DEPONENCY IN FINITE AND NONFINITE CONTEXTS

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This article investigates the syntactic properties of deponents in finite and nonfinite contexts in several Indo-European languages (Vedic Sanskrit, Ancient Greek, Latin, Hittite, Modern Greek) and proposes a novel definition of deponency: deponents are morphologically nonactive verbs with noncanonical agent arguments that are merged below VoiceP. Since VoiceP is spelled out with nonactive morphology in those languages if it does not introduce an external argument itself, the result is a surface mismatch between morphological form and syntactic function. This proposal predicts that only certain nonfinite forms of deponents will surface with the syntax/morphology mismatch, namely, those that include VoiceP. Nominalizations without VoiceP will appear to suspend the voice mismatch. These predictions are shown to be correct with respect to the behavior of deponent participles in the languages under study.*

Keywords: deponents, morphosyntactic mismatches, Voice, participles, Greek, Vedic, Sanskrit, Latin, Hittite

1. INTRODUCTION. This article discusses the morphosyntactic behavior of deponents and its interaction with finiteness. Deponents are verbs with the ‘wrong’ voice morphology: they are morphologically nonactive, but syntactically active. Consider, for example, the paradigm of the Latin nondeponent verb amō ‘love’ in Table 1, which can be inflected with active or passive morphology (= an ALTERNATING VERB) depending on the syntactic context, as opposed to the DEPONENT VERB hortor ‘encourage, incite’, which can only appear with passive morphology (there is no *hortō),1 but which is syntactically active and transitive, like amō, and never means *‘was encouraged’.

<table>
<thead>
<tr>
<th>DEPONENT</th>
<th>PRESENT ACTIVE</th>
<th>PRESENT PASSIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>am-ō</td>
<td>‘I love’</td>
<td>am-os</td>
</tr>
<tr>
<td>hort-</td>
<td>‘I encourage’</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Alternating vs. deponent verbs in Latin.

Deponents apparently instantiate a mismatch between morphology and syntax, or form and function. They have long had their place in the descriptive grammatical tradition as ‘exceptions’ to the expected distribution of voice morphology, all the way back to the Latin grammarians. More recently, they have garnered interest in generative research in syntax and morphology as well, exemplified by Embick 2000, Alexiadou 2012, Kallulli 2013, and Zombolou & Alexiadou 2014 (see also the papers in Baerman et al. 2007, from different theoretical perspectives). These recent approaches fall into two camps: one that views deponency as a lexical idiosyncrasy determined by a diacritic on a particular lexical entry that marks it as morphologically nonactive independent of its syntactic context ([NonAct] or [pass]; e.g. Embick 1998, 2000, 2004a,

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1 But see §2.3 on apparently formally active forms of deponent verbs.
Kiparsky 2005, or in an optimality-theoretic framework Müller 2013) and one that argues that deponents have been misanalyzed and that there really is no mismatch between form and function once the canonical uses of nonactive morphology are correctly described (Kallulli 2013, Zombolou & Alexiadou 2014).

This article falls into the first camp: I argue that there really is a mismatch between ‘form and function’ and that deponents are lexically idiosyncratic. Departing from previous literature, however, I argue for a narrow definition of deponency, restricting the term to cases like hortor in Table 1, in which an agentive verb is formally nonactive. This differs from previous literature, which either does not include argument structure in the definition of deponency, for example Stump 2007, or denies that deponents have agent arguments, for example Alexiadou 2013, Kallulli 2013, Zombolou & Alexiadou 2014.

Following Alexiadou 2013, Harley 2013, and Alexiadou et al. 2015, I assume that canonical external arguments (agents) are introduced by the functional projection VoiceP, while applicative, benefactive, and experiencer arguments are introduced by dedicated functional projections below VoiceP. I propose that deponents are verbs with noncanonical ‘low’ agents which are likewise introduced by a functional projection below VoiceP. Diachronically, they arose from reanalyzed benefactive or experiencer arguments. In ‘Voice syncretism’ languages in which nonactive morphology realizes Voice without a specifier (Voice[−ext.arg]) along the lines of Embick 1998, 2004a, and Alexiadou et al. 2015, a noncanonical low agent will therefore trigger nonactive morphology, like experiencer and benefactive arguments do.

This approach accepts that deponents are synchronically exceptional, but predicts that their mismatch behavior surfaces only in particular environments, namely, ‘verbal’ ones that include the functional projection VoiceP and a noncanonical agent argument. This prediction is borne out by the data from nonfinite formations presented in this article, which have not been treated in detail (or from a comparative perspective) in the previous literature.

These two ingredients for deponency—a Voice head that is sensitive to the presence/absence of an external argument, and a low agent—allow for a sharper definition of the phenomenon, an improvement over previous accounts in which ‘deponency’ is used to refer to a variety of nonactive verbs independent of their argument structure. A better understanding of how these exceptions develop, moreover, contributes to understanding the properties of syncretic voice systems (such as the Latin one) in general.

This article is organized as follows. In the next section, I provide an overview of the voice systems and deponent verbs in several different Indo-European (IE) languages, namely Vedic Sanskrit (Ved.), Ancient Greek (AG), Latin (Lat.), Hittite (Hitt.), and Modern Greek (MG). I have chosen to focus on older IE languages because they have

2 The term deponency is used even more broadly in the papers in Baerman et al. 2007 (especially Baerman 2007, Corbett 2007, Spencer 2007), the Surrey Deponency Database (http://www.smg.surrey.ac.uk/deponency), and in much of the paradigm function morphology literature on the topic. While a detailed review and critique of this literature is beyond the scope of this article, the breadth of the phenomena grouped under the same label in these works makes it difficult to find any meaningful generalizations beyond stating and formalizing the mismatch, and it is not clear that they do indeed form a natural class (cf. Bobaljik 2007). The crucial role of argument structure and syntactic context (finiteness, etc.) discussed in this article are likewise not addressed by these approaches.

3 The data used in this article are drawn from selected corpora in order to limit the extent of dialectal and diachronic variation. In the case of Sanskrit, the focus is on the language of the Rigveda (RV; Vedic Sanskrit, ca. fifteenth–twelfth centuries BCE). The Ancient Greek data are mainly from the Homeric epic poems (eighth century BCE), supplemented by slightly later (post-Homeric but pre-Classical) prose texts, for example Herodotus. For Latin I have focused on Old Latin, mainly Plautus and Ennius (both late third–early second
syncretic voice morphology and rich verbal and participial morphology, and have traditionally been the focus of discussions of deponency. Supplemented with comparative data from Modern Greek, this makes these languages an ideal starting point for testing predictions about voice-mismatch behavior. The comparative perspective is especially important given that conclusions about deponent behavior are usually drawn based on one or two languages alone (usually Latin and/or Modern Greek), and usually only finite forms are discussed. The comparison with other languages with the same type of voice system uncovers systematic correspondences in the behavior of deponents and their nonfinite formations. In §3, I argue that deponency is caused by a noncanonical agent argument in the ‘wrong’ structural position, and I introduce the ‘postsyntactic’ approach to voice morphology of Embick 1998, 2004a, and Alexiadou et al. 2015, in which the morphological exponents active and nonactive in languages with syncretic voice systems are contextually conditioned Spell-out allomorphs of the functional head Voice. In this section, I also briefly describe the diachronic reanalysis that leads to the development of deponent verbs.

In §4 I extend my analysis to nonfinite deponent formations and their syntactic behavior, with a focus on participles. I show that deponent participles differ in whether they preserve the form-function mismatch of the corresponding finite forms, contrary to recent claims that deponency is generally suspended in nonfinite contexts. I argue that whether a voice mismatch occurs is determined by the presence vs. absence of VoiceP. This explains the observed behavior of IE deponents: whenever VoiceP is included in a nonfinite formation, the form-function mismatch is continued and a given deponent participle behaves just like its corresponding finite forms with respect to its syntax. In those cases in which VoiceP is missing, the mismatch is suspended. This behavior shows that while deponents are exceptional with respect to voice morphology due to their diachronic development, their synchronic behavior with respect to derivational morphology and syntactic alternations is entirely predictable from the two ingredients: postsyntactic voice morphology and a noncanonical low agent. Section 5 contains the conclusion.

2. Voice and voice mismatches.

2.1. Canonical uses of nonactive morphology. Many of the older IE languages (Hittite, Tocharian, Vedic Sanskrit, Avestan, Greek, Latin, Old Irish) and some modern IE languages (Greek, Albanian) have a voice system in which an opposition between active and nonactive (often called ‘middle’) voice is expressed through verbal inflection together with tense and agreement features. I refer to this kind of voice system as a bivalent voice system or Greek-type voice system. Sample paradigms of verbal endings from Vedic and Ancient Greek are given in Tables 2 and 3. The endings in Tables 2 and 3 are used in the nonpast tenses; the past tenses use slightly different endings with the same voice distinction. Both languages, moreover, have separate endings for the perfect, again with a voice distinction.

centuries BCE). For Hittite I have concentrated on Old Hittite (eighteenth–sixteenth centuries BCE). For the Modern Greek data I have relied strongly on the studies in Zombolou 2004, Lavidas & Papangeli 2007, Papangeli & Lavidas 2009, Alexiadou 2012, Alexiadou & Doron 2012, and in particular the results of a recent corpus study presented in Zombolou & Alexiadou 2014, supplemented by consultation with native speakers. Other IE languages that share the relevant kind of voice system, but that I have not been able to investigate so far, include Old Irish, Tocharian, and Albanian (on deponency in Albanian, see Kallulli 2013). Moreover, the conclusions presented here should in principle be extendable to non-IE languages with the same kind of voice system in which deponent behavior has been observed, such as Sora (Munda; Stump 2007) and Fula (Niger-Congo; Klaiman 1991). These, too, must be left to future research.
At first glance, the distribution of these endings should be straightforward: the active endings should be found in syntactically active contexts, the nonactive endings in nonactive syntactic contexts. Even though the definition of canonically ‘active’ and canonically ‘nonactive’ contexts is not always particularly clear cut, the typological and the theoretical literature mostly agree that nonactive morphology is crosslinguistically found in the same or very similar syntactic environments (e.g. Geniušienė 1987, Rivero 1990, Klaiman 1991, Kemmer 1993, 1994, Embick 1998, Kallulli 2007, 2013, Kaufmann 2007, Alexiadou & Doron 2012, Alexiadou 2013, etc.; on Modern Greek in particular see Manney 2000 and Zombolou 2004). Researchers generally also agree that nonactive is the marked member of the opposition and that there is a unifying context for nonactive, while active is ‘elsewhere’ or unmarked morphology. I follow this view and motivate it in more detail in §3.1. The following are contexts in which canonical nonactive morphology appears in Greek-type languages.

(1) Canonical functions of nonactive morphology
a. (Some) anticausatives
b. Reflexives and reciprocals, including indirect reflexives (self-benefactives)
c. Dispositional/generic constructions
d. (Medio)passives

In discussing the fact that the same voice morphology is used in these different syntactic contexts, Embick (1998) introduces the term voice syncretism, which I adopt in this article. Moreover, the nonactive verbs in these contexts usually also take active morphology in active syntactic contexts, giving the impression of a regular voice alternation (alternating or ‘oppositional’ nonactive verbs). This is illustrated in Table 4 for Modern Greek.

In addition to alternating contexts, nonactive morphology is also found on a number of verb classes that do not alternate between active and nonactive. In other words, nonactive

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5 The dispositional or generic function basically corresponds to the English ‘middle’ construction in examples such as bureaucrats bribe easily or this book sells well. In languages like Greek, we find nonactive morphology on the verb in these contexts.

morbidity seems to be obligatory for these verbs (nonalternating nonactive verbs; cf. Kemmer 1993, Zombolou & Alexiadou 2014). These, too, fall into some crosslinguistically stable and more or less well-defined verb classes, including the following.

(2) Canonical nonactive verbs that do not alternate (nonoppositional nonactive verbs)

a. Experiencer/psych verbs
b. Stative verbs
c. (Some) verbs of motion
d. Deadjectival and denominal stative and inchoative verbs
e. (Some) verbs of speech and communication

In languages whose nonactive endings are traditionally called ‘middle’, these verbs are called *media tantum* (Lat. ‘middle only’) verbs. It is an unfortunate practice that these verbs are also often referred to as ‘deponents’, suggesting that they are instances of the same voice mismatch that is the focus of this article (see examples 3–6 below). I do not follow this practice and reserve the term *deponents* for verbs that have agent subjects (a more detailed definition is introduced in §2.2). The verb classes in 2 should instead be seen as canonical nonactives, since they do not have these properties (Kallulli 2013, Oikonomou 2014, Zombolou & Alexiadou 2014).

### 2.2. Noncanonical use of nonactive morphology

Assuming for a moment that we know what canonically active and nonactive contexts are based on the discussion in §2.1 (I return to this problem in §3.1), we observe that there are verbs in all of these languages that have nonactive morphology but are found in syntactically active contexts, and both native speakers and linguists share the intuition that they are exceptions to the expected distribution of voice morphology. These voice-mismatch verbs are traditionally called ‘deponents’.

The following examples illustrate this phenomenon in its syntactic context. In each case, an agentive verb (‘incite’, ‘punish, take revenge’, ‘protect’) is found in a syntactically active context.

