# Approaches to Deponency

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Abstract

The aim of this article is to give an overview of theoretical approaches to (generalized) deponency, i.e., morpho-syntactic phenomena in the world's languages that resemble deponent verbs in Latin (where passive morphology accompanies active syntax) in that a 'wrong form' is apparently used. The paper has three parts. First, the concept of deponency is introduced. Second, a new taxonomy of approaches is developed that extends Stump's (2007) original classification by adding two further groups: (i) form deponency, (ii) property deponency, (iii) spurious morpho-syntactic deponency, and (iv) spurious morphomic deponency. The discussion yields interesting results concerning preferred choices among (i)-(iv) in the literature (with (i) emerging as surprisingly rare and (iv) as surprisingly widespread), and concerning potential correlations between analysis type and overall grammatical framework (there aren't any). In the third part, I sketch a version of what is arguably a fairly straightforward approach to deponency (even though an actual instantiation so far appears to be outstanding): an optimality-theoretic analysis that takes the hypothesis that deponency involves 'wrong forms' literally.

## 1. Introduction

Originally, the notion of deponency was confined to the domain of so-called 'deponent' verbs in Latin (plus their counterparts Greek and Sanskrit). With deponent verbs in Latin, (what looks like) a passive form is used in (what looks like) an active syntactic context. Thus, it seems that these verbs "lay aside" or "get rid of" the standard functions of their morphological marking, and this accounts for the label given to the phenomenon (cf. *deponere* ('depose')). Examples showing inflected forms of a regular verb and a deponent verb in Latin are given in table 1.

|  | regere ('rule') | | hortārī ('urge') | |
|---|---|---|---|---|
|  | ACT | PASS | ACT | PASS |
| PRES IND | regit | regitur | hortātur | — |
| PRES INF | regere | regī | hortārī | — |
| PRF IND | rēxit | rēctus est | hortātus est | — |
| PTCP PERF | — | rēctus | hortātus | — |
| SUPINE | rēctum | — | hortātum | — |
| PART PRES | regēns | — | hortāns | — |

Table 1: *Deponent verbs in Latin*

With the deponent verb *hortārī* ('urge'), it seems that passive forms are used with active syntactic functions; and passive contexts cannot be realized by inflected forms at all. However, closer inspection reveals a few complications: Even with deponent verbs, some forms are taken from the active

marker set (and have an active interpretation): In addition to the supine and the present participle, this holds for the future participle, the future infinitive, and the gerund. In contrast, the gerundive has maintained its passive meaning.

Baerman (2007) defines deponency as "a mismatch between form and function (a). Given that there is a formal morphological opposition (b) between active and passive (c) that is the normal realization of the corresponding functional opposition (d), deponents are a lexically-specified set (e) of verbs whose passive forms function as actives. The normal function is no longer available (f)." However, in view of the fact that many other phenomena share fundamental properties with Latin deponent verbs, the concept has been generalized, and is then not confined to deponent verbs in the classic Indo-European languages anymore. Thus, Baerman (2007) suggests to treat (a) as the central, defining characteristic of deponency; all the other properties are subject to variation. On this more general view (which I will presuppose in what follows, and which is prevalent in much recent work, as evidenced, e.g., by the contributions to Baerman, Corbett, Brown & Hippisley (2007)), deponency covers many more phenomena than just voice-related systematic exceptions with a class of verbs in Latin; essentially, deponency has become a cover term for instances of systematic and legitimate use of what (pre-theoretically, at least) looks like *wrong forms*.

An example illustrating this more general concept of deponency involves noun inflection in Archi (see Kibrik (1991; 2003), Mel'čuk (1999), Corbett (2007), Hippisley (2007), Keine (2011)). Consider the inflectional pattern of regularly inflected nouns in table 2.

|  | *aInš* ('apple') | | *qIin* ('bridge') | | *áʕrum* ('sickle') | |
|---|---|---|---|---|---|---|
|  | SG | PL | SG | PL | SG | PL |
| ABS | aInš-Ø | aInš-um | qIin-Ø | qionn-or | áʕrum-Ø | áʕrum-mul |
| ERG | aInš-li | aInš-um-čaj | qIin-i | qionn-or-čaj | áʕrum-li | áʕrum-mul-čaj |
| GEN | aInš-li-n | aInš-um-če-n | qIin-i-n | qionn-or-če-n | áʕrum-li-n | áʕrum-mul-če-n |
| ... | | | | | | |

Table 2: *Partial paradigm of some regular nouns in Archi*

The system involves *parasitic formation* (see Matthews (1972)), in the sense that oblique case forms are derived on the basis of the ERG form (and not the bare stem); and it gives rise to *extended exponence* (see, again, Matthews (1972); and Müller (2007) for more recent overview and analysis) because the grammatical category of number is realized twice in plural contexts: *li* is an ergative singular exponent; *čaj* is an ergative plural exponent; and *um*, *or*, and *mul* are plural exponents sensitive to noun class. In contrast to the nouns in table 2, the nouns in table 3 are deponents: They use the plural marker *čaj* (or the phonologically conditioned allomorph *ǐaj*) in ergative singular contexts, thereby

creating a mismatch of form and function. Note that there is no defectivity (criterion (f) above): The plural marker is used in singular environments, but it also continues to surface in plural environments.

|  | haʕtəra ('river') SG | PL | c′aj ('female goat') SG | PL |
|---|---|---|---|---|
| ABS | haʕtəra-Ø | haʕtər-mul | c′aj-Ø | c′ohor-Ø |
| ERG | haʕtər-*čaj* | haʕtər-mul-čaj | c′ej-*ťaj* | c′ohor-čaj |
| ... | | | | |

Table 3: *Partial paradigm of deponent nouns with plural markers in singular contexts*

Similarly, the noun *xʕon* ('cow') instantiates deponency (albeit in the opposite direction): As shown in table 4, the ergative singular marker *li* shows up in the (suppletive) form chosen for ergative plural contexts.

