

# Another View on Deponency

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### List of Abbreviations:

ABL	Ablative
ACC	Accusative
ACT	Active
AOR	Aorist
CAUS	Causative
DAT	Dative
DEF	Definite
EMPH	Emphatic
EXCL	Exclusive
FEM	Feminine
FUT	Future
GEN	Genitive
HAB	Habitual
ILL	Illative
INCL	Inclusive
IND	Indicative
INESS	Inessive
INF	Infinitive
IPFV	Imperfect(ive)
MASC	Masculine
MID	Middle
MEDIOPASS	Mediopassive
NOM	Nominative
NONACT	Non-Active
PARTIT	Partitive
PASS	Passive

PAST	Past tense
PERF	Perfect(ive)
PL	Plural
PRES	Present
PTCP	Participle
QUOT	Quotative
RECIP	Reciprocal
REP	Repetitive
SEML	Semelfactive
SG	Singular
SUBJ	Subjunctive
VOC	Vocative
WIT.PAST	Witnessed Past

# 1 Introduction

Traditionally, the term *deponent* refers to a verb class in Latin or Classical Greek which is characterized by a mismatch between their morphological form and their semantic context. Deponent verbs are capable of appearing only in passive form but may appear in active syntax. This is illustrated by the following example:

- (1) Nempe patr-em sequ-untur liber-i.  
Of.course father-ACC.SG follow-3PL-PRES.PASS child-NOM.SG  
'Of course, the children follow the father.' (Bermudez-Otero (2007:231))

I will discuss the exact properties of deponent verbs in the next section but, for now, it is sufficient to note that the verb form *sequuntur* is passive as indicated by the gloss but the meaning of the verb and its syntax are active. Apparently, this is a mismatch between form and function.

More recently the term has also been applied to other cases in which syntactical features and morphological features seem to be at odds. These include mismatches of all kinds of morphosyntactic features such as word class,  $\phi$ -features, tense or aspect features. However this transfer to other phenomena caused a necessity for a precise definition of the term *deponency*. Baerman (2007) gives the parametrised definition in (2).

- (2) Deponency in Latin

Deponency is a **mismatch between form and function**. Given that there is a **formal morphological opposition** between **active and passive** that is the **normal realisation** of the corresponding functional opposition, deponents are a **lexically specified set** of verbs whose passive forms function as actives. **The normal function is no longer available** (Baerman (2007)).

According to Baerman, only the first point, namely that 'deponency is a mismatch between form and function' is a defining criterion for deponency. All other points are subject to parametrisation. Thus, the term deponency is also applicable to cases which, for example, do not involve voice features or do not entail defectivity. Nevertheless it is still unclear whether all the cases which are now subsumed under the label *deponency* are to be seen as instances of the same abstract phenomenon.

The present work pursues two goals which are both linked to the question above. The first major goal of this paper is to show that the mismatch between form and function we find with deponent verbs in Latin is more widespread than one might think. In particular, I argue that we find the same kind of mismatch with unaccusative verbs in many languages among which are English or the Romance languages. The argumentation will be based on a detailed investigation of how both verb classes behave in all modules of the grammar.

The second goal of this paper is to establish a comprehensive morphosyntactic analysis that is able to capture the empirical patterns of several cases of deponency. I will mainly focus on the canonical case of verbal voice mismatches in Latin but as I will show in a later section, the approach which I am going to develop can be transferred to other cases of deponency. If different, unrelated cases of deponency could be derived by only one theory, then this is a clear argument for the claim that the common label is justified.

This paper is structured as follows. In the following section, the empirical idiosyncrasies of deponent verbs are illustrated. I am going to investigate the behaviour of deponent and unaccusative verbs in morphology, syntax and

semantics. In the third section, I am going to sum up the empirical behaviour of these two verb classes and compare them to each other. This comparison will lead to the hypotheses that my morphosyntactic analysis will be based on. In the last part of the third section, I am going to invalidate some of the apparent counter-arguments against the hypotheses I drew before. Section 4 will be concerned with two possible approaches to the morphosyntactic properties of deponent verbs. In the fifth section, I am going to discuss two empirical predictions that the second analysis of the previous section makes. Section 6 will demonstrate how my approach can be transferred to derive non-canonical cases of deponency, while section 7 will address two of its problems. Finally, section 8 will conclude the discussion.

But before I come to the section about the empirical behaviour of deponent verbs, let me just make a few remarks about framework I adopt. The arguments I develop are presented in the context of the framework of Distributed Morphology (Halle & Marantz (1993),(1994)). One central assumption of Distributed Morphology (DM) is Late Insertion that is the idea that phonological items are inserted into abstract feature bundles in a post-syntactical morphological component. The syntax operates on abstract feature bundles without phonological content. The insertion of phonological content to these abstract feature sets is accomplished by so-called Vocabulary Items. These Vocabulary Items may be underspecified which means that they do not necessarily express all features of the bundle but since they are subject to the Subset Principle (Halle 1997:427), it is assured that the greatest possible number of features is expressed.

Another concept I will adopt throughout this work is the idea that head movement is fusion of feature bundles (cf. Roberts 2010). In contrast to other theories of head movement, the moving head is not adjoined to its landing site.



Rather there is fusion of the feature sets of both heads and thus they cannot be disunited afterwards. Let me illustrate that with a brief example. Assume that a verb undergoes head movement to its v-head. After head movement applied, the feature sets of V and v are fused and thus V and v now form an inseparable complex. If we assume now that the v-head has contained an active voice feature which means that it will move to T on a later level of the derivation, it follows that v cannot move without V because their feature sets are already fused.

As far as I can see, there are no other crucial theories or concepts which I should introduce. Of course, there are more assumptions on which I implicitly or explicitly draw but they are not as important as the ones I sketched above and most of them will probably become clear as the discussion proceeds. Hence, I am going to start with the discussion about the empirical behaviour of deponent verbs.

## 2 Properties

### 2.1 Properties of Deponent Verbs

Before I present my analysis, I am going to sum up the major properties of deponent verbs. The Latin case of deponency involves the verbal inflection, in this case the voice distinction between active and passive. Intuitively speaking, deponent verbs confuse the paradigms that normally identify the difference between active and passive voice. I will now take a closer look at how deponent verbs behave in all modules of the grammar.

### 2.1.1 The Morphology of Deponent Verbs

Let us start with the morphology. The morphology of a deponent verb is identical to the passive voice paradigm of a non-deponent verb. This analogy applies to all possible feature combinations of  $\phi$ -, tense-, aspect- and mood-features. Table (3) shows that the passive of *amare* (love) and the active of *auxiliari* (help) are morphologically identical:

(3)	amare - (regular)	auxiliari - (deponent)
	Passive	Active
1.SG.PRES.IND	am-or	auxili-or
2.SG.PRES.IND	am-āris	auxili-āris
3.SG.PRES.IND	am-ātur	auxili-ātur
1.SG.PERF.IND	am-ātus sum	auxili-ātus sum
2.SG.PERF.IND	am-ātus es	auxili-ātus es
3.SG.PERF.IND	am-ātus est	auxili-ātus est
3.SG.FUT.IND	ama-bi-tur	auxilia-bi-tur
3.SG.PRES.SUBJ	am-e-tur	auxili-e-tur

In addition to these forms, a regular verb like *amare* also exhibits active forms like the following in table (4). A deponent verb like *auxiliari* lacks these forms. Thus a verb form like *auxilio* (help.1SG.PRES.IND.ACT) is not attested.

(4)	amare - love (regular)
	Aktiv
1.SG.PRES.IND	am-o
2.SG.PRES.IND	am-ās
3.SG.PRES.IND	am-at
1.SG.PERF.IND	am-āmus

2.SG.PERF.IND	am-ātis
3.SG.PERF.IND	am-ant
3.SG.FUT.IND	amā-bi-t
3.SG.PRES.SUBJ	am-et

Since analogy between the active forms of a deponent and the passive forms of a non-deponent applies to all possible combinations of features, we may act on the assumption that these cases are not just fortuitous homonymies of forms. It seems pointless to doubt that the passive paradigm of normal verbs and the active paradigm of deponent verbs are instantiations of the same abstract markers. Thus, it is the only plausible assumption that they also encode the same feature combination.

### 2.1.2 The Semantics of Deponent Verbs

While the morphology of deponent verbs is clearly passive, their semantics seems to be active. Nonetheless, there have been many attempts to identify certain semantic features that trigger deponency. Just as with so-called psych-verbs for example, one could provide an explanation for their irregular behaviour by invoking their distinct semantic features. However the vast majority of authors came to the conclusion that deponent verbs do not form a natural class on the basis of semantic features<sup>1</sup>. Thus, deponency must be an arbitrary lexical property which some verbs inherently possess and others do not. This claim is supported by Lavidas & Papangeli (2007) who have made a comprehensive comparison of Greek deponent verbs. They examined the class of deponent verbs in three periods of the Greek language and found several verbs that changed their status as deponent or non-deponent in the course of time. Some verbs changed from deponent to non-deponent and others changed

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<sup>1</sup>see especially Baldi (1976) for discussion

from non-deponent to deponent. If there was a common semantic property X that all deponents have in common, then one would assume that verbs cannot arbitrarily shift from having X to not having X without changing their meaning.

Thus, the semantics of deponent verbs does not at all differ from the semantics of a regular non-deponent verb in active voice. In (5), for example, there is no reason to believe that we are dealing with something else than regular active semantics. The deponent verb *aggredi* (attack) is coordinated with the regular transitive verb *obsidere* (beset). The subject of both verbs receives the agent theta-role and the object receives patient role.

- (5) Cethegus Ciceronis ianuam obsideret  
 Cethegus Cicero-GEN door-ACC beset-IPFV-SUBJ-3SG  
 eum=que vi aggredereetur  
 him-ACC=and violently attack(deponent)-IPFV-SUBJ-3SG  
 'Cethegus was to beset Cicero's door and assault him' (Embick 2000)

### 2.1.3 The Syntax of Deponent Verbs

The syntax of deponent verbs turns out to be somehow ambivalent. On one hand, it seems to be clearly identical to canonically active syntax. Deponent verbs assign the same cases as active non-deponent verbs. The subject receives the nominative case and the object receives accusative case as can be seen in example (6). This is a clear indicator for the fact that the syntax is active. A passive syntax would not assign case to its object as it will later be promoted to the designated subject position in SpecT receiving nominative case.

- (6) Puer milit-em sequi-tur.  
 boy.NOM soldier-ACC follow-PASS.3SG  
 'The boy is following the soldier' (Embick 2000)

The same applies to agreement. It is not the complement of V that triggers agreement but the external argument that was merged in Spec<sub>v</sub> and has moved to SpecT afterwards. This agreement pattern is identical to an active syntax of a regular transitive verb.

On the other hand, the form of deponent verbs resembles the form of a verb in a passive clause. In perfective aspect the form of a deponent verb appears to be periphrastic (7a), just as the perfect passive form of a non-deponent verb (7b). An active form of a non-deponent verb would be synthetic, even in a perfective clause (7c). And since the distinction between periphrastic and synthetic verb forms is a syntactic parameter, it seems that the syntax of a deponent verb seems to be both, active and passive. It assigns the same cases as an active verb, its perfective verb form is periphrastic, just like a passive verb.

- (7) a. Via-m      secutus      sum.  
       way-ACC follow.PTCP be.1SG  
       'I followed the way.'
- b. Satis      sum      verberatus.  
       enough be.1SG beat.PTCP  
       'I was beaten enough (times)' (Maccius Plautus, 5.1)
- c. Domin-us      verbera-v-it      serv-um.  
       Master-NOM beat-PERF-3SG servant-ACC.  
       'The master beat the servant.'

In order to keep the syntax consistent, one might argue that whether the verb appears as a periphrastic form or not is a question of morphology, not syntax. Several morphological theories have included concepts that may cross word boundaries. Distributed Morphology, for example, implies the concept of fission that allows a terminal node to be split up (see e.g. Halle (1997)). The

result of this process are two independent terminal nodes which realize the features that were located on one head before. In the case of periphrastic verb forms one could make use of this concept by saying that a periphrastic form of a deponent verb in the perfect is constructed by splitting up the T-node into two parts which will later be realised as to auxiliary and the verb. In doing so one could argue that the syntax is completely active and the morphology is passive. However, as Embick (2000) noted, there is a catch to this theory. All morphological concepts that may cross word boundaries are restricted to adjacent nodes. This means that fission, for example, may create two distinct terminal nodes, but these two nodes must still be adjacent. In the case of Latin periphrastic verb forms this makes wrong predictions. As (8) illustrates, the participle and the auxiliary need not be adjacent.

- (8) Lex Terentilia ... novos adgressa  
 law-NOM T. ... new-ACC.MASC.PL menace-PTCP-FEM  
 consules est  
 consul-PL.ACC be-PRES.3SG

'The T. law ... menaced the new consuls' (Embick 2000)

Thus, the morphological explanation for the distinction between synthetic and periphrastic verb forms fails and one has to accept that the syntax is not consistent as to whether it behaves like in active or passive clauses.

#### 2.1.4 Exceptions

Deponent lexemes are restricted to one environment, syntactically as well as morphologically. The deponent verbs in Latin, for example, never occur with active morphology. A form *auxilio* (help(deponent).1.PS.active) is not attested, neither in active nor in passive clauses. Syntactically most deponents are restricted to active clauses. If a Latin speaker wanted to express the proposition "I was helped", he cannot use the lexeme *auxiliar-* because it cannot

appear in a passive syntax. Instead he had to use a non-deponent verb with a similar meaning, for example *adiuva-* (support, help). However, there is a small class of deponent verbs which allow passivized syntax but these cases are clearly lexical exceptions since the vast majority of deponent verbs is restricted to active syntax. One of the few deponent verbs which can be passivized is *hortari* (to urge). In a passive context it makes use of the same markers as regular non-deponent verbs, it uses passive morphology. Thus in the case of these few verbs, active and passive are morphologically indistinguishable. We can see that in the examples (9) and (10). In (9) the sentence is semantically and syntactically passive and in (10) it is active, but in both cases the verb bears the same markers.

- (9) Ab amicis horta-re-tur  
 by friends urge-IPFV.SUBJ-PASS.3SG  
 'He was urged by friends' (subjunctive) (Embick 2000)
- (10) Pompeius (...) multis        verbis        me iam  
 Pompeius (...) many.ABL words.ABL me already  
 horta-re-tur  
 urge-IPFV.SUBJ-PASS.3SG  
 'Pompeius already urged me with many words' (Maurus Servius Honoratus: Commentary on the Aeneid of Vergil, book 8)

I have listed the major facts in table (11) below. Morphologically, deponent verbs are clearly passive. Their markers are identical to the normal passive markers throughout all paradigms. The syntax is active, as far as case assignment and agreement is concerned. When it comes to the question whether the verb form is periphrastic or synthetic, the syntax behaves as if it was passive. The semantics of a sentence containing a deponent verb is also active. There are a few exceptions to the pattern described above. As I have shown some deponent verbs can appear in a syntactically and semantically passive context.

However in these cases, they still use their passive morphology. A deponent verb using active morphology is not attested.

(11) Properties of deponent verbs

Morphology		Passive
Syntax	Periphrasis	Passive
	Case & Agr	Active
Semantics		Active
Exceptions	Morphology	None
	Syntax	Few lexical exceptions
	Semantics	Few lexical exceptions

Looking at the table in (11) one may pose a hypothetical question: Since active and passive are often assumed to be two values of only one binary feature, ( $\pm$ passive) for example, why is there no such thing as the exact opposite of a deponent verb, an anti-, or counterdeponent verb if you will? A verb that always shows active morphology although its semantics is coherently passive. The claim that the analysis I am presenting will be based on is that there is something like an antideponent verb. These verbs occur in a great number of languages. However, usually they are not called antideponent but unaccusative verbs.

I will now proceed as follows. At first, I am going through all the properties that I listed in table (11) and I am going to take a closer look at how unaccusative verbs behave. Hereinafter, I will make a comparison between these two types of verbs and show that it is really justified to claim that these two types of verbs are two sides of the same coin.



## 2.2 The Properties of Unaccusative Verbs

### 2.2.1 The Semantics of Unaccusative Verbs

Intuitively, unaccusatives and passives share some semantic properties. They involve the same theta-role, namely the patient or theme-like role of the verb. Furthermore, they are both characterized by the same relation between the verb and its only argument.

However, the exact semantics of unaccusative verbs is far from being uncontroversial. Chierchia (2004) argues for a unification of reflexives and unaccusatives on the basis of their semantics, at least within his semantic property theory-framework. Kratzer (1993,1996) argues that the semantic distinction between active and non-active clauses is made right above the VP, in a phrase she calls VoiceP. The VoiceP is responsible for the introduction of an external argument and the assignment of accusative case and may thus be identified with the vP (for example Chomsky 1995). According to Kratzer (1996) there are two kinds of voice heads available in languages like English: active and non-active ones. The active voice head introduces the external argument and assigns (checks) accusative case. It is thus employed in transitive active and unergative contexts. The non-active voice head, however, neither assigns case nor introduces an external argument. In unaccusative and passive contexts we have to choose such a voice head. Kratzer argues that there are several kinds of active voice heads, each appropriate for a different Aktionsart of the verb, for example one for stative and one for action verbs. However, as far as I can see, she does not distinguish between different kinds of non-actives since a non-active voice head counts as some kind of default head which is

replaced with an active counterpart if needed. Thus, in her 1996 approach, unaccusatives and passives share the same voice head.

Embick (2000), adopting the view in Kratzer (2003), distinguishes unaccusative voice heads from passive voice heads by adhering an AG-feature (i.e. agentivity) to the latter. This way, unaccusatives and passives form the subclass of non-active voice heads, but this AG-feature allows to account for the fact that unaccusatives and passives do not always behave identically. A passivized verb, for example, can be supplemented with a by-phrase containing the dropped agent role (12). Furthermore the agent role of a passivized clause can license a PRO argument even if it is not overt (13). Both operations are not possible with an unaccusative predicate.

