An Optimality-Theoretic Approach to Deponency

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Overview

Deponency

(1) A Definition (Baerman (2007)):
Deponency is a mismatch between form and function (1). Given that there is a formal morphological opposition (2) between active and passive (3) that is the normal realization of the corresponding functional opposition (4), deponents are a lexically-specified set (5) of verbs whose passive forms function as actives. The normal function is no longer available (6).

Baerman suggests to treat (1) as the central, defining characteristic of deponency; all the other properties are subject to parametrization. Thus, an extended concept of deponency emerges that is not confined to deponent verbs in Latin (Greek, Sankskrit).

Deponent Verbs in Latin

(2) Regular and deponent verbs

	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	—

- 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 (*hortaturus*) and the gerund (*hortandi*).
- In contrast, the gerundive has maintained its passive meaning: *hortandus* 'someone who must be urged'.

Preterite Present Verbs in German

Preterite present verbs in German are mainly modal verbs, but also, e.g., *wissen* ('know'). They give rise to heteroclisis: Two inflectional patterns are mixed in one paradigm.

(3) Preterite present verbs

sollen ('shall')

	PRES	PAST
1.sg.	soll-Ø	soll-te
2.sg.	soll-st	soll-te-st
3.sg.	soll-Ø	soll-te
1.pl.	soll-en	soll-te-n
2.pl.	soll-t	soll-te-t
3.pl.	soll-en	soll-te-n

(4) Regular weak verbs

wählen ('choose')

	PRES	PAST
1.sg.	*wähl-Ø	wähl-te
2.sg.	wähl-st	wähl-te-st
3.sg.	*wähl-Ø	wähl-te
1.pl.	wähl-en	wähl-te-n
2.pl.	wähl-t	wähl-te-t
3.pl.	wähl-en	wähl-te-n

Preterite present verbs take their present tense exponents from the past tense marker inventory of strong verbs. There is no defectivity. "The present tense forms of modal verbs arose via reinterpretation [...] 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)).

Infinitivus pro Participio (Ersatz infinitive) in German

(5) Infinitivus pro participio (IPP):

a. *dass sie das Lied singen gewollt hat
that she the song sing-INF want-PART has

b. dass sie das Lied hat singen wollen
that she the song has sing-INF want-INF

(6) Absence of IPP:

a. dass sie das gewollt hat
that she that want-PART has

b. *dass sie das hat wollen
that she that has want-INF

Generalization: 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 (which one would normally expect). In addition, the VP headed by the modal verb is extraposed. In contrast to other cases of deponency, the IPP effect is syntactically conditioned.

A Taxonomy of Analyses

(7) a. Form deponency
  (i) There is a featural mismatch between a morphological exponent and morpho-syntactic property set (= paradigm cell, syntactic context, ...) that it realizes.
  (ii) Refs.: Stump (2006)

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d. Spurious morphomic deponency
   (i) There is no mismatch. The morphological exponent faithfully realizes a purely morphological ('morphomic', Aronoff (1994)) property set; there is a relation between syntactic features and morphomic features, but it is indirect.
   (ii) Refs.: Sadler & Spencer (2001), Kiparsky (2005), Brown (2006), Hippisley (2007), Schulz (2010)

Form Deponency

Form deponency would a priori seem to be the most straightforward approach, but there seem to be very few analyses of this type: Sadler & Spencer (2001), Stump (2006). Stump (2006, 286-289)) introduces rules of paradigm linkage which can be viewed as generalizations of rules of referral.

(8) Universal default rule of paradigm linkage:
If $<$L,$\sigma>$ is a content-cell and stem r is stipulated as the root of lexeme L, then $<$L,$\sigma>$ has $<$r,$\sigma>$ as its form-correspondent (i.e. the realization of the content-cell $<$L,$\sigma>$ is that of the form-cell $<$r,$\sigma>$).

(9) (More specific) Latin rule of paradigm linkage:
Where L is a deponent verbal lexeme having r as its root, the content-cell $<$L,$\sigma>$ has $<$r,f$_2(\sigma)>$ as its form-correspondent.

(10) Definition of the Latin property mapping f_2:
If $\sigma = \{$active X$\}$, then $f_2(\sigma) = \{$passive X$\}$; otherwise $f_2(\sigma) = \sigma$.

(11) a. $<$FATĒRĪ ('confess'), {1st singular present nonperfect active indicative}$>$
b. $<$fat, {1st singular present nonperfect passive indicative}$>$
(realization: fateor)

Crucial observation: The features of the exponent and the features of the morpho-syntactic property set are of the same type: $<$L,$\sigma>$, $<$r,f$_2(\sigma)>$.