#### Table 4. Voice alternations in Modern Greek.

<table>
<thead>
<tr>
<th>ACTIVE</th>
<th>NONACTIVE</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>sikon-o</td>
<td>sikon-ome</td>
<td>anticausative</td>
</tr>
<tr>
<td>plen-o</td>
<td>plen-ome</td>
<td>reflexive</td>
</tr>
<tr>
<td>promithev-o</td>
<td>promithev-ome</td>
<td>self-benefactive</td>
</tr>
<tr>
<td>skoton-o</td>
<td>skoton-ome</td>
<td>passive</td>
</tr>
</tbody>
</table>

Deponent comes from Latin *dē-pōnere* ‘lay aside’, namely the verb’s passive or nonactive meaning. For a detailed discussion of the complicated history and uses of the term in Latin, see Flobert 1975.
cally active context, with an agent subject bearing nominative case and a direct object with accusative case. However, all of these verbs obligatorily take the nonactive set of endings rather than the expected active one.\(^9\)

(3) Latin: deponent *hortor* ‘incite, encourage’

\[\begin{align*}
\text{sed} & \quad \text{coquöṣ, quasi in marī solet hortātor} \\
\text{but cooks, ACC.PL like} & \quad \text{in sea, ABL be.wont.to.3SG.PRS inciter.NOM} \\
\text{rēmīgēs} & \quad \text{hortārier, ita hortābātur} \\
\text{rowers, ACC.PL incite.INF.PASS so incite.3SG.IPF.PASS} \\
\end{align*}\]

‘But just like at sea a rowing-master (lit. ‘inciter’) is wont to urge the rowers, so he urged the cooks.’

(4) Ancient Greek: deponent *tīnumai* ‘punish’

\[\begin{align*}
\text{kai} & \quad \text{hoi hupenérthe kamōntas} \quad \text{anthrōpous} \\
\text{and who, NOM.PL beneath} & \quad \text{passed.on.PTCP.ACC.PL men, ACC.PL} \\
\text{tinusthōn} & \quad \text{punish.2DU.PRS.MID} \\
\text{… and (you) who in the underworld punish the men who have passed on.’} \\
\end{align*}\]

(5) Vedic: deponent *trāyate* ‘protects, rescues’

\[\begin{align*}
\text{trāyase} & \quad \text{jānaṃ yās tūḥyam dāśāt} \\
\text{protect.2SG.PRS.MID man, ACC who, NOM YOU, DAT worship.3SG.SBJV.ACT} \\
\text{‘… you rescue the man who will do (ritual) service for you.’}^{10} \\
\end{align*}\]

(6) Hittite: deponent *paḫša(ra)i* ‘protects’

\[\begin{align*}
\text{nu mān kūš lingāuš paḫšašduma šumāš-a} \\
\text{if these, ACC.PL oaths, ACC.PL protect.2PL.PRS.MID you, ACC.PL=PTCL} \\
\text{DINGIR.MES-eš paḫšandaru} \\
\text{gods, PL-PL protect.3PL.IPV.MID} \\
\text{‘If you protect these oaths, let the gods likewise protect you!’} \\
\end{align*}\]

That deponents are exceptional is confirmed by the fact that agentive predicates of transitive clauses like 3–6 usually take active morphology, and that it is easy to find formally active synonyms or near-synonyms to these mismatch verbs. A few such cases are collected in Table 5.

<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>DEONENT</th>
<th>ACTIVE VERB</th>
<th>MEANING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin</td>
<td><em>hortor</em></td>
<td><em>moneō</em></td>
<td>‘encourage, incite’</td>
</tr>
<tr>
<td>Vedic</td>
<td><em>fūrōr</em></td>
<td><em>clepō</em></td>
<td>‘steal, rob’</td>
</tr>
<tr>
<td>Ancient Greek</td>
<td><em>grāsate</em></td>
<td><em>ātti</em></td>
<td>‘devours/eats’</td>
</tr>
<tr>
<td>Modern Greek</td>
<td><em>eborevome</em></td>
<td><em>adallasso</em></td>
<td>‘trade’</td>
</tr>
<tr>
<td></td>
<td><em>katarieme</em></td>
<td><em>anathematizo</em></td>
<td>‘curse’</td>
</tr>
</tbody>
</table>

TABLE 5. Active/deponent (near-)synonyms.

Moreover, the nonactive morphology of deponents cannot be motivated in terms of the synchronic canonical functions of nonactive morphology. That is, synchronically

\(^9\) I use *nonactive* as a neutral cover term for the set of endings called ‘middle’ in Tables 2 and 3. The equivalent endings are usually referred to as ‘passive’ in Latin and ‘mediopassive’ in Hittite. While their distribution varies slightly from language to language (most notably in Latin, where the nonactive endings are predominantly found in syntactically passive contexts for alternating verbs), they are both synchronically and diachronically similar enough to be considered exponents of the same functional head in these languages.

\(^{10}\) All translations of Rigvedic examples are from Jamison & Brereton 2014.
they do not fall into any of the categories listed in §2.1 (reflexive, self-benefactive, anticausative, etc.). I motivate this analysis in detail in the next section, §2.3.

The phenomenon of deponency raises several questions concerning the function of voice morphology in Greek-type languages, in particular the question of how the distribution of active vs. nonactive endings can be predicted, why all of these languages display voice mismatches, and how ‘canonically active’ and ‘canonically nonactive’ syntactic contexts can be defined. These questions are addressed in §3.

2.3. Diagnostics for deponency.

**DEPONENTS = EXPERIENCER VERBS?** While Zombolou and Alexiadou (2014) show that the overwhelming majority of morphologically nonactive verbs in Modern Greek actually instantiate the canonical functions of nonactive voice, their attempt to stretch this finding to cover all morphologically nonactive verbs is less convincing. Their starting point is the observation that many of the Modern Greek transitive *media tantum* are psych verbs/experiencer verbs, in which the external argument is an experiencer or undergoer rather than an agent. Examples include *fevome* ‘fear’, *esthanome* ‘feel’, *gevome* ‘taste’, *skeftome* ‘think’, and so forth. Based on this observation, they then argue that all transitive nonalternating nonactive verbs can be analyzed synchronically as experiencer verbs (benefactive or malefactive verbs; similarly Alexiadou 2013 and Kallulli 2013). As discussed in §2.1, the benefactive or indirect reflexive use is a well-attested canonical function of nonactive morphology. If Zombolou and Alexiadou are right, there simply is no mismatch here—all transitive deponents are actually canonical middles, with the same synchronic argument structure as self-benefactive or experiencer verbs.

However, there are several arguments against analyzing all deponents as experiencer verbs. Embick (1997:216f.), based on Anagnostopoulou 1999, shows that some transitive deponents in Modern Greek pattern systematically with agentive transitive verbs as opposed to experiencer verbs with respect to clitic doubling, word order, and clitic left dislocation, providing concrete diagnostics for deponency.11 I briefly discuss these diagnostics before introducing my own below.

With some psych verbs, both an agentive and a psychological reading is possible in Modern Greek. In the agentive reading, the subject is an agent carrying out an action, as in 7a; in the psychological reading, the subject is the cause of an event, as in 7b. While the agentive reading with an animate subject does not require clitic doubling (7a), the psychological reading is ungrammatical without the doubled clitic (7b) (all examples from Embick 1997).

(7) a. I Maria enohli ton Petro.
   the Maria.NOM bothers the Petros.ACC
   ‘Maria bothers Petros.’
   b. Ta epipla *?(ton) enohlun ton Petro.
   the furniture.NOM CL.ACC bothers the Petros.ACC
   ‘The furniture bothers Petros.’

Transitive agentive deponents like *hriazome* ‘need’ pattern with the agentive reading and do not require clitic doubling, as in 8. This suggests that their external argument is an agent rather than a cause/theme.

11 Oikonomou (2014) also mentions that a small class of transitive nonactive verbs in Modern Greek cannot easily be reconciled with an analysis as experiencer verbs.
For experiencer verbs, two word orders—\textit{exp-verb-theme} and \textit{theme-verb-exp)—are possible and unmarked with respect to their discourse status. However, fronting of the object of a nonpsych verb results in a marked \textit{clitic left dislocation} (CLLD) structure. Transitive deponents pattern as nonpsych verbs in triggering this CLLD construction.

While Embick’s agentivity tests show that Modern Greek does indeed have a small class of morphologically nonactive verbs that have agent subjects, these tests cannot be applied to the older IE languages because they do not have clitic doubling or CLLD, and word order cannot be used to disambiguate between different types of predicates. However, there are other diagnostics that show that deponents in the older languages have agent subjects. These are discussed in the following sections.

\textbf{Agent nouns.} Vedic, Greek, Hittite, and Latin all have designated suffixes forming agent nouns that have the same properties as agent nominalizers in other languages: they take genitive (rather than accusative or other structural case) objects and can only be formed to verbs whose external argument is an agent (or animate causer; for a detailed account of the properties of agent nominalizations see Baker & Vinokurova 2009 and §4.3 below).

This property distinguishes agentive verbs from verbs whose surface subject is an experiencer. Experiencer verbs in English, for example, cannot form agent nouns; that is, they cannot take the same nominalizing morphology as agentive verbs in the same reading; compare 10.

\begin{itemize}
\item \textbf{English} \\
\item a. #fearer \\
\item b. #smeller \\
\item c. #feeler
\end{itemize}

While an instrumental reading in which the \textit{-er} nominal designates the instrument with which an action is performed (rather than the agent performing it) is available for cases like \textit{feeler}, an agentive one is not. Moreover, in English only agent nouns can inherit the argument structure of a verb and appear with an \textit{of}-complement, while instrumental nouns cannot (\textit{mower of the lawn} can only be a person, not a machine), and only agent nouns are eventive, whereas instrumentals are not (see e.g. Levin & Rappaport 1988, Pesetsky 1995:76ff. on \textit{caus} object experiencer verbs; Baker & Vinokurova 2009:530, n. 12; differently McIntyre 2014). The same holds for self-benefactives, reflexives, and unaccusatives, which likewise do not make agent nouns. Since the goal of this diagnostic is to distinguish agentive verbs from experiencer verbs, it has to be pointed out that there are some experiencer verbs (all from the SubjExp class) that do make \textit{-er} nominals with the relevant properties in English (\textit{of}-argument, eventive reading), such as those in 11.

\begin{itemize}
\item \textbf{11} a. a dazzled admirer of Washington \textit{(Alexiadou & Schäfer 2010)} \\
\item b. habitual admirers/despisers of nonconformists \textit{(McIntyre 2014)} \\
\item c. frequent haters of Excel
\end{itemize}
I am not convinced, however, that these constitute confounds, since not all SubjExp verbs behave like the ones in 11 (*frequent feelers of pain), and admire, despise, hate, and love also have agentive (or ‘nonexperiencer’) properties with respect to standard agentivity tests, such as compatibility with the progressive (12a), agent-oriented adverbs (12b), imperative formation (12c), ‘what I did’-clauses (12d), and the ability to appear as complement of persuade (12e).

(12) a. I’m loving it.
    b. People sometimes intentionally hate the truth.
    c. Love music, hate racism.
    d. What I did was admire the strategy of the company with their ad.
    e. You persuaded me to love you.

To the extent that these tests do indeed diagnose agentivity, they seem to group the verbs in 12 with more ‘canonically’ agentive verbs. I therefore contend that these counterexamples still leave the basic generalization intact, namely, that agent nominalizers can be used to distinguish between agentive and experiencer verbs.

This generalization also applies to the older IE languages. Vedic has a suffix -tár- that forms agent nouns which take genitive objects and behave like true agent nouns (Benveniste 1948, Debrunner 1954:669ff., Tichy 1995, Kiparsky 2016). Table 6 illustrates agent nouns in -tár- from canonically active verbs and from deponent verbs. They are both semantically and morphologically indistinguishable.

<table>
<thead>
<tr>
<th>ACTIVE, NONDEPONENT</th>
<th>DEPONENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROOT</td>
<td>AGENT NOUN</td>
</tr>
<tr>
<td>dā</td>
<td>‘give’</td>
</tr>
<tr>
<td>nī</td>
<td>‘lead’</td>
</tr>
<tr>
<td>rakṣ</td>
<td>‘protect’</td>
</tr>
</tbody>
</table>

| Table 6. Vedic agent nouns. |

Both the active, nondeponent forms and deponent forms in Table 6 take genitive objects, as in 13a–b.

(13) a. dātár- ‘giver’ (nondeponent verb)  (RV 8.90.2a)
    tvāṃ dātā prathamā rādhas-āṁ as[i]
you.NOM giver.NOM first.NOM bounty-GEN.PL be.2SG.PRS.ACT
    ‘You are the foremost giver of bounties’

b. trātár- ‘protector, rescuer’ (deponent verb)  (RV 2.23.8a)
    trātār-əṃ tvā tanū-nāṃ havāmahā
carrier-ACC you.ACC body-GEN.PL call.1PL.PRS.MID
    ‘We call upon you as the rescuer of our bodies, … ’

Experiencer verbs, by contrast, do not make agent nouns. A survey of the collection of agent nouns in Tichy 1995 confirms that experiencer verbs, nonagentive verbs of motion, and unaccusatives do not take the suffix -tár- in Vedic. Although negative evidence in the strict sense is not available, Tichy (1995:32, n. 6–9) does give a list of nonagentive verbs that fail to make tár-nouns in Vedic.

The same holds for the other IE languages under investigation. The suffix that corresponds most closely to Vedic -tár- in Greek (in taking genitive objects, etc.) is the

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12 Vedic also has an unaccented ‘preaccenting’ version of this suffix, which makes participle-like deverbal forms that take accusative objects; these are not discussed here.

13 There are only a few apparent exceptions. Thus yātār- ‘avenger’ seems to belong to yā ‘go’, but this root fell together with a verb meaning ‘seek out, demand’, as shown by its Greek cognate (dízēmai ‘seek’); and cases like marditār- ‘forgiver’ (mrd ‘have pity, forgive’) and Atharvavedic jātār- ‘witness’ (jā ‘know’) can hardly be considered counterexamples.
The collections of nouns in -tēr in Fraenkel 1912, Buck & Petersen 1945, and Benveniste 1948 make it clear that only agentive verbs use this suffix to make agent nouns. It is furthermore found in kinship nouns (patēr ‘father’, etc.) and with an instrumental reading with nonagentive verbs and (occasionally) agentive verbs (lampēr ‘torch’ : lámpō ‘shine’, statēr ‘a standard coin’ : histēmi ‘stand’, rhaistēr ‘hammer’ : rhaiō ‘break, scatter’, etc.).