|  | xʕon ('cow') SG | PL |
|---|---|---|
| ABS | xʕon-Ø | buc:′i |
| ERG | xʕin-i | buc:′i-*li* |
| ... | | |

Table 4: *Partial paradigm of deponent 'xʕon' with singular markers in plural contexts*

So-called preterite present verbs in German also involve generalized deponency. These (mostly modal) verbs take their present tense exponents from the past tense marker inventory of the class of strong verbs. Again, there is no defectivity: "A past tense form was reinterpreted as a present tense form. Given this reinterpretation, the past paradigm was vacant and had to be newly generated. This generation took place "regularly", i.e., with weak forms" (Eisenberg (2000, 185), my translation). As a result, preterite present verbs in German give rise to *heteroclisis*: Two inflectional patterns are mixed in one paradigm. Cf. table 5, where *sollen* is a deponent verb with Ø inflectional exponents for 1.sg./3.sg.pres contexts (which are the regular exponents for 1.sg./3.sg.past contexts with strong verbs), *wählen* is a regular weak verb that has *e* as a marker for 1.sg./3.sg.pres contexts, and *stehlen* is a regular strong verb that has Ø in 1.sg./3.sg.past contexts.

These few examples of deponency may suffice for now; as shown in Baerman et al. (2007), generalized deponency is fairly widespread in the world's languages. The phenomenon poses a challenge for grammatical theory (and for modelling the morphology/syntax interface in particular) because of (what looks like) the legitimate use of 'wrong forms' in certain (typically lexically restricted; see (e) above) domains of a language's inflectional system. As long as the focus of deponency research was

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|  | sollen ('shall') | | wählen ('choose') | | stehlen ('steal') | |
|---|---|---|---|---|---|---|
|  | PRES | PAST | PRES | PAST | PRES | PAST |
| 1.sg. | soll-Ø | soll-te | wähl-e | wähl-te | stehl-e | stahl-Ø |
| 2.sg. | soll-st | soll-te-st | wähl-st | wähl-te-st | stiehl-st | stahl-st |
| 3.sg. | soll-Ø | soll-te | wähl-t | wähl-te | stiehl-t | stahl-Ø |

Table 5: *Preterite present verbs vs. regular weak and strong verbs*

exclusively on classical deponent verbs with passive exponents in active contexts, one could arguably get away with neglecting the phenomenon from the point of view of grammatical theory, or assigning it to the periphery of grammatical systems. However, with the perspective widened, deponency becomes a severe problem that needs to be addressed. In line with this, recent years have seen an increase in theoretical research on deponency.

## 2.   Approaches to Deponency

### 2.1   A Taxonomy of Analyses

All existing theoretical approaches to deponency belong to one of four groups, which I call *form deponency*, *property deponency* (in both cases following Stump (2007)), *spurious morpho-syntactic deponency*, and *spurious morphomic deponency*.

The first two types of approach acknowledge that there is a mismatch somewhere in the grammar in cases of deponency. In all analyses of this kind it is assumed that the rule (or constraint) that would predict the 'regular', non-deponent outcome *underapplies*: It is not surface-true in cases of deponency even though its context for application is present. There are various possibilities as to how such underapplication may be brought about (see Baković (2011)), among them counter-feeding (the rule applies too early), blocking (there is a more specific rule), and ranking (the rule is violable in favour of a higher-ranked rule). The difference between form deponency and property deponeny is related to the specific domains of grammar where the mismatch is located in deponency configurations. Assuming a realizational approach to inflectional morphology (as in Paradigm Function Morphology (Stump (2001)), A-Morphous Morphology (Anderson (1992)), Distributed Morphology (Halle & Marantz (1993)), and Network Morphology (Brown & Hippisley (2012)), where morphological exponents bearing morpho-syntactic features are matched against the morpho-syntactic features of the syntactic context, there are two kinds of possible feature mismatches giving rise to deponency. First, there can be a feature mismatch between a morphological exponent and the morpho-syntactic property set (i.e., the paradigm cell, or the syntactic context, depending on the morphological theory adopted) that it realizes. This is what Stump (2007) calls *form deponency*. Second, deponency can in principle

also arise when there is no mismatch between the morphological exponent and the morpho-syntactic property set, but between the morpho-syntactic property set and its semantic interpretation; Stump calls this *property deponency*.

In contrast, the remaining two types of approach are based on the assumption that there is in fact no mismatch in cases of deponency. On this view, the deponent forms realize some more abstract property than one would expect at first sight (i.e., not simply voice with Latin deponent verbs, not simply number with Archi deponent nouns, and not simply tense with German preterite present verbs). With *spurious morpho-syntactic deponency*, the morphological exponent faithfully realizes the morpho-syntactic property set, but the features involved are more abstract (though still syntactically grounded) than one might initially have thought. With *spurious morphomic deponency*, the morphological exponent faithfully realizes a more abstract, but this time purely morphological ('morphomic'; Aronoff (1994)) property set that plays no role in syntax; there is a relation between syntactic features and morphomic features, but it is indirect.

In what follows, I address the four types of approach in turn.

## 2.2 Form Deponency

Form deponency would arguably a priori seem to be the most straightforward and obvious approach, and it also corresponds most closely to the intuition behind the very name of the phenomenon: A 'wrong' morphological exponent is used in a certain morpho-syntactically defined context (e.g., 3.sg.pres.ind.active), and the morpho-syntactic information inherently associated with the exponent (e.g., 3.sg.pres.ind.passive) is 'laid aside'. However, so far there are few analyses of this type.

Stump (2006) shows that the inflectional properties of deponent verbs can be accounted for by means of a generalization of rules of referral, which were originally introduced in order to account for syncretism (Zwicky (1985), Corbett & Fraser (1993), Stump (2001)). Such rules state that the exponent for a given morpho-syntactic context (or paradigm cell) must be identical to the exponent independently chosen for some other morpho-syntactic context. The otherwise expected morphological rule of exponence underapplies in this context.

