Two types of passive? Voice morphology and "low passives" in Vedic Sanskrit and Ancient Greek

Laura Grestenberger
University of Vienna

Abstract

This paper discusses passivization in Vedic Sanskrit and Ancient Greek, two ancient Indo-European languages. These languages have two different types of synthetic passive: the inflectional passive, which expresses passivization by selecting a specific set of nonactive ("middle") endings, and the derivational passive, which uses a specifically passive suffix, to which inflectional endings expressing Tense, Aspect, and Voice are then added. While the inflectional passive in both languages can be analyzed along the lines proposed by Alexiadou et al. 2015 for Modern Greek passives, the main focus of this paper is on the derivational passives and their apparent "double marking" of Voice (via a designated suffix and via the inflectional endings). I argue that the suffix of the derivational passive is a diachronically reanalyzed inchoative v head that turned into a "low" passive head, providing further evidence for the cross-linguistic parametrization of passive morphosyntax.

1 Introduction

The cross-linguistic variation in passive constructions discussed in the literature (e.g., the surveys in Shibatani 1988, Fox and Hopper 1994, Abraham and Leisiö 2006, Alexiadou and Schäfer 2013a, etc.) raises the question of which properties of passives are universal, and why. The goal of this paper is to contribute to the question of the internal structure and morphosyntax of passives and the passive/inchoative syncretism based on evidence from two non-informant languages, Vedic Sanskrit and Ancient Greek. I argue that these languages provide additional evidence for the idea that passivization can operate at different "heights" along the verbal spine. That is, passives differ cross-linguistically in whether they select a transitive input structure or are compatible with intransitive verbs (cf. Alexiadou and Doron 2012, Alexiadou et al. 2015). Vedic Sanskrit and Ancient Greek are interesting in this respect because they appear to have (at least) two different synthetic passives, one of which appears to stack a Voice head on top of a designated passive projection (PassP). I argue that these passives are in fact "low" passives: the functional projection that causes passivization attaches *below* the external-argument introducing Voice head. While this may seem counter-intuitive (at least from the point of view of the traditional, argument-demotion or -promotion approaches to passivization of the generative tradition, e.g., Perlmutter and Postal 1984, Baker et al. 1989, etc.), I show that there is synchronic and diachronic evidence that supports this analysis.

While there is ample research on the development of periphrastic passives, the diachrony of synthetic passives is somewhat understudied. I argue in this paper that the Sanskrit and Greek passives show the parallel development of a passive marker from

an older intransitive (stative or inchoative) verbalizing suffix, and discuss some cross-linguistic parallels to this type of development.

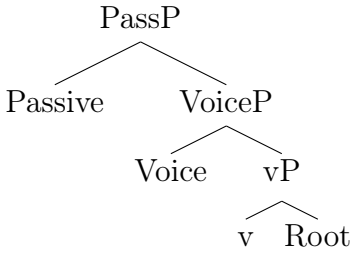
This paper is structured as follows: Section 2 introduces the general framework used in this paper, building on recent approaches to the typology of Voice heads in "voice syncretism" languages such as Modern Greek (most importantly, Alexiadou et al. 2015 and Schäfer 2017). Section 3 provides some general background on Vedic Sanskrit and Ancient Greek and the relevant properties of their voice and verbal systems. Section 4 looks at the two types of passives and their syntactic properties in more detail, first in Vedic (Section 4.1), then in Greek (Section 4.2). Section 5 presents the analysis of the two types and sketches the diachronic development of the derivational passives in Vedic and Greek. Section 6 contains the conclusion.

2 Passivization and Voice

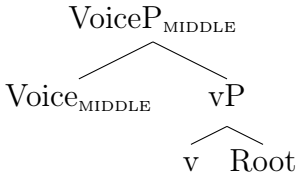
In a line of research that goes back at least to Kratzer 1996, passivization is connected to the external argument-introducing projection VoiceP.[1] If Voice has a particular feature that suppresses the merger of the external argument (Voice[-ext.arg]), movement to subject position of the internal argument results as a by-product. In the following, I adopt the typology of Voice proposed in Alexiadou 2013, Alexiadou et al. 2015, Schäfer 2008, 2017. In particular, Alexiadou et al. 2015 argue that there are (at least) "two ways to go passive", illustrated in (1).

(1) Two ways to go passive (Alexiadou et al. 2015: 124)

a.



b.



(1a) corresponds to the "high passive" of, e.g., Collins 2005 and Bruening 2013. In languages that have this type of passive (e.g., English, German), a designated passive head Pass selects Voice[+ext.arg] and binds/saturates the external argument. This means that passivization builds on transitive input structures in these languages, and their passive morphology reflects this additional projection.

(1b), on the other hand, does not have a designated passive projection, but a number of lower Voice heads (subsumed under the label "VoiceP$_{\text{MIDDLE}}$" by Alexiadou et al. 2015). These different types of Voice projections (e.g., Voice[+/-ext.arg]) select different types of v (e.g., v_{CAUSE}, v_{BECOME}, etc.). Passives result from the combination of a particular Voice head (Voice[-ext.arg]) with a particular type of v. Because there is no designated projection "Pass", the morphology of this construction tends to be syncretic with other syntactic contexts (e.g., reflexive, inchoative, etc.). Modern Greek, Albanian, and Hebrew

[1] Other scholars use different "flavors of v", some of which can introduce an external argument (e.g., Embick 1998, 2004, Kallulli 2007, 2013, etc.). I follow Kratzer 1996, Harley 2013, Alexiadou et al. 2015, etc., in assuming that Voice is the projection introducing the external argument and v spells out verbalizing morphology and adds different types of eventive or stative semantics (cf. Harley 2013, 2017 on the VoiceP/vP split).

are such languages (cf. Alexiadou and Doron 2012, Kallulli 2007, 2013). Alexiadou et al. 2015 indicate this in (1b) with the cover term $\text{Voice}_{\text{MIDDLE}}$, a stand-in for the various syntactic contexts in which the morphology associated with Voice[-ext.arg.] is found. This morphology is usually called "middle" morphology, but I follow the literature cited here in using the more neutral term "nonactive" (NACT).

Nonactive morphology is cross-linguistically found in the following canonical contexts (cf. Embick 1998, 2004; cf. Kemmer 1993, Kaufmann 2007, Alexiadou and Doron 2012, Alexiadou 2013, Alexiadou et al. 2015, Grestenberger 2018):

(2) a. Anticausatives/inchoatives
b. Reflexives/reciprocals
c. Self-benefactives
d. Dispositional/generic constructions
e. Passives (Mediopassives)

In other words, "passive" is one of the canonical functions or contexts of nonactive morphology in Modern Greek, Albanian, etc., but this morphology is also found in other contexts. The same is true for Ancient Greek and Sanskrit. In these "Greek-type languages", "a Voice head is spelled out with non-active morphology [...] if it lacks a specifier." (Alexiadou et al. 2015 based on Embick 1998, 2004). That is, inflectional Voice morphology in these languages is not valency-reducing, nor does it signal the addition of a functional head. It merely signals locally conditioned allomorphy of the Voice head. The Spell-Out condition for this allomorphy is given in (3).

(3) Spell-Out condition on nonactive morphology (Alexiadou et al. 2015: 101–2)
Voice → Voice[Nonact]/_ No DP specifier

Schäfer 2008, 2017, Alexiadou et al. 2015 moreover propose that Voice may be semantically vacuous ("expletive Voice") and note that "[f]or the morphological realization of Voice, the non-projection of the external argument as a specifier is a necessary and sufficient condition to yield a non-active form, independently of whether Voice has semantic impact or not." (Alexiadou et al. 2015: 101–2).

In this approach, nonactive is the more highly specified form, whereas active is Elsewhere morphology. This neatly accounts for the fact that active is not only found on canonically agentive, transitive verbs in Greek-type languages, but also on different classes of unaccusative verbs (called *activa tantum*, "active only" verbs in Latin) which are generally assumed to lack a Voice head entirely (cf. Alexiadou and Anagnostopoulou 2004, Kallulli 2013, Grestenberger 2018).

With this background in mind, we can now turn to Sanskrit and Ancient Greek.

3 Passives in Sanskrit and Greek

Sanskrit and Ancient Greek are two corpus languages (noninformant languages) with very similar voice morphology, ultimately inherited from Proto-Indo-European (PIE). The present study focuses on Vedic Sanskrit (ca. 1,400–600 BCE), the primary corpus being the Rigveda (ca. 1,400–1,100 BCE). Due to its prestige and association with religious practice, Vedic provides a relatively standardized, coherent corpus. The primary sources for Ancient Greek for our purposes are Classical Greek authors such as Herodotus, Thucydides, etc. (5^{th}–4^{th} century BCE), and the earlier and more archaic Homeric Greek

(8^{th} century BCE). As we will see, there are already some significant differences in passivization between these two stages.