<table>
<thead>
<tr>
<th>ACTIVE, NONDEPONENT</th>
<th>AGENT NOUN</th>
<th>DEPONENT</th>
<th>AGENT NOUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>elaunō ‘drive’</td>
<td>ela-tēr ‘driver’</td>
<td>rhūomai ‘protect’</td>
<td>rhū-tēr ‘protector’</td>
</tr>
<tr>
<td>didōmi ‘give’</td>
<td>do-tēr ‘giver’</td>
<td>leizomai ‘rob’</td>
<td>lēis-tēr ‘robber’</td>
</tr>
<tr>
<td>ollumi ‘destroy’</td>
<td>ole-tēr ‘destroyer’</td>
<td>lōbāomai ‘slander’</td>
<td>lōbē-tēr ‘slanderer’</td>
</tr>
</tbody>
</table>

Table 7. Ancient Greek agent nouns.

Latin agent nouns in -tor behave the same way, being formed to both nondeponent and deponent verbs with an agent argument (cf. Leumann 1977:358f.); see Table 8.

<table>
<thead>
<tr>
<th>ACTIVE, NONDEPONENT</th>
<th>AGENT NOUN</th>
<th>DEPONENT</th>
<th>AGENT NOUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>amō ‘love’</td>
<td>amā-tor ‘lover’</td>
<td>hortor ‘urge, incite’</td>
<td>hortā-tor ‘inciter’</td>
</tr>
<tr>
<td>vincō ‘conquer’</td>
<td>vic-tor ‘conqueror’</td>
<td>vēnor ‘hunt’</td>
<td>vēnā-tor ‘hunter’</td>
</tr>
<tr>
<td>doceō ‘teach’</td>
<td>doc-tor ‘teacher’</td>
<td>tueor ‘protect, guard’</td>
<td>tū-tor ‘protector, guardian’</td>
</tr>
</tbody>
</table>

Table 8. Latin agent nouns.

This test also works for Modern Greek, where agentive deponents likewise make agent nouns. The agent noun suffix is -tís.

(14) Modern Greek deponent agent nouns
   a. hiris-tís ‘user, manipulator’ (hirizome ‘use, manipulate’)
   b. ekmetalef-tís ‘exploiter’ (ekmetalevome ‘exploit’)
   c. mimi-tís ‘imitator’ (minume ‘imitate’)
   d. kataras-tís ‘curser’ (katarieme ‘curse’)

The evidence from agent-noun formation confirms that the external arguments of at least some deponents are agents rather than experiencers.

PASSIVIZATION. If deponents are syntactically active agentive verbs, they should be able to passivize given the right conditions. This diagnostic is available only in languages that have designated passive morphology that is distinct from the morphology that deponents usually take—that is, we do not expect passivization in strictly bivalent voice systems, since the passive use of nonactive morphology is presumably blocked for deponents (as are the other canonical uses of nonactive morphology).

This diagnostic is somewhat less fine grained than the last one, since certain experiencer verbs do passivize (e.g. English fear, love, feel ...), as is also the case in Vedic and Ancient Greek (the two languages with distinct passive morphology). Moreover, passivization in these languages is not restricted to verbs with internal arguments with accusative case. Ancient Greek also allows genitive and dative arguments of certain verb classes to become nominative subjects under passivization (see Smyth & Messing 1956:395f., Conti 1998, Anagnostopoulou & Sevdali 2015), and both Vedic and Ancient Greek have restrictions on what types of accusatives are passivizable (e.g. Vedic does not allow passivization of an accusative of goal, with rare exceptions; cf. Delbrück

14 I am grateful to Elena Anagnostopoulou and Despina Oikonomou for confirming this and providing these examples.
1888:104ff.). Therefore passivization picks out a broader class of verbs than just agentive ones. However, showing that deponents do passivize confirms that their direct objects are ‘real’ internal arguments that can undergo promotion to subject, and their external arguments can be demoted to an oblique ‘by-phrase’. Crucially, these are properties that can only be established through a comparative perspective. Since neither Latin nor Modern Greek has passive morphology that is distinct from the mismatch-causing nonactive morphology, passivization of deponents is impossible in these languages. This is different in Vedic and Ancient Greek.

Vedic has a binary voice system in which active and nonactive (‘middle’) voice take different inflectional endings (see Table 2). However, there are some tense/aspect stems in which a passive morpheme that is distinct from the nonactive morphology on the endings is available to make passives. In those stems, the passive interpretation of the nonactive endings is blocked. Such a trivalent distinction is available in the Vedic imperfective (‘present’) stem. Active verbs take the active endings, middle verbs take the middle endings, and passive verbs take the passive suffix -yá- together with the middle endings. This is illustrated in Table 9 for the root bhr ‘carry’.

<table>
<thead>
<tr>
<th>ROOT</th>
<th>DEONENT</th>
<th>PASSIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>bhr</td>
<td>bhr-a-te</td>
<td>bhr-yá-te</td>
</tr>
<tr>
<td>‘carries (something)’</td>
<td>‘is being carried’</td>
<td></td>
</tr>
</tbody>
</table>

Table 9. Vedic presents: active, middle, passive.

The deponent examples in Table 10 show that it is the suffix -yá- that produces the passive interpretation, not the middle morphology. Deponents behave like active transitive verbs in being able to form a yá-passive to their imperfective stem, confirming that their direct objects can become the surface subject of the passive.

<table>
<thead>
<tr>
<th>ROOT</th>
<th>DEONENT</th>
<th>PASSIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>bhr</td>
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<td>bhr-yá-te</td>
</tr>
<tr>
<td>‘carries (something)’</td>
<td>‘is being carried’</td>
<td></td>
</tr>
</tbody>
</table>

Table 10. Vedic deponent passives.

The deponent passives in Table 10 show that passivization of deponents is possible if passive morphology distinct from the morphology that causes the mismatch (middle, in this case) is available.

More evidence for this generalization comes from Ancient Greek: post-Homeric Greek developed a passivizing suffix -thē- in the aorist. Stahl (1907:73f.) notes that deponents use this suffix to make passive aorists, as in example 15 from Thucydides (fifth century BCE).

(15) Deponent ktáomai ‘acquire’ (Thucydides, The Peloponnesian War 2.36.4)

... höís hékasta e-ktē-thē
REL.PRON.DAT.PL several.NOM.PL.N PST-GET-PASS.3SG.ACT
‘... by which several (things) were acquired’
The passive aorist ektēthē ‘was acquired’ contrasts with the middle aorist ektēsato ‘acquired (something)’, as used by the same author with the expected active, transitive syntax (e.g. in 1.4.1). Another example is given in 16 (from Herodotus, fifth century BCE). The deponent dōrēomai ‘give, bestow upon, endow with’ regularly takes an accusative benefactive argument and a dative theme (‘endow somebody with something’). In the passive in 16, the accusative is promoted to subject.

(16) Deponent dōrēomai ‘give, endow with’ (Herodotus, Histories 8.85.3)

Phylakos dè euergētēs basilēos an-e-gráph-ē
Phylakos.nom. ptcl benefactor.nom king.gen down-pst-write-aor.pass.3sg
kai khōrēi e-dōrē-thē pollēi
and land.dat pst-endow-aor.pass.3sg much.dat

‘Phylakos was recorded as benefactor of the king and endowed with much land.’

Note that the deponent passive edōrēthē ‘was endowed’ syntactically behaves exactly like the nondeponent passive anegráphē ‘was recorded’ (from ana-gráphō ‘write down’). The conclusion must be that deponents, like formally active transitive verbs, can passivize if distinct passive morphology is available. This is not usually the case in bivalent voice systems, but Vedic and Greek both developed distinct passive morphology in some tense/aspect stems, and in those cases we find deponent passives.

However, this also means that we do not expect deponents to be able to passivize in languages that do not have separate passive morphology. This is the case for Latin, in which the nonactive (usually called ‘passive’) endings are taken both by the passives of alternating verbs and by syntactically active deponents. Since there is no passive morphology available that is distinct from these nonactive endings, Latin deponents cannot passivize. This has given rise to the idea that deponents in general do not passivize. However, the Vedic and Greek data above show that this generalization is incorrect.

Finally, it is often claimed that some Latin deponents can have both active and passive readings (e.g. Hofmann 1910:12ff., 32ff., Flobert 1975, Embick 2000:194). It is equally possible, however, that the deponent in question has been reanalyzed as a regular alternating verb, and a new formally active transitive form exists beside the formally and functionally passive form. This may be the case for the often-cited example in 17.

(17) Varro ap. Prisc. II, 387
ab amiēcis hortā-rētur
by friends.abl urge-3sg.ipf.sbjv.pass

‘He was urged by his friends’

A formally active hortō may be attested already in Ennius (Ann. 567; cf. Vahlen 1928:104), and an active perfect form in Seneca, Šuas. 5.8. While no formally active form (or deponent, for that matter) is attested in Varro, 17 should probably be analyzed as a passive of the formally active hortō attested elsewhere.15

The Vedic and Greek examples of deponent passives, by contrast, are different from the Latin example in 17, since here we see passive morphology that is distinct from the morphology that triggers the mismatch.

15 More evidence for this analysis of seemingly ambiguous forms comes from Modern Greek: while a passive reading of deponents is usually impossible, passive readings of formally nonactive deponent forms become available once the oppositional formally active transitive forms exist. Roussou and Tsimpli (2007:149ff.) cite examples in which the deponent ekmetalevome ‘exploit’, which usually disallows a passive interpretation, acts like an alternating verb: its new formally active variant is syntactically active and transitive, while its oppositional nonactive variant is passive. However, they also point out that adult speakers are very reluctant to accept new formally active forms of deponents.
Agent-oriented adverbs. Agent-oriented adverbs expressing intention or volition can modify agentive predicates, but not psych verbs/experiencer verbs. Adverb formation is notoriously varied in the older IE languages, where a variety of different suffixes are used, and this test is more difficult to apply to the closed-corpus languages under study here than the other tests. That being said, Vedic in particular provides a few instances in which deponents are modified by agent-oriented adjuncts. Vedic uses certain nominal case forms adverbially, in particular the instrumental and the accusative. For example, the instrumental of the adjectival abstract *ójas-* ‘power, might’, *ójasā*, is used only with animate subjects and means ‘forcefully, with might’. This adverbial use of the instrumental also occurs with agentive deponents, as in the following example.

(18) Deponent *dáyate* ‘distributes’

\[
\begin{align*}
\text{Atithigvāya} & \quad \text{śāmbaraṅ} & \quad \text{girēr} & \quad \text{ugrō} \\
\text{dáyamāna} & \quad \text{ójasā} & \quad \text{vīśvā} \\
\text{down.PST.push.3SG.IPF.ACT} & \quad \text{great.ACC} & \quad \text{prize.ACC.PL.N} \\
\text{distributing.PTCP.PRS.MID,NOM.SG} & \quad \text{might.INS all.ACC.PL.N} \\
\text{dhānān} & \quad \text{ójasā} & \quad \text{prize.ACC.PL.N might.INS} \\
\text{The mighty one pushed Śambara off the mountain for Atithigva, distributing the great prizes with might, (distributing) all the prizes with might.}
\end{align*}
\]

The accusative neuter of the adjective *sabāḍhas-* ‘eager’ is used as an agent-oriented adverb in the following passage.

(19) Deponent *ī́ṭe* ‘praises, invokes’

\[
\begin{align*}
\text{náro} & \quad \text{havyébhir} & \quad \text{ī́-ate} & \quad \text{sa} \bar{b} \acute{a} \acute{d}hāḥ \\
\text{man.NOM.PL} & \quad \text{sacrifice.INS.PL} & \quad \text{invoke-3} & \quad \text{eager.ACC.N} \\
\text{The men are eagerly invoking (him) with sacrifices.}
\end{align*}
\]

Compare the use of this adverb with a nondeponent agentive verb.

(20) Nondeponent *kr-* ‘make, do’

\[
\begin{align*}
\text{vayām} & \quad \text{hi ā te} & \quad \text{cakr̥mā} & \quad \text{sa} \bar{b} \acute{a} \acute{d}hā & \quad \text{ābhiḥ} \\
\text{we.NOM for to you.DAT} & \quad \text{make.1PL.PREF.ACT} & \quad \text{eager.ACC.N} & \quad \text{this.INS.PL} \\
\text{śāmībhir} & \quad \text{mahāyanta} & \quad \text{Indra} & \quad \text{exalting.NOM.PL} & \quad \text{Indra.VOC} \\
\text{… for we have fervently acted for you, exalting you with these labors, Indra.}
\end{align*}
\]

Similar examples can be found in Latin. In the following passage, the adverb *cōgitātē* ‘deliberately, thoughtfully’, though a manner adverb, implies an animate agent.

(21) Deponent *meditor* ‘think, consider’

\[
\begin{align*}
\text{Ab-cāmus} & \quad \text{ergō īntrō, hac} & \quad \text{ut} & \quad \text{meditēmur} \\
\text{from-go.1PL.SBJV.ACT} & \quad \text{then inside these so.that} & \quad \text{consider.1PL.SBJV.PASS} \\
\text{cōgitātē} & \quad \text{deliberately} \\
\text{Let us go inside, then, so that we may carefully consider these things.’}
\end{align*}
\]

Compare the use of this adverb by the same author with a formally active agentive verb.

(22) Nondeponent *faciō* ‘make’

\[
\begin{align*}
\text{ut} & \quad \text{pudicē} & \quad \text{verba} & \quad \text{fēcit,} & \quad \text{cōgitātē} & \quad \text{et} \\
\text{how modestly words.ACC.PL.N} & \quad \text{make.3SG.PRF.ACT} & \quad \text{deliberately and} & \quad \text{commodē, …} & \quad \text{properly} \\
\text{How modestly did she pick her words, deliberately and properly …’}
\end{align*}
\]
There were no unambiguous examples from Ancient Greek deponents in my corpus. Modern Greek allows deponents to be modified by adverbs such as *prosektika* ‘carefully’, as in 23a; compare the semantically similar nondeponent verb in 23b.