Against this background, Stump (2006) introduces rules of *paradigm linkage* which can be viewed as generalizations of rules of referral, such that the referral does not merely affect individual paradigm cells, but entire paradigmatic areas (i.e., what Corbett (2007) calls 'slabs'), as required for deponency. Simplifying a bit, the form chosen for a given morpho-syntactic context $\sigma$ is normally the most specific form where the morphological exponent realizes a subset of $\sigma$'s features; this is guaranteed by a *universal default rule of paradigm linkage*. However, with deponent verbs, a more specific *Latin rule of paradigm linkage* ensures that the form chosen for a morpho-syntactic context $\sigma$ that contains

the specification [active] is the one chosen for a context that is just like $\sigma$, except that [active] is replaced with [passive].

Two general properties of the analysis can be noted. First, there is a true *mismatch* between exponent and syntactic context with deponent verbs; the morpho-syntactic features associated with the morphological exponent (e.g., [passive]) and the features of the morpho-syntactic context (e.g., [active]) are of the same type.[1] And second, the resolution of this mismatch implies *underapplication* of a standard rule of exponence (which would predict active markers in active contexts), and *blocking* by a more specific rule.

Another form deponency approach is developed in Weisser (2012), based on minimalist syntax and Distributed Morphology. Here the main claim is that deponent verbs and unaccusative verbs emerge as two sides of the same coin, with reversed values for the feature [±active]. Again, a mismatch between the features associated with the exponent and the features of the syntactic context is acknowledged. Normally, active/passive syntax and morphological realization by active/passive exponents are determined uniformly by a single voice feature [±active] on the functional predicate head v (which selects VP; Chomsky (2001)). However, in the case of deponent (or, for that matter, unaccusative) verbs, V itself is inherently specified for voice. The mismatch that invariably results when a deponent V (specified as [–active]) undergoes head movement to v if the latter is specified as [+active] is resolved by a general principle according to which special lexical specifications overwrite functional specifications for the purpose of morphological realization ([+active] on v has ensured active syntax by then). (If both heads are [–active], an OCP-like constraint demanding distinctness of adjacent features is violated; this accounts for defectivity.)

Thus, the two analyses, although fundamentally incompatible concerning basic assumptions about the organization of grammar, are similar in their treatment of deponency: There is a mismatch between form and function whose resolution implies underapplication of the expected rule of exponence.

## 2.3 Property Deponency

In property deponency analyses, deponency also involves a mismatch. However, the mismatch is not between the morphological exponent and the morpho-syntactic function it realizes; by assumption, these two pieces of information are identical. Rather, the mismatch is between the morpho-syntactic specification and its interpretation. Such analyses have been developed by Stump (2007), Embick (2000), and Kiparsky (2005) (to some extent; cf. 2.5 below), on the basis of three very different theories of grammar. The main empirical difference to form deponency approaches is that the 'wrong' feature borne by the morphological exponent remains syntactically active; it is only in the semantic

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component that it becomes inactive.

Stump's (2007) approach tackles middle verbs in Sanskrit. Here, so-called *Ātmanepadin verbs* (Ā-verbs) may take on middle forms in the presence of active (non-middle) interpretation. The middle interpretation – with an *affected subject* – is also possible with these forms, i.e., there is no defectivity. Stump gives two arguments for a property deponency approach; one goes like this: Even in cases of active interpretation, the information [middle] must be syntactically (and not just morphologically) available because it participates in *agreement rules*: An auxiliary verb that co-occurs with the Ā-verb in the periphrastic perfect also must have formal middle marking. Thus, Stump's (2007) proposal is that Ā-verbs are morphologically and syntactically marked [middle], but can, by stipulation, escape a standard [middle] interpretation. As before, the reasoning presupposes that a rule of grammar underapplies (in this case, the rule that assigns the syntactic feature [middle] a middle interpretation), and is blocked by a conflicting requirement.

Another, very different, instance of a property deponency approach is Embick's (2000) analysis of Latin deponent verbs. The analysis is couched in Distributed Morphology, where inflectional items are post-syntactic realizations of functional heads. Embick sketches two analyses, each with two possible sources of the feature [pass]. In the first analysis, [pass] may be present in the syntax, triggering passive morphology (via post-syntactic morphological realization) and passive interpretation, or [pass] may be inserted after syntax, where it still triggers passive morphology (by late insertion of morphological exponents) but comes too late to trigger passive syntax (or interpretation); this latter case underlies deponency. Thus, there is a *counter-feeding* relation between [pass] insertion and interpretation in cases of deponency: With regular passive clauses, [pass] feeds interpretation; with deponent verbs, [pass] cannot feed interpretation (given a Chomskyan Y-model of grammar, where LF branches off before morphological/phonological operations take place). A potential problem with this approach is that morphological deponency realization must be able to feed head movement; this leads to a dilemma if head movement cannot be post-syntactic. This problem is evaded in the second analysis that Embick proposes. On this view, [pass] may show up in two different positions: With regular passivization, it is part of a functional head (triggering passive syntax and intepretation). With deponents, it shows up on a root, where subcatgorization information and interpretation are not affected. Morphological realization of [pass] proceeds uniformly.

In both cases, [pass] of the morpho-syntactic property set is matched with [pass] of a morphological exponent, and standard [pass] interpretation is not possible with deponents. However, in contrast to Stump (2007), agreement for [pass] may also be unexpected in the first proposal (since the feature enters the derivation too late) – unless agreement also is (or can be) a post-syntactic operation (which can then be fed by post-syntactic [pass] insertion); see Bobaljik (2008). (In this case, the boundaries

between form and property deponency may become blurred.)

*2.4 Spurious Morpho-Syntactic Deponency*

In a spurious morpho-syntactic deponency approach, it is assumed that there is in fact no mismatch: The morphological exponent faithfully realizes a morpho-syntactic property set, which receives its standard interpretation. However, the features involved here are assumed to be significantly more abstract than is standardly postulated.