Property Deponency 1: Stump (2007) on Sanskrit Middles

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., the deponency does not lead to defectivity, and there is no loss of the original function.

Two arguments for property deponency:

1. 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.
2. There is a system-wide syncretism pattern according to which the passive forms of a verb have to be syncretic with the middle forms in a number of contexts, and the deponent Ā-verbs are no exception; thus, the information "middle" must be accessible at the point where this generalization is expressed, which can not be the individual morphological exponent.

Proposal: Ā-verbs are morphologically and syntactically marked [middle], but can, by stipulation, escape a standard [middle] interpretation (viz., an interpretation of the object as affected).

Property Deponency 2: Embick (2000) on Latin Deponents

Background: Distributed Morphology (Halle & Marantz (1993)): Inflectional items are post-syntactic realizations of functional heads.

Two approaches, each with two possible sources of [pass]:

1. [pass] may be present in syntax, triggering passive morphology and interpretation, or 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 → counter-feeding). (Problem: deponency realization feeds head movement, but there is no post-syntactic movement. Solution:)
2. [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, and unless agreement is post-syntactic).

Spurious Morpho-Syntactic Deponency 1

(12) Antipassive in Chukchi:

a. ʔaaček-a kimitʔ-ən ne-nɬʔetet-ən
youth-ERG load-ABS 3.SUBJ(TRANS)-carry-3.SG.OBJ
'(The) young men carried away the load.'

b. ʔaaček-ət Ø-ine-nɬʔetet-ɣʔet kimitʔ-e
youth-PL(ABS) 3.SUBJ(INTR)-AP-carry-3.PL.SUBJ(INTR) load-INSTR
'(The) young men carried away the load.'

(13) Spurious Antipassive in Chukchi:

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

In certain marked combinations of external and internal argument (3.sg>1.sg, 2>1.sg, 2>1.pl), antipassive morphology is required even though the the clause stays transitive (and the external argument bears ergative case).

Spurious Morpho-Syntactic Deponency 2

Bobaljik's (2007a) Analysis:

- Distributed Morphology
- Object movement in transitive clauses, blocked in marked contexts.
- Regular antipassive: object also stays in situ.
- The two relevant contexts (spurious antipassive, antipassive) – share a property that sets them apart from standard transitive contexts.
- Morphological realization of v proceeds differently depending on whether object movement has applied or not: A marker like 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 an antipassive marker; it realizes v 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.
- There is no "spurious antipassive" because the morphological exponent does not mark antipassive in the first place; it marks v/__Obj.

A similar analysis for IPP in German: Keine (2010).

Spurious Morphomic Deponency 1

Assumption:
"Active" inflection, "passive" inflection, etc. in Latin are pure form classes, without any syntactic interpretation as such; the relevant features governing morphological exponence are morphomic.

Other instances of morphomic analysis:

- inflection class features (Aronoff (1994))
- decomposed inflection class features (Alexiadou & Müller (2008), Trommer (2008), Müller (2007))
- decomposition of morpho-syntactic features for syncretism (Jakobson (1962), Bierwisch (1967))
- transcategorial decomposition of morphological features for syncretism (Wiese (1999), Trommer (2005))
- purely morphomic features for syncretism (Bonami & Boyé (2010))

Spurious Morphomic Deponency 2

A predecessor: Kiparsky (2005)
"These data [showing that verbs of any semantic type can be deponents in Latin, and showing that there are semi-deponents] suggest that passive inflection in Latin is a conjugational feature – we'll call it [±Passive] – which can be lexically specified, for verb stems as well as for inflectional endings, or left unspecified" (p. 121).
However: "[+Passive] inflections trigger one or more of the operations on the verb's argument structure [...] forming passives, as well as possibly reflexives, reciprocals, and inchoatives, depending on further, partly idiosyncratic, properties of the verb" (p. 122)
An explicitly morphomic approach: Schulz (2010)
An implicitly morphomic approach: Brown (2006), Hippisley (2007)

(14) Hippisley's (2007) analysis of Latin deponent verbs:

a. VERB
   (i) <syn> == "<mor>"
   (ii) <mor active> == ACT_FORMS:<>
   (iii) <mor passive> == PASS_FORMS:<>

b. DEPONENT
   (i) <> == VERB
   (ii) <mor active> == PASS_FORMS:<> (deponency)
   (iii) <mor active imperfective future infinitive> == VERB
   (iv) <mor passive> == undefined. (defectivity)

ACT_FORMS, PASS_FORMS are morphomic; they define form classes and play no role in syntax. The system works in exactly the same way if one replaces ACT_FORMS, PASS_FORMS with FORM-CLASS 1, FORM-CLASS 2; or, indeed, with PASS_FORMS, ACT_FORMS, respectively.