Vedic Sanskrit and Ancient Greek both have voice systems that are similar to the one illustrated in (1b). That is, the morphology found in passive contexts is syncretic with the morphology found in other "nonactive" contexts, e.g., reflexives, anticausatives, etc. In both languages, nonactive morphology alternates with active morphology and is expressed together with tense and agreement features on the verbal endings. These separate sets of endings are illustrated in (4) and (5).

(4) Vedic: active—nonactive endings (non-past/"present")

	Active			Nonactive		
	Sg.	Dual	Pl.	Sg.	Dual	Pl.
1	*-mi*	*-vas*	*-masi*	*-e*	*-vahe*	*-mahe*
2	*-si*	*-thas*	*-tha*	*-se*	*-ethe*, *-áthe*	*-dhve*
3	*-ti*	*-tas*	*-nti*	*-te*, *-e*	*-ete*, *-áte*	*-nte*, *-re*

(5) Greek: active—nonactive endings (past)

	Active			Nonactive		
	Sg.	Dual	Pl.	Sg.	Dual	Pl.
1	*-n*, *-a*	—	*-(a)men*	*-(a)mēn*	—	*-(a)metha*
2	*-s*, *-as*	*-(a)ton*	*-(a)te*	*-ou*, *-ō*	*-(a)sthon*	*-(a)sthe*
3	*-e(n)*	*-(a)tēn*	*-(a)n*	*-(a)to*	*-(a)sthēn*	*-(a)nto*

In the following, I will refer to verbs that are marked as passive solely because of the endings they take (the nonactive ones, that is) as *inflectional passives*.

In addition to these inflectional passives, Vedic Sanskrit and Ancient Greek also have an apparently passive *suffix* that occurs closer to the root and co-occurs with inflectional Voice morphology. In the following, this will be called the *derivational passive*.[2] At first glance, the derivational passive is odd in both languages for a number of reasons. First, it is restricted to a particular tense-aspect stem: it only occurs in the present (imperfective) stem in Vedic, and only in perfective stems (crucially the aorist, but also the perfective future) in Greek. This is illustrated in (6) for Vedic and in (7) for Greek (the element glossed as A is the "augment", which marks [+past] in both languages).

(6) Vedic Sanskrit

a. *bhár-a-**ti*** (present act.) 'carries sth.'
carry-V.IPFV-3SG.PRES.**ACT**

b. *bhár-a-**te*** (present nonact.) 'carries (for) oneself' (NOT '*is being carried')
carry-V.IPFV-3SG.PRES.**NACT**

c. *bhri-**yá-te*** (present pass.) 'is being carried'
carry-**PASS.IPFV**-3SG.PRES.**NACT**

[2]Depending on one's view of whether "derivation" always implies a change in category (cf. the discussion in Haspelmath and Sims 2010: 89ff.), this may not be the most accurate term, but it suffices for the purposes of this paper.

(7) Ancient Greek

a. *é-lou-s-**a*** (aorist act.) 'I washed (sth.)'
A-wash-V.PFV-1SG.PAST.**ACT**

b. *e-lou-sá-**mēn*** (aorist nonact.) 'I washed myself, bathed' (NOT *'I was washed')
A-wash-V.PFV-1SG.PAST.**NACT**

c. *e-loú-**thē-n*** (aorist pass.) 'I was washed'
A-wash-**PASS.PFV**-1SG.PAST.**ACT**

(6)-(7) suggest a ternary voice system active–middle–passive for Vedic and Sanskrit. However, the "passive" in (6c) and (7c) only occurs in a particular stem (imperfective in Vedic and perfective in Greek). Note that the suffix glossed as PASS in (6c) and (7c) appears to be in complementary distribution with (i.e., occupies the same "slot" as) the verbal stem-forming suffixes of (6a–b) and (7a–b); we will return to this point below.

(8) and (9) illustrate the inflectional and the derivational passive in Vedic and Greek, respectively. To do this, we need to compare different types of stems, since the derivational passive is not compatible with all tense-aspect stems. (8a) and (9a) illustrate the inflectional passive for Vedic and Greek, respectively. In both cases, the passive value of the verb results from the selected inflectional endings alone (note that there is nothing glossed PASS in these examples). (8b) and (9b) illustrate the derivational passive, with the apparently passive suffix *in addition* to the inflectional endings.

(8) Two types of passive, Vedic

a. inflectional (aorist)	b. derivational (present)
*á-sto-ṣ-**ṭa***	*bhri-**yá-te***
A-praise-V.PFV-3SG.PAST.**NACT**	carry-**PASS**.IPFV-3S.PRES.**NACT**
'he/she was/got praised'	'he/she is/gets carried'

(9) Two types of passive, Greek

a. inflectional (present)	b. derivational (aorist)
*theín-o-**mai***	*e-dú-**thē-n***
strike-V.IPFV-1SG.PRES.**NACT**	A-sink-**PASS**.PFV-1SG.PAST.**ACT**
'I am/get struck, hit'	'I was sunk'

This system is odd for several reasons. For a start, it is not clear why the derivational passive is apparently "doubly marked" for Voice (through the passive suffix and through the endings). If active/nonactive morphology realizes Voice (cf. Section 2 above), why is a designated passive suffix necessary? As (8a) and (9a) show (as well as the evidence from Modern Greek and Modern Albanian discussed above), nonactive morphology by itself is otherwise perfectly capable of expressing (or rather, marking) a passive context. The standard (functionalist) explanation for this odd ternary system is that nonactive morphology came to be "bleached" or lost the capacity to express some of its functions, thereby requiring "strengthening" by means of a new, designated passive morpheme (cf., e.g., Kulikov 2006, Kulikov and Lavidas 2013 on the "degrammaticalization" of middle morphology in Old Indic). However, it is strange that this "strengthening" would be restricted to a particular stem type: apparently, nonactive morphology was "strong" enough to mark passive in the perfective in Vedic and in the imperfective in Greek.

The strengthening hypothesis moreover doesn't work for Greek because the derivational passive co-occurs obligatorily with *active* endings (cf. (7c) and (9b)), which do not usually passivize. That is, there is no passive function associated with these endings that could hypothetically be in need of strengthening. Finally, from the perspective of the approach to Voice discussed in Section 2, the order of functional heads in the derivational passive is the opposite of what would be expected based on the typology of Alexiadou et al. 2015 for languages with a designated PassP: given the Mirror Principle, the order of morphemes expected to follow from (1a) should be ROOT–*v*–Voice–Pass, whereas Vedic and Greek show ROOT–*v*/Pass–Voice. That is, the Pass head seems to be much closer to the root than predicted. In fact, this is what the Vedic and the Greek derivational passive have in common: the "passive" suffix appears in the position where we usually find stem-forming morphology. They differ, on the other hand, with respect to the endings they select (active in Greek, nonactive in Vedic), and with respect to the stem type compatible with the passive suffix (perfective in Greek, imperfective in Vedic). It is therefore the former property, the fact that in both languages the apparently passive morpheme occurs "too close" to the root, that will be the starting point for our analysis. Before going into the analysis, the next section discusses the properties of the two types of passives in more detail. The crucial question is whether the inflectional and the derivational passive have the same syntactic and semantic properties. Accounts which assume that the derivational passive is strengthening the inflectional passsive, or suppletive to the inflectional passive, predict that the two types behave identically, at least with respect to the expression of the passive "function". We will therefore take a closer look at these constructions in the next section.

4 Properties of inflectional vs. derivational passives

4.1 Vedic Sanskrit

4.1.1 Inflectional vs. derivational passives

Any discussion of the inflectional vs. the derivational passive has to take their distributional differences into account. The inflectional passive (i.e., passivization through nonactive or "middle" morphology alone) is often considered a rare or "marginal" function of nonactive morphology in Vedic (e.g., by Gonda 1979: 21, Kulikov 2006, Kulikov and Lavidas 2013: 112). This is because passivization in the imperfective (present) stem is achieved through the derivational passive by using the suffix -*yá*- (cf. Section 3). The inflectional passive would therefore be expected in the aorist and the perfect stem. However, the Vedic aorist system also developed a designated "passive aorist", though this was much more restricted in use than the *yá*-passive.[3] This means that all instances of

[3]The passive aorist uses special "passive" endings in the 3sg. and 3pl., but is otherwise defective. Like the Greek derivational passive, it is syncretic with an intransitive (often anticausative or inchoative) reading (e.g., *ápādi* 'fell', *ábodhi* 'awoke' vs. passive *ákāri* 'was made', *ábhāri* 'was brought', etc.). The origin of the passive aorist is controversial (cf. Kümmel 1996: 14ff., Gotō 2013: 118f.) as is its synchronic status. However, if, following the analysis of Jasanoff 2003, the passive aorist endings ultimately developed from the PIE middle endings, one could analyze the passive aorist synchronically as a specialized form of the inflectional passive. Given the controversy surrounding this formation, it will be left aside in the following.

