The Importance of Impoverishment

Heidi Harley, University of Arizona
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Phi-features workshop, McGill University
hharley@email.arizona.edu

1 Overview

Syncretism occurs when different combinations of morphosyntactic feature values are realized by the same form—in DM terms, when the same Vocabulary Item discharges the p.o.e.s associated with more than one bundle of features.

In most realizational morphological theories, including DM, it is a methodological assumption that the most desirable way to treat syncretism is via underspecification. Only if underspecification fails should more powerful tools of the theory be appealed to, such as an Impoverishment rule (DM) or a Rule of Referral (Paradigm Function Morphology, others).

Williams 1994 points out that meta-patterns of syncretism exist in the world's languages, and argued that a notion of a meta-paradigm as a primitive property of the grammar was necessary to capture these general patterns.

Bobaljik (2001) shows that metaparadigms aren't necessary or desirable; in DM, pre-realization Impoverishment rules can do the same job (as can pre-realization Rules of Referral in PFM, though the case for the more powerful RoR as against more restrictive Impoverishment would have to be argued.) (He also showed that UG does not impose an Instantiated Basic Paradigm requirement, as predicted/entailed by more restrictive DM-style theories but not by paradigm-based theories).

Here, I just want to repeat what JDB said about Impoverishment rules in his 2001 paper, only louder and with different examples. I think one lesson of the metaparadigm discussion within DM is that underspecification of VIs is not necessarily an especially important source of syncretism, Panini notwithstanding. Another lesson is that Impoverishment could be the answer in cases where previous analyses have appealed to brute-force VI ordering and/or negative feature specifications, as argued by Nevins (2003).

I'll just exhibit a few cases where an Impoverishment analysis seems needed and/or useful and have a bash at some actual proposals for a subset of them, drawing morals as I go.

2 Syncretism via underspecification+VI ordering in DM

Vocabulary Items for English pronouns:
Active features: Speaker, Participant, Group, Feminine, Neuter, Superior, Oblique.
(NB: ±Superior, ±Oblique features for Case taken from Halle 1997; see Müller 2003 for extensive justification of such systems). In the 3-way case system of English:
+Sup, -Obl = Nominative
-Sup, +Obl = Genitive
-Sup, -Obl = 'Accusative' = default case)

Without additional assumptions, these features will combine freely to create the following set of possible fully-specified English pronominal determiner nodes. The syncretisms in the actual realization of these nodes are represented by patterns of shading. (Note: I didn't draw them, but I'm assuming these features are organized into geometries).

(1) Possible pronominal determiner terminal nodes of English:

		sg			pl		
		m	f	n	m	f	n
1	Nom	**+Spkr**, **+Part** -Group -fem, -neut **+Sup**, -Obl	**+Spkr**, **+Part** -Group **+fem**, -neut **+Sup**, -Obl	**+Spkr**, **+Part** -Group -fem, **+neut** **+Sup**, -Obl	+ Spkr, **+Part** **+Group** -fem, -neut **+Sup**, -Obl	+ Spkr, **+Part** **+Group** **+fem**, -neut **+Sup**, -Obl	+ Spkr, **+Part** **+Group** -fem, **+neut** **+Sup**, -Obl
	Acc	**+Spkr**, **+Part** -Group -fem, -neut -Sup, -Obl	**+Spkr**, **+Part** -Group **+fem**, -neut -Sup, -Obl	**+Spkr**, **+Part** -Group -fem, **+neut** -Sup, -Obl	+ Spkr, **+Part** **+Group** -fem, -neut -Sup, -Obl	+ Spkr, **+Part** **+Group** **+fem**, -neut -Sup, -Obl	+ Spkr, **+Part** **+Group** -fem, **+neut** -Sup, -Obl
	Gen	**+Spkr**, **+Part** -Group -fem, -neut -Sup, **+Obl**	**+Spkr**, **+Part** -Group **+fem**, -neut -Sup, **+Obl**	**+Spkr**, **+Part** -Group -fem, **+neut** -Sup, **+Obl**	+ Spkr, **+Part** **+Group** -fem, -neut -Sup, **+Obl**	+ Spkr, **+Part** **+Group** **+fem**, -neut -Sup, **+Obl**	+ Spkr, **+Part** **+Group** -fem, **+neut** -Sup, **+Obl**
2	Nom	-Spkr, **+Part** -Group -fem, -neut **+Sup**, -Obl	-Spkr, **+Part** -Group **+fem**, -neut **+Sup**, -Obl	-Spkr, **+Part** -Group -fem, **+neut** **+Sup**, -Obl	-Spkr, **+Part** **+Group** -fem, -neut **+Sup**, -Obl	-Spkr, **+Part** **+Group** **+fem**, -neut **+Sup**, -Obl	-Spkr, **+Part** **+Group** -fem, **+neut** **+Sup**, -Obl
	Acc	-Spkr, **+Part** -Group -fem, -neut -Sup, -Obl	-Spkr, **+Part** -Group **+fem**, -neut -Sup, -Obl	-Spkr, **+Part** -Group -fem, **+neut** -Sup, -Obl	-Spkr, **+Part** **+Group** -fem, -neut -Sup, -Obl	-Spkr, **+Part** **+Group** **+fem**, -neut -Sup, -Obl	-Spkr, **+Part** **+Group** -fem, **+neut** -Sup, -Obl
	Gen	-Spkr, **+Part** -Group -fem, -neut -Sup, **+Obl**	-Spkr, **+Part** -Group **+fem**, -neut -Sup, **+Obl**	-Spkr, **+Part** -Group -fem, **+neut** -Sup, **+Obl**	-Spkr, **+Part** **+Group** -fem, -neut -Sup, **+Obl**	-Spkr, **+Part** **+Group** **+fem**, -neut -Sup, **+Obl**	-Spkr, **+Part** **+Group** -fem, **+neut** -Sup, **+Obl**
3	Nom	-Spkr, -Part -Group -fem, -neut **+Sup**, -Obl	-Spkr, -Part -Group **+fem**, -neut **+Sup**, -Obl	-Spkr, -Part -Group -fem, **+neut** **+Sup**, -Obl	-Spkr, -Part **+Group** -fem, -neut **+Sup**, -Obl	-Spkr, -Part **+Group** **+fem**, -neut **+Sup**, -Obl	-Spkr, -Part **+Group** -fem, **+neut** **+Sup**, -Obl
	Acc	-Spkr, -Part -Group -fem, -neut -Sup, -Obl	-Spkr, -Part -Group **+fem**, -neut -Sup, -Obl	-Spkr, -Part -Group -fem, **+neut** -Sup, -Obl	-Spkr, -Part **+Group** -fem, -neut -Sup, -Obl	-Spkr, -Part **+Group** **+fem**, -neut -Sup, -Obl	-Spkr, -Part **+Group** -fem, **+neut** -Sup, -Obl
	Gen	-Spkr, -Part -Group -fem, -neut -Sup, **+Obl**	-Spkr, -Part -Group **+fem**, -neut -Sup, **+Obl**	-Spkr, -Part -Group -fem, **+neut** -Sup, **+Obl**	-Spkr, -Part **+Group** -fem, -neut -Sup, **+Obl**	-Spkr, -Part **+Group** **+fem**, -neut -Sup, **+Obl**	-Spkr, -Part **+Group** -fem, **+neut** -Sup, **+Obl**

Shading Syncretism Key:

I
We
Me
Us
My
Our
You
Your

He
Him
His
She
Her
It
They
Them
Their

(The double-lined cells above represent terminal node bundles whose realization is considered in detail below).

‘Normal’ way of getting syncretism in DM: Syntax/Morphology outputs fully specified terminal nodes with positions-of-exponence. Underspecified vocabulary items compete to realize the POEs.
Assumption: in VIs, only marked (positive) values are referred to.[1] One set of such VIs that could get the desired English pronoun syncretisms via underspecification is below.