(23) a. metahiriz-ome to amaxi prosektika
    use-1SG.NACT the car carefully
    ‘I am using/handling the car carefully.’

b. hrisimopoi-o to amaxi prosektika
    make.use.of-1SG.ACT the car carefully
    ‘I am carefully making use of the car.’

Although this test is less conclusive than the others, in combination with the evidence from agent-noun formation and passivization it does provide more evidence for the agentive nature of the deponent class.

**Summary.** In this section, I have provided arguments in favor of analyzing deponents as (transitive) agentive verbs rather than as experiencer verbs. I argue in the next section that canonical nonactive verbs are characterized by their lack of an agentive subject. Deponents are therefore indeed cases of a ‘form-function mismatch’, which must be reflected in the ‘narrow’ definition of deponency. I then discuss the derivation of canonical and noncanonical nonactive verbs and argue that deponents differ from canonically nonactive verbs by having a noncanonical low agent.

3. **Deriving deponents.**

3.1. **Background: voice morphology.** Before turning to my analysis of deponents, I provide some background on deriving the distribution of voice morphology in languages like Greek and introduce the framework in which the analysis is couched in this section.

The question that arises over and over again in the literature on voice morphology is whether a unified generalization can be made concerning the contexts in which active and nonactive morphology are found, either syntactically or semantically. I follow an approach in which a verb is spelled out with nonactive morphology if its functional projection VoiceP does not merge an external argument (an agent). In this approach, nonactive morphology can arise in different syntactic contexts that happen to share the property of not having a VoiceP with an agent as its specifier. This analysis of syncretic voice morphology has recently been defended in Alexiadou et al. 2015, based on earlier versions by Embick (1998, 2004a, and similarly Kallulli 2013 and Alexiadou 2013). It has the advantage of avoiding the problem of having to find a unified semantic context for the many different canonical uses of nonactive morphology (e.g. ‘subject-oriented’, ‘affected’, ‘subject-control’; cf. Kemmer’s (1993) attempt at a semantic generalization) by reducing its distribution to a fairly simple (and testable) structural condition: the merger of an external argument.

Following Kratzer 1996 (among others), these approaches assume that the external argument of unergative verbs is merged in the specifier of the functional projection Voice. Embick (1997, 1998, 2004a) argues that the voice-syncretism pattern discussed above is the result of a **postsyntactic** Spell-out condition. This approach is followed by Alexiadou and colleagues (2015:101), who argue that in Greek-type languages, ‘a Voice head is spelled out with nonactive morphology … if it lacks a specifier’.

16 Embick does not use Voice, but different ‘flavors’ of v, one of which, v[AG], merges the external argument. Nonactive morphology in Greek-type voice systems spells out v in this system. I follow Kratzer 1996, Harley 2013, and Alexiadou et al. 2015 (among many others) in assuming that Voice is the projection introducing the external argument (v in these frameworks spells out verbalizing morphology and adds different
Since this is a Spell-out rule, it is agnostic as to the reason for the lack of an external argument. Different constructions may lack an agent argument for different reasons (passive vs. reflexive vs. anticausative, etc.), but the Spell-out condition is blind to the semantics of Voice, explaining the observed voice syncretism. As Alexiadou and colleagues (2015:101–2) put it: ‘For the morphological realization of Voice, the non-projection of the external argument as a specifier is a necessary and sufficient condition to yield a nonactive form, independently of whether Voice has semantic impact or not’. Their Spell-out rule for Voice is given in 24, based on that of Embick 2004a:150.

(24) Voice → Voice[NonAct]/ __ No DP specifier

Under this view of voice morphology in Greek-type languages, [Act] and [NonAct] are not syntactic features, but different ways of spelling out Voice. More precisely, [NonAct] is the realization of Voice in a particular context, whereas active morphology emerges in the absence of this feature. In other words, there is no feature [Act] (either in the syntax or at Spell-out); active is simply ‘elsewhere’ morphology.

The alternative to this view—defining a condition for active and treating nonactive as ‘elsewhere’—is less appealing because there is no easy way of finding a unifying context for the two main verb classes on which active morphology is found: ‘canonically’ active, agentive transitive, and causative verbs (hit, buy, break, cook …), on the one hand, and (usually nonalternating) unaccusative (often anticausative) verbs, on the other. Formally active unaccusative verbs (go, be, become, be red …) are a stable feature of Greek-type voice systems, and a major problem for understanding the canonical distribution of voice morphology in such languages. Examples of such nonalternating unaccusative active verbs (Lat. activa tantum ‘active only’ verbs) are given in 25.

(25) Unaccusative activa tantum
   c. Modern Greek: asprizo ‘whiten’ (tr./itr.), plateno ‘widen’ (tr./itr.), reo ‘flow’

Alexiadou & Anagnostopolou 2004, Schäfer 2008, and Alexiadou et al. 2015 propose that formally active anticausatives should be analyzed as lacking the Voice layer entirely, and that this also holds for unaccusative verbs in Greek-type languages in general. That is, the examples in 25 should all be analyzed as lacking VoiceP (except for the causative actives in 25c, of course). Similar proposals concerning the lack of VoiceP in some verb classes have been made by other researchers, with varying terminology (e.g. Kratzer 1996, Embick 1997, 1998, 2004a, Chomsky 2001, Kallulli 2007, 2013, etc.). Since the Spell-out condition on nonactive morphology in 24 cannot apply to predicates that lack Voice entirely, that is, nonalternating stative/unaccusative predicates, these verbs will surface with active morphology by default in the framework that is adopted here.

This interpretation of voice morphology conflates some of the distinctions made by Alexiadou and colleagues (2015) with respect to different Voice heads, namely between thematic and expletive active and nonactive Voice heads (depending on whether Voice introduces an external-argument variable semantically). According to them, expletive Voice does not introduce an external argument semantically, but can vary in whether it projects a specifier. This distinction derives the difference between passive and anticausative nonactive verbs in Greek: while in passives, the external argument is intro-
duced semantically but not syntactically (VoiceP does not project a specifier), in anti-causatives it is introduced neither semantically nor syntactically as Voice is purely expletive (Alexiadou et al. 2015:108ff.). This results in three different ways of deriving active morphology: thematic active Voice (Alexiadou et al. 2015:109), which introduces an external argument as in canonically active transitive verbs like hit; expletive active voice, which does not introduce an external argument variable but has a D-feature that needs to be valued by some sort of expletive element;\textsuperscript{17} and lack of a Voice head, as in the verbs in 25. However, since voice morphology itself is semantically empty, I have focused on the Spell-out condition for nonactive (which has already been motivated in detail) and leave the details of the different ways of arriving at active ‘elsewhere’ morphology aside.

The basic distribution of voice morphology in a Greek-type voice system is summarized in Table 11, based on Kallulli 2013:349 (where $v$ is used instead of Voice).

<table>
<thead>
<tr>
<th></th>
<th>[+EXT.ARG]</th>
<th>[−EXT.ARG]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice</td>
<td>active</td>
<td>nonactive</td>
</tr>
<tr>
<td>no Voice</td>
<td>N/A</td>
<td>active</td>
</tr>
</tbody>
</table>

Table 11. Canonical distribution of active vs. nonactive morphology.

Separating the morphological distribution of voice morphology from the semantic side simplifies the necessary Spell-out rules, while still leaving room for the difference between the thematic and expletive nonactive Voice heads proposed by Schäfer 2008 and Alexiadou et al. 2015. This analysis achieves precisely the distribution we are looking for: nonactive morphology in a particular environment (Voice without an external argument), active morphology everywhere else.

3.2. DEPONENTS. We can now return to the problem of deponents. My proposal is that deponents truly are ‘mismatch verbs’ in the framework outlined above because they surface with nonactive morphology despite having an external argument (= an agent)—precisely the situation excluded by 24. I therefore use the following definition of deponency (modified from Grestenberger 2014:65).

(26) DEFINITION OF DEPONENTY: In an active-nonactive voice system, a deponent is a verb with an agent subject that appears in a syntactically active context and is morphologically nonactive.

On the one hand, this definition explicitly refers to the findings of §2.3, namely, that deponents have agent arguments. This is a crucial departure from previous approaches to deponency that do not explicitly include argument structure in the definition of deponent verbs.

On the other hand, 26 does not make explicit reference to transitivity or case, even though for the most part the ‘syntactically active context’ in 26 will boil down to a transitive construction with a nominative subject and an accusative object. However, deponents could in principle also be found with a partitive genitive object. Since we have now established that the mismatch is caused by a noncanonical agent, the definition in 26 would also include intransitive unergative deponents, which is a desirable outcome given that there are a few such verbs in Latin and Ancient Greek.\textsuperscript{18} I have therefore not

\textsuperscript{17} Alexiadou, Anagnostopoulou, and Schäfer (2015) argue that this structure is absent in Greek, but discuss se-reflexives in languages like French and Italian as examples; similarly, Wood (2014) has argued that the Icelandic -st morpheme in ‘figure reflexive’ constructions should be analyzed as an argument expletive.

\textsuperscript{18} Notably, denominal or deadjectival verbs such as Latin baccchor ‘celebrate the Bacchus-festival’ or fābulor ‘make up a fable, tell a story’ (fābula ‘fable’) (cf. Xu et al. 2007:137ff.), and Ancient Greek gounázomai
included a requirement on accusative case objects (or indeed any kind of overt object) in the definition of deponency. Even though deponents tend to be transitive, the case on the object by itself is not a sufficient diagnostic for deponent status.

Note furthermore that this definition excludes many of the verbs that are traditionally discussed under the term *deponency*, namely the canonical nonoppositional nonactive verb classes listed in ex. 2 above, which is a desirable outcome. As already discussed in §2.3, this reasoning has led some researchers (Kallulli 2013, Zombolou & Alexiadou 2014) to deny that mismatch verbs exist at all. Kallulli (2013) denies that Albanian has any nonoppositional nonactive verbs with agent subjects, while Zombolou and Alexiadou (2014) note that there is a small class of such verbs in Modern Greek, which make up about 11% of their extensive corpus of Modern Greek *media tantum*; for example, *metahirizome* ‘handle, use’, *epititheme* ‘attack’, *arnume* ‘deny’, *episkeftome* ‘visit’, *katahrome* ‘abuse’, *minume* ‘mimic, imitate’, *skarfizome* ‘contrive, devise’, *iperaspi-zome* ‘defend’, *hriazome* ‘need’, and so forth. This class is referred to as ‘deponents with active meaning’ by Zombolou (2004:223) and given an experiencer-verb analysis by Alexiadou (2013). My own collection of these verbs in the Hittite, Vedic, Homeric Greek, and Latin corpora confirms that this is a relatively small class, leaving the generalization concerning the synchronic distribution summarized in Table 11 intact. That is, we are now left with a fairly small class of synchronic ‘exceptions’ to the generalization that morphologically nonactive verbs do not have an external argument in Greek-type languages.

In the next section, I argue that the agent argument of deponents is introduced non-canonically below VoiceP, as the result of a diachronic reanalysis of a benefactive or experiencer argument as an agent argument. I briefly sketch out this diachronic development in the next section, since it is relevant for understanding how voice mismatches develop in languages with Greek-type voice systems. A more detailed discussion of the diachrony of deponents is provided in Grestenberger 2017.

### 3.3. ‘Low agents’

Since deponents are the exception rather than the norm in Greek-type voice systems, we must look for a diachronic explanation for this situation. The starting point for such an explanation is the observation that nonactive voice itself is not valency reducing or ‘argument absorbing’, most clearly articulated by Embick (2004a). Thus nonactive voice morphology normally signals the lack of an external argument, but does not specify whether this came about through valency reduction. In Greek-type languages there are in fact canonically nonactive predicates in which valency reduction does not seem to have taken place. These include statives like Ancient Greek *keĩmai* ‘lie’, experiencer verbs like *házomai* ‘am in awe of’, verbs of motion like *érkhomai* ‘come’, and self-benefactives like *phéromai* ‘carry something away for myself; win’. The last class is...
especially important to the analysis of deponents. Both Ancient Greek and Vedic productively form nonactive self-benefactives from certain formally active transitive verbs, and the same is true for Modern Greek, as illustrated in Table 12.

<table>
<thead>
<tr>
<th>ACTIVE VERB</th>
<th>SELF-BENEFACTIVE/ NONACTIVE VERB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ved. yája-ti</td>
<td>yája-te ‘sacrifices (sth.)’ for one’s own benefit’</td>
</tr>
<tr>
<td>bhára-ti</td>
<td>bhára-te ‘takes/carries (sth.) for oneself’</td>
</tr>
<tr>
<td>AG phéρ-ó</td>
<td>phéρ-ó ‘carry, bring (sth.)’</td>
</tr>
<tr>
<td>lég-ó</td>
<td>légo-mai ‘pick out/choose (sth.) for myself’</td>
</tr>
<tr>
<td>MG promíthev-o</td>
<td>promíthev-óme ‘get (sth.) for myself’</td>
</tr>
<tr>
<td>arpaz-o</td>
<td>arpaz-óme ‘grab (sth.) for myself’</td>
</tr>
</tbody>
</table>

Table 12. Nonactive self-benefactives.

Descriptively, self-benefactives appear to be three-place predicates in which the benefactive argument of an action is identified with the subject of the same action. There are basically two ways of analyzing this construction. The first analysis is one in which the surface subject is an agent, which is coindexed with a (null) benefactive argument, as in 27b. This solution is appealing because it treats self-benefactives as essentially the same as benefactives in which the agent and the benefactive argument are not coindexed, illustrated in 27a.