Another putative passive construction in Vedic consists of the participle ("verbal adjective" or "past participle") in -*tá*- plus a finite auxiliary (more often a null copula). This construction has very different properties from the synthetic constructions discussed in this article, even though it is routinely discussed

passive aorists have to be left out when comparing the inflectional and the derivational passive.

In addition, many scholars acknowledge a passive structure only if there is an overt demoted agent (e.g., Gonda 1951: 6, Gonda 1979: 21), which in Vedic is expressed as an NP marked with instrumental case. However, it has been noted that overt agent *by*-phrases in passives are "rare" in Vedic (cf. Gonda, loc.cit., Kulikov 2012: 19ff., but see Jamison 1979 for some important qualifications on such statements), as they apparently are in many other languages, including spoken English, even though they are, of course, perfectly grammatical.

In other words, the rarity of overt agents may be due to the nature of the texts and general, discourse-pragmatic restrictions on passivization rather than due to the grammar(s) of the speakers that produced those texts. Moreover, passivization with *by*-phrases is also somewhat restricted in *Modern* Greek in that not all agentive and causative transitive verbs passivize and allow agentive *by*-phrases. Alexiadou and Doron 2012: 18 note that "... only the following verb classes accept an agentive 'by'-phrase in Greek but disallow a causer PP and 'by itself' (...): Verbs of change of possession (e.g. *dino* 'give'), verbs of transfer of message (e.g. *leo* 'tell'), 'take' verbs, verbs of instrument of communication (e.g. *tragudo* 'sign'), 'remove' verbs (e.g. *diohno* 'expel'), and murder and poison verbs (e.g. *dolofono* 'murder')." (cf. also Alexiadou et al. 2015: 121f., 135). In other words, there may be more restrictions on overt demoted agents in Greek-type languages than there are, for example, in English. If an overt demoted agent is considered a core diagnostic for a passive, this will naturally lead to a lower number in the corpus.

Even with all these caveats, we do find instances of inflectional passives with overt demoted agents. Jamison (1979: 3) notes on the Rigveda: "There are at least 200 cases in which an instrumental is used with a passive clearly to express agency. About 25 of these are with *-yá-* passives, 10-15 with aor. passives, and about 20 with passively employed formal middles. The remainder, i.e. the majority, are found with past participles." The "passively employed formal middles" are the inflectional passives we are interested in. Examples are given in (10): (10a) has a demoted agent, (10b-c) are agentless passives, (10c) has an adverbially used instrumental adjunct.

(10) a. RV 1.77.5a–b:

ev<á> **<a>gnír gótamebhir** (...) **a-sto-ṣ-ṭa**
thus Agni.NOM Gotamas.INSTR A-praise-V.PFV-3SG.PAST.NACT
jātávedāḥ
Jātavedas.NOM

"Thus has Agni, the Jātavedas, been praised by the Gotamas (...)."[4]

b. RV 10.65.4d:

devā́ stav-a-nte mánuṣāya sūráyaḥ
gods.NOM praise-V.IPFV-3PL.PRES.NACT Manu.kind.DAT patrons.NOM

"... the gods are praised as patrons to the race of Manu."

c. RV 5.1.3a–b:

yád īṃ gaṇásya raśanā́m ájīgaḥ
when it troop.GEN bridle.ACC awaken.PFV.3SG.PAST.ACT

together with them, and is therefore not treated here (cf., e.g., Jamison 1979, 1990, Hock 1986).

[4]All Rigveda passages cited after van Nooten and Holland 1994; translations are from Jamison and Brereton 2014.

śúcir **aṅk-te** śúcibhir **góbhir**
blazing.NOM.SG anoint-3SG.PRES.NACT blazing.INSTR.PL cows.INSTR
agníḥ
Agni.NOM

"When he has awakened the bridle [=the hymn] of the (priestly) troop, blazing Agni is anointed with blazing cows [=milk]."

(10b-c) moreover show that nonactive morphology alone can still passivize present stems at this stage of the language, even though the *yá*-passive is much more often found.[5] This suggests that the need to "strengthen" or supplete the passive use of the nonactive forms cannot have been the only reason for the rise of the *yá*-passive.

As for the derivational passive itself, this is formed with the suffix *-yá-* and obligatorily takes nonactive endings. Like the inflectional passive, it is compatible with demoted agents and adverbially used instrumental adjuncts. Examples are given in (11) (cf. Delbrück 1888: 268ff. for more examples).

(11) a. RV 9.86.12d:
s<u>āyudháḥ **sotṛ́bhiḥ** **pū-ya-te**
with.good.weapons.NOM.SG pressers.INSTR purify-V.PASS-3SG.PRES.NACT
vṛ́ṣā
bull.NOM

"The bull of good weapons is purified by the pressers."

b. RV 8.20.8a:
góbhir **vāṇó** **aj-ya-te** sóbharīṇaāṃ
cows.INSTR music.NOM anoint-V.PASS-3SG.PRES.NACT Sobhari.GEN.PL

"The music of the Sobharis is anointed with cows."

4.1.2 Syntactic diagnostics

So far, we have assumed that the instrumental agent and the nominative patient of Vedic inflectional and derivational passives behave as demoted and promoted argument, respectively, much like in passives in "Standard Average European" languages. This holds at least for Vedic Sanskrit, where only the accusative-case marked objects of canonical transitive verbs can become the nominative subjects of the passives under discussion (accusatives of goal, duration of time, and "content accusatives" ≈ cognate objects cannot become nominative subjects under passivization) and intransitive verbs do not passivize, cf. Delbrück 1888: 104f., Hock 1982: 130f., Kulikov 2012: 701ff. Hock (1982, 1986, 1990, 2015) has argued that (at least in the oldest Vedic texts) this is corroborated by evidence from word order, control into absolutives, and reflexivization: in Vedic passives, the subject (= promoted object) generally precedes the demoted instrumental agent (as in (10a), though there are exceptions), in keeping with the generally acknowledged underlying S(O)V word order of Sanskrit.

Absolutives form dependent adjunct clauses (historically derived from the instrumental singular form of verbal nouns) using various indeclinable suffixes (most commonly *-tvā*

[5]Cf. also Delbrück 1888: 262f., Hock 1986: 16 on the passive use of present middle forms. The nonactive present *aṅk-te* in (10c) is later replaced by the derivational passive *aj-yá-te*, which is already found in the Rigveda, cf. (11b).

and *-ya*). The subject PRO of the absolutive is canonically controlled by the subject of the main clause in early Vedic (Delbrück 1888: 405, Hock 1982: 131, 1986: 22, Tikkanen 1987: 147f.). This means that in passive main clauses, the controller is the subject rather than the demoted agent (on possible counterexamples see Tikkanen 1987: 149f, Hock 1990, 1991). There aren't many examples of this construction; the following, (12a), is cited after Hock 1982: 131.[6] In this example, the dropped subject pronoun of the passive gerund *hávya-* '(the one) to be invoked' and the nonactive perfect participle *jajñānā́-* '(the one) who has been born' control the PRO of the absolutive *niṣádyā* 'having sat down'.

(12) a. RV 10.6.7.a–b:

ádhā h<í> agne [**PRO$_i$** mahnā́ **ni-ṣád-yā**] [pro$_i$
then because Agni.VOC greatness.INSTR down-sit-ABS
sadyó jajñ-ān-ó] [**pro$_i$**
immediately be.born-PTCP.NACT-NOM.SG.M
háv-<i>y-o babhū́-tha]
invoke-GER-NOM.SG.M become.PERF-2SG.ACT

"Then, o Agni, because, having sat down with greatness, immediately on being born you became the one to be invoked, ..."

b. RV 5.1.8a–b:

mārjāl<í>yo$_i$ **mṛj-ya-te** **své$_i$**
fit.to.be.groomed.NOM groom-PASS.IPFV-3SG.PRES.NACT SELF.LOC
dámūnāḥ kavi-praśast-ó átithiḥ śivó naḥ
house.master.NOM poet-praised-NOM guest.NOM kind.NOM our

"Fit to be groomed, he is groomed in his own (house) as master of the house, praised by poets, our kind guest." ("the one$_i$ fit to be groomed is groomed in his$_i$ own [house] ...")

Finally, the possessive reflexive adjective *svá-* 'own, SELF's" is controlled by the subject of passives, as in (12b), according to Hock 1982: 130f.[7] Taken together, these diagnostics suggest that the inflectional and the derivational passive in (early) Vedic Sanskrit are indeed canonical passives with a promoted internal argument and a demoted agent.[8]

[6]Hock loc.cit. claims that there are four attested examples in the Saṃhitas (the oldest layer of Vedic texts), but unfortunately does not cite the passages. Since he does not distinguish between inflectional, derivational, and *tá*-passives (cf. fn. 4 and ex. (12a) in the main text), as is common practice, a reevaluation of the evidence is a desideratum. Unfortunately this was outside the scope of this article.