(12) The boat sank (\*by the captain)

The boat was sunk (by the captain)

(13). The boat sank (\*PRO to collect the insurance money)

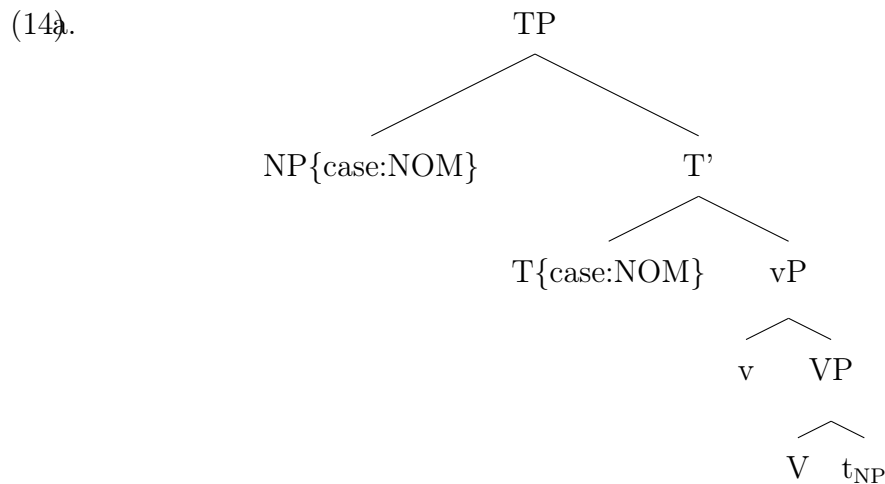
The boat was sunk (PRO to collect the insurance money)

I will, for the rest of this paper, adopt the view that unaccusatives and passives share basically the same semantic properties while keeping in mind that there are subtle differences that still need to be accounted for.

### 2.2.2 The Syntax of Unaccusative Verbs

The syntax of unaccusative verbs is mainly identical to the syntax of a passivized verb. At first, the verb selects its only argument as a complement which is the designated position for objects. After that, little *v* is merged with the VP building the vP. Unlike in transitive contexts, little *v* does not select an argument itself. Neither does it assign accusative case to the argument in object

position. Later on, the T-head is merged. It causes raising of the argument in object position into its specifier to assign nominative case. The tree below is applicable to both, an unaccusative as well as a passivized clause. Concerning syntax, there is no difference between the a passivized and an unaccusative structure<sup>2</sup>.



Also apart from the obvious structural similarities, unaccusatives and passives share many syntactic properties. In the recent discussions about the phasehood status of little vPs unaccusative vPs and passivized vPs are always treated identically. In Chomsky's (2001) system passive and unaccusative predicates do not constitute a phase. Legate (2003) however argues that, for example, reconstruction effects and parasitic gap licensing indicate that passive and unaccusative vPs do constitute a phase. Either way, concerning phasehood, both verb types behave alike.

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<sup>2</sup>Since the actual status of "noun phrases" as DPs or NPs does not play a crucial role throughout this work, I am going to use the term NP referring to any kind of noun phrase. Nevertheless there is no technical reason that this approach might not be applicable to DPs or whichever category one prefers

However, there is one syntactic difference between passives and unaccusatives. Just as it was the case with deponents, it is related to the question whether or not the verb form is periphrastic or synthetic. In Latin, all intransitive verbs appear to be synthetic in the perfect, regardless of whether their perfect form is regular or irregular:

- (15) delassavit - he/she has tired  
 cecidit - he/she has fallen  
 dormivit - he/she has slept  
 vixit - he/she has lived  
 crevit - he/she has grown

If we compare the perfect form of an unaccusative verb (16a) with those of a regular verb in active (16c) and passive (16b), we see that the unaccusative verb behaves like the active form of a regular verb inasmuch it chooses the non-periphrastic verb form.

- (16) a. Filius qui in Marathonis pugna cecidit ...  
 son who in Marathon battle fall.PERF.3SG  
 'The son who fell in the battle of Marathon...' (Cicero, Letters to Atticus)
- b. Satis sum verberatus.  
 enough be.1SG beat.PTCP  
 'I was beaten enough (times)' (Maccius Plautus, 5.1)
- c. Dominus verberavit servum.  
 Master.NOM beat.PERF.3SG servant.ACC.  
 'The master beat the servant.'

The choice of the verb form seems to be a syntactic procedure and since unaccusative verbs, just as unergatives and transitives, choose the synthetic verb form in the perfect, they behave syntactically like active verbs. Thus

we must conclude that the syntax of unaccusatives is, on one hand, identical with an active syntax, namely in the case of periphrastic verb forms. And concerning argument selection, case assignment and structural dependencies, the syntax of unaccusatives is clearly identical to the syntax of passive verbs.

### 2.2.3 The Morphology of Unaccusative Verbs

There is not much to say about the morphology of unaccusatives. In the vast majority of Indo-Germanic languages, unaccusative verbs are morphologically indistinguishable from unergatives or transitive actives. The examples in (17) show that the regular transitive verb *amare* (love) shows the exact same morphological realisation as the unaccusative verb *madescare* (become wet). Again, this analogy is found in all possible combinations of  $\phi$ -, tense, aspect and mood features.

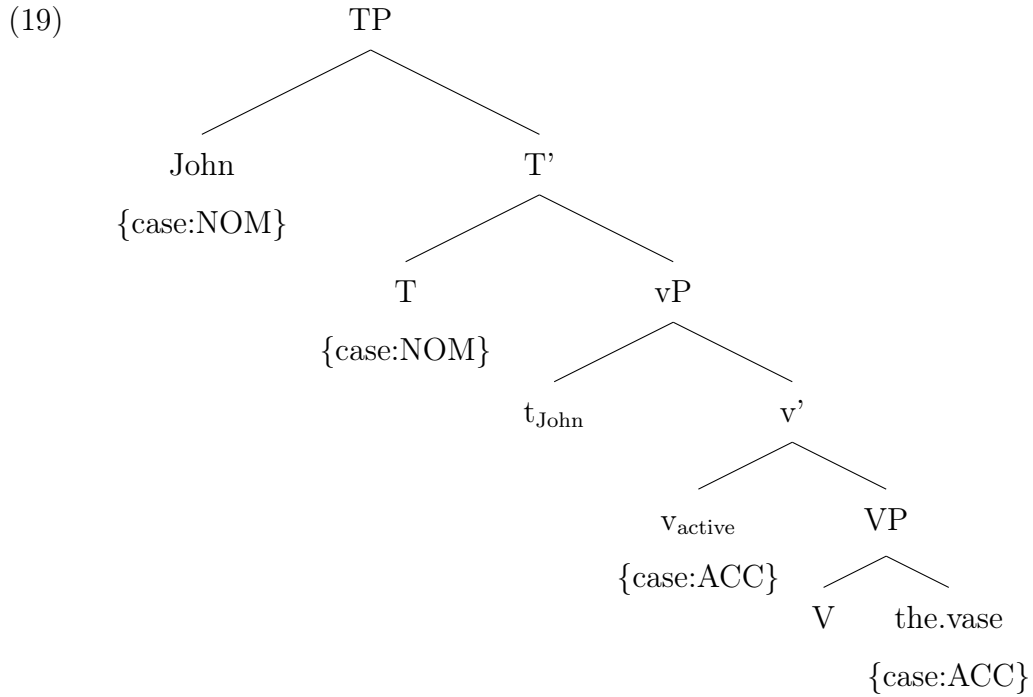
(17)	amo - 'love'	madesco - 'become wet'
	Active	
1.SG.PRES	am-o	madesc-o
2.SG.PRES	am-ās	madesc-ās
3.SG.PRES	am-āt	madesc-āt
1.SG.PERF	am-āvi	madesc-āvi
2.SG.PERF	am-āvisti	madesc-āvisti
3.SG.PERF	am-āvit	madesc-āvit
3.SG.FUT.IND	ama-bi-t	madesc-a-bi-t
3.SG.PRES.SUBJ	am-e-t	madesc-e-t

#### 2.2.4 Exceptions

Just as we did with deponent verbs, we must take a look at possible exceptions. Unaccusative verbs are usually restricted to one environment. Syntactically, they are passive but morphologically they are active. They never occur with passive morphology. This might seem trivial at first sight but in the end it is just the exact opposite from what we saw with the Latin deponent verbs.

However, not all unaccusatives are restricted to passive syntax. There are some lexical exceptions that may undergo the so-called causative alternation that adds an external argument which is the initiator of the action expressed by the verb. Example (18a) shows a unaccusative verb *break* which has undergone causative alternation in (18b). As opposed to (18a), the syntax of (18b) is clearly active. Little *v* merges with an external argument (John), the patient role (the vase) receives accusative case and it is not raised to SpecT because the external argument in Specv intervenes.

- (18) a. The vase broke.  
      b. John broke the vase.



But this kind of causative alternation is not possible with all unaccusative verbs. The majority of unaccusative verbs behave like *fall* which cannot be used in an active syntax, as the following examples illustrate. Only a small number of lexical exceptions may undergo causative alternation.

(20) John fell.

(21) \*John fell Mary.

Let me sum up the major points of the discussion in a table again. The morphology of unaccusatives is unquestionably active. We have seen that the syntax is ambivalent again inasmuch as it resembles a passive construction concerning case assignment, agreement and structural properties and an active construction concerning the question whether we find a periphrastic or a synthetic verb form. The semantics of unaccusatives is not uncontroversial but I have argued that it shares most properties with the semantics of a passive verb,

however, strictly speaking, they are not identical. There are no exceptions to the rule that the morphology of unaccusatives is passive. However there are some lexical exceptions in syntax and semantics as some unaccusative verbs may undergo causative alternation that results in an active construction.

(22) Properties of unaccusative verbs

		Unaccusative Verbs
Morphology		Active
Syntax	Periphrasis	Active
	Case & Agr	Passive
Semantics		Passive(?)
Exceptions	Morphology	None
	Syntax	Some lexical exceptions
	Semantics	Some lexical exceptions

### 2.3 Comparison between Deponents and Unaccusatives

A comparison of the facts about deponent verbs and unaccusative verbs illustrates the abstract similarities between these two types of verbs. Wherever one of them behaves like an active verb, the other one is passive and vice versa. Deponent verbs, for example, show passive morphology wherever they appear and unaccusatives never appear without active morphology. The same generalization can be applied to the fields of semantics and syntax. In contrast to the semantics and the morphology, the syntax is not coherently active or passive but even this incoherence applies to both types of verbs. Deponents as well as unaccusatives are incoherent as to whether their syntax is active or passive. The exceptions also show complementary behaviour as we have seen. Deponents have no active morphology and hardly any passive syntax. Unac-



cusatives have no passive morphology and hardly any active syntax. However, in both cases, we find lexical exceptions that can turn up with the unexpected syntactical context. We find passivizable deponents as well as "activizable" unaccusatives.

(23) Comparison of both verb types:

		Deponent Verbs	Unaccusative Verbs
Morphology		Passive	Active
Syntax	Periphrasis	Passive	Active
	Case & Agr	Active	Passive
Semantics		Active	Passive(?)
Exceptions	Morphology	None	None
	Syntax	lexical exceptions	lexical exceptions
	Semantics	lexical exceptions	lexical exceptions

All phenomena we have dealt with so far strongly suggest that unaccusativity and deponency are in fact two sides of the same coin. Both types of verbs show the same contradictions between different fields of grammar. Even the exceptions to the usual behaviour are a mirror image of each other. In my opinion there is no reasonable alternative than to treat these two types of verbs identically, at least within a morphosyntactic analysis. In the next section I am going to formulate the hypotheses I derive from the detailed comparison of this section. Furthermore I am going to address some of the most apparent objections against a unification of unaccusatives and deponents.

## 3 Hypotheses

### 3.1 Formulation of the Hypothesis

The last section dealt with the formal properties of deponent and unaccusative verbs. A comparison of how these two types of verbs behave in certain modules of the grammar revealed some kind of a mirror image. Whenever one of them behaved like a regular transitive verb in active voice, the other resembled a regular verb in passive voice. That alone is quite remarkable since unaccusative verbs have always been properly integrated into syntactic theories and deponent verbs have long time been dismissed as a weird marginal idiosyncrasy of Latin and a few other languages. If the results of the previous section are on the right track then this discrepancy is a good argument to rethink the grammatical analyses of unaccusatives and/or deponents.

Therefore I am going to present an analysis that covers both types of mismatch verbs, deponents and unaccusatives. The analysis will be based on the findings of the previous section which are subsumed in the following hypotheses.

(24) Mirror Image Hypothesis (Strong Version):

Deponency and unaccusativity are both instantiations of the same abstract phenomenon. Thus, a grammatical analysis must treat both types of verbs identically in every respect.

(25) Mirror Image Hypothesis (Weak Version):

Deponent verbs and unaccusative verbs are sufficiently similar (especially concerning syntax and morphology) to justify an identical morphosyntactic analysis.

I have given two versions of the hypothesis. The strong version in (24) states

that unaccusative verbs and deponent verbs are two verbal categories that stem from the exact same abstract concept of a verb class that is characterized by a clear mismatch between grammatical modules. Thus, (24) claims that both classes of verbs involve the same conceptual and grammatical processes and, therefore, any analysis that treats these both verb types differently misses a crucial generalization. The weaker version (25) acknowledges the findings of the previous chapter and tries to incorporate the similarities between these two verb types into the syntactic and morphological theory. However it makes no claims as to whether unaccusatives and deponents are really two instantiations of the same conceptual phenomenon.

As the major goal of this work is to establish a formal morphosyntactic analysis of these two verb types, it is not crucial whether we adopt (24) or (25), as long as we adopt one of them. But since this decision may play a role for other purposes, I am going to investigate at least some of the most apparent objections that one might have against the stronger version in (24).

## 3.2 Apparent Objections

**Unaccusativity is a semantic feature whereas deponency is triggered by a completely arbitrary syntactic feature.**

There has been a large discussion going on about whether the syntactic behaviour of unaccusative verbs can be deduced to its semantic features. It is widely accepted that intransitive verbs that syntactically behave like unaccusatives tend to entail relatively patient-like meanings such as *die*, *arrive*, *fall*. As a consequence, many papers have tried to find the exact semantic feature or feature combination that allows to predict whether an intransitive verb turns out to be unergative or unaccusative in a given language or even

cross-linguistically. The proposals involved volitionality, agentivity, presentational meaning or telicity. However, according to Dowty (1991), none of these features or combination of these features seems to determine the verb class correctly for all cases in a given language. There is no set of criteria that describes the class of unaccusative verbs accurately, at least not cross-linguistically. He gives the following table (26) to demonstrate how diverse different languages can handle the distinction between unaccusatives and unergatives.

(26)	Unergative:	Unaccusative:
die	Choctaw	Italian
sweat	Italian	Choctaw
bleed	Italian	Turkish, Eastern Pomo
suffer	Italian	Choctaw
be hungry	Lakhota	Choctaw
sneeze	Italian, Dutch	Eastern Pomo, Choctaw
		(Dowty (1991))

Consequently, unaccusativity is often treated as a syntactic feature of the verb listed in the lexicon. Of course, no one would doubt, I guess, that this syntactical feature is based on semantic features such as the above-mentioned, however if these are no reliably deducible facts, then one cannot avoid listing them in the lexicon as a syntactical feature on the verb.

As discussed in the last section, there are no semantic features that allow to predict reliably whether a verb is deponent or not. Xu et al. (2007) examined 543 deponent verbs searching for semantic features that they have in common. They have not found any features that all deponents have in common but they found some significant tendencies that seem to have an impact on the probability of a given verb to be deponent or not. According to Xu et al. Latin deponents tend not to take physically affected objects and, likewise,

they also tend to entail a non-causative meaning, especially if they are derived from nouns or adjectives.

I admit that the verb types differ in this respect. Although they both tend to entail special verb meanings, the tendency of unaccusative verbs is much stronger than with deponent verbs. However, I argue that this difference is rather gradual than absolute.

### **Why do we find only a few languages with a deponency mismatch but so many languages with an unaccusativity mismatch?**

It is correct that only few languages seem to be able preserve a deponent verb class. It is quite remarkable that Latin has a quite widespread and elaborated system of deponent verbs but none of the Romance languages preserved it. To my knowledge, there are no cases of deponency in Romance languages, at least no cases that involve the voice mismatch of active and passive. On the other hand, it is a well-known fact that the Romance languages make extensive use of the unaccusative verb class. Many diagnostics have been developed for the unaccusative-unergative distinction in Romance languages. The question, then, arises why one language should refuse to preserve one of the mismatch pattern but preserve another one. Unfortunately, I am not able to answer the question satisfyingly yet. As I will show in the analysis section, I assume that the question of whether a language comes with a mismatch verb class such as deponent or unaccusative verbs is dependent on several language specific facts about feature specification and syntactic rules. And as these external facts about feature specification and syntax are not evenly distributed across

languages (at least not about European languages) we come to find the pattern that one of the mismatch types (namely unaccusativity) is much more common than the other. I will address this question specifically in a later section being able to provide a more comprehensive answer.

But before I come to the next question, let me just draw your attention to the fact that although among European languages the unaccusativity mismatch is quite common, it is not necessarily the only possibility. Many languages avoid the unaccusative mismatch<sup>3</sup> of morphology and syntax/semantics by treating unaccusatives morphologically like passives. Take the following examples from Albanian (Kallulli 2006).

- (27) a. Dritarja        u            kris                    nga        presioni  
          window.NOM NONACT crack.AOR.3.SG from/by pressure  
          'The window cracked from pressure'
- b. Dritarja        u            kris                    nga        Xhoni/libri  
          window.NOM NONACT crack.AOR.3.SG from/by John/book  
          'The window was cracked by John/by the book'

They show that unaccusatives (27a) contexts and passivized (27b) contexts are marked by the same morpheme, namely the non-active morpheme /u/. Thus, according to my logic, there is no mismatch between syntax and morphology. The syntax, as well as the morphology, is passive in both cases. In comparison, the English translations, however, are characterized by such a mismatch because only one of them is marked for passive.

