *hinvāná-* 'impelled' as non-characterized middles used in syntactic patterns.

The sub-paradigm of the present passive is, in fact, also defective. We primarily find 3sg. and 3pl. forms of the present tense and participles. Next to present tense forms, there are rare imperatives and only exceptional attestations of other moods, which makes the sub-paradigm of the present quite similar to those of the aorist and perfect — much more similar than it is described in traditional Vedic grammar, which usually pays little attention to the fact that some members of the present passive paradigm are virtually unattested in early Vedic.

The early Vedic passive paradigm is summarized in Table 2. Different types of shadowing show the status of the corresponding forms: dark grey means lacking and morphologically impossible, intermediate grey means morphologically possible but unattested or only exceptionally attested (underdeveloped part of the paradigm), light grey means morphologically possible but rare.

The bare middle forms attested in the passive that remain after sifting through the Vedic evidence (i.e., after explaining the status of the passive *-āna*-participles and 3sg. and 3pl. middle perfects) form a small set. Most of these forms can be explained as secondary formations created on the basis of specialized passive formations such as *stáve* or *gr̥ne* (see Kulikov 2006a); cf. class I prs. *stávate* 'is praised', class IX prs. *gr̥ṇīté* 'is praised' (based on the statives *stáve* and *gr̥ṇe* 'is praised', as a type of back derivation [*Rückbildung*]); sigmatic aorists (mostly 3pl.

Table 2. The passive paradigm in early Vedic (from Kulikov 2006a)

		PRESENT		AORIST		PERFECT/STATIVE	
		INDICATIVE	IMPERATIVE	INDICATIVE	INJ.	INDICATIVE	IMPER.
SG	1	…	…				
	2	…, *yujyáse*	[*dhīyasva*]			[*śṛṇviṣé*]	
	3	*sūyáte, yujyáte*	[*dhīyátām*]	*ásāvi, áyoji*	…, *yoji*	*sunvé, yuyujé*	[*duhā́m*]
DU	1	…	…				
	2	…	…				
	3	[*ucyete*]	…				
PL	1	[-*panyā́mahe* (?)]	…				
	2	…	*yujyadhvam*				
	3	…, *yujyante*	[*badhyantām*]	…, *áyujran*	…	*sunvire, yuyujré*	
PTCP		*sūyámāna-, yujyámāna-*		*sᵘvāná-, yujāná-*		*sunvāná-, yuyujāná-*	

forms) *ayukṣata* '(they) were yoked', or *adṛkṣata* '(they) were seen, visible, (they) appeared'.[7] Thus, middle morphology cannot be said to serve as the regular **independent** marker of the passive voice — that is the morphological marker that can encode passive syntactic pattern on its own, without using **additional** (specialized) morphemes, such as the present passive suffix *-yá-*.

In this section, we have discussed the paradigm and functional status of both non-specialized markers (middle morphology) and specialized morphemes encoding the passive pattern in Early Vedic and Greek. Although passive morphology in the strict sense of the term (that is, morphological marking regularly encoding a passive syntactic pattern) cannot be reconstructed for the proto-language, passive **syntactic patterns** associated with **non-specialized** verbal morphemes can well be reconstructed for the Indo-European proto-language. Accordingly, the existence of the passive pattern can be posited for PIE verbal syntax in spite of the lack of the passive voice *sensu stricto*.

5.   Concluding remarks: Proto-Indo-European sources of Indo-European passives

A detailed and well-substantiated reconstruction of the PIE voice and voice-related categories goes beyond the scope of the present article, which analyzed in detail the problems of such a reconstruction (for the evolution of the [early] PIE system of verbal endings, see especially Kortlandt 1979: 66–68 *et passim*, 1981: 128–129 *et passim*). Here, we will confine ourselves to several remarks on this issue. It is reasonable