[7]Hock, loc.cit., argues that this is true for all six instances of *svá-* in passive constructions in the Rigveda, but does not cite the relevant passages. My own survey found four instances in which *svá-* is controlled by the subject of a *tá*-participle (RV 1.94.14, 1.119.8, 7.12.1, 7.90.5; the latter also cited by Hock 1982: 131 as an example of subject control of a reflexive pronoun in the passive) and two in which it occurs with a finite passive verb: RV 5.1.8, cited in (12b), and RV 7.23.3, where *svá-* modifies the subject NP of an inflectional passive and its antecedent/controller is a demoted, instrumental agent. Given the controversy surrounding the syntactic behavior of *svá-* and the nature of its antecedents (cf. Vine 1997, Pinault 2001, Hock 2006, Kulikov 2007), pending further study this diagnostic cannot be considered as reliable as the others.

[8]However, Hock has argued in several articles (Hock 1982, 1986, 1990, 1991) that in the later Vedic language of the Brāhmaṇas as well as in Classical Sanskrit, his diagnostics show agent- rather than subject-orientation. That is, in passive structures the demoted agent (rather than the nominative subject) is found in sentence-initial position, and agents (rather than subjects) control absolutives and reflexives; see also Tikkanen 1987: 148 for a discussion of agent- vs. subject-orientation of Sanskrit gerunds.

(13) summarizes the most important properties of the inflectional and the derivational passive in Vedic. Both types promote internal arguments to subject position, allow the expression of demoted agents as instrumental adjuncts, and are eventive (rather than stative). They also pattern alike with respect to the syntactic diagnostics discussed above, but given the various caveats discussed in this section, these are given in brackets to indicate that further study is needed.

(13) Inflectional vs. derivational passives: Vedic

Properties	infl.	deriv.
Acc.theme → nom.subj.	✔	✔
Demoted agent → adjunct NP, instr. case	✔	✔
Eventive	✔	✔
Subject-initial	(✔)	(✔)
Subject controls absolutives	(✔)	(✔)
Subject controls reflexives	(✔?)	(✔?)

I have concentrated on those properties that are usually considered canonical properties of passives ("argument suppression", case absorption, argument promotion, cf. Alexiadou and Schäfer 2013b: 2ff.), though there is obviously some debate surrounding the issue.

4.2 Greek

4.2.1 Inflectional vs. derivational passive

Inflectional passives in Greek are in principle compatible with all tense-aspect stems, though some of the caveats discussed in Section 4.1 apply. That is, due to the use of the derivational passive in the aorist, inflectional passives are more likely to be found in the present and perfect stems. There are examples of inflectional passives in the aorist, too, though (Schwyzer 1939: 757, and cf. (15b)), especially in Homer, where the derivational passive is less productive than in Classical Greek. Like in Vedic, demoted agents in inflectional passives are considered "rare" (e.g., by Allan 2003), but there are some cases already in Homer and later (Schwyzer 1943, Jankuhn 1969).

However, in Greek there is much more variation with respect to the expression of the demoted agent than there is in Vedic, where agents and instruments are uniformly marked with instrumental case. Greek, on the other hand, uses different prepositions with genitive or dative case marking on the NP, e.g., *hupó* + gen. 'from, under', *apó* + gen. 'from', *ek* + gen. 'out of', *pará* + gen. 'from', *prós* + gen., dat. 'from, by', etc., cf. Schwyzer 1943, Jankuhn 1969, Luraghi 2003, George 2005, Lavidas 2012. The selection of these prepositions is at least partially determined by the semantics of the verb and finiteness (Luraghi 2003, George 2005). Classical Greek eventually generalizes *hupó* (whereas Modern Greek has *apo* for agents and *me* for instruments and causing events, cf. Alexiadou and Anagnostopoulou 2009), a development which seems to have begun in Homeric Greek (George 2005: 67). However, the problem remains that for much of the corpus there seems to be variation in the marking of the demoted agent. This suggests, of course, that there is no uniform thematic role "agent" to be expressed. Moreover, formally *active* unaccusatives can also express the agent/cause of the verbal event with

the same prepositions. For example, *hupó* + agent$_{\text{GEN}}$ famously occurs with a formally active, unaccusative verb in the following passage from Xenophon (Classical Greek):

(14) Xen. Cyr. 7.1.48:

oud' autoí ge **apéthnēiskon hupó hippéōn**
NEG they PTCL die.IPF.3PL.ACT from cavalry.GEN.PL

"They were not killed by any of the [enemy's] cavalry."

This has led to skepticism in the literature as to whether prepositional phrases like *hupó*, etc., *ever* express a demoted argument of the verb, and hence whether inflectional and derivational passives in Ancient Greek can even be considered canonical passives. We will return to this problem in Section 5.

Taking these caveats into consideration, both Homeric and Classical Greek have eventive inflectional passives in which an internal argument descriptively becomes the nominative case-marked subject. Examples are given in (15).

(15) a. Hom., *Il.* 6.56–7:

ẽ soì **árista pepoíē-tai** katà
PTCL you.DAT best.NOM.PL.N do.PERF-3SG.PRES.NACT towards
oĩkon **pròs Trṓōn**
house.ACC from/by Trojans.GEN

"(So) were the best things done to you in your house by the Trojans?"

b. Hom., *Il.* 11.309:

hṑs ára puknà karḗath' **hup' Héktori**
so then many.N heads.NOM.N by Hector.DAT
dámn-ato laõ̃n
subdue.IPFV-3SG.PAST.NACT men.GEN

"Thus many heads of the men were then subdued by Hector."

c. Hdt., *Hist.* 7.153.4:

ho dè **lég-e-tai** **pròs tẽ̃s Sikelíēs**
he PTCL say-V.IPFV-3SG.PRES.NACT by the.GEN Sicily.GEN
tõ̃n oikētórōn tà hupenantía toútōn
the.GEN.PL inhabitants.GEN the.ACC.PL.N opposite.ACC.PL.N this.GEN.PL
pephukenaí
be(come).PERF.INF.ACT

"but he is said by the inhabitants of Sicily to have been the opposite of this" (George 2005: 120)

Homer also has a construction in which a demoted agent is expressed without a preposition, with dative case only, as in (16a). This is known as the dative of agent, and it is only found with a handful of verbs in Homer (cf. George 2005: 51ff.). The dative is also used for instrument adjuncts and inanimate causes, cf. (16b).

(16) a. Hom., *Il.* 5.465:

es tí éti **kteíne-sthai** eásete
until what longer kill.IPFV-PRES.INF.NACT allow.2PL.FUT.ACT
laòn Akhaioĩs
people.ACC Achaeans.DAT

"How much longer will you allow the people to be killed by the Achaeans?" (George 2005: 55)

b. Hom., *Il.* 11.674-5:

hó (...) **é-blē-t'** en prṓtoisin emês apó kheiròs
he A-hit.PFV-3SG.PAST.NACT in first.DAT.PL my.GEN from hand.GEN
ákonti
dart.DAT

"He ... was hit among the first ones by a dart from my hand."

The dative of agent is still used with the perfect passive in post-Homeric Greek (e.g., by Herodotus), but was gradually replaced by *hupó* + gen. The Greek dative is diachronically syncretic between the PIE dative, instrumental and locative cases, and it is therefore possible that the Greek dative of agent is the equivalent of the Vedic instrumental-marked agents that we encountered in Section 4.1. In that case, we could assume that dative was the original case of the demoted agent in Greek, and that the (post-)Homeric use with prepositions, especially *hupó* + gen. is an innovation.[9] This still leaves the variation in choice of preposition and case in post-Homeric Greek to be explained, but it means that there is at least some evidence for a (more or less uniform) thematic role, and hence for a demoted agent.

Turning now to the derivational passives, these are formed with the suffix *-ē-* and *-thē-* in Homeric Greek, the latter of which was generalized in Classical Greek and Koine Greek. The *(th)ē*-passive obligatorily takes the *active* endings.[10] This suffix is only found in the aorist and future, i.e., the perfective aspect. Examples are given in (17). (17a) shows that the derivational passive could occur with a dative of agent, like the inflectional passive. (17b) shows a derivational passive with *ek* + gen., (17c) with *hupó* + gen. (17c) also illustrates an optative passive without an overt demoted agent (as well as an inflectional passive with an overt agent in the first line). See Jankuhn 1969, Tronci 2005, and García Ramón 2014 for further examples.