(2)
a. wij ←→ D_{RE}
+Spkr, +Grp, +Sup
b. awɹ ←→ D_{RE}
+Spkr, +Grp, +Obl
c. ʌs ←→ D_{RE}
+Spkr, +Grp
d. aj ←→ D_{RE}
+Spkr, +Sup
e. maj ←→ D_{RE}
+Spkr, +Obl
f. mij ←→ D_{RE}
+Spkr
g. jɔɹ ←→ D_{RE}
+Part, +Obl
h. juw ←→ D_{RE}
+Part
i. ðej ←→ D_{RE}
+Grp, +Sup
j. ðɛɹ ←→ D_{RE}
+Grp, +Obl
k. ðɛm ←→ D_{RE}
+Grp
l. ɪt ←→ D_{RE}
+Neut
m. ʃij ←→ D_{RE}
+Fem, +Sup
n. hɚ ←→ D_{RE}
+Fem
o. hij ←→ D_{RE}
+Nom
p. hɪz ←→ D_{RE}
+Obl
q. hɪm ←→ D_{RE}

[1] Terminal nodes in syntax are fully specified by the end of Morphology with positive values, perhaps with negative values too (see below).

What's crucial in any such analysis is to a) specify the vocabulary items for all and only the features they are sensitive to, and b) get the order of competition of the vocabulary items 'right', so that the correct patterns of syncretism fall out via blocking.
<u>The subset principle;</u> Only Vocabulary Items whose specified features are a subset of the features in a given terminal node are able to compete to discharge the p.o.e. of that terminal node.

So, e.g., faced with a 1.pl.f.nom node, with the features in (3) below, the vocabulary items from (2) that are competing to be inserted into that node are those listed in (4):

(3) Terminal node: [+Spkr, +Part, +Grp, +Fem, -Neut, +Sup, -Obl]

(4)
a. wij ←→ D_{RE}
+Spkr, +Grp, +Sup
c. ʌs ←→ D_{RE}
+Spkr, +Grp
d. aj ←→ D_{RE}
+Spkr, +Sup
f. mij ←→ D_{RE}
+Spkr
h. juw ←→ D_{RE}
+Part
i. ðej ←→ D_{RE}
+Grp, +Sup
k. ðɛm ←→ D_{RE}
+Grp
m. ʃij ←→ D_{RE}
+Fem, +Sup
n. hɚ ←→ D_{RE}
+Fem
o. hij ←→ D_{RE}
+Nom
q. hɪm ←→ D_{RE}

In particular, none of the vocab items in (2) that are specified for +Obl or +Neut will be competing to be inserted.

(5) Usually, the order of competition, and hence blocking effects and syncretisms, are correctly specified in a given analysis by
a) appeal to the elsewhere principle
b) appeal to feature hierarchy/markedness considerations
c) brute force

This particular competition illustrates the Elsewhere principle in action: the winning VI, [wij], is specified for three features, more than any other eligible VI, and so it is the 'best' realization of that terminal node — this VI is therefore 'ordered' first in the list.

Underspecification syncretism arises when a single VI is the winning candidate for more than one kind of terminal node — a single VI is the winning candidate for more than one combination of features. So, for instance, in the example here, the VI [wij] will also win the competition for the 1.pl.m.Nom terminal node in (6) below — i.e. there will be syncretism between the 1.pl.f.Nom terminal node and the 1.pl.m.terminal node. In the latter case, [wij] is competing against a smaller subset of the pronominal VIs, represented in (7), since the VIs specified for [+fem] will not be in the competition:

(6) Terminal node: [+Spkr, +Part, +Grp, -Fem, -Neut, +Sup, -Obl]

(7)
a. wij ←→ D_{RE}
   +Spkr, +Grp, +Sup
c. ʌs ←→ D_{RE}
   +Spkr, +Grp
d. aj ←→ D_{RE}
   +Spkr, +Sup
f. mij ←→ D_{RE}
   +Spkr
h. juw ←→ D_{RE}
   +Part
i. ðej ←→ D_{RE}
   +Grp, +Sup
k. ðɛm ←→ D_{RE}
   +Grp
o. hij ←→ D_{RE}
   +Nom
q. hɪm ←→ D_{RE}

Sometimes, an analyst will face a case where the elsewhere condition doesn't obviously do the trick, as the next case under consideration. The vocabulary items in (9) are in competition to realize the 1.sg.f.Nom terminal node in (8):

(8) Terminal node: [+Spkr, +Part, -Grp, +Fem, -Neut, +Sup, -Obl]

(9)
d. aj ←→ D_{RE}
   +Spkr, +Sup
f. mij ←→ D_{RE}
   +Spkr
h. juw ←→ D_{RE}
   +Part
m. ʃij ←→ D_{RE}

+Fem, +Sup
n. hɚ ←→ D_{RE}
+Fem
o. hij ←→ D_{RE}
+Nom
q. hɪm ←→ D_{RE}

In this competition, the elsewhere condition will easily eliminate all the VIs that only realize a single feature, or no feature, i.e. (9)f, h, n, o and q, but there are two VIs for whom a simple feature-counting metric cannot obviously decide: (9)d and m. The terminal node and the two remaining candidates are repeated in (10) and (11) below:

(10) Terminal node (repeated): [+Spkr, +Part, -Grp, +Fem, -Neut, +Sup, -Obl]

(11) d. aj ←→ D_{RE}
+Spkr, +Sup
m. ʃij ←→ D_{RE}
+Fem, +Sup

The VI in d is the correct result — we want it to win the competition with m, but they both realize two features, so the elsewhere condition won't help us.[2]

One solution analysts often invoke in cases like these is some version of (5)b: a feature hierarchy like that proposed in Noyer 1992. The VIs in d and m are specified for the same case feature, but in d the second feature is a person feature, +Spkr, while in m the second feature is a gender feature, +Fem. According to Noyer's feature hierarchy, Person>Number>Gender, so two VIs which are equivalent in terms of the elsewhere principle compete in the order determined by the feature hierarchy—so d will win the competition, and block m from realizing this terminal node.

Sometimes, the elsewhere condition gives us the wrong result entirely—cases arise where one might want to say the feature hierarchy outranks the elsewhere condition. So, for instance, consider the competition to realize a 2.pl.f.Nom terminal node represented in (12): the vocabulary items in (13) will be in competition to realize this node:

(12) Terminal node: [-Spkr, +Part, +Grp, +Fem, -Neut, +Sup, -Obl]

(13) h. juw ←→ D_{RE}
+Part
i. ðej ←→ D_{RE}
+Grp, +Sup
k. ðɛm ←→ D_{RE}

[2] Explicitly using the H&R feature geometry+markedness as in Harley 1994 won't help us here either — the geometry that minimally represents d uses 4 nodes, while the one that minimally represents m uses 5 -- if the more marked compatible geometry wins, then m will beat d here!

+Grp
m. ʃij ←→ D_{RE}
+Fem, +Sup
n. hɚ ←→ D_{RE}
+Fem
o. hij ←→ D_{RE}
+Nom
q. hɪm ←→ D_{RE}

Here, we've got a major problem: we want h to win (2.pl.f.Nom in English is 'you'), but the elsewhere principle will rank i and m above h, because they both realize two of the matching features, rather than just one. The VI in i will rank above m, according to the feature hierarchy, because number outranks gender, so the analysis as is predicts that a 2.pl.f.Nom pronoun in English will be realized as 'they'.