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<sup>3</sup>Usually the term 'unaccusativity mismatch' refers to cases in which two different unaccusativity diagnosis yield different results. However, in the sense of the term 'deponency mismatch' I will mainly use it for cases in which morphology and semantics seem to disagree

**There is nothing like "semi-unaccusativity", however semi-deponency is well-attested. Why should this be the case?**

Semi-deponency is a weird phenomenon we find in Latin. Some verbs change their status as being deponent or not, depending on the aspect of the clause. Take the verb *gaudeo* (rejoice), for example. If it is used in the non-perfective aspect then it behaves like a normal non-deponent verb (28b). If it is used in perfective aspect, then it shows passive morphology, i.e. it behaves like a deponent verb (28a) Most of the semi-deponent verbs in Latin follow this type: Non-deponent in non-perfective aspect, deponent in perfective aspect. However, there are a few verbs which are the converse: Deponent in non-perfective aspect but non-deponent in perfective aspect. One example for these verbs is *revertor* (return)

- (28) a. Hercules cum haec audi-re-t, magnopere  
 Hercules at.that.time that hear-IPFV-3SG, greatly  
 gavisus est.  
 rejoice-PASS.PTCP be.3SG  
 'When Hercules had heard that, he greatly rejoiced'
- b. Duo-bus litiga-nt-ibus tertius gaude-t  
 Two-ABL argue-PTCP-ABL third rejoice-ACT.3SG  
 'While two men argue, the third one rejoices'
- c. Ad eum legati revert-untur (...) ne longius  
 To him legate.PL return-PRES.PASS.3PL (...) not further  
 procedere orab-ant  
 move.forward beg.3PL  
 'The legates returned to him and begged him not to move (the troops) any further' (Caesar: De bello Gallico 4.11.1)
- d. Memento homo, quia es ex pulver-e et in pulver-em  
 Remember man, that be.2SG from dust-ABL and in dust-ACC

revert-e-ris  
return-FUT-PERF.ACT.3PL

'Remember that you are from dust and to dust you will return'  
(Genesis 3:19)

These examples seem to be an argument against a unification of unaccusativity and deponency since something like semi-unaccusativity has not been, or at least not to my knowledge, attested in the world's languages. Especially in Indo-European languages, there has been a lot of research about the distinction between unergative and unaccusative verbs. One would assume that if something like semi-unaccusativity existed, somebody would have found it. However, there are certain problems that complicate the search for cases of semi-unaccusativity. To detect such cases, one would have to prove that some unaccusative verbs are expressed by active morphology in the non-perfect aspect and by passive morphology in the perfect aspect. But since most Indo-European languages have no particular passive morphology, this kind of proof is doomed to failure. Take, for example, the German verb *fallen* (fall) which is a prototypically unaccusative verb. In the non-perfect aspect, it inflects like any other active verb. But in the perfect aspect it does not inflect like any other active verb. Its perfect form is formed with the auxiliary *sein* (be) instead of *haben* (have). And accidentally *sein* (be) is exactly the same auxiliary we find in German stative passives like in (29). One could argue that the German verb *fallen* inflects like an active verb in the non-perfect aspect and like a passive verb in the perfect aspect. Thus, it is some kind of semi-unaccusative.

- (29) John-s Bein ist gebrochen.  
John-GEN leg be.3.SG break.PTCP  
'John's leg is broken'



But since not only *fallen* but rather all unaccusative verbs in German behave in that manner, one would have to assume that German has only semi-unaccusatives and no "pure" unaccusatives at all. In fact, I do not want to claim that this is the case. Rather, I wanted to show that semi-unaccusativity is not at all easy to detect. The choice of the auxiliary in languages like German, Dutch or Italian for example is often seen as an inherent characteristic and a reliable test of unaccusative verbs but instead it might be the case it is a mere by-product of another phenomenon like semi-unaccusativity. The same applies to other unaccusativity tests. There is no unaccusativity test of which one can be sure that it is not a characteristic of semi-unaccusatives instead of unaccusatives.

Besides, I do not think that the non-existence of semi-unaccusativity would be a good argument against the hypothesis in (24). As I will show in a later chapter, Swedish has a class of deponent verbs that show the same pattern as the Latin ones. However, they do not have, at least not to my knowledge, any semi-deponent verbs.

I have shown so far that there are quite a number of good arguments for the hypothesis that unaccusative verbs and deponent verbs have a lot in common, at least on a more abstract level of analysis. Their semantic, syntactic and morphological patterns are a mere mirror image of each other and the exceptions to these patterns go hand in hand. Furthermore, I showed that some of the apparent counter-arguments are not that viable after closer inspection.

It is not hard to imagine the strategy that I will pursue from now on. If these two kinds of verbs are in fact a mirror image of each other and basically two instantiations of the same phenomenon then it is obvious that both types of verbs should be treated the same. And since one of these verb types, namely

unaccusatives, is properly integrated into the up-to-date theories of syntax, it should be worthwhile examining whether we could transfer the analysis of unaccusativity to the phenomenon of deponency. The next section will try to elaborate how unaccusatives are integrated into modern syntax theory. I will focus on how the syntax derives the apparent mismatch listed in table (23).

## 4 Analysis

This section is organized as follows. At first I am going to inspect whether it is possible to replicate the analysis for unaccusative verbs with deponent verbs. For this purpose, I need to inspect how the mismatch between semantics and morphology of unaccusatives is resolved. Afterwards I am going to discuss the pros and cons of such an analysis coming to the conclusion that there might be better ways to incorporate both types of verbs into modern syntactic theory. In the second part of this section I am going to introduce my own analysis of how to sustain the analogy between unaccusatives and deponents and incorporate both verb types into morphosyntactic theory. This, as one can imagine, will have effects not only on how to analyse deponent verbs but it will also reanalyse the syntax of unaccusatives.

### 4.1 Replicating the Unaccusativity Mismatch

The starting point for an examination of the syntax of unaccusative verbs is, of course, the classical Unaccusative Hypothesis, proposed by Perlmutter (1978). It claims that the class of intransitive verbs can be divided into two subclasses, namely unergative and unaccusative verbs. This subdivision is based on a number of linguistic phenomena which are called unaccusativity diagnostics.

These involve choice of the auxiliary in German or Italian, or several passive constructions (impersonal passive voice). The unaccusative diagnostics are language specific, however the subdivision into these two classes is not.

Perlmutter already proposes that the difference in empirical behaviour is to be deduced to a difference in syntactical structure. According to his proposal both classes of verbs differ as to where their only argument is merged into the syntactic structure. In the case of unaccusatives, the argument is merged in the position of the direct object. In the case of unergatives, it is the position of the subject. In the meantime, a lot of papers have tried to derive the difference in empirical behaviour from the difference in structure.



I will, in the following, outline what I assume to be a quite common analysis of unaccusative verbs. Different versions of this analysis can be found in Embick (2004) as well as in several introductions to syntax (for example: Adger(2003), Radford (1997)). Many other works are not entirely explicit about the technical implementation of unaccusatives in syntax but seem to have something similar in mind.

In the lexicon unaccusative verbs do not differ from transitives, at least with regard to their feature specification. They have the same categorial label {V} and both select exactly one argument<sup>4</sup>.

- (32) a. fall{V, ●NP●}  
 b. kill{V, ●NP●}

But after the NP has merged, the unaccusative VP is merged with a v-head that was specifically designed for unaccusative verbs (33). It is characterized by its inability to merge a specifier and to assign accusative case.

- (33) v : {v, ●VP● }

Syntactically, (33) is completely indistinguishable from the v-head that is merged with transitive verbs in the context of a passive clause. However, the v-head designed for unaccusative contexts and the v-head for passive contexts cannot be identical since their morphological realisation is not the same. Unaccusative v is realized by active morphology whereas passive v is realized by passive morphology.

- (34) a) v-head for unaccusative verbs:

$$v \{ \bullet VP \bullet \} \Leftrightarrow \text{Active Morphology}$$

- b) v-head for active verbs:

$$v \{ \bullet VP \bullet, \bullet NP \bullet, \text{Case:ACC} \} \Leftrightarrow \text{Active Morphology}$$

- c) v-head for passive verbs:

$$v \{ \bullet VP \bullet \} \Leftrightarrow \text{Passive Morphology}$$

If one compares the v-head of unaccusative contexts with the v-heads of active and passive contexts, it becomes clear that the mismatch between syntax

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<sup>4</sup>In the notation that I will be using throughout this paper bulleted categorial features like ●NP● indicate c-selectional subcategorization features.

and morphology of unaccusative verbs is directly implemented into the feature specification of the unaccusative v-head in (34a). Its syntactical features are identical to those of the passive v-head (34c) but concerning its realisation in morphology it is identical to the active v-head (34b).

It is not too difficult to anticipate how this analysis can be transferred to the mismatch that characterizes deponent verbs. All there is to do is to invent yet another v-head, namely one for deponent verbs. This fourth v-head must show the same properties as deponent verbs, namely its syntactical features must be the same as the active v-head (34b) and its morphological properties must resemble those of the passive v-head (34c):

(35) v-head for deponent verbs:

$$v \{ \bullet VP \bullet, \bullet NP \bullet, \text{Case:ACC} \} \Leftrightarrow \text{Passive Morphology}$$

Deponent VPs obligatorily merge with the v-head in (35) and since (35) has the exact same syntactic features as the v-head for active verbs (34b), the syntactic structure of deponent verbs and the structure of regular active verbs is completely identical. Thus, a stipulation of a special v-head for deponent verbs can derive the mismatch between the syntax/semantics of deponent verbs and their morphology. Something else must probably be said about the fact that the syntax of deponent verbs is not entirely active but some aspect is passive-like, namely the question of periphrasis. Deponent verbs are periphrastic in perfect aspect whereas regular transitives, for example, are not. This aspect is not accounted for by the stipulation of (35). To derive this aspect of deponent syntax one would have to argue that the special deponent v-head cannot move to T in the context of perfective aspect. This argumentation, however, must not affect the active v-head (34b) which always moves to T, even in perfect

aspect. As far as I can see, there is no way around stipulating a constraint that basically forbids the movement of deponent *v* to T since the syntactic structures of a clause involving active *v* and a clause involving deponent *v* are exactly the same at that point of the derivation.

The stipulation of a constraint like that is not really intuitive but it is actually nothing else than what is done with unaccusative verbs. The syntax of passives and unaccusatives is identical at the point when the T-head enters the structure and one has to decide whether *v* moves to T or not. However, in the case of perfective aspect unaccusative *v* raises to T and passive *v* does not. As far as I see, there is no deep explanation for this asymmetry either.

Nevertheless stipulations of that kind are quite ad hoc and not entirely convincing but these are not the only problems for the account that I sketched so far. The next section will discuss some more problems and disadvantages that this theory entails.

#### **4.1.1 Problems and Disadvantages of the First Account**

In the last section I presented an account in which I tried to solve the deponency puzzle by stipulating a specific *v*-head for deponent context. In doing so I tried to transfer a common analysis of unaccusativity to the phenomenon of deponency. As far as I can see, the "replication account" works for deponents as well as the common analysis works for unaccusatives. However this account entails some interrelated disadvantages on which I am going to focus.

The first point about this theory that I find unconvincing is that one has to stipulate four different *v*-heads although there are only two distinct sets of syntactic feature bundles involved. This, in my opinion, would only justify two *v*-heads. The reason for the two other *v*-heads is basically that there is no one-to-one equivalence of morphological and syntactic features. But the fact

that, in that case, morphological and syntactic features do not go hand in hand can be derived more elegantly with other means than arbitrary stipulation of other possible combinations.

The second disadvantage I see is of more concrete nature. If we adopt the replication account, we end up with the four distinct v-heads ((34) and (35), repeated in (36)):

(36) a) v-head for unaccusative verbs:

$v \{ \bullet VP \bullet \}$   $\Leftrightarrow$  Active Morphology

b) v-head for active verbs:

$v \{ \bullet VP \bullet, \bullet NP \bullet, \text{Case:ACC} \}$   $\Leftrightarrow$  Active Morphology

c) v-head for passive verbs:

$v \{ \bullet VP \bullet \}$   $\Leftrightarrow$  Passive Morphology

d) v-head for deponent verbs:

$v \{ \bullet VP \bullet, \bullet NP \bullet, \text{Case:ACC} \}$   $\Leftrightarrow$  Passive Morphology

Since regular transitive verbs can appear in active and passive voice, they must obligatorily be compatible with (36b) and (36c). Thus, lexemes can be combined with more than one v-head. This entails several questions. First, one may ask how to assure that there are no verbs which are compatible with all four v-heads or with three of them. One may also imagine several lexemes which are compatible with another set of two v-heads. The result would, for example, be a verb which is syntactically restricted to active contexts but may show any morphological realisation, active or passive. Such verbs are not attested, neither in Latin nor in other languages.

Another interrelated question one may ask is how one can derive the defectiveness of deponent and unaccusative verbs. Deponent verbs can only be combined with (36d) and unaccusatives are only compatible with (36a). Any other combination leads to ungrammaticality. But how can this be derived?

As far as I can see, there is no elegant way to derive that without assuming additional features on the v- and/or the V-heads. Deriving the defectiveness of the latin deponency cases is, in fact, quite often a problem for generative theories. Many syntactic as well as morphological theories manage to derive the mismatch between semantics and morphology in one way or another but the question of defectiveness is often neglected or handled with some unconvincing stipulation.

## 4.2 A Unified Analysis of Deponents and Unaccusatives

In this section I am going to present an account that tries to derive the mismatch between semantics and morphology that is found with deponent as well as with unaccusative verbs. I will, for that purpose, try to get by with as few assumptions as possible and furthermore I hope to show that the assumptions I make are plausible and have to some extent been argued for in the literature.

### 4.2.1 Assumptions and Analysis

In the last section we have seen that one faces several problems in the course of the derivation if the lexical entries of mismatch verbs (i.e. unaccusatives or deponents) are syntactically indistinguishable from regular verbs. A basic assumption of this account is that deponents as well as unaccusatives have one inherent feature when coming from the lexicon. The feature that I will be using throughout this account is  $[\pm\text{Active}]$ . Deponent verbs are inherently marked  $[-\text{Active}]$ , whereas unaccusatives are inherently marked  $[\text{+Active}]$ . Regular transitives as well as unergative verbs remain unspecified:

- (37) Deponent 'sequ-' (follow)  $\Leftrightarrow \{\bullet\text{NP}\bullet, -\text{Active}\}$   
 Unaccusative 'madesc-' (become wet)  $\Leftrightarrow \{\bullet\text{NP}\bullet, +\text{Active}\}$



Transitive	'am-' (love)	$\Leftrightarrow \{\bullet\text{NP}\bullet\}$
Unergative	'viv-' (live)	$\Leftrightarrow \{ \}$

The feature  $[\pm\text{Active}]$  is comparable to Embick's (2000) inherent feature  $[\text{pass}]$  which was inherent to deponent verbs. However since Embick's account did not apply to unaccusatives in any way, he used a privative feature. The feature I am using in the present account is a binary feature so as to capture the mirror image illustrated in the last chapter.

The second major assumption is that there are only two v-heads, namely an active v-head and a passive v-head. Both are endowed with their typical syntactical features. Thus, the active v-head selects a specifier and assigns accusative case whereas the passive v-head neither selects an argument nor assigns case. Furthermore both v-heads are specified by a value of the feature  $[\pm\text{Active}]$ . Intuitively, active v has  $[\text{+Active}]$  and passive v has  $[\text{-Active}]$ :

- (38) a) Active v-head:  $v\{\bullet\text{VP}\bullet, \bullet\text{NP}\bullet, \text{Case:acc, +Active}\}$   
b) Passive v-head:  $v\{\bullet\text{VP}\bullet, \text{-Active}\}$

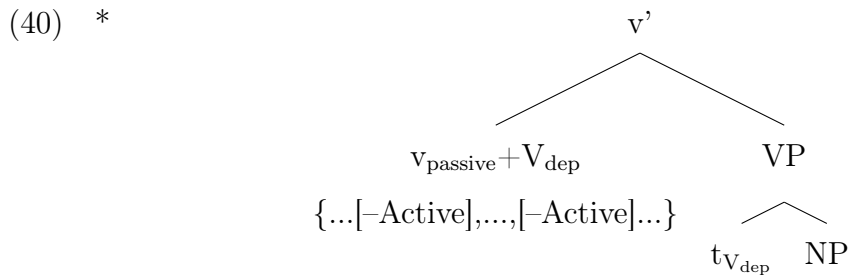
In contrast to the replication account I sketched, in this account any verb type can be merged with both v-heads. There is only one local constraint that penalizes specific combinations within the same feature bundle. The constraint is given in (39). It rules out any derivation in which there are two identical  $[\pm\text{Active}]$ -features within the same feature bundle.

- (39)  $*\{_{\text{X}}\dots, \alpha\text{Active}, \alpha\text{Active}, \dots\}$

As I just said, (39) is a very local constraint that applies at a single node within the structure. For the purpose of this work, especially the v-head is of interest. After the VP is complete, the v-head is merged and head movement

of  $V$  to  $v$  applies. I am following Roberts (2010) in that such head movement obligatorily entails fusion of the feature sets of  $V$  and  $v$ . In such a case, a situation may emerge in which an inherently specified verb fuses its features with those of the  $v$ -head. Then (39) can rule out forbidden combinations. Let me illustrate the effects of (39) by an example:

Assume that a deponent verb like *sequi* (follow) which inherently contains the feature  $[-Active]$  has merged its object and has thus built its VP and a passive  $v$ -head which also contains the feature  $[-Active]$  is merged. When the  $V$ -head moves to  $v$ , the two feature sets are fused and result is one feature set which contains the feature  $[-Active]$  twice. Such a case is ruled out by (39).



Thus, deponent verbs like *sequi* (follow) cannot be combined with passive syntax. The same situation emerges when one tries to combine an unaccusative verb with the active  $v$ -head. The result is one feature set which contains the feature  $[+Active]$  twice.