(27) a. \([\text{VoiceP Agent} [\text{ApplBEN Benefactive} [\text{VP Theme}]])\) (benefactive)

b. \([\text{VoiceP Agent} [\text{ApplBEN Benefactive} [\text{VP Theme}]])\) (self-benefactive)

If this analysis of benefactives and self-benefactives were correct, we would predict that they both surface with the same voice morphology, since the agent would be introduced canonically in Spec, VoiceP in both cases. This evidently makes the wrong prediction for Greek-type languages, in which voice morphology differs between benefactives and self-benefactives (see Table 12).

I therefore propose to adopt the second possibility, namely, to take the evidence of the voice alternation at face value and conclude that the surface subject in self-benefactives is not merged in the same base position as the surface subject of the corresponding benefactive (or nonbenefactive transitive), but is the benefactive argument that has moved to subject position. The benefactive argument itself is introduced by an applicative head Appl\text{BEN}, located below VoiceP, as argued by Pylkkänen (2008). The difference in voice morphology reflects a difference in the status of the surface subject in the two constructions. While the surface subject in benefactives is an agent, the surface subject in self-benefactives is a benefactive argument that is introduced by the applicative projection Appl\text{BEN} and then moves to subject position, as in 28.

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20 The Modern Greek examples are from Zombolou & Alexiadou 2014. Note that the nonactive self-benefactives can also be read as passives (‘get supplied, get taught’, etc.), as expected in a language with morphological voice syncretism.

21 For reasons of space, the distinction between high and low attachment of Appl\text{BEN} proposed by Pylkkänen cannot be discussed here, but see Bosse et al. 2012 on different types of benefactives and their properties.
In this analysis, the difference in voice morphology between self-benefactives and benefactives arises as a result of the different status of their surface subjects: while the subject of benefactives is introduced as the external argument of Voice and therefore triggers active morphology, the surface subject of self-benefactives is introduced below Voice.

Before proceeding to deponents, a possible counterargument to this analysis concerning the case on the benefactive argument needs to be addressed. While the benefactive argument bears (presumably lexical) dative case in Greek-type languages, as in 29a, the subject of the self-benefactive bears nominative case, as in 29b (Vedic dhā means ‘place, establish, set down’ in the active and ‘place/establish for oneself; take’ in the middle; cf. Gonda 1979:109ff.).

(29) Vedic benefactive (RV 4.20.9d) and self-benefactive (RV 1.3.11c)
   a. <á>thā dadhā-ti drāvīnaṃ jaritrē
data+to place-3SG.ACT wealth.ACC singer.DAT
      ‘and he establishes material property for the singer.’
   b. yajñāṃ dadh-e sārasvatī
      sacrifice.ACC place.PRF-3SG.PRF.MID Sarasvati.NOM
      ‘Sarasvati has received our sacrifice.’ (lit. ‘has taken/placed for herself’)

If the subject of self-benefactives is indeed the moved benefactive argument that binds its trace, the fact that it has nominative case rather than the expected dative case is surprising. As mentioned in §2.3, however, at least in Ancient Greek some dative (as well as genitive) arguments regularly take on nominative case under passivization, as in ex. 30 (modified from Anagnostopoulou & Sevdali 2015:453; see also Conti 1998).

(30) a. Athēnaĩ-oi epibouleú-ousin hēm-ĩn
      Athenian-NOM.PL betray-3PL.ACT US-DAT
      ‘The Athenians are betraying us’
   b. Hēm-eĩs hup’ Athēnaĩ-ōn epibouleu-ōmetha
      we-NOM by Athenian-GEN.PL betray-1PL.NACT
      ‘We are betrayed by the Athenians’

(Thucydides, The Peloponnesian War 1.82.1)

This is not possible in Latin, which famously allows dative subjects, and has not been reported for Vedic or Hittite (although a thorough study of this phenomenon in either language is a desideratum). However, I interpret the Greek evidence to mean that at least some of the older IE languages allow ‘lexical’ cases, that is, genitive and dative, to
be lost under movement to subject just like accusative, and that the loss of dative case on benefactive arguments in self-benefactives is therefore not an insurmountable problem for the analysis presented here.

Concerning Ancient Greek, Anagnostopoulou and Sevdali (2015) argue that (at least some) dative and genitive arguments are ‘active’ for Agree and have an uninterpretable case feature that can enter into an Agree relation with T (or Voice) under the right circumstances. They follow the m-case approaches of, for example, Marantz 1991 and Harley 1995, in which morphological case assignment is dissociated from the mechanisms of syntactic case assignment/DP licensing (i.e. Agree) and follows a disjunctive case hierarchy. The crucial Spell-out rules for structural case in Greek accordingly are as follows (I leave out those that are not directly relevant to the present discussion, such as the rules for genitive case).

(31) Structural case in Ancient Greek (Anagnostopoulou & Sevdali 2015:467)
   a. $[u\text{CASE}] \rightarrow \text{NOM}$ iff the DP is not c-commanded by another structurally Case-marked DP (within the domain of finite T).
   b. $[u\text{CASE}] \rightarrow \text{DAT}$ iff the DP is c-commanded by another structurally Case-marked DP within the domain of finite T and is m-commanded by applicative $v_1$ (benefactive/goal).
   c. $[u\text{CASE}] \rightarrow \text{ACC}$ iff the DP is c-commanded by another structurally Case-marked DP within the domain of finite T.

These rules straightforwardly result in the nom-dat-acc-marking observed in benefactives and also derive the dat-nom alternation in active vs. passive structures such as 30. In self-benefactives, we now predict nominative case on the applicative argument: if there is no external argument introduced by Voice, the applicative argument is no longer c-commanded by another structurally Case-marked DP (see 31b) and surfaces with nominative case, as per 31a. The case of the theme argument is not affected.

With this background, we can now return to deponents. My proposal is that their derivation proceeds similarly to that of self-benefactives, with the introduction of the surface subject below Voice. As in self-benefactives, this means that Voice will be spelled out as nonactive because it does not introduce an external argument.22 The difference is the thematic role of the surface subject: in self-benefactives, it is the benefactive argument that moves to subject position, while it is an agent argument in deponents.23

The development of such low agents is now straightforwardly interpretable as a diachronic reanalysis by which a benefactive argument is reanalyzed as an agent. This reanalysis is illustrated in 32. The tree in 32a shows the structure of a self-benefactive before raising of the benefactive argument to subject position, and 32b shows the rean-

---

22 A referee points out that this raises the question of whether ‘low subjects’ (benefactive arguments and low agents) move through the empty specifier of VoiceP, or skip VoiceP entirely since it does not project. I have chosen the latter option for the self-benefactive structure in 28; the same would then hold for low agents. In this analysis, self-benefactives would resemble ‘marked anticausatives’ in Greek in the Alexiadou et al. 2015 analysis in that they select expletive Voice without a specifier. The alternative, selecting thematic nonactive Voice with an implicit external argument, would not work without extra assumptions, since neither self-benefactives nor deponents have implicit external arguments. See §3.1 for a discussion of these different types of Voice heads.

23 A version of the ‘movement analysis’ of self-benefactives is briefly discussed by Alexiadou (2013) for Modern Greek in the context of her analysis of (transitive) deponents as experiencer verbs. As I have argued in §2.3, however, deponents cannot be synchronically analyzed as experiencer verbs, and the movement analysis of self-benefactives needs to be independently motivated. Note that I am not claiming that the movement analysis of self-benefactives holds for all languages, but it must hold for those with a Greek-type voice system in which self-benefactives take nonactive morphology.
analyzed deponent structure, likewise before raising (the boxed DP is the one undergoing the reanalysis).

The synchronic derivation of a deponent verb is illustrated in 33.

\[\text{(32) a.} \quad \text{VoiceP} \quad \text{b.} \quad \text{VoiceP} \]

\[\text{Voice} \quad \text{APpl}_{\text{BEN}} \quad \text{Voice} \quad \text{XP} \]

\[\text{[ext.arg]} \quad \text{Ben} \quad \text{APpl}_{\text{BEN}} \quad \text{[ext.arg]} \quad \text{AGENT} \]

\[\text{APpl}_{\text{BEN}} \quad \text{vP} \quad \text{APpl}_{\text{BEN}} \quad \text{vP} \]

\[\text{v} \quad \text{Root} \quad \text{v} \quad \text{Root} \]

\[\sqrt{\text{THEME}} \quad \sqrt{\text{THEME}} \]

\[\text{(33) Deponent} \]

\[\text{TP} \quad \text{Agent}_{1} \quad \text{VoiceP} \]

\[\text{Voice} \quad \text{XP} \quad \text{Voice} \quad \text{XP} \]

\[\text{[ext.arg]} \quad \text{[AGENT]} \quad \text{[ext.arg]} \quad \text{[AGENT]} \]

\[\text{X} \quad \text{vP} \quad \text{X} \quad \text{vP} \]

\[\text{vP} \quad \text{Root} \quad \text{vP} \quad \text{Root} \]

\[\sqrt{\text{THEME}} \quad \sqrt{\text{THEME}} \]

Case marking along the lines of Anagnostopoulou & Sevdali 2015 would not be affected by this reanalysis, since the reanalyzed low agent would still have an uninterpretable case feature, like its benefactive predecessor, and therefore surfaces with nominative case according to 31a. Case on the theme would likewise be unaffected: the theme would be realized as acc according to 31c, since it is still 'c-commanded by another structurally Case-marked DP within the domain of finite T' (that is, the low agent that has moved to Spec,TP), and there is no reason to assume that the syntactic licensing of structural case has changed.24

To recap, while deponents cannot be analyzed as self-benefactives synchronically, as their surface subject is an agent rather than a benefactive argument (cf. §2.3), a diachronic development from self-benefactives is very likely for many of them. The trigger for this development may have been the gradual loss of benefactive semantics of structures like 32a, resulting in 32b, in which 'XP' is to be interpreted as a remnant of a ‘bleached’ APpl_{BEN} rather than as a new functional low-agent projection. If there is no

\[\text{24} \quad \text{In purely syntactic approaches to case assignment, in which nominative results directly from agreement with T and accusative from agreement with Voice, it might be expected that the low agent would intervene between Voice and the theme, thus blocking accusative case assignment to the theme. A way out would be to assume that themes agree with vP rather than VoiceP for accusative case, effectively dissociating accusative case assignment from the projection that introduces external arguments (potentially problematic, given Burzio’s generalization). However, these approaches would presumably also have problems deriving patterns such as 30, in which an apparently lexically case-marked DP agrees with T, and with the movement analysis of self-benefactives discussed above.}\]
(self-)benefactive meaning that could serve as a cue for positing the presence of the projection Appl\textsc{Ben}, a language learner would be confronted with a paradoxical situation in which an apparently agentive, transitive verb is marked with nonactive morphology. Assuming that the learner has successfully acquired the canonical distribution of active and nonactive morphology in her language, she can now either ‘correct’ the apparent mistake and switch to active morphology (a common fate of agentive deponents diachronically) or posit a noncanonical nonactive verb with a low agent, since this would also be compatible with the mechanism that triggers nonactive morphology. In the latter case, the learner has successfully acquired a deponent. The loss and creation of oppositional active forms in voice-alternation verbs and the development of deponents are extensively discussed for Modern Greek in Lavidas & Papangeli 2007, Lavidas 2009, and Zombolou 2004, 2015.25 These authors have provided evidence that if an alternating verb lost its morphologically active part of the paradigm on the way to Modern Greek, the nonactive counterpart became vulnerable to reanalysis as a formally active or formally nonactive agentive verb. The same can be shown through comparative reconstruction for deponents in older IE languages, many of which have arisen from older canonical nonactive verbs (self-benefactives or experiencer verbs). Thus the Vedic verb \textit{ītē} ‘praise, implore’ (which makes an agent noun \textit{īdītār-} ‘praiser’) goes back to the same verb as Homeric Greek \textit{aídōma}i ‘be reverent of, fear, be ashamed’ (later replaced by \textit{aidēomai}), suggesting that this was originally a psych verb with an experiencer subject.26

This ‘deponent reanalysis’ is treated in more detail in Grestenberger 2016 and 2017, but this brief sketch should suffice to show how Greek-type languages might acquire noncanonical low agents in a small number of cases.

3.4. Summary. The analysis of the diachrony of deponents outlined in this section explains their synchronic behavior and provides a relatively simple account of their diachronic development from canonical nonactive verbs. I have argued that deponents in the narrow definition are indeed mismatch verbs: they surface with nonactive morphology despite having an agent subject. This agent can be analyzed as a noncanonical low agent due to a diachronic reanalysis of an erstwhile experiencer or benefactive argument. Given that VoiceP in Greek-type languages does not always introduce an external argument in the canonical position (recall the ‘expletive Voice’ of Alexiadou et al. 2015), this lack of a DP in Spec, VoiceP of deponents does not cause the derivation to crash. Neither does the fact that the surface subject of deponents is base-generated below VoiceP and then moves to subject position, since this analysis is independently needed for nonactive experiencer verbs and nonactive unaccusative verbs.

We still need to assume that deponency is lexically specified in some way, but we can now do away with the need for a lexical [\textsc{pass}] or [\textsc{NonAct}] feature. Instead, deponents are verbs that select a Voice head that does not project a specifier (‘expletive Voice’), re-

\begin{footnote}{25} Whether a given verb is ‘normalized’ as active or survives as deponent is of course highly idiosyncratic, and a variety of factors seems to play a role, including verbal semantics of a given active/nonactive pair, time of acquisition, language contact, and prescriptive pressure. Katis (1984:135) provides some evidence from the L1 acquisition of Modern Greek verbs that deponents are acquired with the same speed (and error rate) as other nonactive verbs. However, Katerina Zombolou (p.c.) has pointed out to me that bilingual children and heritage speakers tend to ‘normalize’ deponents more than nonbilingual L1 acquirers by turning them into morphologically active verbs (although some of these bilingual acquirers that ‘activize’ deponents then go back to using nonactive morphology after age seven).
\end{footnote}

\begin{footnote}{26} According to Pesetsky 1995, SubjExp verbs like ‘fear’ are essentially unaccusatives; the experiencer is embedded in a locatival PP below VP. These verbs are therefore expected to surface with nonactive morphology in Greek-type languages, and this is indeed the case; see Grestenberger 2014 and 2016 for more examples.
\end{footnote}
flecting their origin as canonical nonactive verbs, but that have an agent argument. The combination of these two properties causes the synchronic form-function mismatch.