Bobaljik's (2007) analysis of the so-called *spurious antipassive* in Chukchi is a prime example. Chukchi has an ergative argument encoding pattern, and antipassive morphology normally signals a detransitivization of the verb, with absolutive rather than ergative showing up on the external argument. However, in certain marked combinations of external and internal argument (viz., 3.sg>1.sg, 2>1.sg, and 2>1.pl), antipassive morphology is required even though the clause stays transitive (and the external argument bears ergative case). This instantiates a case of deponency; see (1).

(1)    ə-nan    ɣəm    Ø-*ine*-ɬʔu-ɣʔi
        he-ERG I(ABS) 3.SG.SUBJ(INTR)-ANTIPASS-see-3.SG.SUBJ(INTR)
        'He saw me.'

Bobaljik's analysis is based on Distributed Morphology. He assumes that an internal argument DP moves to a position in front of the functional head v in transitive clauses, and that the marked contexts mentioned above block such movement of the object. With regular antipassive formation, the object also stays in situ. Thus, the two relevant contexts – spurious antipassive and antipassive – share a property that sets them apart from standard transitive contexts. Crucially, post-syntactic morphological realization of the functional category v proceeds differently depending on whether object movement has applied or not: A marker *ine* is inserted in v/__Obj contexts, whereas a zero marker Ø is inserted in bare v contexts after object movement. Thus, *ine* is not actually an antipassive marker; it just happens to be the morphological realization for a v as it shows up in antipassive contexts as well as in certain well-defined transitive contexts; and the only thing that the two contexts have in common is that there is no object movement.

A similar analysis has been developed by Keine (2010) for *infinitivus pro participio* (IPP) constructions in German. The phenomenon is illustrated in (2): If a modal verb like *wollen* ('want') is embedded by a perfect auxiliary and embeds an infinitive itself, it shows up as an infinitive, not as a past participle as one would normally expect because the perfect auxiliary regularly takes a past participle in German, not an infinitive. (In addition, the VP headed by the modal verb is extraposed in IPP constructions.) Thus, in contrast to other cases of deponency as they have been addressed above, the IPP effect is syntactically conditioned.

(2)  dass sie das Lied *{singen  *gewollt*  hat} / {hat singen  *wollen*}
      that she the song  sing-INF want-PART has  has sing-INF want-INF

Keine's (2010) analysis is similar to Bobaljik's account of the Chukchi pattern, and it also relies on post-syntactic insertion of exponents into functional heads: The infinitive marker is viewed as the default exponent whereas the past participle exponent is used if a verb is c-commanded by a perfect auxiliary ($v_{perf}$). If verb movement has applied to a position outside of the c-command domain of $v_{perf}$, the context for participle morphology is not present anymore, and the default infinitive exponent is inserted. The movement of the most deeply embedded verb is normally blocked; however, it is forced with certain kinds of embedding verbs.

### 2.5  Spurious Morphomic Deponency

Finally, a fourth way to model deponency can be referred to as spurious morphomic deponency. Here, the central assumption is that, e.g., "active" inflection, "passive" inflection, etc. in Latin are pure *form classes*, without any direct syntactic interpretation; Kiparsky (2005) states that "passive inflection in Latin is a *conjugational* feature." In such an analysis, the relevant features governing morphological exponence are *morphomic* in the sense of Aronoff (1994), where a feature qualifies as morphomic if it is relevant for morphological exponence but irrelevant in other domains of grammar (syntax, phonology, semantics). Other morphomic features are inflection class features (which are by definition irrelevant outside morphology; see Aronoff (1994), and Halle (1992), Oltra Massuet (1999), Alexiadou & Müller (2008), Trommer (2008) for yet more abstract, *decomposed* inflection class features), and purely abstract features as sources of syncretism (Bonami & Boyé (2010)).

Spurious morphomic deponency analyses are surprisingly widespread, and they have been developed against the background of various grammatical theories; inter alia, they include Sadler & Spencer (2001), Kiparsky (2005), Brown (2006), Hippisley (2007), Schulz (2010), and Brown & Hippisley (2012). Individual differences in empirical coverage and theoretical orientation notwithstanding, the basic pattern underlying spurious morphomic deponency analyses is always the same: Instead of the standard grammatical categories (like voice, number, tense, etc.), the features realized by morphological exponents are abstract, morphomic features which may accordingly in principle be referred to as $\alpha$, $\beta$, etc. To ensure that there are prototypical correlations between these morphomic features and the standard morpho-syntactic features encoding grammatical categories, general correspondence rules are postulated. E.g., with respect to Latin verb inflection, one can assume that a morpho-syntactic feature [active] corresponds to a morphomic feature [$\alpha$] (that is the target of morphological realization), and a morpho-syntactic feature [passive] corresponds to a morphomic feature [$\beta$]. With deponent verbs, there must then be a more specific rule (blocking the more general one)

that correlates [active] with [$\beta$], and that ensures that [passive] is not correlated with anything (this ensures defectivity).

Sadler & Spencer (2001) and Hippisley (2007) develop approaches to Latin deponent verbs based on Paradigm Function Morphology and Network Morphology, respectively, that are exactly of this type. Sadler & Spencer (2001) call the morphomic features that co-exist with the standard syntactic voice features ([active] and [passive]) [m-voice:Active] and [m-voice:Passive]; Hippisley (2007) calls them [ACT_FORMS], [PASS_FORMS]. By thus choosing a virtually identical name for features with a different ontological status (morpho-syntactic property vs. morphological form class), there is a certain danger that misunderstandings may arise. Sadler & Spencer (2001) are aware of this potential problem: "We mustn't be fooled by notation here, of course. The [two types of] features [...] are completely different formal objects on such a view (as can be seen by replacing all the feature names with completely arbitrary integers)." Arguably, providing the morphological form classes with arbitrary designations revealing their morphomic status (such as [$\alpha$], [$\beta$]) might therefore be preferable.

This issue does not arise with Schulz (2010), where a comprehensive morphomic analysis of Latin deponent verbs and some related phenomena is developed. Extending Aronoff's (1994) work on *binyanim* in Modern Hebrew, he also argues that voice is not a morphological category in Latin. Rather, there are various form classes ('second-order inflection classes'), and a verb may in principle belong to several such form classes, so that it is able to select more than one marker set; however, deponent transitive verbs belong to fewer form classes than regular transitive verbs.