(17) a. Hom., *Il.* 18.103:

hoì dḕ polées **dám-e-n**
who.NOM.PL PTCL many.NOM subjugate-PASS.PFV-3PL.PAST.ACT
Héktori díōi
Hector.DAT divine.DAT

"who, in large numbers, were defeated by godlike Hector" (George 2005: 53)

[9] That the various prepositions used to express agents and causers in the Greek passive were a specifically Greek development is beyond doubt, but it is less clear if the dative of agent in Greek really continues an older instrumental rather than, for example, a dative of obligation or affectedness, as in gerundive and stative constructions elsewhere in the older Indo-European languages. See Hettrich 1990: 75f., Luraghi 2003: 63ff.. and George 2005: 58ff. for a critical discussion of this problem.

[10] With the exception of the future passive, a post-Homeric construction which unexpectedly takes *nonactive* endings in Attic-Ionic (but not in Doric, where the expected active endings are used). For reasons of space, this cannot be discussed here, but see Grestenberger 2016 for details.

b. Hom., *Il.* 2.668–9:

trikhthà dè ŏikē-the-n kataphuladón, ēde
three.parts.ADV PTCL settle-PASS.PFV-3PL.PAST.ACT by.tribe.ADV and
phílē-the-n ek Diós (...)
love-V.PASS-3PL.PAST.ACT of Zeus.GEN (...)

"and they settled in three divisions according to tribe, and were loved by Zeus ..."

c. Hdt., *Hist.* 8.13.1:

e-poié-etó te **pãn hupò toũ theoũ** hókōs
A-do.IPFV-3SG.PAST.NACT and everything by the.GEN god.GEN so.that
àn **eksisō-the-íē** tō̃i Hellenikō̃i **tò**
PTCL make.equal-PASS.PFV-OPT.3SG.ACT the.DAT Greek.DAT the.NOM
Persikòn mēdè pollō̃i pléon eíē
Persian.NOM nor many.DAT more.NOM be.3SG.OPT.ACT

"and everything was being done by God so that the Persian army might be reduced to the same size as the Greek army" (George 2005: 117)

4.2.2 Syntactic diagnostics

We have already seen that the expression of the agent varies widely in the inflectional and the derivational passive in Ancient Greek. Moreover, unlike early Vedic, Greek also allows dative and genitive case-marked NPs to become nominative subjects under passivization (cf. Conti 1998, Lavidas 2012, Anagnostopoulou and Sevdali 2015, Grestenberger 2018). Accusatives of goal, duration of time, and content also passivize, as do some intransitive verbs. However, these properties all start to be attested around 500 BCE, towards the end of the archaic period (Schwyzer 1950: 240f.), so it is likely that Greek underwent a syntactic change with respect to passivization and/or case assignment around that time.

However, the subject of both types of passive behaves as a canonical subject with respect to applicable subject tests. Like in Vedic, the unmarked position for subjects in Greek is sentence-initial (or, more precisely, preceding the finite verb and its other arguments). In 12 of the 18 examples of inflectional passives with both an overt subject and a demoted agent in the corpus of Tronci (2005),[11] the nominative subject precedes both the verb and the demoted agent. In 5 cases, the subject precedes the agent with the verb having moved to the front of the clause. Only in one example does the agent precede the subject; however, in this case the agent is an unstressed dative pronoun (cf. the discussion of the "dative of agent" above), which may have moved to the front for prosodic reasons. Things are a little less clear in the case of the derivational passives in Tronci's corpus: in 11 of the 19 examples with both an overt subject and a demoted agent, the subject precedes the demoted agent and the verb. However, in the remaining 8 cases, the demoted agent precedes the subject, and only in two of these, prosodic factors may have played a role. It needs to be stressed, however, that this is a preliminary assessment.

The subjects of both types of passives can moreover control into infinitives, cf. (18a) for a derivational passive and (18b) for an inflectional passive (both from Tronci 2005: 53) and can be raised to subject (cf. the discussion in Goldstein 2016: 163ff. on subject control and raising predicates in Herodotus).

[11] Consisting of the works of Homer, Hesiod, and Herodotus. Since Tronci's primary focus is on the derivational passive, the discussion of inflectional examples in this corpus is not exhaustive.

(18) a. Hdt., *Hist.* 8.108.3:

ei gàr **anankas-theíē** apolamph-theìs ho
if for force-PFV.PASS.OPT.3SG.ACT cut.off-PFV.PASS.PTCP.NOM the
Pérsēs$_i$ [**PRO$_i$ ménein** en tẽi Eurṓpēi ...]
Persian.NOM remain.IPFV.INF.ACT in the Europe.DAT

"For if the Persian, cut off, is forced to remain in Europe, ...

b. Hdt., *Hist.* 5.101.2:

... [hoí te Ludoì kaì hoi Pérsai]$_i$ **ēnankáz-onto** [
the and Lydians.NOM and the Persians.NOM force-IPFV.3PL.NACT
PRO$_i$ amúne-sthai]
defend-IPFV.INF.NACT

" ... and the Lydians and the Persians were forced to defend themselves (there)."

It is unclear how the subjects of the two different passives behave with respect to binding reflexives. Reflexivization changed between the Archaic Greek of Homer and the Classical (Ionic) Greek of Herodotus, though the relevant reflexive pronouns and the possessive reflexive adjective *heós, heé, heón* 'his/her/its own; SELF's' (cognate with Ved. *svá-*) are generally described as subject-oriented (cf. Powell 1933, Smyth and Messing 1956: 304, Kiparsky 2012), and at least in Classical Greek, dative (experiencer) subjects can also bind reflexives (cf. Viti 2009: 159). This suggests that the subjects of passives should be able to bind reflexives, and there are indeed some examples in Homer, e.g., the inflectional passive (infinitive) in (19).

(19) Hom., *Il.* 22.403-4:

tóte dè Zeùs dusmenéessi dṓken [PRO$_i$
then but Zeus.NOM enemies.DAT give.PFV.3SG.PAST.ACT
aeikíssasthai heé͂i$_i$ en patrídi gaíē͂i]
mistreat.PFV.INF.NACT SELF.DAT in native.DAT land.DAT

"but then Zeus had given (him$_i$) to (his) enemies [PRO$_i$ to be mistreated in his$_i$ own native land]." ($_i$ = Hector, killed and subsequently cruelly mutilated by Achilles)

However, whether this is equally true for inflectional and derivational passives (in Homer and Herodotus) awaits further study. The following table summarizes the properties of the inflectional vs. the derivational passive in Ancient Greek, with the caveats concerning the problems of some of the diagnostics discussed in this section taken into account.[12]

[12] An additional diagnostic used by Tronci (and by Jamison 1979 for Vedic) is the attestation of the corresponding active, transitive structure (ideally in the same author's work). In the table in (i), this subsumed under the entry in the first row.

(20) Inflectional vs. derivational passive: Greek

Properties	infl.	deriv.
(Acc.)theme → nom.subj.	✔	✔
Demoted agent → dat.; prep. + gen./dat. case	?	?
Eventive	✔	✔
Subject-initial	✔	(✔)
Subject controls into infinitives	✔	✔
Subject controls reflexives	(✔?)	(✔?)

To summarize, the Greek inflectional and derivational passives broadly have the same syntactic properties, but the status of the demoted agent is unclear for both. While both are able to occur with dative agents at the oldest stage discussed here and subsequently with the same range of prepositions, there is reason to doubt that they were structurally exactly identical. This will be discussed in the next section.

5 Analysis

The crucial question of this section is whether the inflectional and the derivational passive can receive a uniform analysis in both languages under discussion, and whether we need to assume two different passive structures, i.e., both (1a) and (1b) for Sanskrit and Greek. In the following, I argue that the inflectional passive in both languages has the structure (1b), following the analysis of Alexiadou et al. 2015 and Schäfer 2017 of the Modern Greek passive, whereas the derivational passives in both languages developed independently out of stative/inchoative v's via a reanalysis of a verbal functional head as "low" Pass head.

5.1 The inflectional passive

As mentioned in Section 2, the inflectional passive in Vedic and Greek is syncretic with other canonical functions of nonactive morphology (reflexive, anticausative, etc.). This suggests that the inflectional passive can be analyzed along the same lines as Alexiadou et al. 2015 propose for Modern Greek, namely with an underlying structure like (1b), which includes a syncretic "Voice$_{\text{MIDDLE}}$" head. This Voice head actually comes in different "flavors", depending on whether the verb in question is an anticausative, passive, reflexive, etc.[13] For passives in Greek-type languages, Schäfer 2017 proposes the two Voice heads in (21).

(21) Schäfer 2017: "(Medio)passive" Voice heads in Modern Greek
   a. Medio-passive Voice: $\{\lambda e \exists x[\text{agent(e, x)}], \emptyset\}$
   b. Passive input Voice: $\{\lambda x \lambda e[\text{agent(e, x)}], \emptyset\}$

(21a) is a morphologically nonactive "short passive" in Greek-type languages; that is, a form of "unsaturated Voice" (cf. Bruening 2013): it introduces an agent θ-role, but no external argument DP to saturate that role. The agent is subsequently existentially bound.