Conclusion

1. There are some spurious morpho-syntactic deponency approaches. It is not clear whether a different syntactic context can plausibly be assumed in all attested cases of deponency.
2. 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 a tight interaction; this interaction must then be derived by stipulation in each case. Also, it is not quite clear where to stop (there must be features that are shared by morphology and syntax).
3. There are some property deponency approaches. In those cases where Stump argues that they are needed, 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.
4. There are few form deponency approaches, and they all seem to rely on (a generalized concept of) referral.
5. Deponency and syncretism are very similar. There is an optimality-theoretic approach to syncretism that relies on the use of “wrong” (i.e., unfaithful) morphological exponents. This approach can be generalized so as to cover deponency.

Deponency and Syncretism

(15) Typology of morphological mismatches (Spencer (2007)):

a. Syncretism (canonical):
Domain: within, Paradigm coverage: cell, Generality: class, Defectivity: no

b. Deponency (canonical):
Domain: within, Paradgim coverage: slab, Generality: exception/subclass, Defectivity: yes

However: "No logical possibility [with respect to the combination of variables] can be ruled out."

A mixed pattern (Corbett (2007)):
The noun xexbi ('child(ren)') in Tsez is deponent because it has plural inflection in the singular, but it shares properties with both (canonical) syncretism and (canonical) deponency:

- no defectivity of the paradigm (syncretism)
- no loss of the original function (syncretism)
- slabs as relevant domains (deponency)
- generalizes across cells, not lexemes (deponency)

(16) Coding of xexbi in Spencer (2007):
Domain: within, Paradgim coverage: slab, Generality: exception, Defectivity: no

Determiner Inflection in German

(17) Determiner inflection in German

dies 'this'	MASC.SG	NEUTER.SG	FEMININE.SG	PLURAL
NOMINATIVE	er	es	e	e
ACCUSATIVE	en	es	e	e
DATIVE	em	em	er	en
GENITIVE	es	es	er	er

Standard analysis:
Syncretism is derived via (a) feature decomposition yielding natural classes of instantiations of grammatical categories; and (b) underspecification of morphological exponents with respect to these features. Among the (underspecified) exponents that realize a subset of the fully specified features characterizing the paradigm cell, the most specific one is chosen.

Refs.: Bierwisch (1967), Blevins (1995), Sauerland (1996), Wunderlich (1997), Wiese (1999), Gallmann (2004), Trommer (2005), Sternefeld (2006)

A Standard Underspefication-Based Approach

(18) Feature Decomposition (Bierwisch (1967), Wiese (1999)):

a. Case

NOM:	[–obl,–gov]
ACC:	[–obl,+gov]
DAT:	[+obl,+gov]
GEN:	[+obl,–gov]

b. Gender/Number

MASC:	[+masc,–fem]
FEM:	[–masc,+fem]
NEUT:	[+masc,+fem]
PL:	[–masc,–fem]

(19)
a. [+masc,+obl,+gov] $\leftrightarrow$ /m/[1] (dat.masc.sg./neut.sg.)
b. [+masc,+obl] $\leftrightarrow$ /s/[2] (gen.masc.sg./neut.sg.)
c. [+masc,+fem] $\leftrightarrow$ /s/[3] (nom./acc.neut.sg.)
d. [+masc,+gov] $\leftrightarrow$ /n/[4] (acc.masc.sg.)
e. [+masc] $\leftrightarrow$ /r/[5] (nom.masc.sg.)
f. [+obl,+fem] $\leftrightarrow$ /r/[6] (dat./gen.fem.sg.)
g. [+obl,+gov] $\leftrightarrow$ /n/[7] (dat.pl.)
h. [+obl] $\leftrightarrow$ /r/[8] (gen.pl.)
i. [ ] $\leftrightarrow$ /e/[9] (nom./acc.fem.sg./pl.)

(20) Feature hierarchy for specificity:
[+masc] > [+obl] > [+fem] > [+gov].