This may suffice as an overview of spurious morphomic analyses. It should be clear that the approach is not confined to Latin deponent verbs but can readily be (and has indeed been) extended to other instances to deponency.

*2.6 Conclusion*

Deponency remains a challenge for grammatical theory. It would seem to minimally presuppose (a) underapplication of rules (in form deponency and property deponency approaches), or (b) more abstract features (in spurious morpho-syntactic and spurious morphomic deponency approaches); and it requires additional assumptions in all analyses that have been mentioned above. Furthermore, there are specific issues with at least three types of analysis which become particularly relevant when the approach is viewed as a means to account for *all* instances of deponency.

(i) As for *spurious morpho-syntactic deponency* approaches, it is not clear whether an identical syntactic context can plausibly be assumed in all attested cases of deponency. For instance, with respect to deponent verbs in Latin and deponent nouns in Archi, one would have to argue that the active of a deponent verb like *hortārī* ('urge'), and the singular of a deponent noun like *haʕtəra* ('river'),

form a natural class with the passive of regular verbs, and the plural of regular nouns, respectively, such that the syntactically determined contexts for morphological realization can emerge as identical. In contrast to what may be the case with the spurious anti-passive in Chukchi and the IPP in German, this seems unlikely. (ii) There are surprisingly many *spurious morphomic deponency* approaches. These approaches work, but they complicate the syntax/morphology interface because the two levels do not talk about the same kinds of features even though there is obviously a tight interaction; this interaction must then be derived by stipulation in each case. Also, it is not quite clear where to stop (there should be *some* features that are shared by morphology and syntax). (iii) Next, there are *property deponency* approaches. They make radical assumptions necessary; e.g., a feature like [passive] cannot be mentioned by syntactic rules if passive deponency is derived in this way. (iv) Finally, there are *form deponency* approaches. On this view, expected rules of exponence underapply – in both analyses discussed above, they are blocked by a more specific rule yielding deponence.

So where does this leave us? At least three kinds of approaches (to wit, spurious morpho-syntactic deponency, spurious morphomic deponency, and property deponency) give rise to empirical or conceptual problems, and there is not a single approach in which deponency actually comes for free: All four types of analysis require complications or extensions of existing theoretical machinery. In my view, this latter fact strongly argues against a position that one might hold a priori, viz., that it might be possible that different analyses (and analysis types) might *co-exist* in a single grammar, or across grammars: From a conceptual point of view, there should ultimately be only one type of deponency analysis in grammatical theory. The question then is: Which one? Note that this issue cannot be decided by the choice of a particular grammatical framework because, as we have seen, the choice of a specific approach to deponency turns out to be largely orthogonal to the choice of overall grammatical framework (as long as underapplication and/or abstract features are available).[2]

For the time being, I take this question to be open. That said, given that the form deponency approach seems to be able to capture all existing cases of deponency without too many problems, whereas the other three approaches encouter potential problems in various domains, one might plausibly make a case that it is preferable to the alternatives, given current understanding. Then again, such an argument might be weakened if avoiding underapplication/non-surface-truth of grammatical rules in core areas of morphology and syntax is viewed as a guiding principle of theory construction; also, it remains to be seen how evidence can be captured in such an approach which suggests that the 'wrong' feature specification is not just morphologically relevant, but also active in syntax (see 2.3 above).

These latter caveats notwithstanding, it *is* surprising that what would seem to be the most straightforward, classical approach to deponency – viz., form deponency – is so rarely pursued. More specif-

ically, it is worth noting that deponency does not seem to have figured prominently in Optimality Theory, where feature mismatches and underapplication are not viewed as peculiarities but belong to the core of the system, given constraint violability. The final section of this overview tries to fill this gap.[3]

## 3. An Optimality-Theoretic Approach to Deponency

Against the background of Optimality Theory (Prince & Smolensky (2004)), suppose that the (inflectional) morphological component of grammar is *realizational* (Stump (2001)): Morpho-syntactic information provided by the syntactic context shows up on a given stem, and is realized by combining the stem with an inflectional exponent bearing matching features. Suppose furthermore (in contrast to what is assumed in many current theories of morphology) that inflectional exponents are not underspecified with respect to these features. 'Deponency' will then describe competitions where an unfaithful exponent emerges as optimal because the regular exponent is blocked by a higher-ranked constraint.

How can such a situation come about? I suggest that the trigger is a *lexical specification* on a deponent stem – a feature co-occurrence restriction (FCR, Gazdar et al. (1985)) that expresses an incompatibility with the regular inflectional exponent's morpho-syntactic features. The fewer features the FCR applies to, the more paradigm cells will be affected by the deponency; and the more stems the FCR applies to, the more general the deponency pattern will be.

A prediction of the analysis is that unfaithful exponents chosen in cases of deponency are not arbitrary. Rather, the unfaithful exponents can only differ *minimally* from the regularly expected exponent in their morpho-syntactic features.[4] This presupposes a fine-grained system of morpho-syntactic features. Following Jakobson (1962), Bierwisch (1967), and many others, I assume that instantiations of grammatical categories (like ACC as an instantiation of case) are to be decomposed into combinations of more primitive binary features (e.g., ACC may emerge as [–obl(ique),+gov(erned)]) that encode natural classes (e.g., [–obl] capturing NOM and ACC).

### 3.1 Deponent Nouns in Archi

As a first example, consider deponent nouns in Archi (see table 2), and assume that case and number features are decomposed as (partially) shown in (3).

(3)     a. *Case*            b. *Number*

| ABS: | [–obl] | SG: | [–pl] |
|---|---|---|---|
| ERG: | [+obl] | PL: | [+pl] |
| DAT: | [+obl,+gov] | | |

The two general constraints in (4) and (5) bring about deponency.

(4)    MATCH:

The morpho-syntactic features of stem and exponent are identical in the output.