We may conclude that (39) assures that deponents are incompatible with passive syntax and unaccusatives are incompatible with active syntax. The following table illustrates all possible combinations:

(41)

Deponent $V\{\dots[-Active]\dots\}$	+	Passive $v\{\dots[-Active]\dots\}$	$\Rightarrow$ ruled out
Deponent $V\{\dots[-Active]\dots\}$	+	Active $v\{\dots[+Active]\dots\}$	$\Rightarrow$ ok
Unaccusative $V\{\dots[+Active]\dots\}$	+	Passive $v\{\dots[-Active]\dots\}$	$\Rightarrow$ ok

Unaccusative V{...[+Active]...}	+	Active v{...[+Active]...}	⇒ ruled out
Regular V{...[ ]...}	+	Passive v{...[-Active]...}	⇒ ok
Regular V{...[ ]...}	+	Active v{...[+Active]...}	⇒ ok

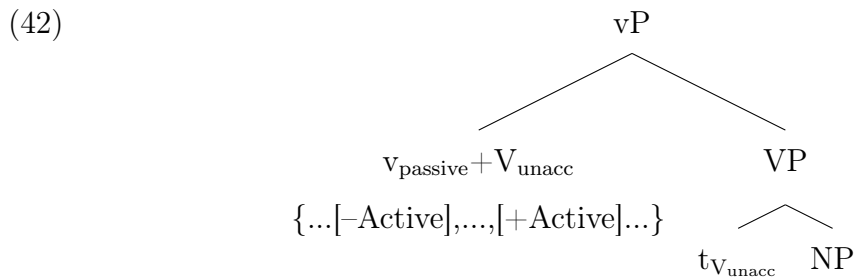
The constraint in (39) is specifically formulated to serve our purpose, namely to penalize two identical voice-features within the same feature set. However on a more abstract level it can be seen as some kind of OCP-like anti-locality constraint which avoids specific combinations of identical features within the same domain. Such Identity Avoidance Principles or as van Riemsdijk (2008) simply calls them, \*XX, have long time been attested in phonology (e.g. McCarthy (1986)) but in more recent literature it is also frequently invoked for morphological (e.g. Yip (1998), Nevins & Sandalo (2010)) or syntactical ((Ackema (2001) or van Riemsdijk (2008)) phenomena. The work of van Riemsdijk also provides a good overview in which parts of syntax the \*XX-principle has been attested.

But as it turns out, the Identity Avoidance Principle can also be used to derive the puzzling defectiveness effects of unaccusative and deponent verbs. These verbs are inherently specified for a voice-feature [ $\pm$ Active] and this specification leads to incompatibility with active or passive syntax. So, in contrast to many other approaches to deponency (e.g. Embick (2000), Hippisley (2007), Schulz (2010)), the defectivity is not the result of a completely independent mechanism or constraint but it follows directly from the feature specification of the V- and v-heads and a well-known principle that has often been attested in the literature. Thus, if one subscribes to the assumption that principles like \*XX are inviolable, then defectiveness is a general property of deponency as such. But since there are other cases where deponency does not entail defectivity, I will have to find separate explanations for these. I am going to address cases of mismatch without defectivity in the section about non-canonical de-

ponency.

The last assumption I want to make concerns the phonological realisation. We have seen that, under special circumstances, a situation may emerge where the feature  $[\pm\text{Active}]$  is found twice within the feature set of the v-head. If the values of these features are identical, then (39) will apply and the structure is ruled out. But if the values of these two features are not identical, then one will have to decide which one of them will prevail, i.e. which one will determine whether morphology uses their active or their passive forms. The situation can be illustrated by an example:

Given a situation where an unaccusative verb has built its VP and is then merged to its v-head. Then the V-head moves to v and both their feature sets are fused. Then, we find the following structure:



The question is now which one of the  $[\pm\text{Active}]$ -features in the feature set of the v-head is taken into consideration for the morphological realisation. Again, the answer is pretty straightforward: It is the lexical feature of the V-head. Thus, in the tree in (42) the  $[+\text{Active}]$ -feature prevails because it has come with the feature set of the V-head. Whenever the features of lexical heads and those of functional heads compete, it seems that the lexical features prevail. That is a phenomenon that has also been attested for various parts of the grammar, especially concerning case assignment (see for example Woolford (2006, 2007)). The case assigning property of an active v-head may often be suspended if

the lexical V-head is able to assign an inherent case. One may thus conclude, that if contradictory feature specifications are always resolved in favor of the lexical features, then the possible combinations yield the following results:

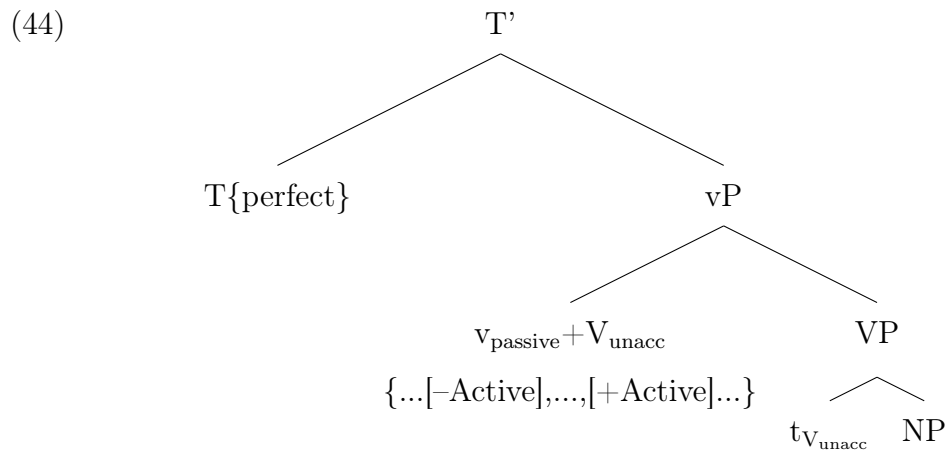
(43)

$$\begin{array}{l} \text{Dep. V}\{\dots[-\text{Active}]\dots\} \quad + \quad \text{Act. v}\{\dots[+\text{Active}]\dots\} \Leftrightarrow \text{Passive morphology} \\ \text{Unacc. V}\{\dots[+\text{Active}]\dots\} \quad + \quad \text{Pass. v}\{\dots[-\text{Active}]\dots\} \Leftrightarrow \text{Active morphology} \end{array}$$

A deponent verb combined with active v-head results in passive morphology and an unaccusative v-head combined with a passive v-head results in active morphology.

However the decision of whether the lexical or the structural features prevail does not only play a role with regard to the morphological realisation but also with regard to syntactic behaviour. Fusing the feature sets of V and v leads to some kind of overriding of the  $[\pm\text{Active}]$ -feature of the v-head, at least in the cases in which the verb itself has such a feature. After this fusion and overriding of its features, the v-head behaves as if it was of the opposite type, at least concerning v-to-T movement: An active v-head behaves like it was passive and a passive v-head behaves like it was active. This interchanged behaviour can be observed when looking at the question of whether the v-head will move to T afterwards. An active v-head will always move to T, regardless of aspectual features. But after it has merged with a deponent V-head, it behaves like it was passive, i.e. there may be cases in which it does not move to T, namely in the perfect aspect. The opposite can be observed when a passive v-head is merged with an unaccusative verb. Normally, the v-to-T movement of a passive v-head would depend on the aspect but after it has merged with an unaccusative predicate, it moves to T anyway, regardless of the aspect. Let me once again illustrate this by an example:

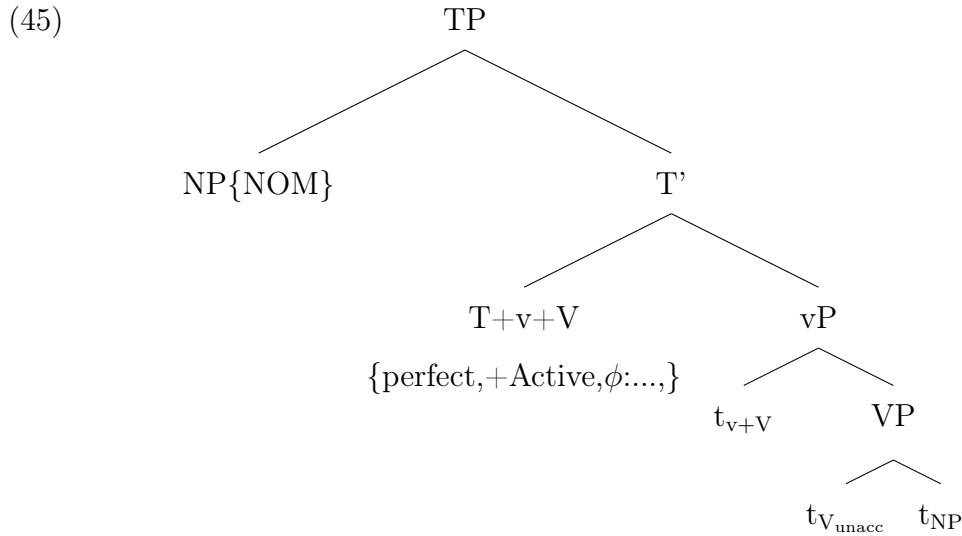
Recall example (42): An unaccusative verb has merged with a passive v-head and afterwards their two feature sets have become one. We now have contradictory voice-features within the same feature set and the dilemma is resolved in favor of the [+Active]-feature because it is the one coming from the lexical head V. Let us assume that we are dealing with a clause in perfective aspect<sup>5</sup>



Normally, a passive v-head would not move to a perfective T, but since its [-Active]-feature has been overridden by the [+Active]-feature of the unaccusative verb, the passive v-head moves to T and hence we end up with a synthetic verb form instead of a periphrastic one. After the v-V-complex has moved to T, once again their feature sets are fused. Then the object NP is raised to T's specifier, T checks its  $\phi$ -features, assigns nominative case and the TP is complete:

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<sup>5</sup>For convenience, I assume aspect features to be part of the T-head, although I recognize that this assumption is not shared by most authors working on that topic. However, as far as I can see, one will not face any crucial problems when trying to include intermediate projections like perfect or aspect phrases.



In the postsyntactic morphological component the feature set of the T-v-V-complex is expressed by vocabulary items. The combination of the [perfect]-feature and the lexical [+Active]-feature trigger a synthetic verb form, the [-Active]-feature of the v-head is overridden. After all vocabulary items have been inserted, we could end up with an example like (46).

- (46) Castor            madesca-vi-t.  
 Castor(NOM) become.wet-PERF-3.SG.  
 'Castor has become wet'

The corresponding vocabulary items would then be the following. The verb stem is inserted into the V-head, of course. The perfectivity feature on the T-head is expressed by the default perfect marker /-vi-/ and the agreement features on the T-head as well as the [+Active] feature of the v-head are expressed by the ending /-t/.

- (47)
- |                     |   |            |
|---------------------|---|------------|
| V                   | ⇔ | /madesca-/ |
| T{+perfect}         | ⇔ | /-vi-/     |
| v+T{3.SG., +Active} | ⇔ | /-t/       |

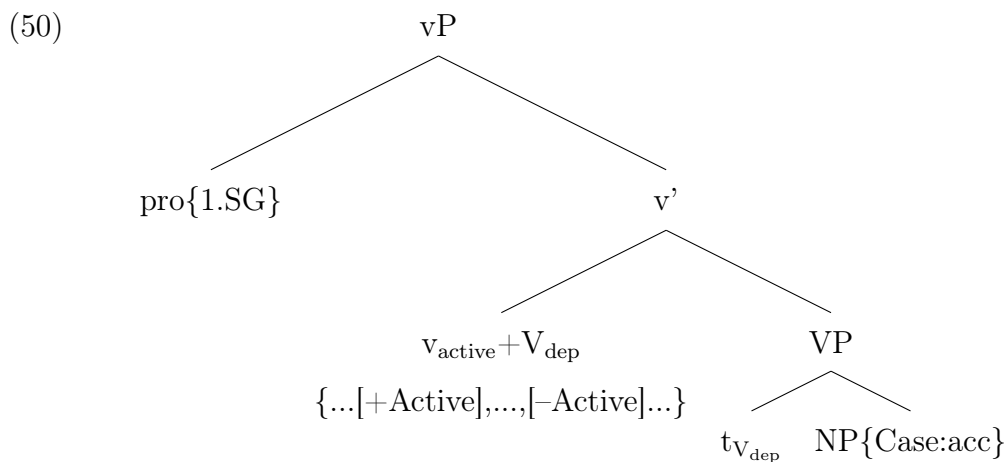
Clauses with deponent predicates can be derived as easily as unaccusatives. Let us have a look at example (7a) repeated in (48):

- (48) *Via*-m    *secutus*    *sum*.  
 way-ACC follow.PTCP be.1.SG  
 'I followed the way.'

The verb *sequi* (follow) is a deponent, hence it is lexically specified for [-Active] and its lexical entry looks like (49):

- (49) *sequi* : {V, ●NP●, -Active}

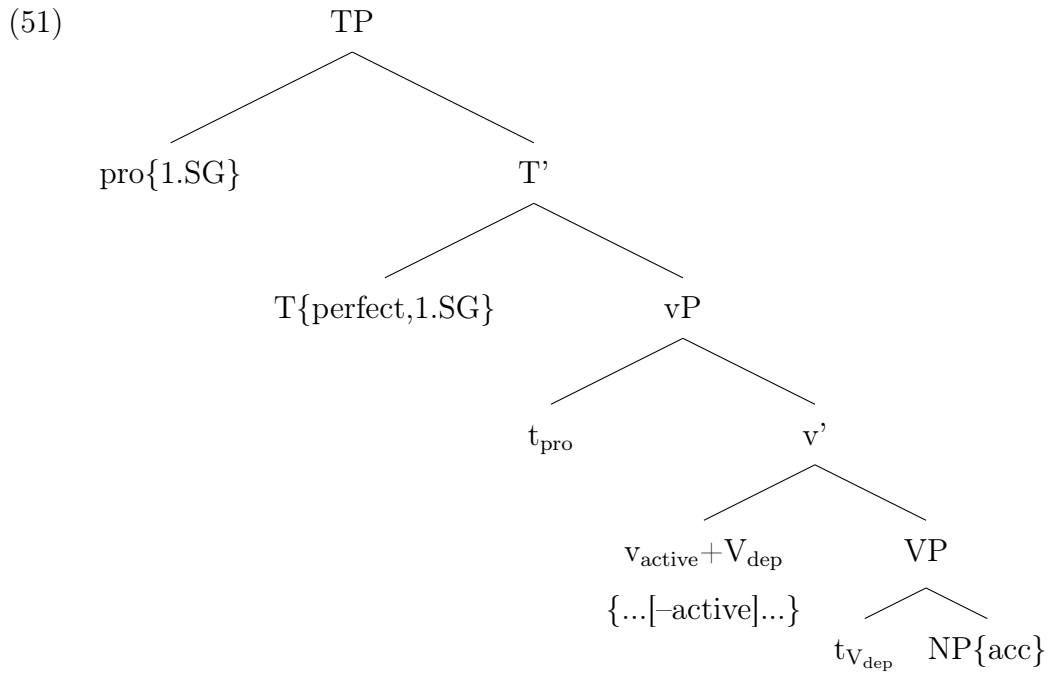
After it has selected its object NP *via* (way), the VP merges with the active v-head. This is the only possibility because merging the passive v-head would result in a violation of the Identity Avoidance Principle in (39). So, the V-head moves to v and their feature sets are fused. Hereinafter, the active v-head assigns accusative case to the object and selects its specifier, in our case an empty first person pronoun:



The T-head is merged and, once again, the v-V-complex is confronted with the question whether it is to move to T or not. Normally, active v-heads move to T, regardless of aspectual features but as the [+Active]-feature of v has been overridden by the lexical [-Active]-feature of V, the aspectual features



of T play a crucial role. Passive v-heads do not move to T if T contains a [perfect]-feature and as we see in example (48) T does contain such a feature. Thus, the v-V-complex does not move to T and the result is a periphrastic verb form. After T has raised the empty subject, it checks the pronoun's  $\phi$ -features and can thus agree with it. We then end up with the following structure:



The tree in (51) is only a few stylistic movements away from example (48). However the exact nature of stylistic movements within the unrestricted word order in Latin would lead us too far and is therefore omitted at this point. If we assume that these stylistic movements have been applied, we may proceed to the vocabulary insertion:

- (52)
- |                   |                   |           |
|-------------------|-------------------|-----------|
| N{Case:ACC}       | $\Leftrightarrow$ | /viam/    |
| V+v{-Active}      | $\Leftrightarrow$ | /secutus/ |
| T{+perfect,1.SG.} | $\Leftrightarrow$ | /sum/     |
| pro               | $\Leftrightarrow$ | /∅/       |

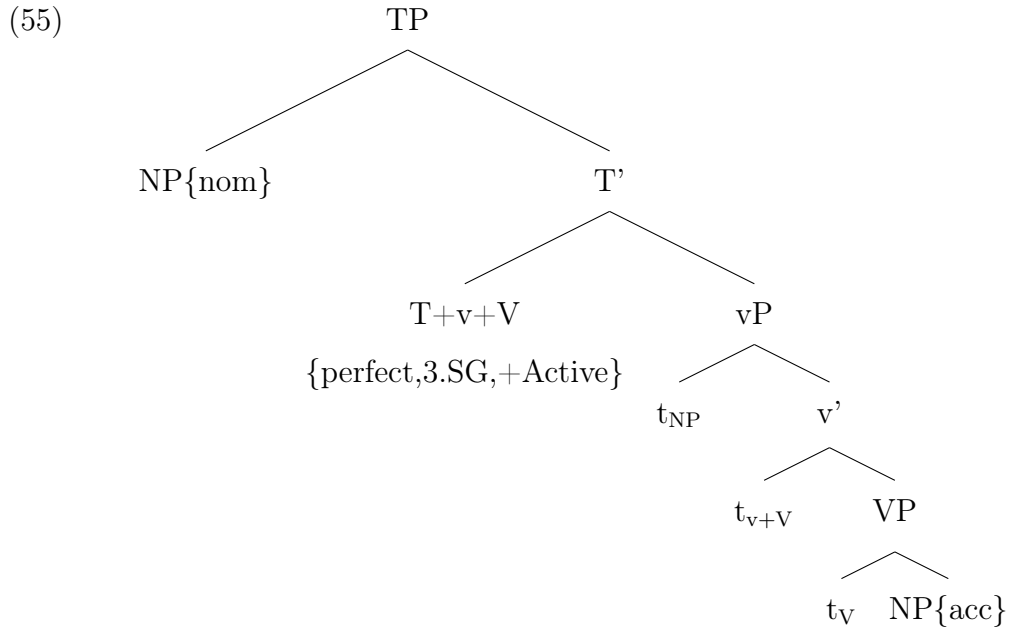
The accusative NP is realised as /viam/ since /-m/ is the default accusative marker in Latin. A V-v-complex that has not moved to T is expressed as the participle /secutus/. A T-head without a lexical verb stem within its domain is expressed by a form of the default copula *esse*. In our case, the form is /sum/ which is the first person singular.