The Approach to Syncretism in Müller (2010)

1. There is no underspecification of exponents.
2. Paradigms are epiphenomena (Bobaljik (2007b)).
3. Not all members of a paradigm (exponents) are present in the input; only leadings forms are (see Wurzel (1984), Blevins (2004), Finkel & Stump (2007; 2009), Albright (2008), and Baerman (2009) on somewhat related concepts).
4. A mismatch of paradigm cells and leadings forms gives rise to syncretism: Initial gaps are filled by using "wrong", i.e., unfaithful exponents (Weisser (2007)).
5. Mismatches between the exponent's specification and the target specification are minimized; this is not accomplished by a single Minimality condition (cf. the Nearest Neighbour Principle in Weisser (2007, 26), or the Minimality principle in Lahne (2007, 11)), but by a set of ranked faithfulness constraints for the features involved (as in Grimshaw (2001), Trommer (2001; 2006), Wunderlich (2004); however, these authors all crucially rely on underspecification).
6. Feature decomposition yielding natural classes is needed exactly as before.
7. The resulting approach can be viewed as a way to provide a principled, highly restrictive optimality-theoretic concept of a rule of referral (Zwicky (1985), Stump (2001), and Baerman, Brown & Corbett (2005)).

Leading Forms

(21) Determiner inflection in German

dies 'this'	MASC.SG	NEUTER.SG	FEMININE.SG	PLURAL
NOMINATIVE	r	s	e	e
ACCUSATIVE	n	s	e	e
DATIVE	m	m	r	n
GENITIVE	s	s	r	r

(22) Nine leading forms:

$/r/_1 \leftrightarrow$ [+masc,–fem,–gov,–obl]
$/n/_2 \leftrightarrow$ [+masc,–fem,+gov,–obl]
$/m/_3 \leftrightarrow$ [+masc,–fem,+gov,+obl]
$/s/_4 \leftrightarrow$ [+masc,–fem,–gov,+obl]
$/s/_5 \leftrightarrow$ [+masc,+fem,+gov,–obl]
$/e/_6 \leftrightarrow$ [–masc,+fem,–gov,–obl]
$/n/_7 \leftrightarrow$ [–masc,–fem,+gov,+obl]
$/r/_8 \leftrightarrow$ [–masc,+fem,–gov,+obl]
$/r/_9 \leftrightarrow$ [–masc,–fem,–gov,+obl]

Optimality-Theoretic Constraints

(23) MATCH (undominated, possibly part of GEN):
The morpho-syntactic features of stem and exponent are identical in the output.

(24) Faithfulness constraints for features on exponents

a. IDENTMASC:
[±masc] of the input must not be changed in the output on an exponent.

b. IDENTOBL:
[±obl] of the input must not be changed in the output on an exponent.

c. IDENTFEM:
[±fem] of the input must not be changed in the output on an exponent.

d. IDENTGOV:
[±gov] of the input must not be changed in the output on an exponent.

(25) Ranking:
IDENTMASC $\gg$ IDENTOBL $\gg$ IDENTFEM $\gg$ IDENTGOV

Incomplete Paradigms

(26) Incomplete paradigm with leading forms only

dies 'this'	MASC.SG	NEUTER.SG	FEMININE.SG	PLURAL
[–gov,–obl]	$/r/_1$		$/e/_6$	
[+gov,–obl]	$/n/_2$	$/s/_5$		
[+gov,+obl]	$/m/_3$			$/n/_7$
[–gov,+obl]	$/s/_4$		$/r/_8$	$/r/_9$

Optimality of 'dieses': Nominative Neuter Singular

Tableau T_1: Nom.Neut.Sg. contexts

Input: dies ↔ [+masc,+fem,–gov,–obl], EXP	MATCH	IDENT MASC	IDENT OBL	IDENT FEM	IDENT GOV
O_1: dies-r_1 ↔ [+masc,–fem,–gov,–obl]				*!	
O_2: dies-n_2 ↔ [+masc,–fem,+gov,–obl]				*!	*
O_3: dies-m_3 ↔ [+masc,–fem,+gov,+obl]			*!	*	*
O_4: dies-s_4 ↔ [+masc,–fem,–gov,+obl]			*!	*	
☞ O_5: dies-s_5 ↔ [+masc,+fem,+gov,–obl]					*
O_6: dies-e_6 ↔ [–masc,+fem,–gov,–obl]		*!			
O_7: dies-n_7 ↔ [–masc,–fem,+gov,+obl]		*!	*	*	*
O_8: dies-r_8 ↔ [–masc,+fem,–gov,+obl]		*!	*		
O_9: dies-r_9 ↔ [–masc,–fem,–gov,+obl]		*!	*	*	
O_{10}: dies-r_1 ↔ [+masc,–fem,–gov,–obl]	*!				