(5)    LEX:

A stem with FCR *[$\alpha$] cannot be combined with an exponent whose input specification includes [$\alpha$] (where $\alpha$ is a – possibly singleton – set of morpho-syntactic features).

LEX demands that a lexically determined incompatibility of some stem with a specific set of morpho-syntactic features is respected.[5] Crucially, LEX refers to the input properties of an exponent, *not* to its output properties: The latter may have been changed in response to MATCH, which requires identity of morpho-syntactic features of the stem and the morpho-syntactic features of the inflectional exponent that realize them. (See Trommer (2006) for this kind of reference to inputs.) Both MATCH and LEX are undominated in the *H(armony)-Eval(utation)* component of the grammar; alternatively, it could be assumed that they belong to the *Gen(erator)* component that creates the competing outputs of a candidate set on the basis of a given input (but see below for a possible qualification). Either way, these constraints cannot be violated in optimal candidates. In cases where LEX precludes a combination of a stem with an exponent that bears identical morpho-syntactic features in the input, the only way to fulfill MATCH is to use another exponent and change its morpho-syntactic features. This incurs a violation of IDENT constraints for exponents, as in (6-ab), which are ranked in this order (in Archi).

(6)    a.    IDENTOBL(IQUE):

[$\pm$obl] of the input must not be changed in the output on an exponent.

       b.    IDENTNUM(BER):

[$\pm$pl] of the input must not be changed in the output on an exponent.

Recall that Archi has deponent nouns like *haʕtəra* (table 3), with plural markers in singular contexts. The present analysis works as shown in tableaux $T_1$, $T_2$. Consider $T_1$ first. By assumption, the deponent stem has been assigned a feature specification [+obl,–pl] in the input, i.e., it shows up in an ergative singular context. However, unlike regular stems, the stem is inherently marked as incompatible with an inflectional exponent bearing this exact specification (as indicated by the FCR *[+obl,–pl] ). When the stem combines with an inflectional exponent EXP, ignoring the FCR associated with the stem is not an option, due to LEX; see output $O_1$, which has the regular ending for this context (*li*, which is specified as [+obl,–pl] in input and output). $O_2$ would at first sight seem to be

the optimal candidate since it uses the intended 'wrong' form (the plural marker *čaj*). However, this is not the case: $O_2$ is blocked by MATCH because it provides a non-matching exponent – the features of the (plural) exponent and the features of the stem are not identical. $O_3$ and $O_4$ respect both LEX and MATCH by changing morpho-syntactic features of an inflectional exponent that initially does not fit. $O_3$ uses the absolutive singular marker Ø and changes its inherent [–obl] feature to [+obl] in the output (indicated by italicization); this violates IDENTOBL. In contrast, $O_4$ takes the ergative plural marker *čaj* and changes its [+pl] feature to [–pl] in the output, which incurs a violation of IDENTNUM. Since IDENTOBL outranks IDENTNUM, $O_4$ is the optimal deponent form.

*Tableau $T_1$: Erg.Sg., unfaithful winner*

| Input: haʕtər-$_{[+obl,-pl]}$ + EXP  $\boxed{*[+obl,–pl]}$ | LEX | MATCH | IDENT OBL | IDENT NUM |
|---|---|---|---|---|
| $O_1$: haʕtər$_{[+obl,-pl]}$-li $\left\{\begin{array}{l} \text{I:} \quad [+obl,-pl] \\ \text{O:} \quad [+obl,-pl] \end{array}\right\}$ | *! | | | |
| $O_2$: haʕtər$_{[+obl,-pl]}$-čaj $\left\{\begin{array}{l} \text{I:} \quad [+obl,+pl] \\ \text{O:} \quad [+obl,+pl] \end{array}\right\}$ | | *! | | |
| $O_3$: haʕtəra$_{[+obl,-pl]}$-Ø $\left\{\begin{array}{l} \text{I:} \quad [-obl,-pl] \\ \text{O:} \quad [+obl,-pl] \end{array}\right\}$ | | | *! | |
| ☞ $O_4$: haʕtər$_{[+obl,-pl]}$-čaj $\left\{\begin{array}{l} \text{I:} \quad [+obl,+pl] \\ \text{O:} \quad [+obl,-pl] \end{array}\right\}$ | | | | * |

In a minimally different competition where *haʕtəra* is specified as plural in the input ([+obl,+pl]), no unfaithful exponent is chosen: The FCR $\boxed{*[+obl,–pl]}$ does not spring into action, and LEX is vacuously fulfilled by choosing the faithful exponent *čaj*.

Consider next the deponent noun *xʕon/buc:ˈi* in Archi (see table 4) which, in contrast to the case just discussed, has singular markers in plural contexts. The outcome of the competition in ergative singular contexts is shown in tableau $T_2$.[6]

$O_1$, which uses the regular ergative plural marker *čaj*, is filtered out by LEX because it contradicts the FCR $\boxed{*[+obl,+pl]}$ that shows up on the stem *xʕon/buc:ˈi* as a lexical property. $O_2$ employs the ergative singular marker *li*, but without changing its number feature (and thereby incurring a faithfulness violation), which fatally violates MATCH. $O_3$ is string-identical to $O_2$ but has changed the number feature of *li* in violation of IDENTNUM; this is the optimal, deponent form. Finally, if the absolutive singular marker shows up, this produces an additional violation of IDENTOBL; $O_4$ is therefore harmonically bounded by $O_3$. Again, given the specific nature of the FCR associated with

*Tableau T₂: Erg.Pl., unfaithful winner*

| Input: buc:ʹi$_{[+obl,+pl]}$ + Exp<br>⬚*[+obl,+pl] | Lex | Match | Ident OBL | Ident NUM |
|---|---|---|---|---|
| O₁: buc:ʹi$_{[+obl,+pl]}$-čaj { I: [+obl,+pl] / O: [+obl,+pl] } | *! | | | |
| O₂: buc:ʹi$_{[+obl,+pl]}$-li { I: [+obl,–pl] / O: [+obl,–pl] } | | *! | | |
| ☞ O₃: buc:ʹi$_{[+obl,+pl]}$-li { I: [+obl,*–pl*] / O: [+obl,*+pl*] } | | | | * |
| O₄: buc:ʹi$_{[+obl,+pl]}$-Ø { I: [*–obl,–pl*] / O: [*+obl,+pl*] } | | | *! | * |

this particular stem, in a minimally different context where the stem is specified as [+obl,–pl] to begin with, LEX and MATCH can be satisfied without violating a faithfulness constraint, and deponency does not arise.