For the sake of completeness, I am going to briefly sketch the derivation of a regular transitive verb. Take example (7c), repeated in (53). The verb *verberare* (beat, hit) is neither deponent nor unaccusative and thus its lexical entry is completely unspecified with regard to the feature [ $\pm$ Active], as can be seen in (54)

- (53) Domin-us      verbera-v-it      serv-um.  
 Master-NOM beat-PERF-3.SG servant-ACC.  
 'The master beat the servant.'

- (54) verberera- : {V, ●NP●}

The first steps are the same as in the previous derivations. At first, the verb merges with the object NP to build the VP. Afterwards, the active v-head is introduced and the verbal head moves to it. In the previous derivations the lexical [ $\pm$ Active]-feature on V always overrode the one on the v-head but since this time the lexical V-head was unspecified, the features of the v-head remain intact. The object is assigned accusative case and the subject is merged. When it comes to the question whether the v-V-complex moves to T, the feature of the v-head decides because it is still intact. Hence, since active v-heads normally move to T, the V-v-complex moves. In the end the subject is raised to SpecTP receiving nominative case. The final structure looks like (55)



This time, no stylistic movements are needed. The word order is identical to the example we wanted to derive. So, if one compared the features of the V-v-T-complex of this derivation to those of the V-v-T-complex in the unaccusative derivation (the tree in (45)) one might observe that the features are exactly the same although their origin is different. But since the features are the same, it is no surprise that the inserted vocabulary items are the same:

(56)	NP{nom}	$\Leftrightarrow$	/dominus/
	V	$\Leftrightarrow$	/verbera-/
	T{+perfect}	$\Leftrightarrow$	/-vi-/
	v+T{3.SG., +Active}	$\Leftrightarrow$	/-t/
	NP{acc}	$\Leftrightarrow$	/servum/

Hence, we can observe that the analysis of deponent and unaccusative verbs that I sketched has no negative consequences for the syntax of regular transitive verbs. The example above clearly shows that clauses with regular transitive verbs are still perfectly derivable under the assumptions I made. They are

still compatible with both v-heads and they are not affected by the Identity Avoidance Principle because they themselves are not specified for the feature  $[\pm\text{Active}]$ .

I have so far given a complete analysis of the Latin deponency system. Based on the hypothesis I drew in the previous chapter the analysis is designed for both types of mismatch verbs in Latin, deponents and unaccusatives. To derive the particular behaviour of these verbs, I made four major assumptions all of which I have explored and illustrated in detail. I have given quite a few illustrative derivations to show that the analysis works for the complex system of mismatch verbs in Latin and at the same time does not have any negative effects on the derivation of regular transitive verbs in active or passive voice.

The next section will point out how this analysis can be applied to languages that do not have deponent but only unaccusative verbs. But before we come to the next section, let me just briefly restate the four assumptions that my account on mismatch verbs like deponent and unaccusative verbs is based on:

- I assume that deponent as well as unaccusative verbs are lexically marked by a  $[\pm\text{Active}]$ -feature, whereas deponents are specified for  $[-\text{Active}]$  and unaccusatives are specified for  $[\text{+Active}]$  in the lexicon.
- Furthermore I assume only two distinct v-heads with which all verb types may be combined arbitrarily. These v-heads contain the same features  $[\pm\text{Active}]$ .
- Ungrammatical combinations of V- and v-heads are ruled out by a OCP-like Identity Avoidance Principle.
- Contradictional feature information on the v-head is always resolved in favor of the features coming from the lexical head V. The structural

features of the v-head may under certain circumstances be overridden. This may have an effect on the phonological realisation of the v-head as well as on its syntactic behaviour in the course of the derivation.

These four assumptions were sufficient to derive the morphosyntactic behaviour of deponent and unaccusative verbs. In the next section I am going to illustrate how the whole system I presented can be expanded to languages which only have one type of mismatch verbs. For that purpose I am going to modify only one of the four assumptions, namely the first one.

#### **4.2.2 Languages without Deponency**

Any theory that argues that deponent and unaccusative verbs involve the same type of mismatch must be able to handle the fact that these two verb types are not evenly distributed among the world's languages. There are many languages in which we find no cases of deponency but a great number of unaccusative verbs. The question why we find this uneven distribution between these verb types will be dealt with in a later chapter. In this section, I am going to show how this asymmetry can be included into the theory.

As I already indicated, all that is needed is a slight modification of the first assumption. I assume that languages which have a class of unaccusative verbs but no deponents make use of a privative feature [Active] instead of a binary feature [ $\pm$ Active]. In doing so, one can elegantly include the asymmetry between deponents and unaccusatives. Unaccusative verbs are still specified by the feature [Active] in the lexicon. However there is no possibility to specify a deponent verb. The change from a binary to a privative feature has eliminated the possibility to specify certain lexemes as deponent thus this category is not attested in these languages. Hence, in a language like English, the lexical entries of the different verb types look like (57):

- (57) Unaccusative Verbs:           fall    {V, ●NP●, Active }  
       Regular transitive Verbs:   kill    {V, ●NP● }  
       Unergative Verbs:           run    {V}

Of course, one also needs to adjust the specification of both v-heads accordingly. The active v-head is specified by the feature [Active], the passive v-head remains unspecified concerning voice-features:

- (58) Active v-head                 v: {●VP●, ●NP●, Active }  
       Passive v-head                v: {●VP● }

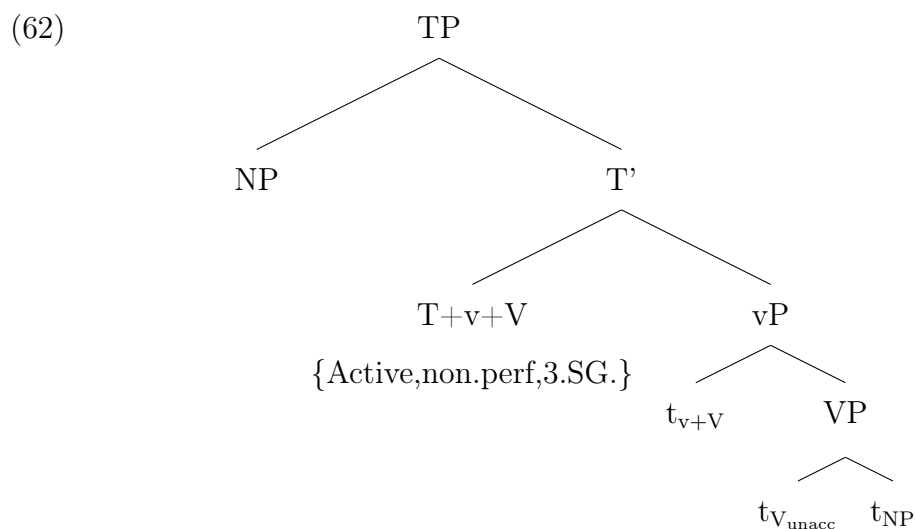
However, there is no need to adjust the Identity Avoidance Principle. It still remains intact and rules out the combinations in which the feature [Active] appears twice within the same feature head. The possible combinations are listed in (60):

- (59) \*{<sub>X</sub>[Active],..., [Active]}
- (60) Unaccusative V{...[Active]...}   +   Passive v{...[ ]...}       ⇒ ok  
       Unaccusative V{...[Active]...}   +   Active v{...[Active]...}   ⇒ ruled out  
       Regular V{...[ ]...}             +   Passive v{...[ ]...}       ⇒ ok  
       Regular V{...[ ]...}             +   Active v{...[Active]...}   ⇒ ok

The result is, of course, that only one combination is ruled out as ungrammatical, namely the one in which an unaccusative verb appears in active syntax. All other combinations are grammatical. Unaccusatives may appear in passive syntax and since regular verbs are still unspecified, they may be combined with either v-head, the active and the passive one. A brief example of a clause with an unaccusative predicate will show that the system which is only slightly modified works fine for English. Take the simple example in (61):

- (61) The rain falls.

The verb *fall* is unaccusative and thus it contains the lexical feature [Active]. It merges its object (the rain) and builds its VP. Hereinafter, the passive v-head (which contains no voice-feature) is merged and the lexical head V moves to v. Their fusion of feature sets entails that the passive v-head behaves like its active counterpart because it now contains the feature [Active]. Therefore it moves to T building a synthetic verb form instead of a periphrastic one. After the NP has moved to SpecTP, the structure looks like (62):



As far as I can see, the account I presented works fine for languages like English and modern Romance languages but it has one major consequence that might be considered a drawback. An account which uses a privative feature [Active] to distinguish active and passive voice is bound to define the passive voice as the default case and active voice as the more marked case. The active voice head contains the distinctive feature whereas the passive v-head is literally unmarked. This may be problematic from a functional perspective since the frequency of occurrence strongly suggests that passive should be more marked. Furthermore this definition of passive as the default case also entails great morphosyntactic consequences. Especially the morphological exponents of active and passive voice probably need some reconsideration.

If the passive v-head contains no distinctive features, then the morphological passive exponents are bound to be default markers as well. However, since the passive voice of English, German and many other languages only consists of quite underspecified forms which also appear in many other constructions, I personally do not consider that a big problem. English for example forms its passive with the perfect participle and a tensed form of the copula. None of these forms is a designated passive-form. Thus they must be underspecified anyway.

Besides, many languages which do not have deponents but do exhibit an unaccusative verb class use a periphrastic form to express passive. Periphrastic passives are often derived by a specially designed passive phrase above the v-head. I am going to investigate the effect of such a passive phrase in the next section because, as it turns out, an analysis including a PassP for languages with periphrastic passive makes an extensive empirical prediction that is worthwhile examining.

## 5 Empirical Consequences

I have so far given a complete analysis of the morphosyntax of mismatch verbs. The analysis includes languages like Latin where we find both types of mismatch verbs, deponents and unaccusatives and it also includes languages like English which only have one type. In this section I am going to investigate some empirical consequences that my theory predicts.



## 5.1 Deponency and Unaccusativity are two distinct Verb Classes

The first prediction is easy to follow. The whole account I presented is based on the assumption that unaccusativity and deponency are two sides of the same coin because their behavior is completely oppositional in all modules of the grammar. This opposition is incorporated into the theory by the binary feature [ $\pm$ Active] which displays different values for both types of verbs. Thus, it is clear that the present account predicts that deponency and unaccusativity should exclude each other, i.e. a verb cannot be unaccusative and deponent at the same time.

Under normal circumstances this prediction could be easily tested. If deponent verbs passed the syntactic unaccusativity tests in Latin this would be a major setback for the theory. Unfortunately, as far as I can see, there are no applicable unaccusativity tests available in Latin. Some of the widely used tests are not applicable because of the distinct grammatical features of Latin. So, for example, there is no difference in the choice of the auxiliary of the Latin periphrastic verb forms. In Italian we can also distinguish intransitive verbs by their (in)ability to undergo the process of ne-cliticization but as far as I know there is no equivalent in Latin. Some other tests are not applicable because the available data are not sufficient. For example, the impersonal passive construction which is used as an unaccusativity test in a variety of languages is attested in Latin. Usually, unaccusative verbs cannot be passivized whereas unergatives can. Alexiadou et al. (2004) give the following examples from Dutch:

- (63) a. Er werd hier door de jongelui veel gedanst.  
it was her by the young.people a.lot danced.

- b. \*Er werd door de kinderen in Amsterdam gebleven.  
 it was by the children in Amsterdam remained.

As Pinkster (1992) noted, there are cases of impersonal passives in Latin but they are, as he concludes, infrequent and highly idiomatic. He gives several examples like the ones in (64) but it is not clear whether impersonal passives can be used as a reliable test for the distinction between unaccusatives and unergatives. Furthermore it is clear that the chance of a cooccurrence of a special deponent verb in such an infrequent construction is not very high and hence, the data for these cases are very scarce.

- (64) a. *Curritur a me*  
 run.PASS.3.SG by me  
 'Running is being done by me'
- b. *Ventum erat ad Vestae.*  
 come.PASS.PTCP be.IPFV.3.SG to Vesta  
 'We had arrived at Vesta's temple', literally: 'There was coming to Vesta'

It would be quite interesting to test this hypothesis but, as far as I can see, the data in Latin are really not sufficient, especially since most of the normal unaccusativity tests are not applicable to Latin. Alexiadou & Anagnostopoulou (1999) have already noted that the same situation is found in Modern (and Classical) Greek. However since it is possible to obtain new data from Greek speakers, Alexiadou & Anagnostopoulou could develop several new tests that allow to define the distinction between unaccusative and unergative verbs in Greek. Unfortunately, this is not possible in Latin. Probably, a test of the hypothesis would lead to more promising results in other languages which exhibit cases of deponency. However, I refrain from doing such an investigation of languages like Greek, Swedish or Sanskrit right now because it would

require an in-depth analysis of the deponency systems of these languages. Furthermore, these analyses would require a lot of data to which I have no access at this point. Nevertheless, this is undoubtedly a very interesting way to test the hypothesis and the whole account on which it is based.

## 5.2 The Unequal Distribution of Unaccusativity and Deponency

To deduce the second empirical prediction, I would like to go back to the question why we find so many languages with an unaccusative verb class but only a few with a deponent verb class. As I already mentioned in the second section of this work, I assume that there is an independent parameter in the world's languages on which the existence of a deponent verb class depends, namely whether a language uses a periphrastic or a synthetic form for expressing passive. The Romance languages, for example, all form their passive periphrastically. As far as I know, every Romance language uses an auxiliary (mostly the respective equivalents of *have* or the copula *be*) combined with some kind of participle. Latin however uses a synthetic form. There are certain forms which are periphrastic but in the majority of combinations of tense, aspect and mood the Latin passive is synthetic. Thus, I am going to argue that the hypothesis in (65) holds:

(65) Hypothesis:

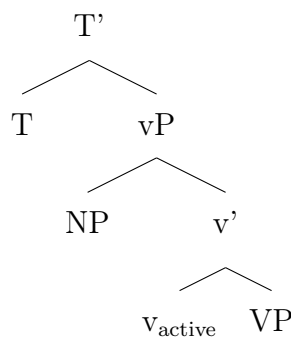
Languages which always use periphrastic verb forms for passive contexts cannot maintain a deponent verb class<sup>6</sup>.

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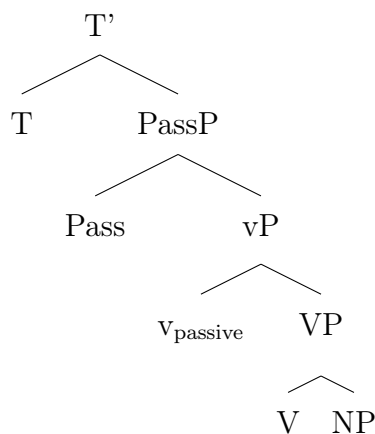
<sup>6</sup>Here, of course, the term deponency only refers to cases of canonical deponency which involve voice distinctions between active and passive

Why should this be the case? To answer this question, let us have a look at the structural differences between a language which uses periphrastic passives and a language which does not. I assume that especially those languages which always use a periphrastic form for passive contexts make use of a functional projection designed for passive syntax (cf. Collins (2005), Cinque (1999)<sup>7</sup>, Adger (2003)), named PassP. Nonetheless, I assume that these languages still have two distinct v-heads, a passive and an active one, however a passive vP is merged with a passive phrase (PassP) whereas an active vP is not. The trees in (66) illustrate the difference.

(66) a.



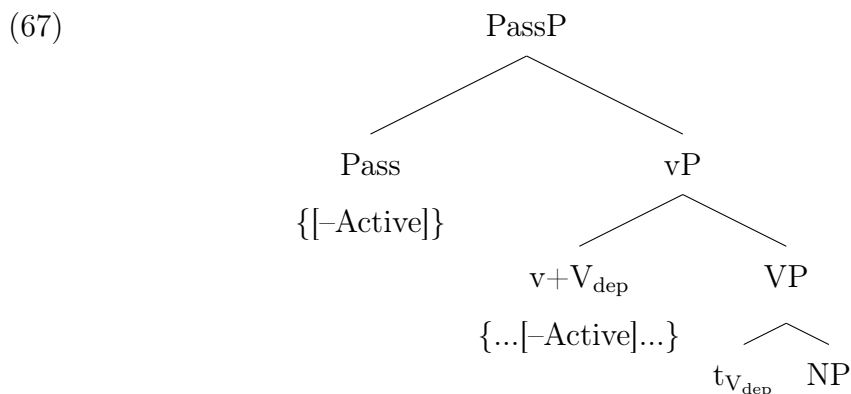
b.




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<sup>7</sup>Cinque (1999) introduces a functional projection for passives named PassP but he claims that the projections he postulates are a universal property of all languages which is something I explicitly deny.