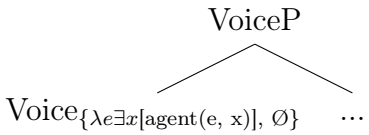
(21b) likewise introduces an agent θ-role, but no external argument DP to saturate that role. However, this structure then becomes the input to a "high passive" head as in

[13] For a similar approach to syncretic nonactive voice using "flavors of v" cf. Kallulli 2007, 2013.

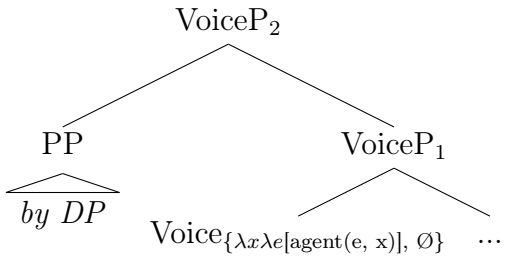
(21a), along the lines of Bruening 2013, who proposes that an agent *by*-phrase adjoined to VoiceP then saturates the agent θ-role. (21b) is generally considered a canonical passive, given the criteria used above (especially the presence of an overt demoted agent). The two structures are illustrated in (22).

(22) Short and long passive in Greek-type languages

a. Mediopassive Voice:



b. "Passive input" Voice

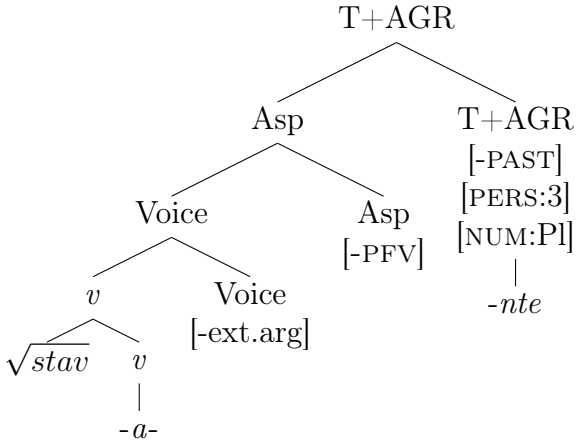


(23) illustrates the inflectional passive in Vedic and Greek (using a Vedic example) after head movement has taken place. The Voice head in (23) is a stand-in for either of the structures in (22), depending on whether or not a demoted agent is adjoined; verbal stem forming suffixes such as the "theme vowel" *-a-* in (23) are analyzed as realizations of the verbalizing head *v* (see, e.g., Harley 2009, Harley 2013, Panagiotidis et al. 2017 on "verbalizers").[14]

(23) Inflectional passive, Vedic & Greek

a. Y ($X_{INSTR/DAT}$) *stav-a-nte*
praise-IPFV-3PL.PRES.NACT
"Y are praised (by X)"

b.



While the analysis of the inflectional passive is relatively straightforward, the derivational passive is more complicated. The crucial question is how to analyze the "passive" suffixes *-yá-* and *-(th)ē-*. I argue in the next section that this is where Vedic and Greek diverge structurally.

[14]There is actually some evidence that verbalizers in Vedic and Greek spell out a span (in the sense of Merchant 2015) that includes Voice (and Asp? Cf. Grestenberger 2016), but this will not be relevant here. For reasons of space, I cannot discuss the exact nature of the verbal theme vowel, especially the question of whether it realizes *v* as assumed here, or adjoins to it post-syntactically as argued by, e.g., Oltra-Massuet 1999.

5.2 The derivational passive

5.2.1 Greek: "pass" = v/_Asp[+pfv]

As illustrated in the previous sections, both the Greek and the Vedic "passive" suffixes are too close to the root to spell out the "high passive" head of Bruening 2013, Alexiadou et al. 2015, Schäfer 2017, etc. In this section I argue that Ancient Greek -*thē*- realizes *v* in the context of Asp[+pfv], based on the analysis of Merchant 2015 of Modern Greek -*th*-. However, Merchant argues that -*th*- spells out Voice[-act] (≈ Voice[-ext.arg] as used in this paper) in the context Asp[+pfv], whereas I propose that Ancient Greek differed in that the *(th)ē*-passive spelled out (a particular type of) *v* in the context of Asp[+pfv], without an intermediate Voice head.[15]

There are two immediate advantages to this proposal. First, it correctly predicts that -*(th)ē*- passives always surface with the *active* set of endings: recall that the Spell-Out condition in (3) means that active morphology surfaces by the Elsewhere Principle when there is no Voice head, as in active unaccusatives. Second, it explains the odd restriction of the derivational passive to what is traditionally called a tense-aspect stem; that is, a verbal stem that also seems to be marked for aspect. If suffixes like -*(th)ē*- actually spell out verbalizers (or *spans* of *v* and Voice, cf. footnote 14) that are only licensed in the context of Asp[+pfv] or Asp[-pfv], it would explain why verbal stem-forming morphology and sentential aspect are morphologically so closely linked in many of the older Indo-European languages, most conspicuously so in Indo-Iranian (to which Sanskrit belongs) and in Greek. It would therefore also explain why -*thē*-, like other verbalizers but crucially unlike Voice morphology on the endings, is restricted to a particular aspectual environment.

Finally, the diachrony of -*(th)ē*- also suggests that it was originally a verbal stem-forming suffix, rather than a Voice marker. In Homer and to some extent in Classical Greek, -*thē*- and its historically older allomorph -*ē*- also form non-passive, usually stative or inchoative, aorists, illustrated in (24).

(24) Non-passive *thē*-aorists:

a. *e-rrú-**ē**-Ø* 'flowed, streamed'
A-flow-**V.PFV**-3SG.PAST.ACT

b. *e-pág-**ē**-Ø* 'became fixed, coagulated'
A-become.fixed-**V.PFV**-3SG.PAST.ACT

In other words, this suffix is originally linked to lexical aspect or "Aktionsart" rather than Voice, and the distribution of passive vs. non-passive (anticausative/inchoative) *(th)ē*-aorists in Homer vs. Herodotus shows that the passive use gradually gained ground on the way to Classical Greek: Of the 158 Homeric *(th)ē*-aorists listed in Tronci 2005, only 27 are passive, while the rest are for the most part anticausative or inchoative, compared to 112 passive and 73 non-passive *(th)ē*-aorists in Herodotus. This suggests that the semantics of the functional head spelled out by this suffix gradually changed during this period.

Moreover, Homeric and Classical Greek show that -*(th)ē*- was originally in complementary distribution with other verbalizers, that is, other *v*'s. If -*(th)ē*- realized Voice, on the other hand, we would expect it to be able to select verb stems with overt stem

[15] Cf. Grestenberger 2016 for an earlier, slightly different version of this analysis; some of the arguments are repeated here. See also Christopoulos and Petrosino 2018 and Alexiadou 2018, who argue that Modern Greek -*th*- spells out a fused Voice/Asp head.

forming-morphology, but this is not case, as illustrated by (25).

(25) *-thē-* in complementary distribution with other *v*'s:

a. *dű-**n**-ō*
sink-**V.IPFV**-1SG.PRES.ACT
'sink (sth.)'

b. *é-dū-**s**-a*
A-sink-**V.PFV**-1SG.PAST.ACT
'sank (sth.)'

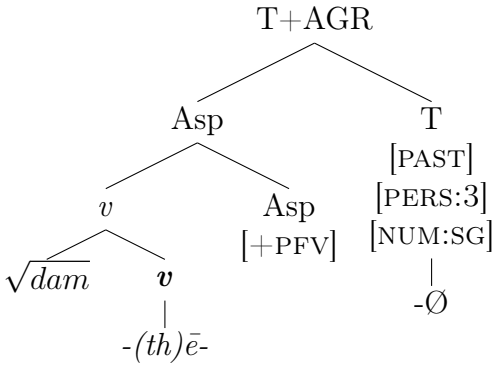
c. *e-dú-**thē**-n*
A-sink-**PASS.PFV**-1SG.PAST.ACT
'was sunk'

In other words, the fact that we get *edúthēn* instead of **edűsthēn* tells us that the *(th)ē*-passive and inchoative/anticausative was originally formed from the root, i.e., spelled out a version of *v*, rather than *selecting v*. This structure is illustrated in (26).

(26) derivational passive, Greek

a. Y *e-dám-ē-Ø* (hupò X_{GEN})
A-subjugate-PASS.PFV-3SG.PAST.ACT
"Y was subjugated (by X)"

b.



