Class 5: Syncretism

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1 Paradigms

- Unlike in some other morphological theories, paradigms do not have any status in the theory of Distributed Morphology.
- They exist as descriptions of the possible logical space of feature combinations that our rules for Vocabulary Insertion have to cover.

(1)

	singular	plural
1st person	[PRON, 1, SG]	[PRON, 1, PL]
2nd person	[PRON, 2, SG]	[PRON, 1, PL]
3rd person	[PRON, 3, SG]	[PRON, 3, PL]

- The expected case in one in which each cell in the paradigmatic space is filled by a distinct form:

(2)

	singular	plural
1st person	*I*	*we*
2nd person	*you*	*y'all*
3rd person	*he/she/it*	*they*

- Of course, this is very often not the case for all dialects of English:

(3)

	singular	plural
1st person	*I*	*we*
2nd person	*you*	*you*
3rd person	*he/she/it*	*they*

- In addition, there is a three-way gender distinction that we only see in the 3rd person singular.
- Our understanding of the paradigm as a maximal combination of feature distinctions forces us to assume that the gender distinction is present in every cell too.
- As Harley (2008) points out, this means that there is actually considerably more cells in the English pronominal paradigm than is usually acknowledged:

(4)

		singular			plural		
		masculine	feminine	neuter	masculine	feminine	neuter
1	Nom	*I*			*we*		
	Acc	*me*			*us*		
	Gen	*my*			*our*		
2	Nom	*you*					
	Acc						
	Gen	*your*					
3	Nom	*he*	*she*	*it*	*they*		
	Acc	*him*	*her*	*it*	*them*		
	Gen	*his*	*her*	*its*	*their*		

- The correspondence of one form to many morphosyntactic contexts is called *syncretism*.

Syncretism

The use of the same form across distinct morphosyntactic contexts.

- The questions we want to address in this class:
  - What theoretical devices do we need to account for syncretism in DM?
  - What are common cross-linguistic patterns of syncretism?
  - Are there patterns of syncretism that pose a challenge for the DM approach to syncretism?

2 Underspecification

- As we have already seen, the simplest way to account for syncretism is by means of *underspecification*.
- Given the Subset Principle, a Vocabulary Item may mention fewer features than its insertion context:

(5)

	singular	plural
1st person	*I*	*we*
2nd person	*you*	*you*
3rd person	*he/she/it*	*they*

a. [1, SG] ↔ I
b. [2] ↔ you
c. [3, SG, F] ↔ she
…

- A similar case can be found with pronouns in Kuman (Harbour 2016):

(6)

	singular	plural
1st person	na	no
2nd person	ene	ene
3rd person	ye	ye

a. [1, SG] ↔ na
b. [1, PL] ↔ no
c. [2] ↔ ene
d. [3] ↔ ye

- Now look at these verb forms from Gothic:

(7)

nim-a	'I take'	*nim-ōs*	'we two take'	*nim-am*	'we take'
nim-iþ	'you (sg.) take'	*nim-and*	'you two take'	*nim-and*	'you (pl.) take'

(8)

	singular	dual	plural
1st person	-a	-ōs	-am
2nd person	-iþ	-and	-and

- There is a three-way number contrast (singular, plural, dual). How can we account for the distribution of *-and*?
- One possibility is to treat *-and* as a general 2nd person form that is blocked by a more specific exponent in the singular:

(9)
a. [2, singular] ↔ -iþ
b. [2] ↔ -and

- This works for some cases, but it treats the syncretism as accidental (the leftover cells).
- An alternative is to treat these two columns as a *natural class* (a distribution defined positively by a given feature specification).
- In order to do this, we can assume a *decomposition* of traditional grammatical features like 'singular' and 'plural' into sub-features.
- Typically, one uses binary feature values (but this isn't actually necessary).

(10)

	singular [+singular, −plural]	dual [−singular, −plural]	plural [−singular, +plural]
1st person	-a	-ōs	-am
2nd person	-iþ	-and	-and

- Once these features are given an explicit semantics, it is possible to explain why [+sing, +pl] is not possible (Harbour 2011).
- Now consider the different case suffixes used in Icelandic:

(11) *Nominal declension in Icelandic*

hest-ur	'horse' (nom. masc.)	*mynd*	'picture' (nom. fem.)	*borð*	'table' (nom. neut.)
hest	'horse' (acc. masc.)	*mynd*	'picture' (acc. fem.)	*borð*	'table' (acc. neut.)
hest-i	'horse' (dat. masc.)	*mynd*	'picture' (dat. fem.)	*borði*	'table' (dat. neut.)
hest-s	'horse' (gen. masc.)	*myndar*	'picture' (gen. fem.)	*borðs*	'table' (gen. neut.)