Postulating an additional Pass-head in passive contexts enables to account for the obligatory presence of an auxiliary and the fact that the V-head is expressed by a non-finite participle form. But since these two factors are not found in Latin, there is no reason to assume the existence of a PassP in Latin. However, the Pass-head projection has great consequences on the theory of deponency which I sketched. If the phonological realisation of voice features is carried out by the features of the passive phrase, then a lexical specification on the V-head is completely pointless because the features of a PassP are too high up the tree to be mingled with. The following tree in (67) is illustrating the situation:



The deponent V-head is specified for [-Active]. It moves to v hoping to override v's voice feature. However, the v-head does not contain any voice-features because the voice-distinction is handled by the passive phrase higher up the tree. The lexical specification of the V-head can neither affect the syntactic derivation, nor determine whether the morphological realisation will be active or passive. Thus, the existence of specific features on the lexical V-head has no consequences whatsoever. And since a hypothetical learner would never postulate the existence of such pointless features, it is clear that such features cannot be maintained by a language. It follows directly that a language which maintains a passive phrase cannot maintain a deponent verb

class at the same time.

Before I am going to test this prediction in a variety of languages, I have to make a remark about the terminology I used. In the previous section I have shown that my approach to deponency predicts that a language which makes use of periphrastic passives in all cases cannot maintain a deponent verb class. I have used the term "periphrastic" in the sense that it denotes a verb form which consists of two (possibly disconnected) verb parts which are not part of the same syntactic head. However, strictly speaking, the term only refers to verb forms which contain more than one verb stem, regardless of whether these stems are located on the same head or not. There may be cases in which a periphrastic verb form (in the original sense of the word) and a deponent verb class may go together but only if both parts of the verb are located on the same head. Thus, one might restate (65) in the following way.

(68) Hypothesis:

Languages which always use a verb form that consists of two distinct parts located on two different heads for passive contexts cannot maintain a deponent verb class

This is a really subtle difference and it does not play a role in English or other European languages. But there are certain language areas in which verb forms are generated by head movement of a verb into its higher counterpart. I will discuss such a language, namely Tunica, in the section about non-canonical deponency. In Tunica, a periphrastic verb form consists of two parts which are located on the same head. It will be shown that in such a case lexical specifications on the V-head may still have the right to exist because they can have a syntactical and morphological effect.

### 5.2.1 Empirical Overview

In this section I am going to investigate whether this empirical prediction of the preceding section holds. Therefore, I am going to have a look at some more languages which have a deponent verb class involving the voice distinction between active and passive (and sometimes middle voice). If the hypothesis (65) holds, then all of these languages form their passive (or middle) by using a synthetic form.

#### Deponency in Ancient and Modern Greek

Let us start with Greek which is widely known to have a deponent verb class. In all stages throughout the Greek language development we find verbs that combine transitive active syntax (and semantics) with non-active morphology. In Classical Greek, we even find the distinction between two types of deponent verbs, namely those exhibiting middle morphology and those using passive morphology. The verb forms in (69) illustrate the difference which only shows up in past and future tense forms<sup>8</sup>. The examples in (70) show that these verbs really show non-active morphology in syntactically active transitive context.

(69) a. *apekri-same:n* : answer-PAST.MIDDLE

*apokri-somai* : answer-FUT.MIDDLE

b. *e-sebas-the:n* : respect-PAST.PASSIVE

*sebas-the:somai* : respect-FUT.PASSIVE

(70) a. *dokei kai emoi ho Tisaphernis*  
seems and me.DAT.SG the.NOM.SG Tisaphernis.NOM.SG  
*to auto boule:the:nai*  
the.ACC.SG same.ACC.SG want.PAST.INF.PASS  
'It seems also to me that Tisaphernis wanted the same'

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<sup>8</sup>All Greek examples, unless otherwise noted, are taken from Lavidas & Papangeli (2007)

- b. tous            tote parontas            aitiasontai  
 the.ACC.PL then present.ACC.PL accuse.FUT.3PL.MID  
 symbolous  
 adviser.ACC.PL  
 'They will accuse all those advisers who were then present.'

In the later stages of Greek this distinction between middles and passives has vanished but the deponent verb class which shows non-active morphology in active contexts is still maintained. There are even cases in which regular verbs in Classical Greek have changed into deponent verbs in Modern Greek. One of these verbs is 'ligurevome' (I desire):

- (71) i    egkios                    ligureftike  
 the pregnant.NOM.SG desire.PAST.3SG.MEDIOPASS  
 pagoto  
 ice-cream.ACC.SG  
 'The pregnant woman desired ice cream'

As can easily be seen, all cited verb forms were synthetic. I have only given examples where the non-active morphology is shown by deponent verbs. However, these are always identical to the respective forms of passives and middles. Passive and middles in Greek have in all stages been formed by using a synthetic verb form. Hence, the verb forms in the examples (69) to (71) clearly show that the Classical as well as the Modern Greek case clearly support the hypothesis (65). Greek has been able to maintain its deponent verb class because it makes use of a synthetic verb form to form passives and middles.

### **Deponency in Sanskrit**

Sanskrit is another language which comes with a class of verbs that is said to be deponent. The cases of deponency which we find in Sanskrit also concern



the voice distinction between active and middle. According to Burrow (2001), Sanskrit active voice distinguishes between active and middle voice whereas the middle form is used whenever an action stated by a verb affects its subject in some way. Stump (2007) gives the following examples which illustrate the distinct use.

- (72) a. pacati (3SG.ACT) - 'he cooks' (said of a cook preparing food for others)  
       pacate (3SG.MID) - 'he cooks' (said of one cooking for himself)
- b. yajati (3SG.ACT) - 'he sacrifices' (said of a priest sacrificing on someone else's behalf)  
       yajate (3SG.MID) - 'he sacrifices' (said of one sacrificing on his own behalf)

However, not all verbs behave like the ones in (72). Most of the verbs in Sanskrit are restricted to one of the paradigm, either the active forms or the middle forms. Stump (2007) classifies the Sanskrit verbs as to whether their non-passive forms can appear in active and middle voice or whether they are restricted to one paradigm. Verbs which can appear in both forms, active and middle, are called U-verbs, verbs restricted to the active paradigm are called P-verbs and verbs restricted to the middle paradigm are called  $\bar{A}$ -verbs<sup>9</sup>. And as Stump convincingly argues, the distinction between these classes is not semantically determined. Whether a certain verb belongs to a certain class cannot be traced back to its semantic properties but it is rather arbitrary. Thus, there are quite a lot of verbs within the P-class and the  $\bar{A}$ -class which can be identified as deponent<sup>10</sup>. Some  $\bar{A}$ -verbs, for example are restricted to

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<sup>9</sup>The terminology is based on the classical differentiation between the so-called  $\bar{A}$ tmānepadīn, the Parasmaipadīn and the Ubhayapadīn verb class in Sanskrit

<sup>10</sup>In the course of his discussion, Stump argues that P-verbs are not to be seen as deponent

the middle paradigm although they may very well appear in contexts that would suggest to use the active form because their subject is not affected by the action at all. Take the following example in (73) in which the  $\bar{A}$ -verb *garh* (to rebuke) clearly expresses some action which does not affect its subject but is nevertheless accompanied by a middle form.

- (73) *kathā* ha      *tād* *vārunāya*      *tvám*      *agne*  
 why EMPH then Varuna.DAT.SG you.NOM.SG Agni.VOC.SG  
*kathā* *dive*      *garhase*.  
 why heaven.DAT.SG rebuke.2SG.PRS.IND.MID  
 'Why, Agni, do you reproach us to Varuna, why to the heaven?'

The concrete situation about Sanskrit deponent cases is very complicated and I do not claim that the account I presented for the Latin cases may be transferred to Sanskrit without any adjustments but the few examples I gave already illustrate that the hypothesis I draw in the previous section also holds for Sanskrit. We find cases of deponency concerning the voice distinction between active and middle voice but as one can see in the examples (72) and (73) this voice distinction is morphologically usually expressed by a synthetic verb form. I should add that there are some periphrastic verb forms in Sanskrit, for example certain causatives or desideratives, but the claim of hypothesis (65) is not that languages with deponent verbs have no periphrastic forms. Strictly speaking, all you need is one synthetic form in which a lexical specification on the V-head entails morphosyntactic consequences. Latin has also periphrastic forms, however the fact that the usual form are synthetic is sufficient to maintain the lexical specification of the verbal head.

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because the definition of active voice is not based on non-affection of the subject but it is rather a semantically empty operator which works as some kind of default voice. Hence, the semantical incoherence of the P-verb class does not entail any mismatch with its morphological marking

## Deponency in Swedish

Swedish has two possibilities to form a passive sentence. Either one can use a periphrastic form with the participle and an inflected form of the auxiliary *bli* (become, get, be) or one can use a synthetic verb form adding the suffix *-s* to the verb stem. The examples in (74) illustrate the difference. The first example (74a) shows the periphrastic version whereas the latter two exemplify the synthetic passive which is, according to Ritte (2004), the far frequent one.

- (74) a. England blev slaget 2-3 av Sverige i final-en  
England BLI beaten 2-3 by Sweden in final-DEF  
'England was beaten 2-3 by Sweden in the final.' (Ritte (2004))
- b. Stad-en förstörde-s under krig-et  
Town-DEF destroy-PASS under war-DEF  
'The town was destroyed during the war.'
- c. Det säg-s att en sjärna ska falla  
That say-PASS that a star shall fall  
'It is said that a star will fall.'

The synthetic passive in Swedish, however, is also used for other purposes, namely for reflexive or reciprocal contexts (75a) or what Ritte (2004) calls absolute forms (75b) which can only be formed of a few verbs and often have corresponding forms without the *s*-affix. Absolute forms often incorporate a habitual meaning and often omit the object.

- (75) a. De kysste-s  
They kiss.PAST-RECIP  
'They kissed (each other)'
- b. Deras hund bits.  
Their dog bites.  
'Their dog (usually) bites (me)'

Since there are several different active forms which make use of the *s*-affix, it is often doubted whether the so-called Swedish deponents are really a case of deponency. As the *s*-affix is semantically polyfunctional, it can be argued that the Swedish deponents are not really a mismatch between form and function. I will, however, argue that the cases of "s-verbs" in Swedish are in fact a case of deponency. But let me give some examples of these verbs at first. The example (76) lists some of the more frequent so-called Swedish deponents (or "s-verbs" to use a more neutral term), (77) gives an example which includes the verb *hoppas* (hope).

- (76)
- färdas - 'travel'
  - avundas - 'envy'
  - finnas - 'be, exist'
  - hoppas - 'hope'
  - minnas - 'remember'
  - nalkas - 'approach'
- (77) Jag hoppa-s att de kommer  
 I.NOM hope-PASS that they come  
 'I hope that they come'

As I already indicated, the status of the Swedish "s-verbs" as deponents has often been doubted and they have often been analysed as reflexive or as absolute forms. However, I think that neither of these analyses can capture the behaviour of these verbs. In my opinion, Swedish s-verbs cannot be analysed as absolutes because they do not incorporate the habitual meaning component. Example (77) does not imply that I usually hope that they are coming, it may very well be uttered in a unique context. Furthermore, as I already said, the absolute forms often have correspondent forms without the *s*-affix (example

(78a)). None of the mentioned s-verbs has such forms. They cannot appear without the s-affix.

The analysis of s-verbs as inherently reflexives also faces some problems since at least some of the Swedish deponents seem to be capable of selecting a direct object. Especially the verbs *nalkas* (approach) and *minnas* (remember) seem to be able to merge with a direct object (examples (78b) and (78c))<sup>11</sup>

- (78) a. Deras hund brukar bita mig.  
 Their dog be.in.the.habit.of bite me.ACC  
 'Their dog usually bites me.' (Ritte 2004)
- b. Han minna-s mig från när vi träffade-s  
 He remember-PASS me.ACC from when we meet.PAST-RECIP  
 på Hultsfred  
 in H.  
 'He remembers me from when we met in H.'
- c. Han nalka-s oss steg för steg.  
 He.NOM approach-PASS us.ACC step for step  
 'He approaches us step by step'

The case of the Swedish s-verbs needs, of course, a far more detailed analysis than I could provide here. I have given some arguments for the fact that these "s-verbs" ought to be treated as real cases of deponency and not just instantiations of inherently reflexive verbs or special absolute forms. If these arguments are on the right track and Swedish s-verbs are deponent, then one can see that Swedish, just like Greek and Sanskrit, clearly supports my hy-

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<sup>11</sup>The examples (78b) and (78c) are taken from the internet and may thus not be seen as completely reliable but the mere frequencies of these verbs combined with pronominal objects suggest that such constructions are not just an accidental mistake of some Swedish learner. The phrases *minnas mig* (remember me) and *minnas henne* (remember her) together generate more than 30,000 hits on google.com which is quite a lot for a language with only about 10 million speakers

pothesis because Swedish has cases of deponency and a synthetic verb form in passive contexts. This is quite remarkable, I think, because a synthetic passive and a deponent verb class are both phenomena which are not really common amongst Germanic languages.

Nevertheless, it is clear that the case of the Swedish s-verbs really needs more attention since some questions about these verbs must remain unanswered. It would be quite interesting to see whether these verbs can occur in passive contexts or whether they can be combined with the periphrastic passive I mentioned earlier.

## **Finnish**

In Finnish, speakers distinguish active and passive voice whereas the latter is more of an impersonal form. In a sentence in passive/impersonal voice, the subject of the correspondent active sentence is dropped and cannot be expressed in an adjunctival phrase. The former object is not raised to the status of a subject, it remains in object position and receives the respective object case which may be accusative, genitive or partitive depending on a variety of factors. Hence, verbs in passive/impersonal voice do not have no subject. Accordingly, they do not inflect for any person or number features either. This is illustrated in table (79). Example (80) below shows a passive clause in which the object *kahvia* (coffee) receives partitive case. The sentence contains no argument in nominative case.

(79) Active and passive verb forms in Finnish<sup>12</sup>

'say'	Present tense		Past tense	
	active	passive	active	passive
1SG	sanon	sanotaan	sanoin	sanottin
2SG	sanot		sanoit	
3SG	sanoo		sanoi	
1PL	sanomme		sanoimme	
2PL	sanotte		sanoitte	
3PL	sanovat		sanoivat	

- (80) Suomessa juodaan kahvia.  
 Finland.INESS drink.PASS coffee.PARTIT  
 'In Finland, one drinks coffee.' (Buchholz 2005:103)

Just like in the previous languages we find cases in Finnish where it is possible to use passive/impersonal forms in a syntactically (and semantically) active context. As can be seen in example (81), the passive/impersonal form is also used for a first person plural active form in spoken Finnish. Furthermore the passive form is used as the first person plural imperative, in written and in spoken Finnish (82). Other combinations of person and number features cannot be expressed by the impersonal forms. Nevertheless, this is clearly a case of deponency.

- (81) Me mennään elokuviin.  
 1PL go.PASS cinema.ILL  
 'We go to the cinema'

<sup>12</sup>The tables are provided by the capacious Surrey Deponency Databases which can be found here:

[http://www.smg.surrey.ac.uk/Deponency/Deponency\\_home.htm](http://www.smg.surrey.ac.uk/Deponency/Deponency_home.htm)

- (82) Mennään elokuvaan!  
go.PASS cinema.ILL  
'Let's go to the cinema' (Buchholz 2005:104)

However, the difference between Finnish and the languages I already discussed is that this mismatch between active and passive voice is not lexically triggered. In Swedish, for example, only a few verbs are characterized by this mismatch. In Finnish, however, all verbs can be used in the same manner as *sanoa* (say).

I do not want to claim that this kind of mismatch can be elegantly analysed with my approach which has been elaborated for lexically triggered cases of deponency. Nevertheless, it is worth while pointing out that also this mismatch is found in a language with a synthetic passive formation and thus supports hypothesis (65)

It seems that the hypothesis in (65) makes the correct predictions for most of the languages. I have shown that the languages in which cases of deponency concerning active and passive voice are attested make use of a synthetic passive. This is not a trivial finding. One could easily imagine deponent verbs in a language like English. However such cases are not attested, neither in English nor in any other language with a periphrastic passive that I know of. Apparently there is something that precludes verbs to become deponent in these languages.

My approach was able to derive that by assuming that languages with a periphrastic passive use an additional functional projection PassP. But as I have shown, such a functional projection is incompatible with the concept of deponency as lexical specification. Thus, deponent verbs can only appear in languages with synthetic passive.



## 6 Non-canonical Cases of Deponency

The last section dealt with some empirical consequences that my approach to mismatch verbs entails. In the course of this discussion I briefly investigated cases of deponency in a number of different languages. In all of these languages the mismatch between morphology and the syntax (and semantics) involved the distinction between active and passive voice. In this section I will try to transfer my approach to non-canonical cases of deponency.