### 3.2    Deponent Nouns in Tsez

Noun deponency also exists in Tsez (see Corbett (2007), Spencer (2007)); compare the (partial) paradigms of a regular noun like *besuro* ('fish') in table 6 and the deponent noun *xexbi* ('child(ren)') in table 7.

| | SG | PL |
|---|---|---|
| ABS | besuro-Ø | besuro-bi |
| GEN 1 | besuro-Ø-s | besuro-za-s |
| INES/ERG | besur-Ø-ā | besuro-z-ā |
| ... | | |

Table 6: *Partial paradigm of regular noun*

Here, *bi* is an absolutive plural exponent, Ø is an absolutive singular exponent, *z(a)* is an oblique plural exponent, and *s* and *ā* are pure oblique case exponents (i.e., there is extended exponence again). In table 7, there are thus plural exponents in all singular contexts of the deponent noun. The analysis rests on a FCR ⬚*[–pl] that blocks regular singular exponents in all cases. The competition underlying the choice of unfaithful exponent in absolutive singular contexts is shown in tableau T₃.

As before, O₁ and O₂ violate LEX and MATCH, respectively. The unfaithful, deponent output O₃ changes the number feature from [+pl] to [–pl] and becomes optimal.

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|  | SG | PL |
|---|---|---|
| ABS | xex-bi | xex-bi |
| GEN 1 | xex-za-s | xex-za-s |
| INES/ERG | xex-z-ā | xex-z-ā |
| ... | | |

Table 7: *Partial paradigm of deponent noun*

*Tableau T$_3$: Abs.Sg., unfaithful winner*

| Input: xex-$_{[-\text{obl},-\text{pl}]}$ + EXP   $\boxed{*[-\text{pl}]}$ | LEX | MATCH | IDENT NUM |
|---|---|---|---|
| O$_1$: xex$_{[-\text{obl},-\text{pl}]}$-Ø $\left\{\begin{array}{l} \text{I:} \quad [-\text{obl},-\text{pl}] \\ \text{O:} \quad [-\text{obl},-\text{pl}] \end{array}\right\}$ | *! | | |
| O$_2$: xex$_{[-\text{obl},-\text{pl}]}$-bi $\left\{\begin{array}{l} \text{I:} \quad [-\text{obl},+\text{pl}] \\ \text{O:} \quad [-\text{obl},+\text{pl}] \end{array}\right\}$ | | *! | |
| ☞ O$_3$: xex$_{[-\text{obl},-\text{pl}]}$-bi $\left\{\begin{array}{l} \text{I:} \quad [-\text{obl},+pl] \\ \text{O:} \quad [-\text{obl},-pl] \end{array}\right\}$ | | | * |

The determination of deponent forms of *xexbi* in other cases proceeds along the same lines, with a minimization of faithfulness violations throughout, such that, e.g., in GEN 1 singular contexts, the genitive plural marker *za* is chosen, rather than the absolutive plural marker *bi*.

### 3.3  Further Instances of Deponency

Other instances of deponency can be analyzed in the same way. For instance, as regards the spurious antipassive in Chukchi (see (1)), recall that in certain marked contexts, antipassive morphology is required even though the clause stays transitive. The exponent *ine* can be viewed as an antipassive marker ([+apass]), and Ø is marked [–apass]. For all the contexts in which spurious antipassive morphology shows up, there must then be a FCR banning the co-occurrence of the $\phi$-features of the arguments (present on the verb for agreement) and [–apass], e.g.: $\boxed{*[3.\text{sg}.>1.\text{sg},-\text{apass}]}$. The faithfulness constraint violated in optimal deponent outputs will then be IDENTAPASS.

The core of an analysis of the German preterite present verbs (see table 5) will rely on a FCR $\boxed{*[-\text{past}]}$ that precludes the use of (weak or strong) present tense forms with this verb class, and makes the use of past tense forms optimal (in minimal violation of IDENTPAST); but ultimately, a bit more needs to be said about the choice of weak past tense endings in past tense contexts.

There are further, yet more intricate patterns of deponency like, e.g., the *polarity* effect in deponency with telic vs. atelic verbs in Tübatulabal (Baerman (2007), Brown (2006)): With these

deponent verbs, a [+telic] stem cannot combine with an exponent that is [+telic] in the input (viz., Ø); a [–telic] stem cannot combine with an exponent that is [–telic] (an abstract morpheme RED triggering reduplication; McCarthy & Prince (1994)). This effect can be treated similarly, with additional complications arising not from the basic mechanism grounded in lexically restricted FCRs triggering unfaithful exponent choice, but rather from the orthogonal factor of polarity. Assuming that variables ranging over feature values are permitted (Chomsky (1965), Chomsky & Halle (1968)), this factor can straightforwardly be accommodated, as in the FCR $\boxed{*[\alpha\text{telic}]}$ accompanying deponent verbs that gives rise to minimal violations of IDENTTEL(ICITIY) in deponent verbs by choosing the value (+ or –) for [telic] that is contrary to the specification associated with the stem.