Note: EXP is an abstract case exponent that stands for the set of possible (fully specified) exponents of the inventory (see RED in McCarthy & Prince (1994)).

Optimality of 'diese': Accusative Plural

Tableau T_2: Acc.Pl. contexts

Input: dies ↔ [–masc,–fem,+gov,–obl], EXP	MATCH	IDENT MASC	IDENT OBL	IDENT FEM	IDENT GOV
O_1: dies-r_1 ↔ [+masc,–fem,–gov,–obl]		*!			*
O_2: dies-n_2 ↔ [+masc,–fem,+gov,–obl]		*!			
O_3: dies-m_3 ↔ [+masc,–fem,+gov,+obl]		*!	*		
O_4: dies-s_4 ↔ [+masc,–fem,–gov,+obl]		*!	*		*
O_5: dies-s_5 ↔ [+masc,+fem,+gov,–obl]		*!		*	
☞ O_6: dies-e_6 ↔ [–masc,+fem,–gov,–obl]				*	*
O_7: dies-n_7 ↔ [–masc,–fem,+gov,+obl]			*!		
O_8: dies-r_8 ↔ [–masc,+fem,–gov,+obl]			*!	*	*
O_9: dies-r_9 ↔ [–masc,–fem,–gov,+obl]			*!		*
O_{10}: dies-r_1 ↔ [+masc,–fem,–gov,+obl]	*!				

Optimality of ‘dieser’: Dative Feminine Singular

Tableau T_3: Dat.Fem.Sg. contexts

Input: dies ↔ [–masc,+fem,+gov,+obl], EXP	MATCH	IDENT MASC	IDENT OBL	IDENT FEM	IDENT GOV
O_1: dies-r_1 ↔ [+masc,–fem,–gov,–obl]		*!	*	*	*
O_2: dies-n_2 ↔ [+masc,–fem,+gov,–obl]		*!	*	*	
O_3: dies-m_3 ↔ [+masc,–fem,+gov,+obl]		*!		*	
O_4: dies-s_4 ↔ [+masc,–fem,–gov,+obl]		*!		*	*
O_5: dies-s_5 ↔ [+masc,+fem,+gov,–obl]		*!	*		
O_6: dies-e_6 ↔ [–masc,+fem,–gov,–obl]			*!		*
O_7: dies-n_7 ↔ [–masc,–fem,+gov,+obl]				*!	
☞ O_8: dies-r_8 ↔ [–masc,+fem,–gov,+obl]					*
O_9: dies-r_9 ↔ [–masc,–fem,–gov,+obl]				*!	*
O_{10}: dies-r_1 ↔ [+masc,–fem,–gov,+obl]	*!				

Spreading

(27) Complete paradigm with spreading of leading forms

dies 'this'	MASC.SG [+masc,–fem]	NEUTER.SG [+masc,+fem]	FEMININE.SG [–masc,+fem]	PLURAL [–masc,–fem]
[–gov,–obl]	$/r/_1$	$\uparrow$	$/e/_6$	$\rightarrow$
[+gov,–obl]	$/n/_2$	$/s/_5$	$\downarrow$	$\searrow$
[+gov,+obl]	$/m/_3$	$\rightarrow$	$\uparrow$	$/n/_7$
[–gov,+obl]	$/s/_4$	$\rightarrow$	$/r/_8$	$/r/_9$

Note:
To some extent, the decisions on which occurrence of an exponent's distribution is to count as primary (i.e., qualify as the leading form), and which occurrences of the distribution are secondary (involving a violation of faithfulness) have been arbitrary from a purely synchronic, grammar-internal point of view.

However:
Evidence for occurrence asymmetries of inflectional exponents comes from other domains (i.e., outside grammatical theory) which can be addressed by research in areas like diachronic linguistics, corpus linguistics, and psycholinguistics.

Restrictiveness of the Approach

As it stands, the approach does not derive elsewhere distributions.

(28) a. Leading forms

x	
	y

b. Intended spreading

x	$\longrightarrow$
$\downarrow$	y

Bidirectional spreading:
It seems that in order to derive something like (28-b), contextual faithfulness is needed in the absence of radically underspecified elsewhere markers.

Note: A learning algorithm for elsewhere distributions of syncretism is necessarily much more complex than a learning algorithm for systems where all instances of syncretism can be derived by reference to natural classes, without reference to elsewhere or default exponents (see Pertsova (2007) on the "No-Homonymy Learner" and the "Elsewhere Learner").