### 6.1 Reflexive Verbs in Sora

A different kind of voice mismatch is found in Sora, an Austro-Asiatic Munda language. In this language the mismatch does not involve the distinction between active and passive but between reflexive and non-reflexive voice. Sora verbs can be reflexivized by adding an *n*-suffix right after the tense marker *t(e)*. The contrast between reflexive and non-reflexive forms is shown in table (83):

(83) Distinction between non-reflexive and reflexive in Sora:

	nonreflexive 'shave so.'	reflexive 'shave oneself'
kuŋ		
1.SG	kuŋ-t-ay	kuŋ-te-n-ay
2.SG	kuŋ-t-ε	kuŋ-te-n
3.SG	kuŋ-t-ε	kuŋ-te-n
1.PL.INCL	kuŋ-tə-be	kuŋ-te-n-be
1.PL.EXCL	ə-kuŋ-t-ay	ə-kuŋ-te-n-ay
2.PL.EXCL	ə-kuŋ-t-ε	ə-kuŋ-te-n
3.PL	kuŋ-t-ε-ji	kuŋ-te-n-ji

This distinction is productive and usually fully predictable. However, there are certain verbs which obligatorily use the *n*-suffix but do not entail a reflexive meaning. Such a verb is *ber* (speak). It cannot be used without the reflexive suffix *n*. Verbs that behave similarly are for example *der* (believe), *ñá* (walk) or *daku* (stay)

- (84) \*ber-t-ay  
ber-te-n-ay (=‘I speak’) (Stump (2007:92))

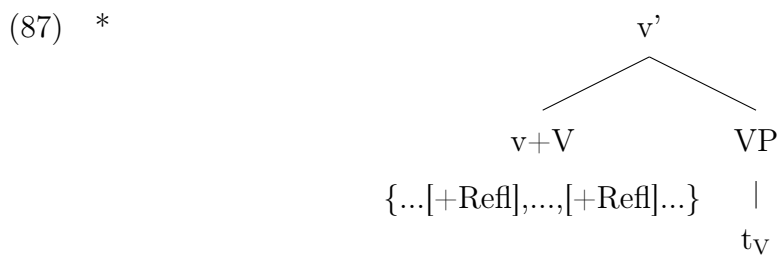
As far as I can see, the analysis I presented could be transferred to the Sora case. One might assume that some verbs are specified with a [+Refl]-feature in the lexicon. In doing so, one could derive the fact that verbs like *ber* (speak) cannot appear without the reflexivity suffix. After a verb has moved to its v-head, it is morphologically realised by a reflexive form even though its interpretation is not reflexive at all.

- (85)
- $$\begin{array}{ccc}
 & v' & \\
 & / \quad \backslash & \\
 v+V & & VP \\
 \{ \dots [+Refl] \dots \} & & | \\
 & & t_V
 \end{array}$$

But if some Sora verbs are lexically specified for [+Refl], one could assume that a [-Refl]-specification would also be possible. Hence, we would expect verbs in Sora which are restricted to non-reflexive voice. And that is exactly what we find in Sora. Verbs like *gu* (call) never appear with the reflexive *n*-suffix (86):

- (86) gu-t-ay (=‘I call’)  
\*gu-te-n-ay (Stump (2004:229-230))

Unfortunately the data are not explicit about whether the deponent verbs in Sora are defective, i.e. whether the reflexive meaning of *bertenay* is still available. Stump (2005) and Biligiri (1965) repeatedly translate verbs of what they call the +N-type with a non-reflexive meaning but whether a reflexive meaning is still possible remains unanswered. If a reflexive meaning was possible, then this would be a "regular" syncretism between the reflexive and the non-reflexive paradigms. If this meaning is impossible, then this would be a case of defectiveness just like the Latin type. In the latter case, one could invoke the Identity Avoidance Principle which, in this case, would penalize a situation in which the V-head and the v-head contain a [+refl]-feature. This is exemplified in (87).



Nevertheless, to fully transfer the analysis of the previous sections to the case of Sora, one would probably need to investigate the exact syntax and semantics of reflexivity. Especially the syntax is of interest here. If one found that the structural reflexivity feature is not part of the v-head but of another functional projection, for example, this would probably have major consequences for the theory, just as it was the case with the PassP in the previous section. But since the Sora case is unclear with regard to the question of defectiveness anyway, a discussion about these consequences would end up in mere speculation.

## 6.2 Causative Verbs in Tunica

Tunica is an extinct isolate language which had been spoken in the Central and Lower Mississippi Valley until the 1940s. Tunica has a complex system of voice distinction, especially concerning the use of causative voice. Haas (1940) explicitly notes that causativization in Tunica is fully productive and applicable to all (non-causativized) verbs. She gives several examples for causativization from intransitive verbs. Even impersonal verbs can be causativized.

(88)	Verb stem - Non-causative meaning - Causative meaning		
	woru	learn	teach
	pihu	hide (oneself)	hide (transitive)
	hiyu	awaken	wake sb.
	wi'	sound (impersonal)	listen, hear (transitive)

Causative verbs are formed with a periphrastic<sup>13</sup> verb form. They consist of the verb stem and the causative auxiliary which can also be marked for a lot of other categories like habitual, semelfactive, conditional. The following examples illustrate the construction. The object agreement of the verb stem is marked by the initial prefix, followed by the verb stem. The causative auxiliary is marked for semelfactiveness (which is not glossed in the example) and furthermore realizes the  $\phi$ -features of its subject.

(89)	ti-hi'ya-hk- <sup>?</sup> ata-'nì
	3.FEM-awake-HAB-CAUS.3.FEM-QUOT
	'She wakes her up' (literally: 'She causes her to wake up')

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<sup>13</sup>In this case, the term "periphrastic" is used in the original sense of the word, i.e. it refers to a verb form which consists of two verb stems regardless of whether these two stems are part of the same head.

- (90) tih-ki<sup>?</sup>pa-hk-<sup>?</sup>uta-nì  
 3.FEM-marry-HAB-CAUS.3.MASK-QUOT  
 'He is marrying her off' (literally: 'He causes her to marry') (Haas  
 1940:52)

But Haas also remarks that certain verbs are inherently causative and cannot appear without the causative morpheme. And since some of these inherently causativized verbs appear to be intransitive, there seems to be an apparent mismatch between form and function because a causativized verb has at least two arguments. The Surrey Deponency Database<sup>14</sup> cites the following example to illustrate that mismatch. The absence of a initial object clitic illustrates that the clause is intransitive. Nevertheless, it contains the causative suffix /-n/<sup>15</sup>

- (91) wera-n-<sup>?</sup>u-<sup>?</sup>u-wa-ani  
 hunt-CAUS-REP-3SGM-go-QUOT  
 'He used to go hunting'

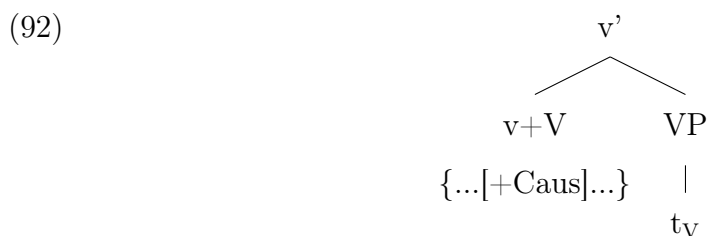
Haas explicitly notes that forms which already contain a causative suffix or causative auxiliary cannot be causativized once more. Thus verbs like *wera* (hunt) must appear with causative morphology but cannot appear with causative syntax and semantics. This is the same situation we found with Latin deponents.

But before I propose an analysis for this case of deponency in Tunica, I will have to devote a brief excursus at how causative constructions are syntactically analysed. Basically, there are two different possibilities to analyse the syntax of causatives in Tunica. The first possibility is to treat causatives as a

<sup>14</sup><http://www.smg.surrey.ac.uk/deponency/Examples/Tunica.htm>

<sup>15</sup>In this case, not the causative auxiliary is used with a semelfactive affix but a repetitive semelfactive auxiliary with a causative suffix. The reason for this is to be found in the complex verbal system of Tunica and would lead to far from the main point. Nevertheless, (91) is undoubtedly an intransitive form which contains a causative suffix.

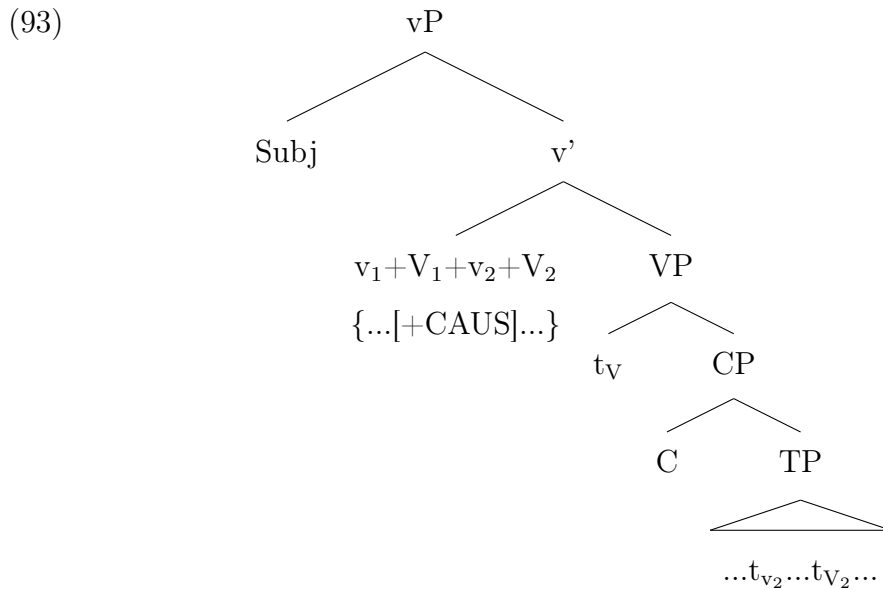
monoclausal light verb construction. In such a scenario, the causative auxiliary occupies the v-head and since the V-head undergoes head movement to v, they are realised as one complex verb form. An analysis along these lines has for example been proposed by Ahn (2001) and Yeo (2005) for morphological causatives in Korean. If one adheres to such an analysis, it becomes clear that the situation in Tunica closely resembles the case of reflexive deponency in Sora. Take a look at the tree in (92). It is practically identical to the tree about Sora in (85). The only difference is that in Tunica the relevant feature is not a [ $\pm$ Refl] but [ $\pm$ Caus].



The tree in (92) is the result of two different derivations. Either it is the combination an inherently causative verb with a non-causative v-head or the combination of an unspecified verb with a causative v-head. A verb like *wεra* (hunt) in (91) is inherently specified for [+Caus]. When it has moved to the v-head, their feature sets are fused and the whole v-V complex is expressed by a causative morpheme although the interpretation is not causative at all. A verb like *ki<sup>2</sup>pa* (marry) in (90) is not specified for causativity. Thus, it may be combined with a causative as well as with a non-causative v-head each with their respective interpretation. If, however, a verb like *wεra* (hunt) is combined with a causative v-head, then the Identity Avoidance Principle will penalize that we find two [+CAUS]-features within the same feature set. Hence, inherently causative verbs cannot be causativized.

The second possible analysis of the causative construction follows the lines Baker (1988). One might assume that the morphological causatives in Tunica

are created through an incorporation mechanism that forces the verb of the embedded clause to undergo head movement to the verb of the matrix clause. If one prescind from problematic details such as the crossing of several phase boundaries (or barriers in Baker's approach), a verb form like (89) or (90) could thus be analysed as follows:



The verb of the embedded clause has undergone head movement to its v-head and later the complex consisting of  $v_2$  and  $V_2$  moved to the verb of the matrix clause. Afterwards the whole  $V_1+v_2+V_2$ -complex has moved to the v-head of the matrix clause which contains a [+CAUS]-feature. However, it is important that at most one of the four elements within this complex may contain a [+CAUS]-feature. Otherwise the Identity Avoidance Principle would be violated. Thus, one can easily derive that a verb which is inherently specified for [+CAUS] must not be combined with a causative v-head. Similarly, an embedded causative v-head must not be causativized once more by another causative v-head in the matrix clause.

The question is whether a sentence like (91) with an intransitive verb should be analysed as inherently biclausal. It appears quite uneconomical that a language should maintain verbs that obligatorily require a biclausal structure although their semantics (hunt) does not require biclausality at all. On the other hand, it is not economical either that a language maintains a whole verb class which uses passive inflection in active contexts for no apparent reason. Arguments based on economy are to be viewed critically in a discussion about cases of deponency. Thus, if one subscribes to the idea that some verbs in Tunica require a biclausal structure, one could easily replicate my approach to deponency within this theory.

The data about causativization in Tunica are not sufficient to decide whether all causative clauses are based on a biclausal structure. If there were examples in which we find cases of causativization without incorporation or in which we find that the causative auxiliary may be used as a main verb, this would be a viable argument for a theory that follows Baker (1988). Nevertheless I have shown that my approach to deponency can be incorporated into both analyses of causatives, the light verb analysis as well as the incorporation analysis.



### 6.3 Plurality Mismatches in Tsez

The cases of deponency which I discussed in the previous sections were to a certain extent quite similar. In all cases the voice morphology on the verb seemed to be at odds with the syntactic and semantic context in which the verb appeared. The following case, however, does not involve verbal features at all. In Tsez, a North Caucasian language, two nouns exhibit a mismatch concerning their number features. To illustrate this mismatch, let us have a look at the regular system of agreement in Tsez. Simple sentences like (94)<sup>16</sup> show agreement concerning number and noun class features between the subject and the verb. Furthermore, also the demonstrative agrees with the noun in number and class. But for the purpose of this work only the number features are of interest.

- (94) a. howda      uži                      Ø-ik'i-s  
          this.I.ABS boy(I).SG.ABS I.SG-go-WIT.PAST  
          'This boy went.'
- b. howziri      uži-bi                      b-ik'i-s  
          these.I.ABS boy(I).PL.ABS I.PL-go-WIT.PAST  
          'These boys went.'

However, there are two nouns which do not follow this regular pattern, namely *xexbi* (child) and *yanabi* (mother). These nouns always exhibit plural morphology, regardless of whether they appear in a singular or a plural context. The number morphology on the noun is always plural as indicated by the /-bi/-suffix but as the agreement morphology on the verb and the determiner indicate, the syntax and semantics are flexible concerning number agreement. This is illustrated by the examples in (95). However the examples (95) are

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<sup>16</sup>All Tsez examples are taken from the Surrey Database on Deponency:  
<http://www.smg.surrey.ac.uk/deponency/Examples/Tsez.htm>

complicated by the fact that the noun *xexbi* changes its noun class, depending on its number. In the singular, it belongs to class III and in the plural it belongs to class I<sup>17</sup>

- (95) a. howdu                      xex-bi                      b-ik'i-s  
           this.II/III/IV.ABS child(III).PL.ABS III.SG-go-WIT.PAST  
           'This child went.'
- b. howziri                  xex-bi                      b-ik'i-s  
           these.I.ABS child(I).PL.ABS I.PL-go-WIT.PAST  
           'These children went.'

As one can see, the noun *xexbi* is marked for plural in both cases but the determiner and the verbal agreement disambiguate the sentences. In (95a), the subject is semantically singular and in (95b) is semantically plural. This is clearly a case of deponency but in contrast to the canonical case in Latin, the number mismatch in Tsez does not entail defectivity. Even though the plural form is used for singular contexts, plural contexts are still available.

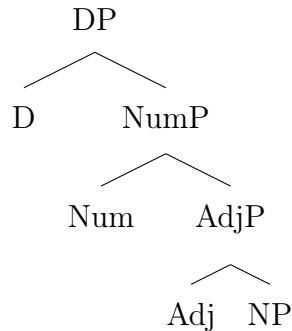
So, let us have a look at how the number mismatch with these Tsez noun phrases can be derived. The word order of a noun phrase in Tsez is the same as in English: Determiner-Numeral-Adjective-Noun. Thus, according to Cinque (2005) and Abels & Neeleman (2006) the structure of the DP looks like (96):

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<sup>17</sup>This change of noun class is the reason for the fact that the verbal agreement in (95a) and (95b) is identical. As the following table illustrates, the agreement marker for a class III singular is identical to the agreement marker of class I plural:

	Singular	Plural
Class I	∅-	b-
Class II	y-	r-
Class III	b-	
Class I	r-	

(96)



In both analyses, this word order can be base-generated and goes without movement steps. Thus, the distribution of  $\phi$ -features within the DP must be achieved via Agree. As one can see in the examples above, the D-head, for example, inflects for number. It receives its number features from the Num-head via Agree. I do not want to go into detail about this kind of agree relation because, as far as I can see, any system which assures the distribution of features among the elements within the DP will do the trick.

So, how do we transfer the analysis for voice mismatch to the system of number mismatch in Tsez. The first step is probably, that by assumption the nouns *xexbi* (child) and *yanabi* (mother) are inherently specified for plurality. This is, of course, achieved by a lexical specification:

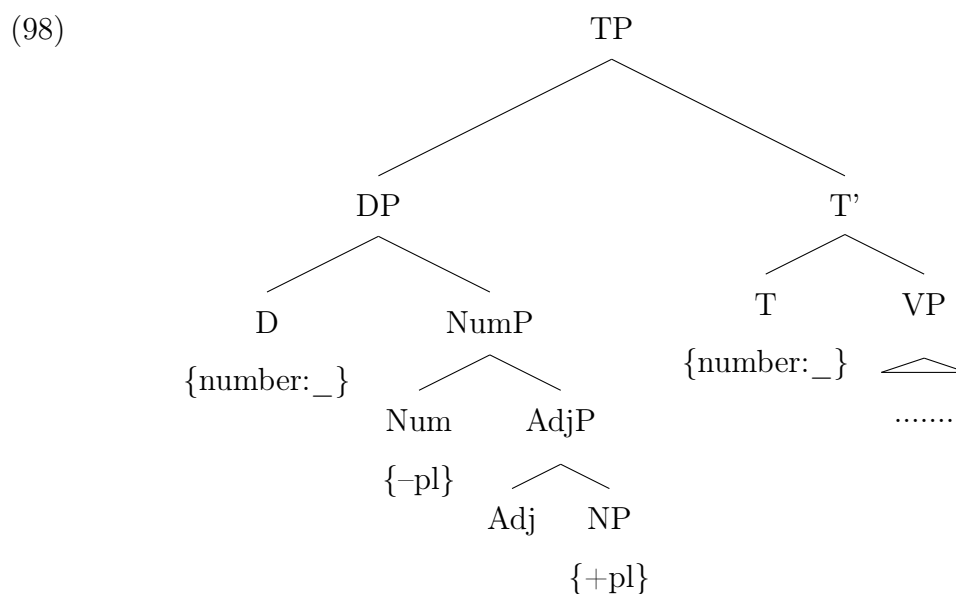
- (97) 'xexbi' : N{...[+pl]...}  
'yanabi' : N{...[+pl]...}

The same number features can be found on the Num-Head. Hence, when the D-head searches for a value for its number feature, it necessarily finds the feature of the Num-head because it is much closer than a possible inherent feature on the N-head. The same applies to a potential probe outside of the DP, the T-head for example. Whenever any probe searches for number features in the DP, it will always find the number features of the Num-Head<sup>18</sup>.