One of the possible solutions for analyses with this problem is to invoke (5)c — brute force ranking of VIs, according to which h is simply stipulated to outrank i-q. Alternatively, one could give up the idea that 3rd person is unmarked. We could include negative values (-Spkr, -Part) in the 3rd person VIs, or invent a feature (+3) that refers to 3rd person specifically, and include that feature in the 3rd person VIs. Extant DM analyses of English have done either or both of these in such situations. (It's fun to tinker with the features until the correct ordering of VIs emerges 'naturally', from just the elsewhere condition and/or the feature hierarchy.) However, there's no agreement on what's the best kind of solution: negative values, new features, brute force — and all such solutions violate my own theoretical aesthetic.

Although not widely deployed in this situation, another kind of solution to ordering problems is available within DM: manipulating the terminal node bundle by deleting certain features from it before vocabulary items are inserted. This can remove problematic VIs from the competition, since feature-deletion in the terminal node will mean that fewer VIs will have a subset of the terminal node's features, and hence fewer VIs will be eligible to compete. (We'll see how this works in more detail in a second). The feature-deletion procedure is called Impoverishment.

So really, there's an embarrassment of possible solutions to this kind of problem in DM: negative features, brute force, and Impoverishment. Here, I want to suggest that the Impoverishment solution is to be preferred in general. Bobaljik (2001) showed that Impoverishment allows DM to capture a certain kind of generalization about language-wide patterns of syncretism that simple VI-ordering based solutions fail to capture — the meta-paradigm effect identified by Williams. In addition, Nevins (2003) argues that judicious use of Impoverishment will allow the elimination of references to negative feature values from

DM analyses, showing how this works for the thorny Germanic 1-3sg syncretism; if that turns out to be true widely, I think it'll be a great stride forward.[3]

The remarkable thing about the meta-paradigm cases is that an Impoverishment solution turns out to be needed to capture the metaparadigm patterns in many cases where a simple elsewhere analysis or feature hierarchy analysis is in principle possible, and where it had not occurred to analysts before to propose Impoverishment. Impoverishment thus takes on a much greater degree of importance than has previously been recognized, and will turn out to need to be much more widely employed.

3 Meta-paradigm effects and Impoverishment: Bobaljik 2001

(As I've just said,) the real consequence of Bobaljik's metasyncretic observation, is that Impoverishment turns out to be necessary in cases where the ordering of VIs is already completely unproblematic. Bobaljik exhibits English agreement (as does Williams) and a subset of Russian nominal forms, initially; since the analysis of both of these turns out to be a bit tricky (I think), I'll use a different instance to illustrate the point (we may get back to English agreement). The case for liberal deployment of Impoverishment is made by paradigms like that of Tsakhur (Caxur)[4] pronouns, illustrated below (data from the report in the Surrey Syncretism Database):

(14) Tsakhur pronominal/demonstrative forms (animate):

	1		2		3 (neuter demonstrative series)			
	sg	pl	sg	pl	sg		pl	
					m	f	m	f
abs	zɨ	ši	ʀu	šu	mana		mammɨ	
erg					manɢ$_{o}$e:	manɢe:	mammiše	
attrI	jizda	jišda	jiʀna	wušda	manɢuna	manɢɨna	mammišda	
attrII	jizɨn	jišɨn	jiʀɨn	wušun	manɢun	manɢɨn	mammišin	
dat	zas	šas	was	šos	manɢus	manɢɨs	mammišis	

Here, we have a completely general syncretism between absolutive and ergative case in the personal pronouns (1-2 person). This could very easily be taken care of by the Elsewhere condition in each set of vocabulary items: while the AttrI, AttrII and Dative pronoun vocabulary items would be specified for person, number and case (or case context, for those that look synthetic, as in attrI and attrII), the Abs/Erg vocabulary items would just be specified for number and person: case not mentioned, as follows:[5]

[3] To make this work, however, Nevins has to assume that Minimal (singular) is a marked, rather than underspecified feature in English. Depending on the approach to underspecification that turns out to be right, this may or may not work. Here I've treated singular as unmarked.
[4] A Lezgian, Nakh-Daghestanian language of Azerbaijan
[5] Rather than do a breakdown of case features here, I've used regular case abbreviations as shorthand for the combination of features each represents.

(15) Tsakhur personal pronominal vocabulary items in an Impoverishment-less analysis:

a. jiš $\leftrightarrow$ D_{RE} / ____ KASE
+Spkr +Attr
+Group

b. wuš $\leftrightarrow$ D_{RE} / ____ KASE
+Part +Attr
+Group

c. jiz- $\leftrightarrow$ D_{RE} / ____ KASE
+Spkr +Attr

d. jiʀ $\leftrightarrow$ D_{RE} ____ KASE
+Part +Attr

e. šas $\leftrightarrow$ D_{RE}+KASE
+Spkr
+Group
+Dat

f. šos $\leftrightarrow$ D_{RE} + KASE
+Part
+Group
+Dat

g. zas $\leftrightarrow$ D_{RE} + KASE
+Spkr
+Dat

h. was $\leftrightarrow$ D_{RE} + KASE
+Part
+Dat

i. ši $\leftrightarrow$ D_{RE} +KASE
+Spkr
+Group

j. šu $\leftrightarrow$ D_{RE} +KASE
+Part
+Group

k. zɨ $\leftrightarrow$ D_{RE}+KASE
+Spkr

l. ʀu $\leftrightarrow$ D_{RE}+KASE
+Part

I assume a fusion rule has unified D and Kase here and in the erg/absolutive nodes, since the forms are not analyzable the way they are in the Attr cases

In Tsakhur, (unlike English) the Elsewhere condition would operate perfectly satisfactorily to generate the correct order of competition for all these VIs — in particular, it will order i, j, k and l last, as the most underspecified. The lack of specification of VIs i, j, k, and l for Case features will work perfectly well to create the syncretism between absolutive and ergative in the personal pronouns.

What this analysis misses, however, is the meta-syncretic pattern in the personal pronouns. Without Impoverishment of the terminal nodes, the lack of case specification in i, j, k and l is a happenstance property of each of four items; it could easily have been different (e.g. the 2pl form in j could refer to a particular case feature, independently of whatever i, k and l are doing). This misses a generalization about the grammar, as Williams notes.

What's needed in Tsakhur is an Impoverishment rule like the following:

(16) +Erg $\rightarrow$ Ø / D_{RE} + KASE (“Ergative case is deleted in 1 & 2 terminal bundles)
+Part
___

If Absolutive is the unmarked Case, the 1 and 2 person ergative terminal node combinations will become indistinguishable from the 1 and 2 person absolutive terminal node combinations. Now, the syncretism across different VIs is predicted across the grammar. Impoverishment-driven syncretism is observed even though ordering is unproblematic.

It now so happens that the available VIs in Tsakhur match up one-to-one with the available terminal nodes — there just is no VI-driven syncretism in the Tsakhur paradigm. (We still need the Elsewhere principle here, though, to prevent i, j, k, l from realizing other Case nodes, and to prevent singular forms from realizing plural nodes).

3.1 Other motivations for Impoverishment analyses: removing VIs from competition

Metasyncretism is not the only motivation for Impoverishment analyses, however. The impoverishment operation was originally proposed to account for cases where an otherwise regular VI mysteriously failed to appear in an environment where the analysis predicted it would show up. Impoverishing the crucial feature from the relevant feature bundles removed the relevant VI from competition, and hence predicted its absence. One clear case is afforded by the case inflection of Baoan[6] nouns and pronouns (again data from the Surrey report).