An Obvious Challenge: Verb Inflection in English

(29)

	Singular	Plural
1	am	are
2	are	are
3	is	are

(30) Underspecification approach (Subset Principle; standard):

a. /am/ ↔ [–2,–pl]
b. /is/ ↔ [–1,–2,–pl]
c. /are/ ↔ [ ]

(31) Overspecification approach (Superset Principle; Starke (2006), Caha (2007; 2008)):

a. /am/ ↔ [pres,part]
b. /is/ ↔ [pres]
c. /are/ ↔ [pres,part,addr,group]

Even more interesting: /s/ vs. Ø with regular verbs.

General Features of the Approach

1. As with the optimality-theoretic approach to syncretism sketched above, an unfaithful (leading) exponent emerges as optimal.
2. However, the trigger is not an initial paradigmatic gap (absence of a leading form) but a lexical specification on the stem (a feature co-occurrence restriction (FCR), see Gazdar et al. (1985)) that expresses an incompatibility with the regular exponent's morpho-syntactic features.
3. The fewer features the FCR excludes, the more cells will be affected by the deponency.
4. The more stems the FCR applies to, the more general the deponency pattern will be.
5. As with many other approaches to deponency (e.g., Embick (2000), Kiparsky (2005), Bobaljik (2007a), Hippisley (2007), Schulz (2010)), defectivity does not automatically follow as a general property of deponency. It is logically independent and where it holds, it must be derived by some additional means.
6. The analysis predicts that unfaithful exponents chosen in cases of deponency are not arbitrary (as is the case, e.g., with the Network Morphology analyses developed in Hippisley (2007) for Latin deponent verbs and Archi deponent nouns, and in Brown (2006) for spurious antipassive in Chukchi, verbal case on nouns in Kayardild, and polarity effects with telic and atelic verb stems in Tülatulabal; or with the Paradigm Function Morphology analyses in Sadler & Spencer (2001), Stump (2006)). Rather, the unfaithful exponents must differ only minimally from the regularly expected exponent.

Noun Inflection in Archi

Refs.: Kibrik (1991; 2003), Mel'čuk (1999), Corbett (2007), Hippisley (2007), Keine & Hein (2010)

(32) Partial paradigm of some regular nouns in Archi

	alnš ('apple')		*qlin* ('bridge')		*áʕrum* ('sickle')	
	SG	PL	SG	PL	SG	PL
ABS	alnš-∅	alnš-um	qlin-∅	qionn-or	áʕrum-∅	áʕrum-mul
ERG	alnš-li	alnš-um-čaj	qlin-i	qionn-or-čaj	áʕrum-li	áʕrum-mul-čaj
GEN	alnš-li-n	alnš-um-če-n	qlin-i-n	qionn-or-če-n	áʕrum-li-n	áʕrum-mul-če-n
DAT	alnš-li-s	alnš-um-če-s	qlin-i-s	qionn-or-če-s	áʕrum-li-s	áʕrum-mul-če-s
COMIT	alnš-li-ɬ:u	alnš-um-če-ɬ:u	qlin-i-ɬ:u	qionn-or-če-ɬ:u	áʕrum-li-ɬ:u	áʕrum-mul-če-ɬ:u
...						

Note:
The system involves (i) parasitic (Priscianic) formation, where oblique case forms are derived from the ERG form; and (ii) extended exponence: /li/ is an ergative singular exponent; /čaj/ is an ergative plural exponent; and /um/, /or/, /mul/ are plural exponents sensitive to noun class.

Deponent Nouns in Archi

(33) Partial paradigm of deponent nouns with plural markers in singular contexts

	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-t̄aj	c'ohor-čaj
...				

Note: Choice of *t̄aj* vs. *čaj* is determined by consonant-final vs. vowel-final roots.

(34) Partial paradigm of the deponent (and suppletive) noun 'xʕon' with singular markers in plural contexts

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

Optimality-Theoretic Analysis of Deponent Nouns in Archi

(35) Case and number features:

a. Case		b. Number	
ABS:	[–obl]	SG:	[–pl]
ERG:	[+obl]	PL:	[+pl]
DAT:	[+obl,+gov]		
...			

(36) MATCH (undominated, possibly part of GEN):
The morpho-syntactic features of stem and exponent are identical in the output.

(37) LEX (undominated, possibly part of GEN):
A stem with FCR *[α] cannot be combined with an exponent bearing [α] in the input (where α is a – possibly singleton – set of morpho-syntactic features).