to assume that the IE categories 'middle' and 'perfect' (see above, Section 4) are historically related and most likely originate in one single proto-category.[8] This hypothesis, going back as far as Kuryłowicz (1932) and Stang (1932), is primarily based on the fact that the sets of endings used by the middle voice and the active perfect share a number of features (but cf. also somewhat different views and the reconstruction in Sihler 1995: 445, 564f.).[9] Thus, in early PIE (= Stage I), the active/middle opposition would have been irrelevant for perfect forms. The vestiges of this system can still be found in early Vedic, where the active perfect of some verbs syntactically correspond to middle presents, i.e., they function as non-passive intransitives (for a typological discussion of this phenomenon in ancient Indo-European languages, see Kulikov 1999, where it is labeled 'split causativity'); cf. the middle present *pádyate* 'falls' corresponding to the active perfect *papáda* 'has fallen' or the middle present *mriyáte* 'dies' corresponding to the active perfect *mamára* 'has died' (see, e.g., Hoffmann 1976, Jasanoff 1978: 15, Kümmel 2000: 296f., 370ff. *et passim*). Perfect forms of some verbs could be used both intransitively and transitively, thus being syntactically labile (see Kulikov 2003: 106–107).

Similar remarks can be made for Greek: the early Greek perfect shows a clear preference for the active voice (some media tantum have an active perfect; see Szemerényi 1990 and, on the perfect, Di Giovine 1990–1996). Furthermore, the early Greek perfect shows preference for intransitives, whereas all perfect forms in Mycenaean Greek are either participles of intransitive verbs or participles of transitive verbs used in passive constructions (Hooker 1980: 61–62). Perfect forms in Homeric Greek are mostly attested either for intransitive verbs or for transitive verbs that appear in intransitive syntactic patterns in the perfect: *pépoitha* (persuade:PRF.1SG) 'I am persuaded' (Luraghi et al. 2005).[10]

During the next stage (II = [standard] PIE), we may reconstruct a number of innovations resulting from a contamination and/or analogical rebuilding of inflection due to mutual influence of the endings belonging to different sets. In particular, some elements of the 'perfect-stative' inflection would have been introduced into the present paradigm (see Kortlandt 1979: 67). These newly built forms must have retained the functional connection with statives, which were closely associated with intransitive syntax. This connection could be the origin of the middle voice that was used to mark several intransitive patterns, such as passive, anticausative, reflexive and reciprocal.

Finally, during Stage III, in some IE dialects (in particular, in Proto-Indo-Iranian), the active/middle distinction was introduced into the perfect paradigm under the influence of the present system, which results in the universal character of the active/middle opposition applied across the paradigm (for details, see Renou 1925: 103ff., Jasanoff 1978: 16, 81f., Jasanoff 2003, Kümmel 2000: 94). This scenario is schematically represented in Figure 3.
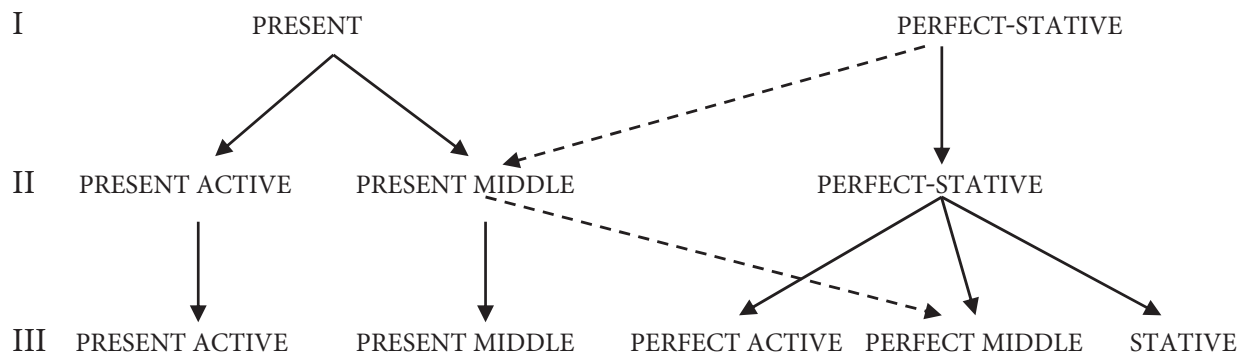
I	PRESENT		PERFECT-STATIVE

II	PRESENT ACTIVE	PRESENT MIDDLE		PERFECT-STATIVE

III	PRESENT ACTIVE	PRESENT MIDDLE	PERFECT ACTIVE	PERFECT MIDDLE	STATIVE

Figure 3. The emergence and development of the middle in IE

The position of the passive within the PIE can accordingly be summarized as follows:

- *early PIE*
  passive: expressed by some **statives**
- *(standard) PIE*
  passive: (i) (some **statives**), (ii) **middle** forms
- *late PIE (differences between dialects)*
  passive: (i) (rare with **statives**), (ii) **middle** forms, (iii) specialized morphemes (Ved. prs. *-yá-*, *-i*-aorist)

On the basis of the above discussion of the PIE sources of the passive morphology in individual Indo-European branches, the main tendencies in the development of the PIE verbal syntax for different parts of the IE area can be presented as follows (see Kulikov 2009 and cf. also Table 3). Several Western groups of IE either preserve the old syncretic marker of valency-reducing categories, the middle conjugation, or replace the old middle with a new middle morphology, which in most cases can be traced back to the PIE reflexive pronoun **s(u̯)e-* (see, for instance, Cennamo 1993). Such a scenario of the evolution of the middle is instantiated, for instance, by Latin as it evolves with its daughter languages (Romance) (see Kemmer 1993: 151–182, Cennamo 1993, 1998, Heidinger 2010). Greek, which forms one of the Western, syncretic, branches, exemplifies a slightly different scenario of development (see Lavidas 2009). The development of voice in Greek results in the new/innovative marking of the passive, the reflexive and the reciprocal with a syncretic (mediopassive) morphology in contrast to the anticausative and all transitive patterns that become obligatorily marked with active morphemes after the loss of the auto-benefactive meaning (that was originally expressed by the mediopassive). Furthermore, a number of Romance and Germanic languages attest the rise and expansion of labile patterning (which becomes particularly common and productive in English; see McMillion 2006 and van Gelderen 2011); the expansion of labile verbs is also well attested in the development of Greek (Lavidas 2009). Finally, the PIE causative morpheme **-ei̯e/o-*, still present in Gothic (*jan*-verbs) and Old

Church Slavonic (*i*-causatives), virtually disappears in this area leaving only minimal traces in the modern Germanic and Slavonic languages. This type of evolution, attested in the Western part of the IE area, might be called '**syncretic**'.

By contrast, the main tendencies in the development of voice in several Eastern IE languages, foremost in Indo-Iranian, can be summarized as follows (these tendencies are partly related to, but not entirely dependent on, one another). One of the main trends is the rise and development of specialized voice and valency-changing morphemes, cf. the Vedic causative suffix *-áya-* (see Jamison 1983) and the passive suffix *-yá-* (see Kulikov 2012). The specialized voice and valency-changing morphemes bring the language to a more overt morphological marking of transitivity oppositions and essentially run in parallel with the decay of labile patterning and the degrammaticalization of the middle voice. We observe these tendencies, in particular, in the evolution of: (a) the Indo-Aryan and Armenian markers of morphological passive, going back to the PIE suffix *-i̯e/o-* as well as in the development and grammaticalization of free morphemes encoding some voice-related categories; (b) the Indo-Iranian reflexive pronouns *tanū́-* (← 'body') and Indo-Aryan *ātmán-* (← 'breath') (for details, see Kulikov 2007b); and (c) the Indo-Iranian reciprocal pronouns (cf. Vedic *anyó'nyá-*; see Kulikov 2007a).

Furthermore, morphological causatives become quite productive both in Armenian (causative marker *-uc'anem* based on the nasal present derived from a sigmatic aorist; see Kortlandt 1999) and Indo-Iranian (productive morphological causative suffixes *-áya-*, *-aiia-* going back to PIE *-ei̯e/o-*). Note an interesting feature (isogloss) shared by several Eastern IE languages of the anti-syncretic type: the parallel development of the new morphological passive and the productive morphological causative. The PIE middle voice is degrammaticalized (that is, the active/middle opposition, albeit physically preserved in the paradigm, loses a large part of its grammatical content) and eventually disappears. The labile syntax, even

Table 3. Western vs. Eastern IE languages: Specialized passive morphemes, syncretic middle, and lability

Western IE languages: Syncretic type (Greek, Germanic, Romance, Slavic …)	*Eastern IE languages: Antisyncretic type* (Indo-Aryan, Iranian, Armenian …)
Increase of lability	Decline of lability
Preservation of the old (PIE) middle morphology or emergence of the new middle	Degrammaticalization of the old Indo-European middle
Preservation of the syncretic encoding of passive syntactic pattern	Development of specialized passive morphology
Decline and disappearance of the old (PIE) causative morphology	Development and increase of productivity of the causative morphology

if attested in some ancient languages of the Eastern branches, tends to disappear in the course of their history. One might call this type 'anti-syncretic'.