(17) Baoan nouns and pronouns

	'bird'		1		2	
	sg	pl	sg	pl	sg	pl
nom	bendžer	bendžerle	be	mange/ bede	če	ta
gen	bendžer**ne**	bendžerle**ne**	me**ne**	ma**ne**/ beda**ne**	če**ne**	ta**ne**
acc			na:**de**	man**de**/ bedande	čo:**de**	ta**de**
dat/loc	bendžer**de**	bendžerle**de**				
abl	bendžerse	bendžerlese	na:se/ bese	manse/ bedanse	čo:se	tase
instr/comit	bendžerGale	bendžerleGale	beGale	mangeGale/ bedaGale	čeGale	taGale

Here we have a beautifully synthetic paradigm, with some case- and number-conditioned suppletion in the personal pronoun roots, but utterly transparent case suffixes in both the nominal and personal pronominal paradigms. (Note: Baoan is another lg. where there's no Instantiated Basic Paradigm in the sense of Williams 1994.)

The problem arises in that it seems clear that the genitive suffix is *-ne*, and the dative suffix is *-de*, in both the nominal and pronominal paradigms, but that the accusative case slot syncretizes with the genitive in the nominal paradigm and the dative in the pronominal paradigm. Metasyncretism is not an issue with these case morphemes, because the same VIs are at stake in all the relevant cells of both paradigms.

Underspecification will never do the job here. If one underspecifies the genitive *-ne* to get it to spread into the accusative in the nominal paradigm, then we can't understand why dative *-de* (which also occurs in the nominal paradigm) spreads into the accusative in the pronouns, and vice versa. There is no underspecification solution for this problem.[7]

[6] A Mongolian language of Gansu province, China.
[7] I think!

Rather, it must be the case that the accusative shares a marked case feature with either the dative or the genitive. This feature will trigger case syncretism in one paradigm, because a marked VI will refer to it. In the other paradigm, that feature is deleted via a conditioned Impoverishment rule, and consequently the marked VI will drop out of competition. The accusative will then syncretize with another, less specified form.

Which paradigm is the 'real' one, i.e. the un-Impoverished one? Let's assume it's the nominal paradigm. We can then say our Impoverishment rule is conditioned by a [+Part] node (3rd person forms are again demonstratives, and pattern with the nominals, not the personal pronouns). Plus, there are other irregularities in the pronominal system (unsurprisingly), but none in the nominal system.

So we want a feature shared by accusative and genitive to be deleted in the personal pronouns, causing accusative to syncretize with less-marked dative.

In Halle's 1997 system, Accusative and Genitive are both [+Structural].[8] We'll assume that Dative is [-Structural]. Let's also assume that Accusative and Dative are both [+Dependent], while Genitive is [-Dependent]. Here's the full set of features I'm assuming are operative in Baoan, positive values highlighted:

(18) Case feature combos in Baoan:

+Structural, -Dependent, -Oblique:	Nominative
+Structural, -Dependent, **+Oblique**:	Genitive
+Structural, **+Dependent**, -Oblique:	Accusative
+Structural, **+Dependent**, **+Oblique**:	??
-Structural, **+Dependent**, -Oblique:	Dative
-Structural, **+Dependent**, **+Oblique**:	Ablative
-Structural, -Dependent, -Oblique:	??
-Structural, -Dependent, **+Oblique**:	Instrumental

The following VIs will then be relevant for Baoan case markers:

(19) a. -se ←→ KASE
[+Obl]
[+Dep]
(Ablative)

b. -ne ←→ KASE
[+Struct]
(Genitive)

c. -Gale ←→ KASE
[+Obl]
(Instrumental)

d. -de ←→ KASE
[+Dependent]
(Dative)

e. Ø ←→ KASE elsewhere
(Nominative)

These VIs, in this order, will generate the nominal paradigm. In particular, a KASE terminal node with this specification:

[8] So is Dative, but we'll assume it's not in Baoan for the moment. It doesn't really matter what the features are called, anyway.

(20) [+Structural, +Dependent, -Oblique] (=Accusative)

will be realized as *-ne* because b. comes before d. in the competition. This ordering is not guaranteed by the Elsewhere principle as things stand, but it is plausible if we assume a feature hierarchy within Case features such that Structural > Oblique > Dependent.

What happens in the pronouns so that *-ne* does not realize Accusative, but *-de* does? If we delete the [+Structural] feature from Accusative feature bundles in the environment of [+Part], as below, the only relevant feature in the Accusative feature bundle will be [+Dependent]. Consequently, Accusative will syncretize with Dative rather than with Genitive here.

(21) [+Structural] → Ø / RE KASE "Delete +Structural in 1 and 2p bundles"
[+Part] _____
[+Dependent]
[-Oblique]

Impoverishment, then, is the only way to block *-ne* from showing up in the personal pronouns in the accusative in Baoan.

(Note: The suppletive pronominal stems in Baoan show a metasyncretism between Dative and Ablative. This suggests that an additional Impoverishment rule is in action, deleting [+Oblique] from the Ablative and causing it to conflate with the Dative, as far as the stems go. However, it crucially *cannot* be applying to the KASE terminal node, because if it did, the ablative suffix *-se* would never appear; the *-de* Dative syncretism would spread to the Ablative as well as the Accusative. It must be the case that the pronominal stem terminal node (D_{RE}) receives its own set of Case features via Agree, which condition the insertion of particular pronominal stems — and the metasyncretizing Impoverishment rule for the Ablative applies to *that* set of Case features, not the KASE node's features. A similar problem arises in the analysis of Nubian, below: features that are crucially Impoverished in one terminal node appear to be fully active in another terminal node).

In any case, the point of the Baoan case suffixes is to show that Impoverishment can be motivated without metasyncretism, to prevent the wrong VI from competing for a position of exponence in a place where we would otherwise expect it to appear.

3.2 Metasyncretically motivated Impoverishment that *also* solves ordering problems by removing otherwise-expected VIs from competition:

Back to English pronouns: In conventional cell-uniting notation, the syncretisms of the English pronominal paradigms for each Case we've been considering look like this:

Nominative

<table>
<tr><th></th><th colspan="3">sg</th><th colspan="3">pl</th></tr>
<tr><th></th><th>m</th><th>f</th><th>n</th><th>m</th><th>f</th><th>n</th></tr>
<tr><td>1</td><td colspan="3">I</td><td colspan="3">we</td></tr>
<tr><td>2</td><td colspan="6">you</td></tr>
<tr><td>3</td><td>he</td><td>she</td><td>it</td><td colspan="3">they</td></tr>
</table>

Accusative

<table>
<tr><th></th><th colspan="3">sg</th><th colspan="3">pl</th></tr>
<tr><th></th><th>m</th><th>f</th><th>n</th><th>m</th><th>f</th><th>n</th></tr>
<tr><td>1</td><td colspan="3">me</td><td colspan="3">us</td></tr>
<tr><td>2</td><td colspan="6">you</td></tr>
<tr><td>3</td><td>him</td><td>her</td><td>it</td><td colspan="3">them</td></tr>
</table>

Genitive

<table>
<tr><th></th><th colspan="3">sg</th><th colspan="3">pl</th></tr>
<tr><th></th><th>m</th><th>f</th><th>n</th><th>m</th><th>f</th><th>n</th></tr>
<tr><td>1</td><td colspan="3">my</td><td colspan="3">our</td></tr>
<tr><td>2</td><td colspan="6">your</td></tr>
<tr><td>3</td><td>his</td><td>her</td><td>it</td><td colspan="3">their</td></tr>
</table>

As in Tsakhur, we have metasyncretism: In each case, the shape of the paradigm is the same, even though the vocabulary items that realize each set of syncretic cells don't have anything to do with each other — English pronouns don't obviously admit of an agglutinative, decomposed analysis.[9] Several identical patterns of syncretism appear in all Case paradigms.