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<sup>18</sup>Or possibly the D-head if one allows transitive agree relations

But nevertheless the number features on the N-head are still present because, apparently they are morphologically realised. Take a look at (98) which illustrates the situation with a sentence like (95a). The NP *xexbi* contains a [+pl] feature, its Num-Head however contains a [-pl] feature.



The D-head and the T-head both have unvalued number features. Thus, both search for the closest valued number feature and both find the number feature of the functional projection, namely the NumP. The result is that both, the determiner as well as the verb show singular agreement. They both agree with the NumP, not with the noun, at least not concerning number. Since the D-head and the T-head also inflect for gender, they will have to search for gender features as well. In this case, of course, they find the N-head because the Num-Head does not intervene because it contains no gender features. The resulting vocabulary items are the following:

- (99)
- |                         |   |          |
|-------------------------|---|----------|
| D{-pl],[class:III]}     | ⇔ | /howdu/  |
| T+v+V{-pl],[class:III]} | ⇔ | /bik'is/ |
| N{+pl],[class:III]}     | ⇔ | /xexbi/  |

The analysis is pretty straightforward and it nicely derives the number mismatch within the Tsez noun phrase. Furthermore it also derives why we find no defectivity with Tsez nouns. As I have shown, nouns like *xexbi* can also appear in a plural context. In the previous cases like Tunica or Latin defectivity was enforced by the Identity Avoidance Principle  $*\{\dots,[X],\dots,[X],\dots\}$ . But since there is no instance of head movement within the formation of the Tsez noun phrase, there is no fusion of feature sets. In Latin, for example, the V-head undergoes head movement to *v* and their feature sets are fused. However, there is no head movement of N to Num here. Hence, a situation in which the Identity Avoidance Principle could interfere cannot emerge.

In this section I have sketched how my analysis of Latin deponent verbs can be transferred to other cases of mismatch. The first two examples were quite similar to the Latin case as they both involved a mismatch between the voice features of a verbal head. In the case of Sora the mismatch involved the  $\pm$ reflexive distinction whereas in Tunica the mismatch involved the distinction between causatives and non-causatives. The third and last case that I illustrated was a mismatch concerning number features within the DP in Tsez.

In all of these cases, the lexical specification for a special grammatical category came into conflict with the features of a functional head. In all of these cases the conflict was resolved, either because one of the conflicting features prevailed over the other or because the conflicting features remained separate on two different heads.

## 7 Problems and Work to be Done

In the previous sections I have sketched how the vast majority of deponent verbs can be elegantly analysed. However there are two subclasses of deponents which deviate from the usual behaviour of deponent verbs. One of them is the class of semi-deponent verbs which I have already discussed. The examples in (28), repeated in (100) illustrate the behaviour of the semideponent verb *gaudere* (rejoice):

- (100) a. Hercules cum            haec audi-re-t,            magnopere  
Hercules at.that.time that hear-IPFV-3SG, greatly  
gavisus                        est.  
rejoice-PASS.PTCP be.3SG  
'When Hercules had heard that, he greatly rejoiced'
- b. Duo-bus litiga-nt-ibus        tertius gaude-t  
Two-ABL argue-PTCP-ABL third rejoice-ACT.3SG  
'While two men argue, the third one rejoices'

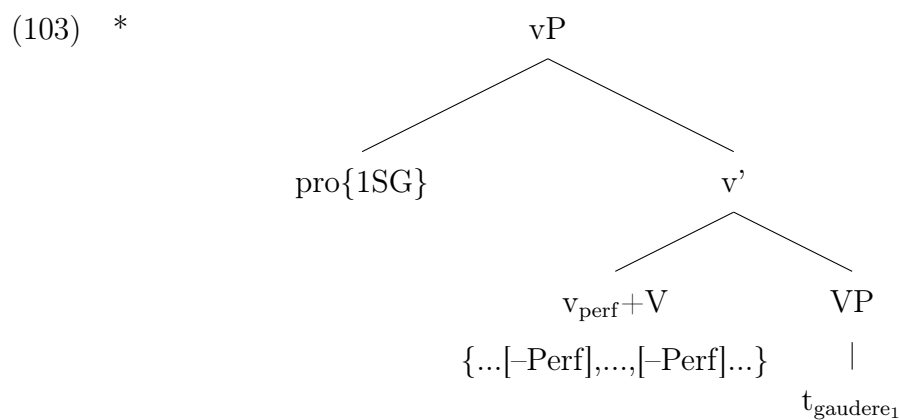
*Gaudere* behaves like a regular non-deponent verb in the non-perfect aspect and it behaves like a deponent verb in perfect aspect. This idiosyncratic behaviour is hard to derive for any syntactical theory of deponency. The one presented in this work is not an exception to that rule. The only possibility I see is to stipulate two different lexemes which are restricted to a certain aspect. The question is how this aspectual restriction is implemented. One possibility is an external stipulation that the non-deponent version of *gaudere* cannot appear in perfect aspect and the deponent version cannot appear in the non-perfect aspect.

- (101)        *gaudere*<sub>1</sub>: {[-Active], ... , [\*cannot be used in the non-perfect\*]}  
              *gaudere*<sub>2</sub>: {[\*cannot be used in the perfect\*]}

This, of course, is highly stipulative and undesirable for obvious reasons. Another possibility is trying to make the Identity Avoidance Principle do the work. If one assumed that at least some of the aspectual features are located on the v-head, it seems likely that the lexical restrictions on the V-head interact with the aspectual features of the v-head just as was the case with voice features. Thus, one might assume the following lexical entries for *gaudere*:

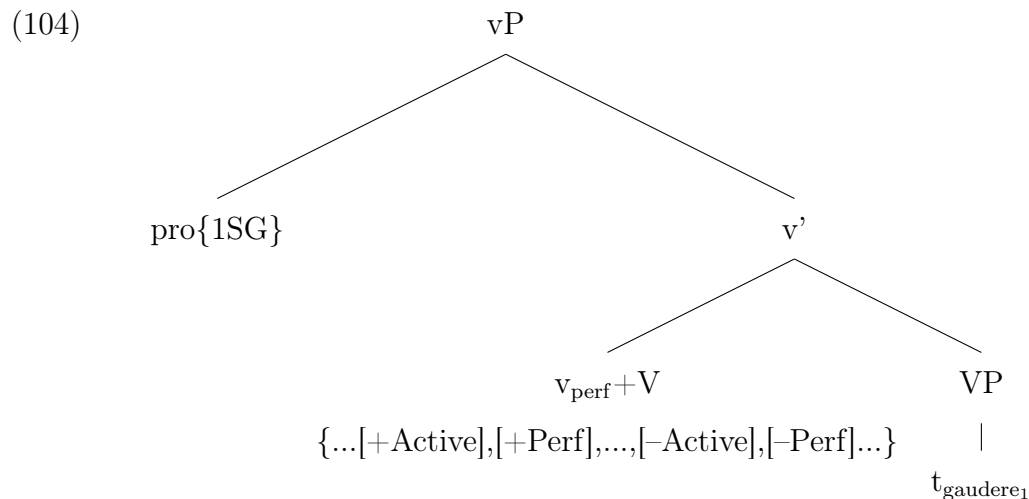
- (102)      *gaudere*<sub>1</sub>: {[-Active], [-Perf]}  
               *gaudere*<sub>2</sub>: { [+Perf]}

Thus, the verb *gaudere*<sub>1</sub> which behaves like a deponent ([-Act]) verb is restricted to perfective contexts because in a non-perfective aspect, we would find two instances of the same feature [-Perf] within the feature set of the v-V-complex. This is illustrated by tree in (103) in which *gaudere*<sub>1</sub> was combined with a perfective v-head. The result is ungrammatical.



The verb *gaudere*<sub>2</sub> which is unspecified with regard to voice and thus behaves like a regular non-deponent verb contains the feature [+Perf]. Hence, it may not be combined with a perfective v-head, otherwise the Identity Avoidance Principle would be violated in the same manner as in (103). These lexical specifications would yield the correct restrictions as to which version of the verb *gaudere* can be combined with which v-head. However, there is one point that

remains unclear. To illustrate that point, let us have a look at the tree in (104) in which  $\text{gaudere}_1$  was combined with an active and perfective v-head. The result is grammatical because no feature is found twice within the same feature set.



When it comes to morphological realisation of the voice features, we have seen that the [-Active] feature of the V-head prevails and thus the verb is morphologically passive. However, if we go back to example (100b), we see that when it comes to the morphological realisation of the aspect features, it seems that the feature [+Perf] prevails because the clause is still marked for perfective aspect. And since the [+Perf]-feature came from the higher v-head, we must make another stipulation:

- (105) In case of conflicting aspectual features on the same head those features which came from the v-head prevail.

This is, of course, not very elegant and stands in stark contrast to the rule we established for voice features. One might speculate what distinguishes voice features from aspectual features so that different methods are applied but as far as I can see, there is no intuitive explanation.



There is another small subclass of deponent verbs which is problematic for my approach. As I mentioned in the first section about the properties of deponent verbs, some of them do not involve defectivity, i.e. some deponent verbs can be passivized. This is illustrated in example (9), repeated in example (9) for the deponent verb *hortari* (to urge).

- (106) Ab amicis horta-re-tur  
by friends urge-IPFV.SUBJ-PASS.3SG  
'He was urged by friends' (subjunctive) (Embick 2000)

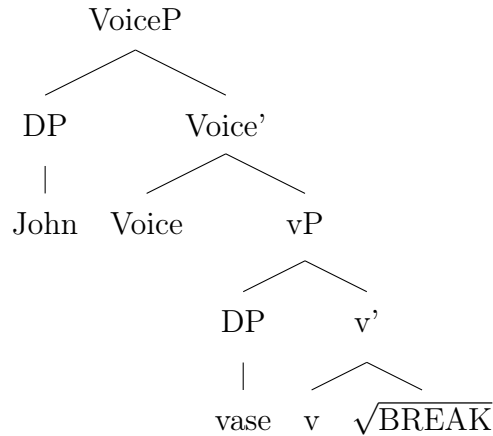
The same problem, of course, also arises on the other side of the coin. Some unaccusative verbs like *break* may appear in a syntactically active context, in so-called causative alternations like in 'John broke the vase'.

In my approach, the defectivity of mismatch verbs was always derived by the Identity Avoidance Principle which ruled out special combinations of v-heads and verbs. Whenever both of them contained the same feature  $[\pm\text{Active}]$ , the derivation crashed when the V-head underwent head movement to v. The question is now, how we can derive that some verbs like *hortari* or *break* seem to avoid the Identity Avoidance Principle.

One possibility would be to stipulate that verbs like *hortari* or *break* do not contain the exact feature  $[\pm\text{Active}]$  but rather a similar feature  $[\pm\text{Active}']$ .  $[\pm\text{Active}']$  and  $[\pm\text{Active}]$  are not completely identical so that the Identity Avoidance Principle is not violated but they are similar enough to yield the same morphological realisation. However, I admit that this is another stipulation.

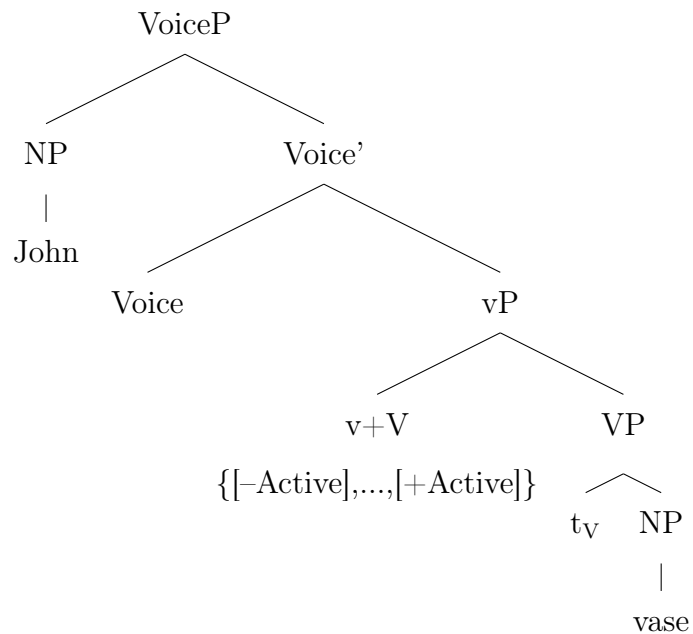
Another possibility arises when we look at how causative alternations are analysed in the literature. Alexiadou et al. (2006) argued in detail that the structure of all transitivized unaccusatives should be as in (107):

(107)



If we adopt the idea that the agent of a transitivized unaccusative verb is not located in the specifier of the vP but rather in the specifier of an additional functional projection called VoiceP, the problem is solved. In such a case, the unaccusative verb which contains a [+Active] feature is merged with a passive v-head which contains a [-Active] feature. Thus, the derivation does not crash because the features on the v-V-complex are distinct. The active interpretation is assured by the Voice head.

(108)



However, as far as I can see, it is not clear whether this solution can be transferred to the case of non-defective deponents like *hortari*.

## 8 Conclusion

This paper pursued two interrelated goals. First, I tried to show that the mismatch we find with deponent verbs in Latin is not some marginal exotic phenomenon. In particular, I argued that the very same kind of mismatch is found with unaccusative verbs. The argument was based on an in-depth analysis of the behaviour of both verb classes in different modules of the grammar. I have shown that unaccusative verbs and deponent verbs behave completely oppositional in all modules of the grammar. Whenever one of them behaved like a regular active verb in a certain module, the other behaved like a regular passive verb. Even the exceptions to the basic rules of deponents and unaccusatives revealed the same mirror image. This behaviour suggests that, on an abstract level of analysis, both verb classes seem to be part of the same phenomenon. I have tried to back up that finding by disputing some of the apparent arguments against a unification of unaccusatives and deponents. As a result of this whole discussion I stated two versions of what I called the 'Mirror Image Hypothesis' which explicitly demands an equal treatment of these two verb classes.

The second major goal of this work was to establish a formal analysis for deponent verbs. As a consequence of the discussion in the first part of this paper, this analysis was designed to cover the morphosyntactic behaviour of both verb classes, deponents and unaccusatives. Since unaccusatives have always been well integrated into syntactic theories, it seemed likely to transfer the common analysis of unaccusatives to deponent verbs. After delineating

how the mismatch found with unaccusatives is derived within modern syntactic frameworks, I tried to replicate it for the class of deponent verbs. However, this approach was rejected for various reasons.

The second approach still had the aim to equally derive the behaviour of both mismatch verbs and it did so by postulating four different assumptions all of which have already been proposed in the literature. First, it is assumed that verbs can be lexically specified for voice features. Second, it is assumed that the same voice features appear on the v-head on which the voice features are morphologically realised. The third assumption is that ungrammatical combinations of verbs and v-heads (i.e. cases of defectivity such as the fact that deponent verbs cannot appear in passive syntax) are rejected by an OCP-like Identity Avoidance Principle. And fourth, it is assumed that conflicting feature specifications are always resolved in favor of the inherent feature of the lexical head. These four assumptions were sufficient to derive the idiosyncratic morphosyntactic behaviour of deponents as well as unaccusatives. And, as I have shown, it can also easily be adapted to languages in which we find only one side of the coin, unaccusativity or deponency.

In comparison to other theories about deponency, the theory I presented in this paper has several advantages. The first advantage for which I extensively argued is the equal treatment of deponents and unaccusatives. But even if one does not share my opinion that these both verb types are part of the same phenomenon, my theory of deponency would still be applicable. In the section about languages without deponency I have shown how my theory works in languages which exhibit only one side of the coin. Thus, even if one does not subscribe to one of the Mirror Image Hypotheses, the theory can still be adapted to derive only cases of deponency. The second advantage is that the four assumptions above are well established in modern syntactic theory. Other

theories of deponency need adhoc constraints or stipulations to derive the empirical facts, especially to derive the property of defectiveness. In my theory, defectiveness is derived elegantly by invoking the notion of a Identity Avoidance Principle, a syntactical version of the well-known Obligatory Contour Principle (OCP). Another advantage is that my approach directly answers the frequently asked question why no Romance language preserved a deponent verb class. I have shown that my theory predicts that deponent verbs can only appear in languages which form their passive synthetically, at least in a part of their verbal paradigm. This prediction is supported by all the languages which I investigated throughout this paper.

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## **Zusammenfassung:**

Die vorliegende Arbeit beschäftigt sich mit dem Phänomen der Deponenz. Hierbei wird hauptsächlich auf den kanonischen Fall der deponenten Verben im Latein eingegangen, im hinteren Teil werden allerdings auch andere Fälle lexikalisch bedingter Deponenz diskutiert. Dabei werden besonders zwei Ziele verfolgt: Erstens soll gezeigt werden, dass sich das Verhalten deponenter Verben nicht so seltsam und exotisch darstellt wie oft gedacht, sondern dass derartige Phänomene in den Sprachen der Welt weit verbreitet sind. Im Speziellen soll argumentiert werden, dass die Verbklasse der unakkusativen Verben eine ganz ähnliche Diskrepanz zwischen Form und Funktion aufweisen, wie die, die deponente Verben definiert. Hierzu wird das Verhalten deponenter, sowie unakkusativer Verben in Semantik, Syntax und Morphologie untersucht und verglichen.

Zweitens soll im Rahmen der Arbeit eine umfassende Analyse erstellt werden, die das eigentümliche morphosyntaktische Verhalten deponenter Lexeme erfassen kann. Die Analyse wird auf der Basis deponenter Verben im Latein entwickelt, erfasst aber, den Erkenntnissen des ersten Teils folgend, auch das morphosyntaktische Verhalten unakkusativer Verben. Darüberhinaus kann die Analyse, wie gegen Ende gezeigt wird, auch auf andere Fälle lexikalisch bedingter Deponenz in anderen Sprachen übertragen und sprachspezifisch angepasst werden.

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