Thus, we observe two basic types of evolution, or evolutionary types, in the history of the system of transitivity oppositions and valency-changing categories in IE: the syncretic type found in many Western branches, including Greek, and the anti-syncretic type attested at least in some Eastern branches, in particular in Indo-Aryan. It is important to note that the degrammaticalization of the middle and the lexicalization of middle forms are supported by the grammaticalization of several new valency-changing categories (-*yá*-passives and -*áya*-causatives, reflexives with *ātmán-* and reciprocals with *anyó'nyá-*).

In the present article, we have focused on particular aspects of the status and the role of the non-specialized markers of the passive in PIE and their development, primarily in Vedic and Greek. The evidence discussed in this short survey supports the idea that, although passive morphology in the strict sense of the term (that is, regular encoding of the passive syntactic pattern by means of **specialized** verbal morpheme(s)) cannot be reconstructed for the proto-language, we have good reasons to reconstruct passive **syntactic patterns** associated with **non-specialized** verbal morphemes. In other words, we can posit the existence of the passive for the verbal system of PIE, despite the lack of the passive voice *sensu stricto*. The rise of specialized passive markers is arguably related to, and partly supported by, the development of other valency-changing categories; cf. (i) the active morphology that becomes the specialized marker of transitive syntactic patterns (after the loss of the auto-benefactive meaning of the mediopassive) in Greek from the Hellenistic Koine onwards or (ii) the development of productive causatives in Vedic.

Notes

1. For an outline of this methodology, see, for example, Geniušienė (1987), Mel'čuk (1993), and Kulikov (2011a). For a typological overview of passive, see the seminal work by Siewierska (1984).

2. This correspondence is not always of straightforward character, however. Thus, in the case of 'non-canonical' case-marking of the core relations, subject and object, additional and more

sophisticated syntactic criteria are necessary for elucidating the grammatical relation of the noun phrases. We would like to thank Jóhanna Barðdal (p.c.) for drawing our attention to this issue.

3. However, Hoffner & Melchert (2008) show that the middle was not the standard way of expressing passive in Hittite, and thus its usage in passive constructions cannot be compared to that attested in Latin or Greek.

4. On the syntactic reconstruction in the framework of the Construction Grammar, see Barðdal & Eythórsson (2012), Barðdal (2013).

5. We leave the issue of quantitative analysis of the data open for future research. What is important for us here is that middle forms in a passive pattern and passive forms (passive aorists and futures) in anticausative or reflexive patterns are possible.

6. Synchronically, the middle perfect endings *-e* and *-re* (3sg. and 3pl.) are identical with the stative inflection; historically, they represent a secondary innovation, being borrowed from the stative paradigm, see Kümmel 2000: 52 ("'Stativendungen' des Präsens"). Thus, from a historical point of view, *-e* and *-re* are stative, not (middle) perfect endings.

7. Regarding the development of anticausative uses of passives made from verbs of perception, see Kulikov (2011b).

8. We are not going to discuss here the status of other verbal categories — in particular, the quite complicated issue of the origins of the aorist tense. There are some reasons to believe that this category is a recent addition to the verbal system, perhaps going back to some nominal formations (see especially Kortlandt 2009: 57, 187, Kortlandt 2010).

9. Cf., for instance, Ved. 1sg.mid. (athematic secondary ending) *-i* $(< *-H_2)$ ~ 1sg.prf.act. *-a* $(< *-H_2e)$, 2sg.mid. *-thās* (secondary ending) ~ 2sg.prf.act. *-tha*, etc.

10. We would like to thank Silvia Luraghi (p.c.) for relevant remarks on this point.

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