This analysis of deponency also straightforwardly explains why some languages do not seem to have deponents in the narrow sense: in order to create the form-function mismatch, a language needs to have voice morphology that is sensitive to the presence or absence of an external argument, like the Greek-type voice morphology. Languages like English or French that lack this type of voice morphology are therefore not expected to have deponents, which seems to be correct.

In the next section, I provide additional evidence for this analysis through a discussion of the behavior of deponent participles and other deverbal nominals and adjectives. Given the analysis presented in this section, deverbal formations that include VoiceP are expected to preserve the form-function mismatch, even in nonfinite contexts. I argue in the next section that the presence vs. absence of VoiceP is indeed an indicator of whether the voice mismatch surfaces in deponent participles.

4. DEPONENTY IN NONFINITE CONTEXTS.

4.1. Introduction. The puzzle that we are now facing can be summarized as follows: at what point in the derivation of a given deverbal noun or adjective do we know that we are dealing with a ‘mismatch’ form derived from a deponent verb? For example, the alternating Vedic root nī ‘lead’ and the deponent root trā ‘protect’ are identical with respect to the morphosyntax of their agent nouns and verbal adjectives (columns c–d in Table 13), but they differ in their voice morphology between their finite paradigm and their participles (columns a–b in Table 13).

<table>
<thead>
<tr>
<th>ROOT</th>
<th>a. 3SG PRES.</th>
<th>b. PRES. PARTICIPLE</th>
<th>c. VERBAL ADJ.</th>
<th>d. AGENT NOUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>nī</td>
<td>nāy-a-nt</td>
<td>nāy-a-ti</td>
<td>nī-tā-</td>
<td>ne-tār-</td>
</tr>
<tr>
<td>trā</td>
<td>trā-ya-te</td>
<td>trā-ya-māṇa-</td>
<td>trā-ta-</td>
<td>trā-tār-</td>
</tr>
</tbody>
</table>

Table 13. Vedic alternating nī ‘lead’ vs. deponent trā ‘protect’.

Based on this pattern, it is reasonable to assume that the voice mismatch that is observed in deponents is somehow linked to the presence of verbalizing morphology: for the ‘deponent root’ trā, it is observed in all forms that contain the present-stem-forming suffix -ya-, but is absent in those formations that are formed directly to the root. Assuming that verbal stem-forming suffixes like -a- and -ya- in the Vedic examples in Table 13 spell out the heads of functional projections that turn a category-neutral root into a verbal category (cf. Harley’s (2009) analysis of English -ize, -ify, and so forth; see also Harley 2005, 2011), it looks like the voice mismatch occurs whenever the verbal-eventive projection v is present.

In the following sections I argue that vP is not enough but that the mismatch forms also include VoiceP, and that their properties mirror those of the corresponding finite forms with respect to agency, transitivity, and adverbial modification. This is predicted by the analysis of deponents discussed in §3, where I have argued that deponency is triggered by a noncanonical agent introduced below Voice which causes Voice to be spelled out as morphologically nonactive. This analysis predicts how deverbal nouns and adjectives of deponent verbs will behave syntactically: on the one hand, if a nomi-

27 See Schäfer 2008 and Alexiadou et al. 2015 for an analysis of se-reflexives in Romance. While these are often equated with nonactive voice in Greek-type languages and share many of their characteristics, these authors argue that se-constructions differ structurally and are active during the syntactic derivation (they trigger \( \phi \)-feature agreement), whereas nonactive morphology is strictly postsyntactic. The lack of deponents (in the narrow sense) in these languages confirms that their voice system must differ from that of Greek-type languages.
nal or adjectival suffix in a given language regularly attaches above VoiceP, deponent behavior should be preserved in the resulting formation, since it now includes the projection that triggers the mismatch. On the other hand, if a nominal or adjectival suffix does not include VoiceP below the attachment site, deponent behavior should be suspended in the resulting formation, since the ‘triggering’ projection is absent.

4.2. Participles. Broadly speaking, participles are deverbal nominals (substantives or adjectives28) that are perceived to be integrated into a verbal paradigm as ‘nonfinite verbal forms’. They usually combine properties that would be characterized as nominal (e.g. nominal rather than verbal morphology) with verbal properties, like the ability to value structural case on direct objects and to take adverbial modifiers.

Research on nominalizations in the generative tradition (e.g. Embick 1997, 2000, 2004b, Alexiadou 2001, Anagnostopoulou 2003, Alexiadou et al. 2007, Alexiadou & Anagnostopoulou 2008, Baker & Vinokurova 2009, Harley 2009, Baker 2011, and the papers in Alexiadou & Rathert 2010, among others) emphasizes that the crosslinguistic differences in participial syntax (and the syntax of nominalizations more generally) result from the presence or absence of particular verbal functional projections below the attachment site of the participial morphology, that is, from selectional properties of particular affixes. However, the interaction of nominalizing and voice morphology has not explicitly been studied for most of the languages discussed here, nor has the behavior of verbs exhibiting a voice mismatch (deponents) in nonfinite contexts.

The starting point for the following investigation is work by Anagnostopoulou and others on different types of participles in Modern Greek, especially Anagnostopoulou 2003, Alexiadou & Anagnostopoulou 2008, and Alexiadou et al. 2015, where it is argued that the differences in the syntax of the Modern Greek adjectival ‘passive’ participles in -menos vs. -tos are due to the different attachment sites of the participial suffixes and the different functional projections included in these participles (on Modern Greek participles in general see also Embick 1997:134ff., Holton et al. 1997:234ff., Papangeli & Lavidas 2009). Anagnostopoulou 2003 shows that participles in -menos have event implications, whereas participles in -tos do not. For example, the participle vras-menos ‘boiled’ from vrazo ‘boil’ implies that there was a boiling event that resulted in the state of something having been boiled, whereas no such boiling event is implied by the participle vras-tos ‘boiled’, made from the same verb. This semantic difference correlates with different syntactic properties of menos- vs. tos-participles: formations in -menos license manner adverbs, while those in -tos do not. Moreover, eventive/verbal passives in -menos license agent by-phrases, whereas stative (adjectival) passives in -tos do not; compare 34.

(34) Ta keftedakia ine tiganis-mena/*tigan-ta apo tin Maria.
the meatballs are fried-menos/*fried-tos by the Maria
‘The meatballs are fried by Maria.’ (Anagnostopoulou 2003:13)

These different syntactic properties of the Modern Greek passive participles reflect different heights of attachment sites for the participial suffixes -menos vs. -tos. While -tos attaches directly to the root, -menos selects either v+Asp (‘target-state participles’), as in 35a, or v+Voice+Asp (‘resultant-state participles’), as in 35b (the trees below are

28 Since nouns and adjectives in the older IE languages largely share the same inflection, I follow the Greek and Latin grammatical traditions in which ‘noun’ was used as a cover term for both, with a subdivision into nōmen substantīvum ‘substantival noun’ and nōmen adjectīvum ‘adjectival noun’ in Latin. Hence the term ‘nominalization’ includes participles and verbal adjectives here and is thus used more broadly than in much of the literature, where it usually only refers to different types of event and agent nominals.
based on those of Alexiadou and colleagues (2015:161), who essentially follow this analysis. This analysis explains the different properties of participles in \(-\text{menos}_\text{RES}\), \(-\text{menos}_\text{TARG}\), and \(-\text{tos}\) in terms of their structural makeup.\(^{29}\)

(35) \text{menos}-participles (\text{anigmenos} ‘opened’)

\[
\begin{array}{c}
\text{a.}
\quad \text{Asp} \\
\quad \text{v} \\
\quad \text{\(-\text{men(os)}\)} \\
\end{array}
\quad \begin{array}{c}
\text{b.}
\quad \text{Asp} \\
\quad \text{Voice} \\
\quad \text{v} \\
\quad \text{\(-\text{men(os)}\)} \\
\end{array}
\quad \text{\sqrt{\text{anig}}}
\]

The difference between target-state and resultant-state participles is introduced to explain the variation in syntactic properties within \text{menos}-participles. Target-state participles can be modified by the adverb \text{akoma} ‘still’, while resultant-state participles that express an irreversible state are incompatible with \text{akoma}. Anagnostopoulou argues that this is because the resultant-state operator \text{res} that is found in irreversible states attaches above VoiceP in Greek, while the target-state operator \text{targ} attaches below VoiceP. This explains why \text{menos}-participles that are modified by \text{akoma} (target-state participles) are incompatible with agent \text{by}-phrases, while resultant-state participles are fine with them (cf. 36).

(36) \text{Ta lastixa itan (*akoma) fuskomena apo tin Maria.}
\quad \text{the tires were (still) inflated by the Maria}
\quad \text{‘The tires were still inflated by Maria.’} \quad (\text{Anagnostopoulou 2003:22})

Since target-state participles (compatible with \text{akoma}) do not have VoiceP, the projection that usually introduces the external argument, they cannot combine with an agent \text{by}-phrase in 36. If \text{akoma} is left out, the resultant-state reading becomes available and licenses the \text{by}-phrase.

This analysis provides a cartography for ‘regular’ Modern Greek passive participles. It remains to be seen whether it has any consequences for the question of voice mismatches (a question not addressed in the works discussed above). This question is of some relevance because of a reported observation in the literature concerning nonfinite forms of deponent verbs. The observation is that some of these nonfinite forms continue the voice mismatch introduced in §2.2, displaying nonactive morphology but active syntax, while others do not continue the mismatch. In this latter class, we find that deponents use the same nominal or adjectival morphology as agentive transitive nondeponents. In Modern Greek, this is the case for the passive participles in \text{-tos} and \text{-menos}, leading Papangeli and Lavidas (2009:207) to speculate ‘whether syntactic features on Tense play, after all, some role in the notion of deponency’ because ‘adjectival participles, constructions without Tense, do not display a deponent behavior’. Pesetsky (2009:213) elaborates on their suggestion and claims that ‘[u]ntensed forms of deponent verbs show non-passive morphology’. Building on the claim in Pesetsky & Torrego 2007 that verbs are usually lexically valued for T, he then argues that Latin deponents are ‘defective verbs that are lexically unable to bear T under any circumstances’ (Pesetsky 2009:217). They therefore cannot agree with the head Tns to value its interpretable but unvalued T-feature, and the copula has to be used instead to ‘rescue’ Tns. This account

\(^{29}\) Alexiadou and colleagues (2015) follow Embick 2000, 2004b in assuming that participial morphology spells out different verbal functional heads if movement to a higher functional category is blocked, rather than spelling out a designated \text{nominal} functional category (e.g. ‘PtcpP’, ‘nP’, ‘DP’, ‘AdjP’, etc.).
predicts that deponents always surface as analytic constructions with active syntax in environments that are [+Tns], but have nondeponent behavior in environments that are [−Tns]. This is wrong on both accounts. As I show in the following sections, deponent behavior is not suspended across the board in nontensed environments. Moreover, deponents do not generally surface as analytic constructions. Pesetsky is forced to argue that the Latin synthetic r-forms (the nonactive endings found on passives and deponents alike) are underlyingly analytic constructions that have incorporated the copula, possibly expressed as the final r-morpheme of the Latin passive. However, the comparison with other languages with similar voice systems shows that Latin is actually exceptional in having an analytic perfect passive,30 and that deponents in Vedic, Ancient Greek, Hittite, and Modern Greek consistently have synthetic nonactive forms (and synthetic perfect passives, if they have perfect passives at all). In other words, treating precisely the synthetic nonactive forms in Latin as unexpected is unsupported by the comparative evidence.

To clarify the syntactic behavior of deponent participles, I divide the relevant formations into whether the mismatch is suspended or not, starting with ‘mismatch suspension’ in §4.3. The comparative evidence shows that Tense is not the decisive factor that determines deponent behavior.

For reasons of space, I concentrate on a handful of suffixes in each language, namely verbal adjectives and participles similar to the ones discussed by Anagnostopoulou (2003) and agent nouns. The following survey is therefore representative rather than exhaustive.

4.3. Mismatch suspended: VoiceP excluded.

Agent nouns. Deponents behave like formally active agentive verbs and form agent nouns, using the same suffix as the regular active verbs, in Vedic, Ancient Greek, Modern Greek, Hittite, and Latin. In other words, from a given agent noun alone it is not possible to tell if the corresponding finite verb is formally active or formally nonactive (deponent). Since I have already discussed deponent agent nouns in §2.3 as evidence that deponents are agentive, I keep the following discussion short. Recall that we have seen examples of agent-noun formation from Vedic, Ancient Greek, Latin, and Modern Greek, some of which are repeated in 37.