→ Gender is not marked in the personal pronouns (first & second person)
→ Gender is not marked in the plural pronouns
→ Number is not marked in the second person

Here are the vocabulary items from (1) that will end up realizing each feature combination in the nominative and genitive cases shown above:

(22) Genitive

b. awɹ ←→ D_{RE}
+Spkr, +Grp, +Obl

e. maj ←→ D_{RE}
+Spkr, +Obl

g. jɔɹ ←→ D_{RE}
+Part, +Obl

Nominative

a. wij ←→ D_{RE}
+Spkr, +Grp, +Sup

d. aj ←→ D_{RE}
+Spkr, +Sup

h. juw ←→ D_{RE}
+Part

[9] It might not be impossible to propose such an analysis, however; one could, for instance, analyze the *-r* in *our, your* and *their* as marking genitive, and the *-m* in *him* and *them* as accusative, and propose readjustment to the stems *you, he, we* and *they* to get the right final shape.

j. ðɛɹ $\leftrightarrow$ D_{RE} +Grp, +Obl
i. ðej $\leftrightarrow$ D_{RE} +Grp, +Sup
n. hɚ $\leftrightarrow$ D_{RE} +Fem
m. ʃij $\leftrightarrow$ D_{RE} +Fem, +Sup
p. hɪz $\leftrightarrow$ D_{RE} +Obl
o. hij $\leftrightarrow$ D_{RE} +Sup
l. ɪt $\leftrightarrow$ D_{RE} +Neut

In the genitive, the ordering of the VIs can simply fall out from the elsewhere effect. In the nominative, getting the right ordering is somewhat trickier, as we saw in section 2, (10)-(13). It is crucial, for instance, that h be ordered before m, or else nominative 2nd person feminine feature bundles will be pronounced 'she', rather than 'you', but the Elsewhere condition predicts the opposite ordering; ditto for h and i ('they' rather than 'you'). So this order is crucial, if we want to avoid negative features.

As noted above, we could just impose the needed ordering shown here by brute force. On such an analysis, the syncretisms in each case paradigm are entirely dependent on the particular (under)specifications of the vocabulary items relevant for each case. Williams' metasyncretic point applies: If these syncretisms are created by feature underspecifcation of VIs + rule ordering, it's rather a remarkable coincidence that all three English pronominal case paradigms syncretize identically, despite containing different vocabulary items. Nothing in principle rules out the possibility of a VI that particularly refers to plural in the 2nd person genitive, for instance, even though there doesn't happen to be a 2nd person VI that refers to plural in the accusative. On a VI-based treatment, number marking in the 2nd person genitive is completely independent of whether there's number marked in the 2nd person in any other case. Vocabulary item-based syncretism doesn't predict such uniformities, which appear to be generalizations about the whole grammar of a language.

If we adopt an Impoverishment account, however, we will capture these patterns across paradigms in a natural way. On an Impoverishment story, English-specific rules will apply to terminal nodes with certain combinations of features, removing some of them, prior to Vocabulary Insertion. As in Tsakhur and Baoan, because this happens prior to Vocabulary Insertion, it becomes *in principle* impossible for any Vocabulary Item to refer to one of the deleted features in the relevant terminal node. The absence of gender in the plural, for instance, becomes a grammar-wide fact, rather than an accident of vocabulary specification.

For English, we would probably want something like the following rules:

(23) Class → Ø / +Part, ±Spkr ______ (Gender is deleted in the presence of +Participant)

(24) Class → Ø / +Group _____ (Gender is deleted in the presence of +Plural)

(25) Indv → Ø / +Part, -Spkr _____ (Number is deleted in the presence of 2nd person)[10]

(26) Sup → Ø / +Part, -Spkr ____ (Nominative is deleted in the presence of 2nd person)

These Impoverishment rules will generate the meta-syncretisms of English.

What's more, they remove the ordering problems for the Elsewhere condition that we encountered above, because they delete the very features that were inviting inappropriate VIs into the competition.

The 3.sg.f.Nom pronoun *she* will no longer be in competition with the 1.sg.Nom pronoun *I* to realize a [+Spkr, +Part, +Sup, +Fem] terminal node, as in (10) and (11) because no such terminal node will no longer exist—the Impoverishment rule (23) will have deleted [+Fem] from the representation before the VIs start competing. Since [+Fem] is no longer present, *she* won't even enter the competition, because the Subset Principle will rule it out.

The same result will obtain for our ordering problem between *they, she* and *you* in (12) and (13): the deletion of [+Sup] case by the Impoverishment rule in (26) from terminal nodes containing [+Part, -Spkr] representations removes *they* and *she* from the competition, by the Subset Principle.

So the Impoverishment rules that are motivated for English by the meta-syncretic facts also happen to remove the need for brute-force ordering of VIs, an ideal result: an independently motivated and well-used mechanism of the theory allows us not to use an unmotivated, way-over-powerful analytic fudge with no real status in the theory. It seems to me that Impoverishment, judiciously used, may be able to accomplish this quite generally, and it should be deployed more freely than it has been.

3.0 Some meta-paradigms: they're trickier than you think

Williams claims that metaparadigmatic patterns are common in languages of the world, but both he and Bobaljik only consider Indo-European languages (English, Latin, Russian).

Indo-European generally shows a lot of metaparadigmatic behavior, particularly in syncretizing gender in the presence of plural number. Nevins notes that an Impoverishment analysis predicts that metasyncretisms should be fairly stable over time, since not tied to any individual VIs. How common is metaparadigmatic behavior in the languages of the world?

---

[10] Oh no! Negative features in this rule ([-Spkr])! Since 1st person representations also contain a [+Part] node, but do represent number, we have to find away for this Impoverishment rule to apply to representations containing a Speaker node. Solution: either 2nd person is marked — i.e. a bare Part node is 1st person (contra McGinnis 2004), and Addressee is referred to in this Impoverishment rule — or terminal nodes are fully specified in the syntax, negative values and all, and it's only Vocabulary Items that can't be conditioned by negative features. A third possibility is that we somehow allow reference to a node with or without a dependent — i.e. there's $Part_1$, without a dependent, which is different from $Part_2$, with a depenedent. The problem here is interestingly similar to the problem of 3rd person *-s* in English, and to the problem of needing two Gender-deleting Impoverishment rules here in (23) and (24). More on this anon.

In the Surrey Syncretisms Database, syncretisms of person, number, gender and case are presented for 30 genetically diverse languages. Interestingly many of the meta-paradigmatic syncretisms in their database look to be attributable to agglutinative synthetic morphology, where a single vocabulary item appears in multiple ‘paradigms’.

Again, in order for metaparadigmatic syncretism to be an issue, there has to be syncretism driven by distinct vocabulary items w/r to different sets of phi-features; synthetic agglutinative morphology will not demonstrate it. Of the thirty languages in the Surrey syncretism database, at least 10 involve something that really looks like indubitable metaparadigmatic syncretism: <u>Aranoan</u>, <u>Baoan,</u> <u>Georgian</u>, <u>Limbu</u>, <u>Nubian</u>, Rangpo, <u>Tsakhur</u>, Yimas and Yupik; many of the others’ syncretism patterns were too complicated to tell at first glance whether they were metasyncretic or not.