The reason for the "Voiceless" structure of the Greek derivational passive is that the inchoative/anticausative *-(th)ē*-suffix was originally denominal (cf., e.g., Jasanoff 2004, García Ramón 2014). Concretely, the *-ē-* reflects the instrumental singular ending of adjectival abstract nouns and is also seen in analytic constructions like Vedic *guh**ā** bhū-* 'become hidden/with hiding', Lat. *ār**ē**-faciō* 'make hot/with heat', etc. (Jasanoff 2004: 144ff.).[16] If the Greek *ē*-verbs were originally denominal/deadjectival statives or inchoatives, this would explain why they didn't have a Voice head: Alexiadou and Anagnostopoulou 2004 show that in Modern Greek, unaccusative deadjectival verbs are always morphologically active, i.e., *activa tantum*, and argue that they consist of only a v_{BECOME} head that selects an AP.

However, we do also find occasional *thē*-aorists from verbal *stems* rather than roots already in Homeric Greek (cf. Schwyzer 1939: 761f.), as illustrated in (27). (27a-b) show the alternating present stem *klī-n-* 'lean' (a causative alternation verb), (27c) shows the *thē*-passive built on this stem (as can be seen by the presence of the stem forming-suffix

[16]While Greek **-ē-* therefore has cognate suffixes in other languages, albeit in the nominal domain, the origin of the variant *-thē-* is less clear. See, e.g., Jasanoff 2004: 166f., Peters 2004, García Ramón 2014: 152, fn. 6 for a discussion of its origin.

-*n*-), (27d) shows the expected, root-derived *thē*-passive. Both occur in Homer, so there must have been some variation already at this stage.

(27) Deverbal vs. deradical *thē*-passives in Homer

a. *klī́-n-ō*
lean-V.IPFV-1SG.PRES.ACT
'I make sth. lean, prop up (sth.)'

b. *klī́-n-omai*
lean-V.IPFV-1SG.PRES.NACT
'I lean' (itr.)

c. *e-klí-n-thē-n* (e.g., Homer, *Il.* 6.467)
A-lean-V.IPFV-PASS-1SG.PAST.ACT
'I lean, slope, fall'

d. *e-klí-thē-n* (e.g., Homer, *Od.* 18.213)
A-lean-V.PASS-1SG.PAST.ACT
'I lean, slope, fall'

Passives like (27c) seem to confirm an analysis along the lines of Merchant 2015 of Modern Greek -*th*- as an exponent of Voice[-act] in the environment Asp[+pfv] (or: as the exponent of a fused Voice/Asp head, cf. Christopoulos and Petrosino 2018, Alexiadou 2018), since in this case we see an exponent of *v* arguably selected by -*thē*- (though a reanalysis of the root as $\sqrt{klin}$ instead of $\sqrt{kli}$ is also possible).

Wile a diachronic reanalysis of -*thē*- from a *v* exponent to a Voice exponent is *a priori* not an unreasonable assumption, there are a few reasons that mitigate against it. First, if -*thē*- in (27c) and Modern Greek -*th*- really realized Voice, it would follow that the active/nonactive *endings* of Ancient and Modern Greek verbs are not realizations of Voice, but contextually conditioned allomorphs of T/Agr in the contexts Voice[+ext.arg.], Voice[-ext.arg.], etc., as Merchant (2015: 279) assumes. The Span Adjacency Hypothesis in (28) makes this possible, and it is compatible with the analysis presented here so far.

(28) Span Adjacency Hypothesis (Merchant 2015: 294)
Allomorphy is conditioned only by an adjacent *span*.

However, assuming that Merchant's Voice[+/-act] corresponds to Voice[+/-ext.arg.], we then actually predict the *nonactive* set of endings for cases like (27c) and for the Modern Greek *th*-forms because of the Spell-Out condition in (3), i.e., that Voice is realized with nonactive morphology if it does not have an external argument. This is, of course, wrong for Ancient *and* Modern Greek.

The second problem is that Merchant is forced to assume three (potentially more) different ways of realizing Voice in Modern Greek: as -*th*- in the context Asp[+pfv], as part of the span Voice[+act]+Asp[+pfv] (p. 291), as part of the span V+v+Voice[-act] (p. 291) and as part of the span Voice+Asp+T/Agr in the case of the nonactive imperfective endings (p. 293). This seems ad hoc and runs counter to the generalizations with respect to the distribution of active and nonactive endings discussed in Section 2, which suggest that there *is* a uniform exponence of Voice across the different verbal stems.[17] All in all,

[17]This is especially problematic for the active nonpast endings on T/Agr, which appear to be conditioned by Voice[+act] in the present and future active (Merchant 2015: 290–1, but by Voice[-act] in the future and perfective passive (p. 292). See Christopoulos and Petrosino 2018 for further criticism of Merchant's analysis.

these are good reasons against assuming that *-(th)ē-* in the derivational passive realizes Voice in (at least) Ancient Greek.[18] Rather, it is the exponent of a functional projection below Voice, whereas the realization of Voice must be uniformly sought in the endings (whatever the exact implementation of this generalization). We will return to the nature of this functional projection in Section 5.3.

Finally, the structure in (26b) predicts that there will be no uniform expression of a demoted agent in the derivational passive in Greek, given that the projection where such a demoted agent usually adjoins to, VoiceP, is absent. This would, of course, fit well with the observation that there is a great deal of variation in the expression of agents, instruments, and causes with passives (and unaccusatives!) throughout the Ancient Greek corpus. However, this is usually claimed for both the inflectional *and* the derivational passive. On the other hand, previous studies on the expression of agents in Ancient Greek (Schwyzer 1943, Jankuhn 1969, George 2005) do not systematically distinguish between the inflectional and the derivational passive because the latter is treated as suppletive to the "middle" paradigm in the aorist by traditional grammars. The evaluation of the prediction resulting from this proposal must therefore be deferred to another time.

5.2.2 Vedic: "pass" = *v*

Compared to its Greek counterpart, the analysis of the Vedic derivational passive is relatively straightforward. I propose that it realizes a particular "flavor" of *v*, specifically a reanalyzed inchoative v_{BECOME} (in the sense of, e.g., Alexiadou and Anagnostopoulou 2004, Harley 2009, etc.).

The arguments for this are similar to the ones given above for the Ancient Greek derivational passive. First, the Vedic "passive" suffix *-yá-* never co-occurs with other stem forming-morphology, and crucially never selects verbs with overt transitivizing morphology. This is especially striking in the case of the nasal infix presents of class VII, in which an infix *-na-/-n-* is inserted before the last consonant of the root. (29a–b) show the 3sg. present active and nonactive, respectively, (29c) illustrates the present passive from the same root (*yuk-/yuj-* 'yoke').

(29) Vedic nasal infix present and its passive

a. present active:
*yu<**ná**>k-ti*
yoke<**V.IPFV**>-3SG.PRES.ACT
'yokes' (tr.)

b. present nonactive:
*yu<**ṅi**>k-té*
yoke<**V.IPFV**>-3SG.PRES.NACT
'yokes for him-/herself'

c. present passive:
*yuj-**yá**-te*
yoke-**PASS.IPFV**-3SG.PRES.NACT
'is being yoked'

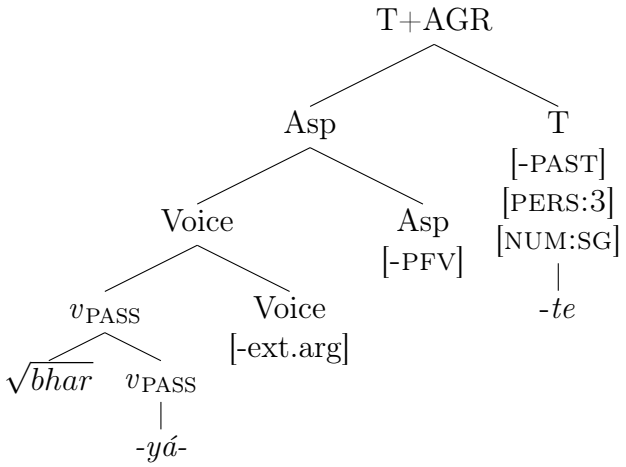
[18] I remain agnostic on the correct analysis of Modern Greek *-th-*, on which the reader is again referred to Alexiadou et al. 2015, Merchant 2015, Christopoulos and Petrosino 2018, and Alexiadou 2018.

(29c) shows that the nasal infix that marks the transitive present stem is missing in the passive, even though the expected **yu<ñ>j-yá-te* would be phonotactically licit. In other words, *-yá-* seems to compete for the same structural position as other verbal stem-forming suffixes, like Ancient Greek *-(th)ē-*. However, unlike the Greek suffix, the Vedic suffix obligatorily takes *nonactive* morphology, suggesting that it is selected by a higher VoiceP. Its structure, (30), is therefore fairly similar to the one of the inflectional passive given in (23b). Given the syntactic and semantic similarities between the two types of passives (i.e., both uniformly express a demoted agent as an instrumental NP), this is a desirable outcome.