- It seems like we need a similar decomposition of gender into [±masculine] and [±feminine]:

(12)

	masculine [+masc, −fem]	feminine [−masc, +fem]	neuter [−masc, −fem]
nominative	-ur	-Ø	-Ø
accusative	-Ø	-Ø	-Ø
dative	-i	-Ø	-i
genitive	-s	-ar	-s

- Vocabulary Items for Icelandic:

(13)
a. [+masc, nominative] ↔ -ur
b. [+fem, genitive] ↔ -ar
c. [−fem, dative] ↔ -i
d. [genitive] ↔ -s
e. [ ] ↔ -Ø

- Why do we have to mention [−fem] in (13c) but not (13d)?
- Does this decomposition work for the forms of the Albanian demonstrative 'this (NOM)' (data from Baerman et al. 2005)?

(14)

	singular	plural
masculine [+masc, −fem]	*ky*	*këta*
feminine [−masc, +fem]	*kjo*	*këto*
neuter [−masc, −fem]	*ky*	*këto*

a. [+fem, +sg] ↔ kjo
b. [+masc, −sg] ↔ këta
c. [(−masc,) −sg] ↔ këto
d. [(−fem,) +sg] ↔ ky

- What about other kinds of syncretism, e.g. for case? See the Polish wh-pronouns in (15).

(15)

	'who' [+animate]	'what' [−animate]
NOM [+a, +b]	*kto*	*co*
ACC [+a, −b]	kogo	co
GEN [−a, −b]	kogo	czego

a. [+a, +b, +animate] ↔ kto
b. [−a, −b, −animate] ↔ czego
c. [−b, +animate] ↔ kogo
d. [+a, −animate] ↔ co

- Here, it is not obvious that there is a semantic decomposition that makes sense nowadays (but see Jakobson 1962; Bierwisch 1967).
- For this reason, I will just use arbitrary feature labels [±a, ±b] instead of traditional anachronistic ones like [±governed].

3 Impoverishment

- We have already used underspecification to account for the irregular present tense forms of *be*:

(16)

	SG	PL
1	am	are
2	are	are
3	is	are

(17)
a. $\sqrt{\text{BE}}$ ↔ *am* / ___ [PRES, 1, SG]
b. $\sqrt{\text{BE}}$ ↔ *is* / ___ [PRES, 3, SG]
c. $\sqrt{\text{BE}}$ ↔ *are* / ___ [PRES]
d. $\sqrt{\text{BE}}$ ↔ *be*

- Now, compare these forms to the past tense forms of *be*:

(18)

	SG	PL
1	was	were
2	were	were
3	was	were

(19)
a. $\sqrt{\text{BE}}$ ↔ *was* / ___ [PAST, 1SG]
b. $\sqrt{\text{BE}}$ ↔ *was* / ___ [PAST, 3SG]
c. $\sqrt{\text{BE}}$ ↔ *were* / ___ [PAST]
d. $\sqrt{\text{BE}}$ ↔ *be*

- What's the problem with the analysis above?

Avoid accidental homophony

All else being equal, treat two identical forms within the same paradigm as deriving from the same Vocabulary Item.

- How can we do this for the paradigm above? We could find a feature that unifies 1st and 3rd person (e.g. [−addressee]?). More on this in a moment.
- There is another option. We can specify *was* for past singular contexts:

(20)
a. $\sqrt{\text{BE}}$ ↔ *was* / ___ [PAST, SG]
b. $\sqrt{\text{BE}}$ ↔ *were* / ___ [PAST]
c. $\sqrt{\text{BE}}$ ↔ *be*

- How do we get *were* instead of *was* in the 2sg context?
- Here, DM employs what are known as *impoverishment* rules.
- The following rule deletes the [SG] feature in the context of [2, PAST]

(21) [SG] → Ø / [___ 2, PAST]

(22)

	SG	PL
1	[1, SG, PAST]	[1, PL, PAST]
2	[2, ~~SG~~, PAST]	[2, PL, PAST]
3	[3, SG, PAST]	[3, PL, PAST]

(23)

	SG	PL
1	was [1, SG, PAST]	were [1, PL, PAST]
2	were [2, PAST]	were [2, PL, PAST]
3	was [3, SG, PAST]	were [3, PL, PAST]

- This is known as *directional syncretism*: The 'plural form' spreads to the singular.