3.3 Case 1: Nubian verbal inflection

Consider, e.g., the Nubian interrogative and affirmative verb inflections on *éd-*, ‘take’, below, as they are presented in the Surrey database:

(27) Nubian interrogative verb inflection

<table>
<tr><td rowspan="3"></td><td colspan="4">interrogative I[11]</td><td colspan="4">interrogative II</td></tr>
<tr><td colspan="2">present</td><td colspan="2">past</td><td colspan="2">present</td><td colspan="2">past</td></tr>
<tr><td>sg</td><td>pl</td><td>sg</td><td>pl</td><td>sg</td><td>pl</td><td>sg</td><td>pl</td></tr>
<tr><td>1</td><td>édrè</td><td rowspan="2">édrò</td><td>édsè</td><td rowspan="2">édsò</td><td>édréè</td><td rowspan="2">édróò</td><td>édséè</td><td rowspan="2">édsóò</td></tr>
<tr><td>2</td><td rowspan="2">édì</td><td rowspan="2">édò</td><td rowspan="2">édnáà</td><td rowspan="2">édònáà</td></tr>
<tr><td>3</td><td>édìnnà</td><td>édsà</td><td>édinnànáà</td><td>édsànáà</td></tr>
</table>

It looks like a good case for metaparadigmatic syncretism here — 2sg and 3sg are syncretized across moods and tenses, as are 1pl and 2pl. However, on a little closer examination, at least one of these syncretisms look attributable to individual vocabulary items that recur in each paradigm — the paradigms are synthetic. However, on a little closer inspection still, one particular metaparadigmatic pattern does emerge.

These verbs seem to have the following structure: V-T/Agr-Mood-Agr_{Part}; nice Mirror Principle stuff except for the final Agr. I assume that the final Agr represents agreement of 1 and 2-person subject in Spec-CP with the C° head, where the Mood features are located; an Agr node is copied/adjoined to Mood in the syntax.

The difference between the 1st person sg and 1-2pl forms in all cases is that the sg forms end in *-è* while the pl forms end in *-ò*.

So one source of the 1-2pl syncretism is the individual underspecified *-ò* vocabulary item that recurs across paradigms. You might think that no Impoverishment needs to be involved here; it can all be blamed on the fact that the *-ò* is underspecified for Person — it realizes a plural Part feature, irrespective of its dependents.

---

[11] Judging from the description in the database report, Interrogative I is the inflection associated with yes-no questions, while Interrogative II is associated with wh-questions.

There's more going on, however. The difference between the present tense and past tense in the 1st person sg and 1-2 pl is that the present has an *-r-* following the verb stem and the past has an *-s-*. These are obviously Tense markers, but they are conditioned by Agr too, since they don't show up in the third person forms or 2sg. *Now* we have reason to think a metaparadigmatic effect is at work, since the *-r-* and the *-s-* are independent vocabulary items. How can we get them to show up in the 2pl but not the 2sg?

The difference between the mood classes is an extra prefinal vowel in the personal forms (except 2sg), and a *náà* suffix in the other forms. The breakdown of all forms except 2-3sg will look like this. Anticipating the solution, I've labeled the *-r-* and *-s-* 'Part', indicating that they are tense markers conditioned by a Participant feature (despite not appearing in in 2sg.)

(28) a. Present tense,

éd-r-Ø-è	éd-r-Ø-ò	éd-r-V[12]-è	éd-r-V-ò
V-PresPart-I-1sg	V-PresPart-I-PartPl	V-PresPart-II-1sg	V-PresPart-II-PartPl

b. Past tense, 1sg, 1&2pl

éd-s-Ø-è	éd-s-Ø-ò	éd-s-V-è	éd-s-V-ò
V-PastPart-I-1sg	V-PastPart-I-PartPl	V-PastPart-II-1sg	V-PastPart-II-PartPl

c. Present tense, 2&3sg and 3pl

éd-ìnnà-Ø	éd-ìnnà-náà
V-PresPl-I	V-PresPl-II

d. Past tense, 2&3sg and 3pl

éd-sà-Ø	éd-sà-náà
V-PastPl-I	V-PastPl-II

What exactly is the source of the metaparadigmatic effect—what Impoverishment rule creates it? To answer that, we have to look at the 2-3sg syncretism. Here, we have another fairly clear case: *éd-ì* in the present shows this syncretism, as does *éd-ò* in the past. If we assume that the *ì* is a genuine exponent of present tense, then we have metasyncretism, as the two vocabulary items here don't look similar.

The *-ì* doesn't show up in the right spot in the II class, though, which it really ought to, since the *-ò* does. So perhaps the present tense morpheme is *-Ø* here, and the *-i* epenthetic —but even if that's the case, we've still got two different tense morphemes in two paradigms showing the same syncretic patterns—whether one's a zero or not doesn't matter. Here, then, we're looking at metasyncretism. The breakdown of the 2-3syncretic forms is as follows:

[12] I hypothesize that the vowel quality of the final vowel spreads left to specify this vowel

(29) a. Present tense, 2-3sg

éd-Ø[13]-Ø	éd-Ø-náà
V-Pres2/3-I	V-Pres2/3-II

b. Past tense, 2-3sg

éd-ò-Ø	éd-ò-náà
V-Past2/3-I	V-Past2/3-II

The metasyncretic character of this syncretism is confirmed in the ‘affirmative’, a form used in rhetorical questions, which looks like a subclass of the class II interrogatives with a special Tense marker, *-min-,* showing up everywhere except for the 2-3 syncretic forms, where it’s *-mi-* instead (see table).

(30) Nubian Affirmative mood

<table>
<tr><td colspan="3">affirmative</td></tr>
<tr><td></td><td>sg</td><td>pl</td></tr>
<tr><td>1</td><td>édminéè</td><td rowspan="2">édminóò</td></tr>
<tr><td>2</td><td rowspan="2">édmi</td></tr>
<tr><td>3</td><td>édmìnáà</td></tr>
</table>

(The other missing piece in the 2-3 syncretic forms is the expected *-náà* class II marker, which shows up as expected in the plural. We expect to see *-náà* here because it was in the *éd–náà* form in the equivalent cell in the II class. There’s nothing incompatible between *–mi* or *–min* and *–náà*, as shown by the 3pl form here—in fact, without the missing *-náà*, the 2-3sg and 3pl forms would be homophonous. So the absence of *-náà* needs accounting for. We’ll assume an Impoverishment rule deletes the +Wh feature of MOOD in this environment of the affirmative.[14])

The breakdown of the affirmative will look like this:

(31) a. 1sg and 1-2pl

éd-min-V-è	éd-min-V-ò
V-AffT-II-1sg	éd-AffT-II-PartPl

b. 3pl
éd-min-náà[15]
V-AffT-II

c. 3sg
éd-mi
V-AffT

[13] As noted above, I hypothesize that the final vowel *ì* in this form is inserted for phontactic reasons.
[14] Though we’ll have to refer to negative features again to characterize the right environment for *this* Impoverishment rule, since it’s the unspecified environment: 3sg. Agh!
[15] I hypothesize that Nubian disallows geminate consonants.

If we Impoverish a second person Part feature in the singular (i.e. a Part with no dependents, assuming unmarked Part is 2nd person per McGinnis 2004), causing 2sg representations to become identical to 3sg representations, both sets of syncretisms that we have identified will fall out.

(32) T + AGR → T + AGR
RE → RE
Part

After Impoverishment, and before VI insertion, the 2sg terminal nodes feature combination will be eliminated. Consequently, the behavior of -r- and -s-, not appearing in the 2sg, is expected.