(37) Deponent agent nouns
   a. Vedic: trā-ṭār- ‘protector’ (trayate ‘protects’), kṣat-ṭār- ‘server’ (kṣādate ‘serves, prepares’)
   b. Ancient Greek: rhū-ṭēr ‘protector’ (érūmai, rhūomai ‘protect, guard’), lōbē-ṭēr ‘slanderer’ (lōbāomai ‘slander’)
   c. Latin: hortā-tor ‘inciter’ (hortor ‘urge, incite’), vēnā-tor ‘hunter’ (vēnor ‘hunt’)
   d. Modern Greek: ekmetalef-tis ‘exploiter’ (ekmetaleve ‘exploit’), hiris-tis ‘user, manipulator’ (hirizome ‘use, manipulate’)

There is no mismatch between morphology and syntactic function in 37: the same agent-noun morphology is used for formally active and formally nonactive agentive verbs. This is expected under the analysis of Baker and Vinokurova (2009), who argue that agent-noun suffixes are semantically similar to Voice and select the same types of verb phrases (vP) that Voice selects. That is, Voice and agent-noun morphology never

30 Sanskrit also develops in the late Vedic period a periphrastic perfect construction in which active and nonactive morphology are expressed on the copula; see Kiparsky 2005. Periphrastic perfects of deponents preserve the voice mismatch.
cooccur because they occupy the same structural position. While other accounts of agent nominalizations assume that VoiceP is part of the structure of an agent noun (e.g. Alexiadou & Schäfer 2010, Roy & Soare 2014), Baker and Vinokurova provide arguments against such an analysis based on evidence from the Turkic language Sakha, but more widely applicable. They show that agent-noun morphology can only combine with verbs that can be passivized (that is, it is in complementary distribution with the overtly expressed passive Voice head and cannot cooccur with passive morphology) and can only select the same verbal projections that Voice can select. Since Negation and Aspect are higher than Voice, agent-noun morphology is likewise incompatible with it. The lack of Voice also explains the incompatibility of agent nouns with adverbial modification and the lack of structural (accusative) case assignment. If Voice is the projection responsible for deponent behavior, agent nominalizations are not expected to be sensitive to deponency under this account—and indeed they are not.

**Verbal Adjectives.** Deponent and nondeponent active verbs also pattern together with respect to root-derived (‘stative’) adjectives in which the suffix attaches directly to the root (cf. the Modern Greek adjectival or ‘stative’ participle in -tos discussed above). These are called ‘verbal adjectives’ in the Indo-Europeanist literature and have an apparent passive reading if made to transitive verbs, but an intransitive reading with intransitive verbs. The verbal adjectives of deponents pattern with active transitive verbs in having a passive reading. This is again consistent across these languages.

In Vedic, verbal adjectives are formed with the suffix -tá- (cf. Debrunner 1954:551ff., Jamison 1990). Table 14 compares verbal adjectives made from formally active, transitive verbs to verbal adjectives made from (transitive) deponents. As in the case of the agent nouns above, the formations made from deponents and nondeponents are indistinguishable, both morphologically and syntactically (both are ‘passive’/object-oriented). The Ancient Greek suffix -tós patterns the same way, as illustrated in Table 15 (cf. Risch 1974:19ff.).

<table>
<thead>
<tr>
<th>ROOT</th>
<th>ACTIVE VERBAL ADJ.</th>
<th>ROOT</th>
<th>DEPONENT VERBAL ADJ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>han</td>
<td>‘slay’</td>
<td>gras</td>
<td>‘devour’</td>
</tr>
<tr>
<td>vac</td>
<td>‘speak’</td>
<td>bādh</td>
<td>‘beset’</td>
</tr>
<tr>
<td>pā</td>
<td>‘drink’</td>
<td>labh</td>
<td>‘take’</td>
</tr>
</tbody>
</table>

Table 14. Vedic verbal adjectives in -tá-.

<table>
<thead>
<tr>
<th>VERB</th>
<th>ACTIVE VERBAL ADJ.</th>
<th>VERB</th>
<th>DEPONENT VERBAL ADJ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>tithēmi</td>
<td>‘place’</td>
<td>ex-ainumai</td>
<td>‘choose’</td>
</tr>
<tr>
<td>poiēō</td>
<td>‘make’</td>
<td>mnāomai</td>
<td>‘woo’</td>
</tr>
<tr>
<td>tetraínō</td>
<td>‘pierce’</td>
<td>eukhomai</td>
<td>‘pray’</td>
</tr>
</tbody>
</table>

Table 15. Ancient Greek verbal adjectives in -tós.

Hittite moreover exhibits the same pattern with an etymologically unrelated suffix -ant-, which has the same syntax as the verbal adjectives in -tá- and -tós- in Vedic and Greek (see Hoffner & Melchert 2008:339ff. on Hittite -ant-); see Table 16.

---

31 Assuming that structural case on the object is linked to the projection that introduces the external argument (Burzio’s generalization) and adverbial modification takes place above vP/VP, as these authors do. See also n. 24 above.
As already mentioned, Anagnostopoulou 2003, Alexiadou & Anagnostopolou 2008, and Alexiadou et al. 2015 argue that Modern Greek -tos-participles (stative participles) take a bare Root complement. This derives a number of properties of stative participles: only the internal argument is included in the nominalization, deriving the ‘theme-orientedness’ of these formations which generally treat (unaccusative) intransitive subjects and transitive objects alike, and causes the apparent ‘passive’ reading of these participles. Since neither verbalizing morphology (associated with vP) nor VoiceP is present in these stative participles, deponents are predicted to pattern with regular transitive verbs with respect to their syntactic properties. I illustrate this for the Vedic verbal adjectives (stative participles) in -tá- in 38, based on the analysis of Alexiadou et al. 2015 for Modern Greek -tos. Besides Modern Greek -tos and Vedic -tá-, this is also the structure of the Ancient Greek to-participle.

(38) a. Vedic nondeponent tá-participle
   b. Vedic deponent tá-participle

<table>
<thead>
<tr>
<th>ACTIVE</th>
<th>VERBAL ADJ.</th>
<th>DEPONENT</th>
<th>VERBAL ADJ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>epp-/app- 'seize'</td>
<td>app-ant- 'seized'</td>
<td>parš(i)- 'break'</td>
<td>paršiy-ant- 'broken'</td>
</tr>
<tr>
<td>pai-/pi- 'give'</td>
<td>piy-ant- 'given'</td>
<td>ḫuett(i)- 'pull'</td>
<td>ḫuetti-ant- 'pulled'</td>
</tr>
<tr>
<td>tarupp- 'assemble'</td>
<td>tarupp-ant- 'assembled'</td>
<td>tuḫš- 'cut off'</td>
<td>tuḫš-ant- 'cut off'</td>
</tr>
<tr>
<td>nī-tá-'led'</td>
<td>-nī</td>
<td>-tā-</td>
<td>-tā-</td>
</tr>
<tr>
<td>Root</td>
<td>THEME</td>
<td>THEME</td>
<td>THEME</td>
</tr>
</tbody>
</table>

Both the deponent and the nondeponent tá-participle have the same ‘passive’ reading because the only argument included below the suffix is the internal argument. Deverbal formations that do not include Voice are therefore ‘neutral’ with respect to deponency. This explains the intuition outlined above: we cannot tell a deponent from a nondeponent root in the absence of verbalizing morphology.

The Hittite ant-participle furthermore offers crucial evidence that it is the presence of VoiceP, rather than just vP, that determines whether mismatch behavior surfaces. Contrary to its Greek and Vedic counterparts, it does contain verbalizing morphology (albeit not always overtly), illustrated in Table 17.

<table>
<thead>
<tr>
<th>VERB</th>
<th>VERBAL ADJ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ḥark-Ø-zi perish-V-3SG.PRS.ACT</td>
<td>ḥark-Ø-ant- perish-V-PTCP- ‘perished’</td>
</tr>
<tr>
<td>b. ḥark-nu-zi perish-V-3SG.PRS.ACT</td>
<td>ḥark-nu(w)-ant- perish-V-PTCP- ‘destroyed’</td>
</tr>
<tr>
<td>c. nēwa-hḫ-i new-V-3SG.PRS.ACT</td>
<td>nēwa-hḫ-ant- new-V-PTCP- ‘renewed’</td>
</tr>
</tbody>
</table>

Deponent ant-participles in Hittite are always passive, suspending the mismatch. The Hittite ant-participle therefore shows that it is Voice, and not v alone, that is responsible for deponent behavior.
4.4. **Mismatch continued: VoiceP included.** In the previous section, we have seen cases in which nonfinite formations to ‘deponent roots’ are morphologically and syntactically indistinguishable from those of nondeponent roots. In this section, I discuss cases in which deponent participles are distinct from nondeponent participles and continue the mismatch between voice morphology and syntax.

**Vedic and Ancient Greek.** Both Vedic and Ancient Greek have distinct active and nonactive participial morphology in their present, aorist, and perfect paradigms. The Vedic participle suffixes are the active suffix \(-\text{ant-}\) and the nonactive (= ‘middle’) suffix \(-\text{āna-}\). The Greek active participle is formed using the suffix \(-(\text{o/}\text{e/}\text{a-})\text{nt-}\), the middle participle with the suffix \(-(\text{o/}\text{a-})\text{menos}\). In both languages, the general principle is that finite active verbs select the active participle suffix to make their participles, and finite middle verbs select the formally middle participle suffix. However, if finiteness (‘finite T’) were a necessary precondition for the suspension of mismatch behavior, we would expect deponent participles to either pick the active participial suffixes in these languages (in accordance with their active syntax) or retain nonactive morphology and change their syntactic behavior to correspond to it.

In fact, we find that the mismatch is continued. Deponent participles always select the **middle** suffix, but behave just like the corresponding finite forms with respect to their ‘active’ syntactic properties, illustrated for Vedic in 39 (= 18; cf. §2.3).

(39) Deponent \(\text{dāyate} \) ‘distributes’
\[
\begin{array}{llll}
\text{atithigvā} & \text{śāmbara} & \text{girēr} & \text{ugrō} \\
\text{Dat} & \text{mountain} & \text{abl} & \text{mighty} \\
\text{ávābharat} & \text{mahō} & \text{dḥānāni} \\
\text{down.pst.push.3SG.ipf.act} & \text{great.accc} & \text{prize.accc.pl.n} \\
\text{dāyamāna} & \text{ōjasā} & \text{vīśvā} \\
\text{distributing.ptcp.prss.mid.nom.sg} & \text{might.ins} & \text{all.accc.pl.n} \\
\text{dhānāny} & \text{ōjasā} & \text{prize.accc.pl.n} & \text{might.ins} \\
\text{‘The mighty one pushed Śambara off the mountain for Atithigva, distributing the great prizes with might, (distributing) all the prizes with might.’}
\end{array}
\]

The participle \(\text{dāyamāna-} \) ‘distributing’ behaves exactly like its corresponding finite verbal forms with respect to transitivity and agentivity (note also the instrumental NP \(\text{ōjasā} \) ‘with strength’ used as an agent-oriented adverb). The same is true of Ancient Greek deponent participles; compare 40.

(40) \(\text{dízēmai} \) ‘seek something’ : participle \(\text{dízēmenos} \) ‘seeking’
\[
\begin{array}{llll}
\text{ōikheto} & \text{gār} & \text{kaī keiše} & \text{thoēs} \\
\text{3SG.ipf.NAct gc.} & \text{and there} & \text{swift.gen} & \text{ship.gen} \\
\text{phārmakon} & \text{andro-phōn} & \text{dízēmenos} \\
\text{poison.accc} & \text{men-slaying.accc} & \text{seeking.nom} \\
\text{And so Ulysses went there on his swift ship, seeking men-slaying poison.’}
\end{array}
\]

To summarize, the distribution of the active/nonactive allomorphs of the participial suffixes of Greek and Vedic is essentially parallel to the distribution of voice morphology in finite contexts: the resulting participles take accusative case objects\(^{32}\) and show
‘active’ behavior if the corresponding finite forms are syntactically active as well. This suggests that the Vedic and Greek participial suffixes—active -ant-, nonactive -(m)āna- (Vedic) and active -nt-, nonactive -menos (Greek)—incorporate (at least) the projection VoiceP. Their structure is exemplified in 41 and 42 for the alternating Vedic root nī/nay ‘lead’ (cf. column b in Table 13).

(41) Vedic active participle
   a. náy-a-nt-
      lead-v-PTCP.ACT-
      ‘leading’
   b. AspP
      Asp
      VoiceP
      [\[-ant\] AGENT Voice
      vP
      Root
      \[\[-t\] nay THEME

(42) Vedic (nondeponent) nonactive participle
   a. náy-a-māna-
      lead-v-PTCP.NACT-
      ‘leading oneself, driving’
   b. AspP
      Asp
      VoiceP
      [\[-māna\] [\[-ext.arg\] vP
      Root
      \[\[-t\] nay THEME

The participial suffixes -ant- and -(m)āna- are therefore allomorphs of the same functional head Asp in 41 and 42. The Spell-out rules for Vedic and Greek participles can be summarized as follows (based on Embick 2000:218), parallel to the Spell-out rules for finite active and nonactive verbal forms (cf. Table 11).

(43) Spell-out rules for Vedic and Greek participles
   a. Asp: Vedic -(m)āna-, Greek -menos ↔ Voice[-ext.arg]
   b. Asp: Vedic -ant-, Greek -(e/o/a-)nt- ↔ elsewhere

In a deponent participle, the agent argument is introduced noncanonically below Voice, as in the finite forms. If verb movement to T does not take place, Asp is therefore spelled out as -(m)āna- by 43a, illustrated in 44 for Vedic.

...
Deriving Vedic and Greek deponent participles is thus relatively straightforward: the mismatch is preserved because these participles include VoiceP, just as the corresponding finite forms. It should be noted that this parallelism is possible because these languages have distinct active and nonactive nonfinite morphology in their participial formations. What about languages in which there is no overt voice marking in the nonfinite verbal morphology? Such languages would have different morphological values for Voice[±ext.arg] in its finite paradigm, but the same participial morphology for both of these values. The result would be that voice mismatches appear to be suspended in the nonfinite forms of such a language, since both nondeponents and deponents use the same participial morphology. I argue in the next section that Latin is such a language.