(24)

	SG	PL
1	was	were
2	←were	
3	was	were

- Let's look at a slightly more complicated example.
- Consider the plural declension of Polish adjective *słaby* ('weak')

(25)

	Masculine		Feminine	Neuter
	human	non-human	(non-)human	(non-)human
NOM	słab-i	słab-e	słab-e	słab-e
ACC	słab-ych	słab-e	słab-e	słab-e
GEN	słab-ych	słab-ych	słab-ych	słab-ych
LOC	słab-ych	słab-ych	słab-ych	słab-ych
DAT	słab-ym	słab-ym	słab-ym	słab-ym
INS	słab-ymi	słab-ymi	słab-ymi	słab-ymi

- There is a lot of syncretism here (5 forms distributed across 24 cells).
- We have some simple syncretism (*-ym* and *-ymi* = DAT/INS).
- Some stipulated natural classes: *-ych* is the GEN/LOC form and *-e* is the NOM/ACC form.
- We have a very specific form *-i* that is restricted to exactly one cell, while the GEN/LOC form is 'borrowed' in the accusative masculine human cell (*directional syncretism*).

(26)

	Masculine		Feminine	Neuter
	[+human]	[−human]	[±human]	[±human]
NOM [+a, +b, +c]	*-i* [+a, +b, +c]	*-e* [+a, +b, +c]	*-e* [+a, +b, +c]	*-e* [+a, +b, +c]
ACC [+a, −b, +c]	*-ych* [~~+~~/−b, +c]	*-e* [+a, −b, +c]	*-e* [+a, −b, +c]	*-e* [+a, −b, +c]
GEN [−a, −b, −c]	*-ych* [−a, −b, −c]	*-ych* [−a, −b, −c]	*-ych* [−a, −b, −c]	*-ych* [−a, −b, −c]
LOC [−a, −b, +c]	*-ych* [−a, −b, +c]	*-ych* [−a, −b, +c]	*-ych* [−a, −b, +c]	*-ych* [−a, −b, +c]
DAT [−a, +b, −c]	*-ym* [−a, +b, −c]	*-ym* [−a, +b, −c]	*-ym* [−a, +b, −c]	*-ym* [−a, +b, −c]
INS [−a, +b, +c]	*-ymi* [−a, +b, +c]	*-ymi* [−a, +b, +c]	*-ymi* [−a, +b, +c]	*-ymi* [−a, +b, +c]

(27)
a. [+a, +b, +c, +hum, masc] ↔ *-i*
b. [−a, +b, −c] ↔ *-ym*
c. [−a, +b, +c] ↔ *-ymi*
d. [+a, +c] ↔ *-e*
e. [−b] ↔ *-ych*

- In order to get *-ych* in one accusative cell, it must be specified for the only featured shared by these cells ([−b]).
- Insertion of the more specific *-e* is bled by the impoverishment rule in (28).

(28) *Impoverishment rule*
[+a] → Ø / [___, +masc, +hum, −b]

4 Metasyncretism

- Let's now look at (regular) German present tense inflection:

(29)

	SG	PL
1	glaub-e	glaub-en
2	glaub-st	glaub-t
3	glaub-t	glaub-en

	SG	PL
1	-e	-en
2	-st	-t
3	-t	-en

- First, we have to consider what feature decomposition to use.
- There are different possible semantically-motivated decompositions we could consider:

(30)

	SG	PL
1 [+speaker, −hearer]	-e	-en
2 [−speaker, +hearer]	-st	-t
3 [−speaker, −hearer]	-t	-en

(31)

	SG	PL
1 [+author, +participant]	-e	-en
2 [−author, +participant]	-st	-t
3 [−author, −participant]	-t	-en

- A possible advantage of the [±speaker, ±hearer] system is that it predicts a fourth category to be possible, namely one that includes the speaker and the hearer in the set of referents: in the plural, this corresponds to the 1st.INCL in some languages (though not German).
- The [±author, ±participant] system rules out the fourth logic possibility [+author, −participant] as incoherent since it is not possible to be both the author (speaker) but not be speech act participant.
- What do you notice about the possible syncretic patterns that these decompositions offer?

- Let's consider the less straightforward option, namely using [±author, participant]:

(32)

	SG	PL
1 [+author, +participant]	-e	-en
2 [−author, +participant]	-st	-t
3 [−author, −participant]	-t	-en

(33)
a. [+author, 1, SG] ↔ -e
b. [−author, 2, SG] ↔ -st
c. [−author] ↔ -t
d. [ ] ↔ -en

- No more specific rule fits 1PL. However, we expect to find *-t* in 3PL.
- We can therefore bleed the insertion of this suffix by impoverishment:

(34) *Impoverishment rule*
[−author] → Ø / [___, −participant, PL]

- An important consideration is that the 1/3PL syncretism is systematic:

(35)

	SG	PL
1	glaub-e	glaub-en
2	glaub-st	glaub-t
3	glaub-t	glaub-en

	SG	PL
1	bin	sind
2	bist	seid
3	ist	sind

	SG	PL
1	A	E
2	B	C/D
3	C	E

- This a case of *metasyncretism*. The cells pattern together regardless of the specific form (cf. NOM/ACC in non-masculines in German).
- There is a general consensus in DM literature that this kind of syncretism should not be treated as an accident of the Vocabulary (Bobaljik 2002; Harley 2008).
- So the guiding idea is that the E cells in (35) should *have* to be metasyncretic.