(33) The VIs of Nubian interrogative verbal inflection:

a. -s- ↔ T+AGR
+Past
+Part

b. -r- ↔ T+AGR
+Part

c. -ìnnà- ↔ T+AGR
+Group

d. -sà- ↔ T+AGR
+Past
+Group

e. -ò- ↔ T+AGR
+Past

f. -min- ↔ T+AGR
+Affirm
{+Part, +Group}[16]

g. -mi- ↔ T+AGR
+Affirm

[16] Ironically, here I find I need to refer to the same natural class as in the English present tense: any marked Agr node. Since 3sg is maximally underspecified, there's no way to have it block insertion of anything, so the -*mi-* really has to be the Elsewhere case. That means that *-min-* has to realize some coherent class of features — but since it appears (like English –Ø) in both +Part, -Group cases (1&2sg) and +Group, -Part cases (3pl), it's simply not a natural class. Here's where someone could get tempted by a RoR.

h. -Ø- ←→ T+Agr

i. -V- ←→ Mood / T+Agr ______
+Wh +Part

j. -náà ←→ Mood
+Wh

k. -Ø ←→ Mood

l. -ò ←→ $\mathrm{Agr}_{\mathrm{PART}}$
+Group

m. -è ←→ $\mathrm{Agr}_{\mathrm{PART}}$

So the moral of the story here is that we see a metasyncretism created by Impoverishment that affects *other* nodes. We have to modify our analysis somewhat, however, when we look at the indicative in present, past and future:

(34) Indicative mood: present, past, future

	present		past		future	
	sg	pl	sg	pl	sg	pl
1	éd-(ì)-r		éd-(ì)-s		éd-âll	
2	éd-nâm	éd-l-ókòm	éd-o-nâm	éd-s-ókòm	éd-áa-nâm	éd-áa-l-ókòm
3	éd-ì	éd-innà	éd-ò	éd-sà	éd-áà	éd-áa-nà

In the 3rd person, we see our familiar items *-innà* and *-sà*, for present and past, as well as two new items for the future, *-âll-* in the first person and *-áà-* elsewhere. We see *-r-* in the first person present and *-s-* in the first person past and 2nd person pl past, just as before. The agreement vowels on the end are absent, so presumably those VIs are conditioned for insertion in the interrogative mood, or *-Ø* forms pre-empt them here. I assume that the *-i-* vowels in the first person forms are epenthetic, fixing the phonotactics of the forms.

However, the analysis of the second person needs more attention now. We see an *-l-* in the Mood slot in second person plural present and future. (We see the tense marker *-áa-* clearly in both the 2nd and 3rd persons, both numbers. So the *–l–* seems to be a special Indicative mood marker conditioned by 2nd person.) We see two new $\mathrm{Agr}_{\mathrm{Part}}$ items following the *-l-* Mood marker, *-nâm* and *ókòm,* conditioned by 2nd person and number. Given these items, it would appear that 2nd person is *not* impoverished in the indicative—but if that's the case, then we would expect to see the *-r-* and *-s-* Tense items spread into the Tense slot in the 2sg. But we do not see this—rather, the syncretism of Tense with 3sg remains here; we get the *-Ø-* and *-o-* tense markers in 2sg, as in the interrogative, rather than the *-r-* and *-s-*.

As noted above, we assume an Agree operation creates the extra Agr node outside Mood (in C°) from +Part subject representations in Spec-CP the syntax, in the Indicative, Interrogative II, and Affirmative.[17] Hence it is ordered before the Impoverishment operation that deletes the Participant feature from Tense in the T+AGR node. Then the Impoverishment applies, and the Tense node syncretizes. (This is the same solution to the same problem that we saw in Tsakhur, above: double exponence, where an Impoverishment rule applies to one node but not the other.)

Then we *still* have a problem in figuring out the realization of the extra Agr node in Interrogative II. We *don't* want the equivalent extra vowel to be inserted in the interrogative forms in the 2nd singular, which syncretize perfectly with the 3rd person forms (*náà-*è*, no person vowel suffix... or is there? Perhaps there's a phonotactic reanalysis going on here?)

3.4 Case 2: Aranoan pronouns (long forms only):

(35) Aranoan[18] personal pronouns

1st person	sg	du	pl
absolutive	ema	tsema	cuama
ergative	yama	tseama	cuamaja
genitive	quima		

1st incl	sg	du	pl
absolutive	*	tseda	cuada
ergative	*	tseada	cuadaja
genitive	*		

2nd pers.	sg	du	pl
absolutive	midya	metseda	micana
ergative	midyaja	metseada	micanaja
genitive	miqueda		

3rd person	sg	du	pl
absolutive	joda	huatseda	naeda
ergative	huada	huatseada	naedaja
genitive			

In all cases, the ergative/genitive pronoun in the dual and plural can be derived from the absolutive one with the insertion of a single *–a–* infix (in the dual) and an *–ja—* suffix (in the plural).

[17] In a way, it's not surprising that this operation doesn't happen in Interrogative I, since that is for yes-no questions only; one wouldn't expect any phi-features to be in Spec-CP in this instance.
[18] A Tacanan language spoken in Bolivia.

(36)	Absolutive duals	+ -*a*- before final syllable	→	Erg/gen duals
1ex	tsema			tse**a**ma
1in	tseda			tse**a**da
2	metseda			metse**a**da
3	huatseda			huatse**a**da

(37)	Absolutive plurals	+ -*ja* suffix	→	Erg/gen plurals
1ex	cuama			cuama**ja**
1in	cuada			cuada**ja**
2	micana			micana**ja**
3	naeda			naeda**ja**

We could propose the following vocab items to capture this syncretism with underspecification, assuming Erg and Gen share some distinctive feature like [+Obl]:

(38) -*a*- → KASE / [+Min, +Group] ____
[+Obl]
-*ja*- → KASE
[+Obl]
Ø → KASE (absolutive)

But.. .the same point from Tsakhur and English applies here: if *a* and *ja* are truly separate Vocabulary items, then we're facing a metasyncretism again: two separate items creating the same syncretisms in two different number paradigms. There would be no reason, for instance, why some vocab item in the plural might not refer to an Erg feature, independently of what was happening in the dual. Consequently, we'd need an Impoverishment rule, deleting Erg in the presence of [+Group] (which is present in both the dual and plural), to capture these metasyncretisms.

(If 'j' is a default consonant in the lg, then it's possible that these are the same affix, with a phonologically driven syllable-fix in the plural. If *that* analysis were supported, the Elsewhere Condition would be useful (to order -*a*- w/r to -*Ø*-), and no metaparadigmatic syncretism would be present, despite appearances. Whatever other analysis of these pronouns is possible (*tse- (?+da)* looks like a dual-marking morpheme, e.g.), it would be irrelevant to the way case is realized in the system: the erg/gen syncretism would be totally driven by the relevant vocabulary item -*a*- and would not be 'meta-paradigmatic' at all.)

3.5 Case 3: Georgian non-inverted transitive agreement paradigms

Suffixes syncretize in the same ways in all types, despite being distinct VIs:

(39) Georgian non-inverted trans. agr paradigms types A, B, C:

<table>
<tr><th>Sub-Obj</th><th>A: 18 forms
3sg = -s
class 1 present
‘build’ *šeneb*</th><th>B: 19 forms
3sg = vowel
class 1 aorist
‘build’ *šen*</th><th>Type C: 20 forms