LEX refers to the input properties of an exponent, not to its output properties (which may have been changed, triggered by MATCH). See Trommer (2006) for reference to inputs in optimality-theoretic constraints. One way to implement this would be to assume that LEX applies to structure-building directly (in which case candidates violating it would not be part of the competition).

(38) Faithfulness constraints for features on exponents

a. IDENTOBL(IQUE):
[±obl] of the input must not be changed in the output on an exponent.

b. IDENTNUM(BER):
[±pl] of the input must not be changed in the output on an exponent.

Plural Markers in Singular Contexts 1

Tableau T_4: Erg.Pl., faithful winner

Input: haʕtər-mul- ↔ [+obl,+pl], EXP *[+obl,–pl]	LEX	MATCH	IDENT OBL	IDENT NUM
O_1: haʕtər-mul-li ↔ I: [+obl,–pl] O: [+obl,+pl]	*!			*
O_2: haʕtər-mul-Ø ↔ I: [–obl,–pl] O: [+obl,+pl]			*!	*
☞ O_3: haʕtər-mul-čaj ↔ I: [+obl,+pl] O: [+obl,+pl]				*

Note:
Strictly speaking, there are two EXP morphemes associated with the stem in the plural; but class-dependent optimization of the first EXP (yielding plural marker *mul*) is orthogonal to the deponency issue, and hence omitted here. (Similarly for further oblique case markers.)

Plural Markers in Singular Contexts 2

Tableau T_5: Erg.Sg., unfaithful winner

Input: haʕtər- ↔ [+obl,–pl], EXP *[+obl,–pl]	LEX	MATCH	IDENT OBL	IDENT NUM
O_1: haʕtər-li ↔ I: [+obl,–pl] O: [+obl,–pl]	*!			
O_2: haʕtəra-Ø ↔ I: [–obl,–pl] O: [+obl,–pl]			*!	
☞ O_3: haʕtər-čaj ↔ I: [+obl,+pl] O: [+obl,–pl]				*

Singular Markers in Plural Contexts 1

Tableau T_6: Erg.Sg., faithful winner

Input: xʕon- ↔ [+obl,–pl], EXP *[+obl,+pl]	LEX	MATCH	IDENT OBL	IDENT NUM
☞ O_1: xʕon-i ↔ I: [+obl,–pl] O: [+obl,–pl]				
O_2: xʕon-Ø ↔ I: [–obl,–pl] O: [+obl,–pl]			*!	
O_3: xʕon-čaj ↔ I: [+obl,+pl] O: [+obl,–pl]	*!			*

Singular Markers in Plural Contexts 2

Tableau T_7: Erg.Pl., unfaithful winner

Input: buc:'i- ↔ [+obl,+pl], EXP *[+obl,+pl]	LEX	MATCH	IDENT OBL	IDENT NUM
☞ O_1: buc:'i-li ↔ I: [+obl,–pl] O: [+obl,+pl]				*
O_2: buc:'i-∅ ↔ I: [–obl,–pl] O: [+obl,+pl]			*!	*
O_3: buc:'i-čaj ↔ I: [+obl,+pl] O: [+obl,–pl]	*!			

Note:
No attempt is made here to account for stem selection/suppletion. As with multiple EXP optimization, this issue is orthogonal to the deponency issue.

Deponent Nouns in Tsez

Refs.: Corbett (2007), Spencer (2007)

(39) Partial paradigm of regular noun besuro ('fish')

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

(40) Partial paradigm of deponent noun xexbi ('child(ren)')

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

Assumption: /bi/ is a plural exponent, /Ø/ is a singular exponent, /za/ is an oblique plural exponent, /s/ and /ā/ are pure oblique case exponents.

Plural Markers in All Singular Contexts 1

Tableau T_8: Abs.Sg., unfaithful winner

Input: xex- ↔ [–obl,–pl], EXP *[–pl]	LEX	MATCH	IDENT OBL	IDENT NUM
O_1: xex-∅ ↔ I: [+obl,–pl] O: [+obl,–pl]	*!			
☞ O_2: xex-bi ↔ I: [+obl,+pl] O: [+obl,–pl]				*

An interesting consequence:
Even in simple absolutive singular noun forms like *besuro-∅*, ('fish'), there must be a number position (EXP) that needs to be filled by some marker (which then must regularly be ∅) under present assumptions. Otherwise, there would be no motivation for the system to provide an unfaithful plural marker in singular contexts.