(36)

	SG	PL
1	[+auth, +part, SG, PRES]	[~~+auth~~, ~~+part~~, ~~PL~~, PRES]
2	[−auth, +part, SG, PRES]	[~~+auth~~, ~~+part~~, ~~PL~~, PRES]
3	[−auth, −part, SG, PRES]	[~~+auth~~, ~~+part~~, ~~PL~~, PRES]

(37) *Impoverishment rules*
a. [+author, −participant, PL] → Ø / [___, PRES]
b. [−author, −participant, PL] → Ø / [___, PRES]

- By deleting all the features that could distinguish the cells we ensure that there can never be a different from in 1PL and 3PL.
- The hypothetical paradigm in (38) would therefore never be possible:

(38) *

	SG	PL
1	bin	sind
2	bist	seid
3	ist	sei

a. $\sqrt{\text{BE}}$ ↔ *sind* / [___, +auth, +part, PL]
b. $\sqrt{\text{BE}}$ ↔ *sei*

5 Bidirectional syncretism

- There are some tricky cases of syncretism, e.g. *bidirectional syncretism* (Baerman 2004; Baerman et al. 2005).
- Consider the form of pronouns in Bonan (*convergent bidirectional syncretism*):

(39)

	NOUN 'house'	PRONOUN 'I'
NOM	labčoŋ-Ø	ndžaŋ-Ø
GEN	labčoŋ-ne	ndžaŋ-ne
ACC	labčoŋ-ne	ndžaŋ-de
DAT	labčoŋ-de	ndžaŋ-de
ABL	labčoŋ-se	ndžaŋ-se
INS/COM	labčoŋ-Gale	ndžaŋ-Gale

- Analysis of the important part:

(40)
a. [+a] → *-ne*
b. [+b] → *-de*

	NOUN	PRON
GEN [+a, −b]	-ne	-ne
ACC [+a, +b]	-ne/-de	-ne/-de
DAT [−a, +b]	-de	-de

- *-de* and *-ne* require a partially overlapping distribution.
- We have an *indeterminacy* for the ACC cells. We can resolve this with impoverishment:

(41)
a. [+b] ↔ Ø / ___ [+a], [NOUN]
b. [+a] ↔ Ø / ___ [+b], [PRON]

- Now consider the 'second declension' for singular nouns in Latin:

(42)

	I 'war'	II 'slave'	III 'crowd'
NOM	bell-um	serv-us	vulg-us
ACC	bell-um	serv-um	vulg-us
GEN	bell-ī	serv-ī	vulg-ī
DAT	bell-ō	serv-ō	vulg-ō
ABL	bell-ō	serv-ō	vulg-ō

- This pattern is challenging for an impoverishment/underspecification approach.
- Let's start with the distribution of class II:

(43) a. [+a, −b] ↔ *-us*
b. [+a, +b] ↔ *-um*

	I	II	III
NOM [+a, −b]	-us	-us	-us
ACC [+a, +b]	-um	-um	-um

- Let's try to get *-um* in the top-left corner with impoverishment:

(44) *Impoverishment rule I*
[−b] → Ø / ___ [+a], [I]

(45) a. [+a, −b] ↔ *-us*
b. [+a] ↔ *-um*

	I	II	III
NOM [+a, −b]	[+a, −b] ⇓ [+a,] ⇒ -um	-us	-us
ACC [+a, +b]	-um	-um	-um

- So far so good, now let's try to get the bottom-right corner:

(46) *Impoverishment rule II*
[+b] → Ø / ___ [+a], [III]

(47) *Vocabulary Items for Latin*
a. [+a] ↔ *-us*
b. [+a] ↔ *-um*

	I	II	III
NOM [+a, −b]	-um	-us	-us
ACC [+a, +b]	-um	-um	[+a, +b] ⇓ [+a,] ⇒ -us

- Now we have a big problem: The two markers have a fully overlapping distribution.
- There is no good way around this.

- This requires that we can insert features (we can turn an ACC cell into a NOM cell)

(48) a. [+a] → *-us*
b. [+a, +b] → *-um*

(49) *Impoverishment rule I*
[−b] → Ø / ___ [+a], [I]

(50) *Impoverishment rule II*
[+b] → Ø / ___ [+a], [III]

(51) *Insertion rule*
Ø → [−b] / ___ [+a]

	I	II	III
NOM [+a, −b]	[+a, −b] ⇓ [+a,] ⇒ -um	-us	-us
ACC [+a, +b]	-um	-um	[+a, +b] ⇓ [+a,] ⇓ [+a, −b] ⇒ -us

- This might look stipulative, but it is grounded in ideas about markedness (Noyer 1998).

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