class 2 present
‘help’ *exmareb*</th></tr>
<tr><td>1sg-2sg</td><td>g- -**Ø**</td><td>g- -**e**</td><td>g- -**i**</td></tr>
<tr><td>1sg-3</td><td>v- -**Ø**</td><td>v- -**e**</td><td>v- -**i**</td></tr>
<tr><td>1sg-2pl
1pl-2pl
1pl-2sg</td><td>g- -**Ø** -t</td><td>g- -**e** -t</td><td>g- -i -t</td></tr>
<tr><td>3sg-2pl</td><td></td><td colspan="2">g- -**a** -t</td></tr>
<tr><td>3pl-2pl
3pl-2sg</td><td>g- -**en**</td><td>g- -**es**</td><td>g- -**an**</td></tr>
<tr><td>3sg-2sg</td><td>g- -**s**</td><td colspan="2">g- -**a**</td></tr>
<tr><td>1pl-3</td><td>v- -**Ø** -t</td><td>v- -**e** -t</td><td>v- -**i** -t</td></tr>
<tr><td>2sg-1sg</td><td>m- -**Ø**</td><td>m- -**e**</td><td>m- -**i**</td></tr>
<tr><td>2sg-3</td><td>-**Ø**</td><td>-**e**</td><td>-**i**</td></tr>
<tr><td>2sg-1pl</td><td>gv- -**Ø**</td><td>gv- -**e**</td><td>gv- -**i**</td></tr>
<tr><td>2pl-1sg</td><td>m- -**Ø** -t</td><td>m- -**e** -t</td><td>m- -**i** -t</td></tr>
<tr><td>2pl-3</td><td>-**Ø** -t</td><td>-**e** -t</td><td>-**i** -t</td></tr>
<tr><td>3sg -1sg</td><td>m- -**s**</td><td colspan="2">m- -**a**</td></tr>
<tr><td>3pl-1sg</td><td>m- -**en**</td><td>m- -**es**</td><td>m- -**an**</td></tr>
<tr><td>3sg-3</td><td>-**s**</td><td colspan="2" rowspan="2">-**a**
gv- -**a**</td></tr>
<tr><td>3sg-1pl</td><td>gv- -**s**</td></tr>
<tr><td>3pl-1pl</td><td>gv- -**en**</td><td>gv- -**es**</td><td>gv- -**an**</td></tr>
<tr><td>3pl-3</td><td>-**en**</td><td>-**es**</td><td>-**an**</td></tr>
</table>

Across all three verb classes, patterns of syncretism are close to identical. Where A has *–Ø*, B has *–e*, and C has *–i*. Where A has *–en*, B has *–es*, and C has *–an*, and in most places where A has *–s*, B and C have *–a*. Because their phonological forms are distinct in each class, they are separate Vocabulary Items; the metaparadigmatic pattern needs to be captured pre-Vocab Insertion by manipulating the terminal nodes, via Impoverishment or some other mechanism. Not that I’m going to try.

3.6 Case 4: Limbu verbal inflection

(40) Reg. stem intransitive verbs in Limbu:[19]

	non-past	past	neg non-past	neg past
1sg	V-ʔε	V-aŋ	mε-V-ε-n	mε-V-aŋ-nε-n
1du	V-**si**-ge	V-**εtchi**-ge	mε-V-**si**-gε-n	mε-V-**εtchi**-gε-n
1pl	V-i-ge	V-mʔna	mε-V-i-gε-n	mεn-V-mʔna
1in du	a- V-**si**	a-V-**εtchi**	an-V-**si**-n	an-V-**εtchi**-n
1in pl	a- V-**Ø**	a-V-**ε**	an-V-**nε**-n	an-V-**ε**-n
2	kε- V-**Ø**	kε-V-**ε**	kεn-V-**nε**-n	kεn-V-**ε**-n
2 du	kε-V-**si**	kε-V-**εtchi**	kεn-V-**si**-n	kεn-V-**εtchi**-n
2pl	kε-V-i		kεn-V-i-n	
3	V-**Ø**	V-**ε**	mε-V-**nε**-n	mε-V-**ε**-n
3du	V-**si**	V-**εtchi**	mε-V-**si**-n	mε-V-**εtchi**-n
3pl	mε-V-**Ø**	mε-V-**ε**	mεn-V-**nε**-n	mεn-V-**ε**-n

Here, the syncretism patterns in the suffixes are exactly the same for all the tenses, although the vocabulary items are different: despite the different other suffixes (e.g. the *-si* dual suffix in non-past and the *–εtchi* dual suffix in past), the interesting 'elsewhere'-looking class of 1inpl, 2sg, 3sg, and 3pl is the same across all columns, though realized with different VIs: -*Ø* (positive nonpast), -*ε* (negative) and -*nε* (positive past).

If this natural class is created through Impoverishing the relevant person features, its uniformity across classes is expected; if it's an accident of Vocabulary Item specification, its uniformity is a surprising coincidence. Note that any one of these patterns could be easily taken care of by appropriate Vocab Items and the Elsewhere condition. Here, again, we have a case where despite the fact that Elsewhere *could* handle the ranking in each individual case, Impoverishment must be applying anyway.

English tense+agreement vocabulary items:

(41)
a. t ←→ T+AGR / V_{Class1} ____   *e.g.* He deal-t the cards
    +past
b. Ø ←→ T+AGR / V_{Class2} ____   *e.g.* She hit-Ø the deck
    +past
c. d ←→ T+AGR   *e.g.* He wow-ed the audience
    +past
d. wõ ←→ T+AGR / ____ Neg   *e.g.* She wo-n't walk
    +future
e. wɪl ←→ T+AGR   *e.g.* He will walk.
    +future
f. z ←→ T+AGR   *e.g.* She do-es
    +3,-pl

[19] A Tibeto-Burman Kiranti language, spoken in Nepal

g. Ø ←→ T+AGR e.g. They do-Ø
elsewhere

(Some) possible English tense+agreement terminal node feature bundles, as provided by the syntax, using these features and assuming full specification and negative values, after valuation of phi-features via Agree:

Person	Sg			Pl		
	A (fut)	B (past)	C (prs)	D (fut)	E (past)	F (prs)
1	T+AGR	T+AGR	T+AGR	T+AGR	T+AGR	T+AGR
	+1 -pl -past +future	+1 -pl +past -future	+1 -pl -past -future	+1 +pl -past +future	+1 +pl +past -future	+1 +pl -past -future
2	T+AGR	T+AGR	T+AGR	T+AGR	T+AGR	T+AGR
	+2 -pl -past +future	+2 -pl +past -future	+2 -pl -past -future	+2 +pl -past +future	+2 +pl +past -future	+2 +pl -past -future
3	T+AGR	T+AGR	T+AGR	T+AGR	T+AGR	T+AGR
	+3 -pl -past +future	+3 -pl +past -future	+3 -pl -past -future	+3 +pl -past +future	+3 +pl +past -future	+3 +pl -past -future

The spell-out of the terminal nodes in columns A and D will depend on whether negation is around in the tree or not (Vocab Items (41)d-e), and the spell-out of columns B and E will depend on the class of the neighboring verb (Vocab items (41)a-b).

No matter whether there is negation and no matter the verb class, there will be total syncretism in the realizations of all of the nodes represented in 1A, 1D, 2A, 2D, 3D, (which will turn up as [wɪl]), simply by virtue of the underspecification of Vocab Items in (41); represented by horizontal grey stripes) and 1B, 1E, 2B, 2E, 3E will syncretize as well. On the usual analysis, this is guaranteed by the underspecifcation of the Vocab Items 1a, 1b, 1d and 1e: because they all refer to a tense value only, the forms in the future and the past syncretize completely.[20]

In English agreement, across verb classes, if tense is marked, number is not. This is true both for *-t* suffixing verbs (*He slep-t*) and the elsewhere *-d* suffixing verbs *(He plann-ed*).

[20] (Of course, the crucial point in the analysis of English tense-agr marking is to ensure that the correct forms appear in the nodes represented in 3A, 3B and 3C, the third person singular forms present tense. They seem to pose a thorny problem for underspecification analyses of 3sg forms (though I still think this has to be the right way to go, because that *–s* spreads throughout the present tense forms in some English dialects, including Nfld. English; characteristic behavior for an elsewhere form. See Nevins 2003, McGinnis 2003 for relevant discussion.)

This is our favorite metaparadigmatic effect: Williams and Bobaljik both note that there's no reason for these irregular verbs to exhibit the same syncretism(s) as regular ones — there could be an irregular person-number marking suffix competing for a p.o.e. in the irregular environment—but there's not. A rule of Impoverishment deleting person-number features in the context of marked tense features can explain this cross-paradigmatic syncretism pattern.

(42) $\text{Agr} \rightarrow \varnothing \;/\; \underset{\{+\text{Past}, +\text{Fut}\}}{\text{T}} \;\_\_\_\_$

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