Latin. Latin warrants special discussion because of the unexpected behavior of its participial formations. In the present tense, Latin uses the same participial suffix -ns (the active participle) with both deponent and formally active verbs. Descriptively, the mismatch is suspended and the result is very similar to the cases discussed above: looking only at the present participles, one cannot tell whether a given participle is formed to a formally active or a deponent verb. The forms in bold in Table 18 illustrate this pattern.
(46) *loquor* ‘speak, say’, perfect participle *locūtus* ‘(having) said’

(Plautus, *Trinummus* 563)

**quid** hic *est locū-tus* tēcum?
what.ACC he.NOM is speak-PREF.PTCP.NOM.SG.M with.you
‘What did he discuss with you?’ (not: ‘what has been discussed’)

There is thus a discrepancy in Latin between the behavior of the present and the perfect participle: while the former apparently suspends the voice mismatch for deponent verbs (with the result that their present participles behave morphologically and syntactically like those of nondeponent active transitive verbs), the latter preserves it. This means that the Latin present ‘active’ participle cannot be used as evidence that voice mismatches are generally suspended in nonfinite contexts, since the perfect participle contradicts this, and we have already seen evidence from Vedic and Ancient Greek making the same point. In fact, the Latin present and perfect participles are similar to their Greek and Vedic counterparts discussed in §4.4. The only additional assumption necessary for understanding Latin deponent present participles is that the participial suffix *-ns* is not sensitive to whether Voice has a specifier. In other words, Asp is spelled out as *-ns* in the context of a feature [pres] if verb movement to T is not possible, but the value of Voice is irrelevant. This is essentially the analysis given in Embick 2000.

(47) Asp: *-ns* ↔ [pres] (Embick 2000:218)

This means that nondeponent and deponent participles will surface with the same morphology (see 48), because *-ns* is simply not specified for active/nonactive.

(48) Latin *ns*-participles

- Nondeponent: *amāns*
- Deponent: *hortāns*

This analysis may seem counterintuitive, given that Latin *-ns* is usually analyzed as an active present participle, suggesting that it is associated explicitly with formally active finite verbs. However, it has long been noted that there are exceptions to the expected distribution of this ‘active’ suffix, that is, that *-ns* is used in contexts that are decidedly nonactive. Concretely, the present participle of alternating verbs occasionally has the syntactic behavior of the corresponding nonactive (‘passive’) finite forms, in addition to that of the corresponding active finite forms (cf. Leumann 1977:583).

(49) a. *vertēns* ‘turning’ (tr./itr.): act. *vert-ō* ‘turn’ (tr.):
    nonact. *vert-or* ‘turn’ (itr.)

b. *volvēns* ‘rolling’ (tr./itr.): act. *volv-ō* ‘roll’ (tr.):
    nonact. *volv-or* ‘roll’ (itr.)

c. *līquēns* ‘fluid’: nonact. *līqu-or* ‘become fluid, melt’

These exceptions provide additional evidence that the Latin ‘active’ participle is in fact underspecified for Voice. Embick (2000) moreover argues that the same is true for the ‘passive’ participle suffix *-tus*. According to him, *-ns* and *-tus* are allomorphs of the
head Asp in the presence or absence of the feature [pres] on Asp. Crucially, neither suffix is sensitive to whether Voice is nonactive. The Spell-out rules for Asp in the absence of verb movement to T are thus as follows (again based on Embick 2000).

(50) a. -ns ↔ Asp[pres]
    b. -(tus)- ↔ elsewhere

Under this analysis, the ‘perfect passive’ participle suffix -(tus)- is therefore underspecified for both Voice and Aspect (as noted already by Brugmann 1895; see also Weiss 2009).

The derivation of a nondeponent/alternating and a deponent participle is illustrated in 51 for amātus ‘loved’ (nondeponent, syntactically passive) and hortātus ‘having exhorted’ (deponent, syntactically active).

(51) Latin tus-participles
    a. Nondeponent: am-ā-tus
    b. Deponent: hort-ā-tus

That -tus can have accusative case objects may be surprising, given that it is usually analyzed as the passive participle. However, examples like 45–46 above show that this is undoubtedly a property of this suffix. This confirms that Voice must be part of this nominalization, unlike in other, superficially similar-looking passive participles (cf. the discussion of Vedic -tá-, Greek -tós above), which never value accusative case on direct objects. Moreover, these participles can be modified by manner adverbs—compare 52 (from Embick 2000:220)—like ‘active’ ns-participles (see the discussion of Anagnostopoulou’s diagnostics for Voice in participles in §4.2 above).

(52) filius ūnicē amā-tus
    son.nom uniquely love-prf.ptcp.nom.sg.m
    ‘uniquely loved son’

This analysis predicts that the Latin ‘passive’ participle -tus made to alternating verbs should have both active and passive readings, parallel to -ns (cf. 49 above). There are indeed occasional forms that do behave like syntactically active participles, but these are relatively rare (Leumann 1977:61f., Weiss 2009:437); compare 53 and 54a–b.

(53) a. cēnō ‘dine’: cēnātus ‘having dined’
    b. iūrō ‘swear’ : iūrātus ‘having sworn’
    c. pōto ‘drink’ : pōt(āt)us ‘having drunk’

By contrast, the view that the ‘perfect passive’ participle is not necessarily perfective or [+past] is well supported. Brugmann (1895:100ff.) cites a number of examples in which a Latin tus-participle behaves like a present participle, either active, as in 54a–b, or passive, as in 54c (see also Embick 2000:219ff. and Weiss 2009:437 and n. 45).

(54) a. confidō ‘trust’: confisus ‘trusting’
    b. taceō ‘am silent’: tacitus ‘silent’
    c. laudō ‘praise’: laudātus ‘being praised’
Note that in 54a–b, the *tus*-participle occurs in the same syntactic context as a finite active verb (*confisus* means ‘trusting’, not ‘trusted’), suggesting again that -ns/-tus are not sensitive to whether Voice introduces an external argument.

To conclude this section, I have argued that Vedic and Greek show that deponent behavior is preserved in participles that include the projection VoiceP. This pattern is obscured in Latin because Latin participles display morphological syncretism for the values of Voice[±ext.arg]. However, the syntactic behavior of Latin deponent participles shows that they must include VoiceP as well, and are thus structurally quite similar to their Greek and Vedic counterparts.

In the next section, I briefly return to Modern Greek deponent participles, since these have not yet been discussed from this perspective.

4.5. Modern Greek. We saw in §4.2 that Modern Greek has two different types of ‘passive’ participial suffixes, -tos and -menos. Deponent participles, both in -tos and in -menos, behave like the participles of nondeponent transitive verbs. For -tos, this is entirely expected: Alexiadou and colleagues (2015) analyze the stative participle suffix -tos as attaching directly to the root; it does not have event implications because it does not contain vP (see §4.3). The suffix -tos occurs in negated participles of both deponent and nondeponent verbs and has the same syntactic behavior in both cases, as in 55 (from Papangeli & Lavidas 2009:201).

(55) a. Nondeponent pleno ‘wash’
    pli-menos — a-pli-tos
    ‘wash-ed’ ‘un-wash-ed’
    b. Deponent metahirizome ‘use’
    metahiris-menos — a-metahirist-tos
    ‘use-d’ ‘un-use-d’

While this pattern is expected, what is unexpected is that -menos-participles of deponents are passive, as in 56a, like -menos-participles of transitive nondeponents, as in 56b.

(56) a. Deponent metahirizome ‘use’
    To lexiko ine metahirismeno.
    the dictionary.nom is used
    ‘The dictionary is used.’
    b. Nondeponent grafo ‘write’
    To gramma ine grammeno.
    the letter.nom is written
    ‘The letter is written.’

According to Alexiadou, Anagnostopoulou, and Schäfer (2015), -menos can contain VoiceP in resultant-state participles (cf. §4.2). Therefore resultant-state participles of deponent verbs should preserve the voice mismatch and have an active reading, since VoiceP and vP would be incorporated below the suffix. By contrast, Anagnostopoulou (2003:21ff.) and Alexiadou, Anagnostopoulou, and Schäfer (2015:157ff.) argue that target-state participles in -menos do not contain Voice and are incompatible with agentive by-phrases and agent-oriented adverbs. Building on this, Papangeli and Lavidas (2009:201) argue that VoiceP is absent in deponent adjectival participles. The structure of a Modern Greek deponent participle in -menos is therefore as follows (cf. 35a).

(57) metahirismenos ‘used’

```
  Asp
    v
  -men(os) v √(meta)hiris
```
Anagnostopoulou’s (2003) diagnostics for target-state participles with the structure in 57 are (among others): (i) compatibility with *akoma* ‘still’, (ii) compatibility with *parameno* ‘remain’, (iii) no Voice-oriented adverbs like *prosekтика* ‘carefully’.

Testing this with *menos*-participles of deponent verbs turns out to be difficult because not all Modern Greek deponents have well-formed passive *menos*-participles. Of the Modern Greek deponents that were tested (*metahirizome* ‘use’, *ekmetalevome* ‘exploit’, *episkeptome* ‘visit’, *ironevome* ‘mock, make fun of’, *eborevome* ‘trade’, *epititheme* ‘attack’), only *metahirizome* has a *menos*-participle. However, this appears to be lexicalized in the meaning ‘used, secondhand’. It is incompatible with agent by-phrases and can be used with *parameno* ‘remain’ and *fenome* ‘appear’, as in 58a. Of the other deponents, the passive participle *ekmetalevmenos* is accepted as well formed by some speakers; compare 58b.

(58) a. To lexiko fenete metahirismeno.
   ‘The dictionary appears used.’

b. *O ergatis paramene ekmetalevmenos.
   ‘The worker remains exploited.’

To the extent that Anagnostopoulou’s diagnostics are applicable, they indicate that deponent *menos*-participles do indeed lack VoiceP. They are therefore expected to pattern syntactically with the *menos*-participles of nondeponent transitive verbs, which is what they do.33 This means that Modern Greek deponent participles actually pattern exactly as predicted given the hypothesis that voice mismatches are preserved when Voice is part of a given deverbal formation.

Table 19 summarizes the findings discussed in this section. I have argued that the suffixes in column a preserve the voice mismatch because they include VoiceP, while the suffixes in column b do not preserve the voice mismatch because they select vP or the bare root (resulting in an apparent passive reading for transitive verbs).

<table>
<thead>
<tr>
<th>ACTIVE SYNTAX</th>
<th>PASSIVE SYNTAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. includes VoiceP</td>
<td>b. no VoiceP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>a. includes VoiceP</th>
<th>b. no VoiceP</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG -menos, Ved. -(m)āna-, Lat. -ns/-tus</td>
<td>AG -tos, Ved. -tá-, MG -tos, MG -mēnos, Hitt. -ant-</td>
</tr>
</tbody>
</table>

Table 19. Syntax of deponent participles in ‘Greek-type’ voice systems.

For reasons of space, this discussion of participles is of course not exhaustive. There are many more deverbal nominal and adjectival formations in each of these languages whose behavior with respect to voice mismatches has not been discussed here, like the Modern Greek, Vedic, and Latin gerunds or the Latin future participle. The approach presented in this article is, however, easily extendable to all of these formations and makes concrete predictions concerning their expected syntactic behavior.

5. Conclusion. Morphosyntactic ‘mismatches’ provide unique insights into how syntactic features interface with morphological exponents. In this article, I have ar-

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33 Modern Greek also has a ‘passive present participle’ in -(ó)menos (cf. Holton et al. 1997:237; the accent is on the syllable preceding the suffix), which seems to belong to Katharevousa Greek and whose status with respect to productivity is unclear. Participles in -(ó)menos preserve the voice mismatch when formed to deponent verbs, for example, *metahirizomenos* ‘using’ (*metahirizome* ‘use’), *epitithēmenos* ‘attacking; attacker’ (*epititheme* ‘attack’), *dehōmenos* ‘accepting’ (*dehome* ‘accept’), and so forth. For reasons of space I cannot discuss their analysis in detail here (see Grestenberger 2018), but it is clear that they represent an archaism compared to the productive passive use of (accented) -mēnos (cf. the discussion of Ancient Greek -menos in §4.4).
gued for a ‘narrow’ definition of deponency, a particular type of verbal form-function mismatch in which syntactically active, agentive verbs surface with (noncanonical) nonactive morphology. Unlike the ‘broad’ definition used previously (often implicitly) in the literature, this definition includes argument structure—deponents have agent arguments—and is based on previous work on the canonical functions of nonactive morphology. I have argued that this mismatch arises when a noncanonical agent argument develops diachronically in certain predicates in a structural position other than the specifier of VoiceP (the canonical base position of agents). In ‘voice syncretism’ languages in which Voice is spelled out as active or nonactive depending on the presence/absence of an external argument in its specifier (along the lines of Embick 1998, 2004a, Alexiadou et al. 2015, etc.), this ‘low agent’ will result in a descriptive mismatch between morphological form and (canonical) syntactic function.

This special status of ‘mismatch verbs’ in languages with a Greek-type voice system means that their nonfinite forms can serve as a diagnostic for the presence of functional structure below a given derivational suffix. I have provided evidence that the idiosyncratic behavior of deponents (active syntax, but nonactive morphology) surfaces only when VoiceP is part of the derived noun or adjective. This explains why Vedic and Greek present and past participles, which are marked for active/nonactive voice, continue the voice mismatch in their participles. I have argued (based on work by Embick) that the Latin present and perfect participles are structurally similar, but underspecified for Voice. Moreover, Modern Greek participles also conform to this generalization (to the extent that judgments are possible, given the limited productivity of deponent participles).

In nonfinite formations in which Voice is absent, the mismatch is suspended. This is the case in the stative participles of Vedic, Ancient Greek, Hittite, and Modern Greek, and generally in agent nominalizations. When it comes to non-VoiceP nominals, deponent verbs are morphologically and syntactically indistinguishable from agentive transitive nondeponent verbs. Deponent participles can therefore be used to detect morphosyntactic microversion in the participial morphology of languages that display voice mismatches.

Future work should test the following predictions in non-IE languages: (i) only voice-syncretism/‘Greek-type’ voice languages have deponents in the narrow sense, and (ii) in these languages, deponency surfaces in nonfinite formations if these can be shown to include the functional projection Voice.

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