(30) derivational passive, Vedic

a. Y (X_{instr}) *bhri-yá-te*
carry-PASS.IPFV-3SG.PRES.NACT
'Y is (being) carried (by X)'

b.



Like its Greek counterpart, the Vedic passive suffix developed from a non-passive, stative/inchoative verbal stem-forming suffix. In fact, Vedic has a second *ya*-suffix which triggers root accent and overwhelmingly occurs with *active* endings (cf. Kulikov 2012). With very few exceptions, this suffix is found on unaccusative, stative or inchoative verbs. Some examples are given in (31).

(31) Vedic intransitive (non-passive) *-ya-*: *kṣúdh-ya-ti* 'becomes hungry', *gṛ́dh-ya-ti* 'becomes greedy', *jū́r-ya-ti* 'grows old, ages'

There are even a few minimal pairs of inchoative *-ya-* vs. passive *-yá-* from the same root, e.g., inchoative *kṣ́ī-**yá**-te* 'perishes' vs. passive *kṣī-**yá**-te* 'is destroyed'. It is therefore plausible that the Vedic suffix, too, arose from a diachronic reanalysis v_{BECOME}- to v_{PASS}- (*vel sim.*; cf. Jasanoff 2004: 141, who also points out the similarity to the development of Greek *-(th)ē-*). Vedic inchoative/stative *-ya-* and passive *-yá-* moreover have cognates in other Indo-European languages, ultimately reflecting the PIE suffix *-i̯é/o-, which is generally agreed to have formed stative and inchoative denominal and deadjectival verbs. However, it also formed primary verbs, as attested by a number of cognates across the IE languages. Some examples are given in (32).

(32) Inherited *i̯é/o*-verbs

a. **spék-i̯e-* 'see, watch out for' > Ved. act. *páśyati* 'sees', Lat. act. *speciō* 'I see', vs. Gk. nonact. *sképtomai* 'look around'

b. *$m\underset{\circ}{r}$-$\underset{\frown}{i}$é- 'die' > Ved. nonact. *mriyáte* 'dies', Lat. nonact. *morior* 'die'
c. *$\hat{g}\underset{\circ}{n}h_1$-$\underset{\frown}{i}$é/ó- 'become, be born' > Ved. nonact. *jā́yate* 'is born', Old Irish 3sg. pass. *gainithir* 'is born' vs. Young Avestan act. 3sg. *zaiieiti* 'is born'

The fact that quite a few of these cognates agree with respect to their nonactive voice morphology suggests that the suffix *-$\underset{\frown}{i}$é/o- could be selected by Voice already in PIE. Given the semantics of verbs like (32b–c) and their lack of an implicit argument, this was most likely the semantically empty "expletive" Voice head proposed by Schäfer 2008, Alexiadou et al. 2015, Schäfer 2017, etc. The semantics of Voice in this construction seem to have changed after the reanalysis of the *yá*-suffix as a v_{PASS} head, which could now be selected by either one of the passivizing Voice heads discussed in Section 5.1. (cf. ex. (22)), judging from the fact that the Vedic *yá*-passive has a uniformly expressed overt demoted agent.

5.3 The inchoative-to-passive reanalysis

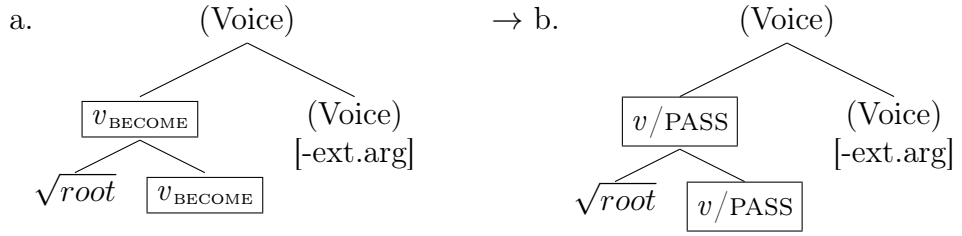
In the previous sections, I have argued that the inflectional passive in Vedic and Greek fits into the typology of passives in voice syncretism languages and confirms the observations of, e.g., Kallulli 2007, 2013, Alexiadou and Doron 2012, Alexiadou 2013, Alexiadou et al. 2015 with respect to how these passives behave in Modern Albanian and Modern Greek.

I have moreover argued that the derivational passive arose independently in these languages through a reanalysis of an inchoative verbalizing head as a designated passive head. It's time to look at this reanalysis more closely.

As already mentioned, there is not much work on the development of synthetic passives. The diachrony of analytic passive constructions is slightly better understood, even though these are comparatively rare outside of Indo-European. In fact, Haspelmath 1990 argues based on a sample of 31 languages that the most common morphological means of forming a passive is via a "stem suffix" such as the suffix -*yá*- in Vedic and -*thē*- in Greek. A better understanding of the development of such suffixes is therefore an urgent desideratum. Haspelmath 1990: 38ff. discusses several cases in which a passive suffix arose via grammaticalization of a BE-auxiliary, but this is clearly not what happened in the case of Vedic and Greek. He also discusses cases of what he terms "the lexical expansion of initially idiosyncratic derivational morphemes" and mentions both Greek -*thē*- and Vedic -*yá*- as examples. However, his brief treatment of such cases suggests that this development was, indeed, idiosyncratic and proceeded from lexical item to lexical item. As I have argued in the previous sections, a more principled generalization is possible. In fact, what the Vedic and Greek suffixes resemble most in terms of their syntactic and semantic development is the English *get*-passive, which according to Alexiadou 2005, 2012 is ambiguous between an anticausative and a passive interpretation in examples like *Samantha got hurt*. This ambiguity between an anticausative/inchoative and a passive interpretation is precisely what we observed in the diachrony of Greek -*(th)ē*- and Vedic -*yá*-.

Alexiadou 2012 argues that English *get* realizes *v*, building on previous work that has shown that *get* does not pattern with other auxiliaries, but behaves almost like a lexical verb (Haegeman 1985, Wanner 2013; cf. also Givón and Yang 1994 on the development of the English *get*-passive from the meaning 'obtain' and Haspelmath 1990: 40ff. on passives from UNDERGO/OBTAIN-auxiliaries). For our Vedic and Greek suffixes, we can identify this *v* with v_{BECOME}, whose subsequent reanalysis resulted in the derivational passive. This reanalysis is illustrated in (33); the projections that undergo the change are boxed.

(33) Inchoative-to-passive reanalysis



Whether this v-head could be selected by Voice is parametrized (yes for Vedic, no for Greek), which is why Voice is in brackets in (33). We could moreover refine (33) by adding the observation that Greek *-(th)e-* was originally denominal/deadjectival into its structure.

6 Conclusion: two types of passive

Passivization is parametrized both syntactically and morphologically. I have argued in this paper that the nonactive morphology of Vedic and Greek is found in canonically passive contexts and can be analyzed as an exponent of (a version of) Voice[-ext.arg.], along the lines proposed for Modern Greek by Alexiadou et al. 2015, etc. That is, it signals the lack of an agent DP in Spec.VoiceP in different syntactic environments, one of which is the inflectional passive.

We have moreover seen that both languages have syntactically similar but non-cognate *derivational* passives, in which a passivizing suffix intervenes between the root and the endings, descriptively in the slot that is usually occupied by verbalizing morphology. I have argued that this suffix spells out a distinct verbal functional passive head, but that this head is unlike the "high", Voice-selecting PassP of Bruening 2013, Alexiadou et al. 2015, etc. Rather, both Vedic *-yá-* and Greek *-(th)ē-* select roots, *not* transitive v or Voice. I have moreover argued that there is evidence that both suffixes developed diachronically from inchoative verbalizing suffixes that realized v_{BECOME}, and that the reanalysis of these suffixes resulted in a kind of "low passive" in Vedic and Greek. However, these suffixes differ in whether or not they can be selected by a higher Voice[-ext.arg.] head (the Vedic suffix can be, the Greek one cannot). This analysis explains the variation in the choice of active vs. nonactive endings in the Greek vs. Sanskrit derivational passive, as well as its restriction to a particular tense-aspect stem. It also dispenses with the need to assume any kind of "functional strengthening" of verbal morphology in the history of the two languages.

Remaining open questions center around whether it can be shown that the inflectional and the derivational passive in Greek really differ syntactically with respect to their demoted agents, as predicted by the analysis in Section 5, and what exactly triggered the inchoative-to-passive reanalysis of the two verbalizers. Although more work is needed to understand this diachronic development, there is a typological parallel in the development of the English *get*-passive and potentially other passives that developed from (grammaticalized) BECOME-verbalizers.

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