Plural Markers in All Singular Contexts 2

Tableau T_9: Gen1.Sg., unfaithful winner

Input: xex- ↔ [+obl,–pl], EXP, -s *[–pl]	LEX	MATCH	IDENT OBL	IDENT NUM
O_1: xex-Ø-s ↔ I: [+obl,–pl] O: [+obl,–pl]	*!			
☞ O_2: xex-za-s ↔ I: [+obl,+pl] O: [+obl,–pl]				*

Note: The genitive 1 marker /-s/ would strictly speaking have to enter the optimal output form by (trivial) optimization; as before, the issue is irrelevant for questions of deponency.

Deponent Stems in Tübatulabal

Refs.: Baerman (2007), Brown (2006), and references cited there.

Tübatulabal (Uto-Aztecan) exhibits a polarity effect in deponency. There is stem alternation via reduplication with telic vs. atelic verbs. Normally, the telic stem is generated by reduplication on the basis of the atelic stem; however, there are some thirty verbs where the telic stem is in fact the basis, and the atelic stem is formed by reduplication.

(41) *Regular verbs*:

atelic	telic	
ela-	eʔela-	'jump'
tɨk-	ɨtɨk	'eat'
tana-	andana-	'get down'

(42) *Polar verbs*:

atelic	telic	
anaŋ-	naŋ-	'cry'
andaŋ-	taŋ-	'kick'
ʊnʊŋ-	nʊŋ-	'pound'

Assumption: There are two exponents; /Ø/ ↔ [–telic]; /RED/ ↔ [+telic].

Problem: *[–telic] on deponent V will produce a reduplicated stem for atelic contexts, but not yet a simple stem for telic contexts; similarly, *[+telic] on deponent V will produce a simple stem for telic contexts, but not yet a reduplicated stem for atelic contexts.

Polar Stem Selection in Tübatulabal 1

Assumption: There are variables over feature values (α notation, Chomsky & Halle (1968)): A [+telic] stem cannot combine with an exponent that is [–telic] in the input; a [–telic] stem cannot combine with an exponent that is [+telic].

(43) Lexical entries for regular and deponent verbs:

a. ela- $\leftrightarrow$ [αtelic]

b. naŋ- $\leftrightarrow$ [αtelic]
[*αtelic]

Note: α is realized as + or – as soon as the verb is taken out of the lexicon and enters grammar.

Tableau T_{10}: deponent verb, atelic; unfaithful winner

Input: Exp, naŋ- $\leftrightarrow$ [–telic] *[–telic]	Lex	Match	Ident Tel
O_1: Ø-naŋ- $\leftrightarrow$ I: [–telic] O: [–telic]	*!		
☞ O_2: RED-naŋ- $\leftrightarrow$ I: [+telic] O: [–telic]			*

Polar Stem Selection in Tübatulabal 2

Tableau T_{11}: deponent verb, telic; unfaithful winner

Input: EXP, naŋ- ↔ [+telic] *[+telic]	LEX	MATCH	IDENT TEL
☞ O_1: Ø-naŋ- ↔ I: [–telic] O: [+telic]			*
O_2: RED-naŋ- ↔ I: [+telic] O: [+telic]	*!		

Tableau T_{12}: regular verb, telic; faithful winner

Input: EXP, ela- ↔ [+telic]	LEX	MATCH	IDENT TEL
O_1: Ø-naŋ- ↔ I: [–telic] O: [+telic]			*!
☞ O_2: RED-naŋ- ↔ I: [+telic] O: [+telic]			

In the same way, the Ø-prefixed stem wins in atelic contexts with regular verbs.

Spurious Antipassive in Chukchi

(44) Spurious Antipassive in Chukchi:

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

In certain marked combinations of external and internal argument (3.sg>1.sg, 2>1.sg, 2>1.pl), antipassive morphology is required even though the the clause stays transitive (and the external argument bears ergative case).

(45) Sketch of an analysis:

a. /Ø/ ↔ [–apass]
b. /ine/ ↔ [+apass]
c. /α/[+V]:
*[3.sg.>1.sg,–apass]
*[2>1.sg,–apass]
*[2>1.pl,–apass]

Violated faithfulness constraint in optimal deponent outputs: IDENTAPASS

Deponent Verbs in Latin

(46) Deponent verbs:
$/\alpha/$[+V,+dep]:
*[−pass]

(47) Semi-deponent verbs:
$/\alpha/$[+V,+dep]:
*[−pass,+perf]

Violated faithfulness constraint in optimal deponent outputs: IDENTPASS

Note: This does not yet derive defectivity. This can be handled by output/output constraints.

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