Finally, deponent verbs in Latin (see table 1) are amenable to the same type of analysis. The choice of passive forms in active contexts follows under present assumptions if (i) deponent verb stems are equipped with the FCR $\boxed{*[-\text{pass}]}$, and (ii) the unfaithful output respecting LEX that has the best constraint profile is one that violates IDENTPASS. Furthermore, semi-deponent verbs in Latin like *gaudēre* ('rejoice'), which have passive forms for active contexts only in the perfect, can be accounted for by assuming a FCR $\boxed{*[-\text{pass},+\text{perf}]}$ for the stems involved.[7] As with most other approaches to deponency (e.g., Embick (2000), Kiparsky (2005), Bobaljik (2007), Hippisley (2007), etc.), defectivity does not yet automatically follow. The empirical evidence shows that defectivity is logically independent of the basic mismatch property. Thus, where it holds, it must be derived by some additional means. This can in principle be handled by *output/output constraints* in an optimality-theoretic approach, such that a uniqueness requirement may (given a high ranking) block certain outputs (e.g., certain passive outputs) if they correspond to (and are string-identical with) other outputs with radically conflicting (but "superior") features (like active outputs), and the null parse wins, yielding ineffability (while permitting syncretism with feature specifications that are more similar).[8]

On a more general note, and returning to the issues discussed at the end of section 2, one may ask whether the comparative ease with which Optimality Theory can capture the data implies that we have now found an approach in which deponency virtually comes for free after all. This is not the case. The optimality-theoretic approach, while easily representing underapplication and the use of 'wrong forms', also requires extensions of existing theoretical machinery, in the form of the FCRs that accompany deponent lexical items.

## 4. Conclusion

To sum up the main results: First, approaches to deponency can be grouped into four classes: (i) form deponency, (ii) property deponency, (iii) spurious morpho-syntactic deponency, and (iv) spurious morphomic deponency. Second, all existing analyses must resort to either underapplication of

rules or fairly abstract features, and in none of the existing analyses does deponency come for free (i.e., additional assumptions are required throughout). Third, form deponency analyses are surprisingly rare (given that they correspond most directly to classic intuitions about what underlies the phenomenon, and given that a case might be made that they encounter the fewest problems with respect to empirical coverage and conceptual justification); and spurious morphomic analyses are surprisingly frequent. Fourth, the choice of analysis type seems to be largely orthogonal to the choice of overall grammatical theory (as long as rule underapplication and/or abstract features are available). Finally, this fourth point notwithstanding, an optimality-theoretic approach would seem to suggest itself as a straightforward implementation of form deponency analyses.

**Short Biography**

Gereon Müller is professor of general lingustics at Leipzig University. He got his Dr. phil. from Tübingen University in 1993, and his Dr. habil. from the same university in 1996, both with theses on theoretical syntax. His main research interest is grammatical theory, with a special focus on syntax and morphology. An underlying assumption that guides his research is that the rules and constraints that are at the heart of syntactic and morphological systems of individual languages are both conceptually simple and highly abstract. He is currently working on a strictly derivational theory of morphology, syntax, and the morphology/syntax interface that adheres to this tenet by reconciling aspects of the minimalist program and optimality theory, and by focussing on different kinds of interaction (both excitatory and inhibitory) of grammatical building blocks (of various types). His major publications are concerned with displacement processes (among them wh-movement, scrambling, verb-second, and remnant movement; cf. the three books *A-Bar Syntax* (Berlin 1995), *Incomplete Category Fronting* (Dordrecht 1998), and *Constraints on Displacement. A Phase-Based Approach* (Amsterdam 2011)); repair phenomena (e.g., in *Elemente der optimalitätstheoretischen Syntax* (Tübingen 2000)); argument encoding types; and restrictions on exponence in inflectional morphology.

## Notes

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[1] More specifically, Stump identifies potential mismatches between a paradigm of form (morphology) and a paradigm of content (relevant for syntax) that play these roles.

[2] Note in particular that spurious morphomic deponency analyses can be advanced in every grammatical framework, independently of whether morphemes are recognized as genuine entities of grammar (in whatever form) or not; Schulz's (2010) morphomic approach to genus verbi in Latin, e.g., is based on Distributed Morphology.

[3] The following section should not be taken to qualify as original research: I make no attempt to argue for the individual analyses sketched there, and they remain fragmentary throughout. My only goal is to show that Optimality Theory might suggest itself as a model for form deponency analyses. See Trommer (2001), Grimshaw (2001), Wunderlich (2004), Xu (2011) for optimality-theoretic approaches to morphology in general.

[4] The approach to deponency sketched below builds on the optimality-theoretic approach to syncretism developed in Müller (2011). In both cases, minimally unfaithful forms become optimal; the main difference is that in the approach to syncretism in Müller (2011), need for an unfaithful winner arises as the consequence of an initial paradigmatic gap (cf. Weisser (2007)), rather than a FCR. See also Spencer (2007) and Corbett (2007) on similarities between syncretism and deponency.

[5] As such, it is an instance of a more general requirement ensuring that lexical specifications are respected. This is also needed, e.g., to guarantee that lexically determined case on a verb overrides general rules of structural case assignment.

[6] No attempt is made here to account for stem selection/suppletion, which is independent of deponency.

[7] As noted by a reviewer, something extra needs to be said about the five contexts mentioned in section 1 where deponent verbs regularly take active forms. Two possibilities suggest themselves. First, given that instantiations of grammatical categories can be decomposed into combinations of more primitive binary features, it may not be futile to look for a common feature related to a certain type of non-finiteness (call it [–X]) that characterizes the present participle, the future participle, the future infinitive, etc., as a natural class; the basic FCR associated with deponent verbs could then accordingly be modified to $\boxed{\text{*[–pass,+X]}}$. Second, one may postulate high-ranked faithfulness constraints for the relevant feature combinations that make violations of LEX optimal after all. Essentially, these would amount to *contextual faithfulness* constraints (see Beckmann (1998) for phonology, Wunderlich (2004) for morphology, and Woolford (2007) for syntax). Thus, an exception to deponency in, say, present participle contexts can result under a ranking MATCH, IDENTPASS(PARTPRES) ≫ LEX ≫ IDENTPASS. Both approaches seem viable; however, the second one is arguably more in the spirit of the optimality-theoretic program.

[8] Another possible reaction to this would be suppletion. Also note that depending on whether a good theory of "superior" features can be developed, apparent exceptions like the case of the Latin gerundive, which receive a passive interpretation even with deponents, may also be given a simple analysis along these lines.

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