

# Bidirectional syncretism

Andrew Murphy

andrew.murphy@uchicago.edu

## 1 Baerman (2004)

- Unstipulated syncretism*: Where the values involved form a natural class, so that the syncretism results from underspecification ≈ underspecification without decomposition, e.g. syncretism spanning an entire row/column.
- Symmetrical syncretism*: Where the syncretized values do not constitute a natural class (entire row/column) ≈ underspecification without decomposed features.
- Directional syncretism*: The stipulation of class membership exhibits directional effects: it looks as if the form is ‘borrowed’ from another value ≈ rules of referral.

### Convergent bidirectional syncretism

There is a feature value  $x$  that takes the form associated with feature value  $y$  in some contexts, and in other contexts takes the form associated with feature value  $z$ .

#### (1) Bidirectional syncretism in Russian noun declension:

<i>o</i> -stem		<i>i</i> -stem	
INANIMATE	ANIMATE	INANIMATE	ANIMATE
‘table’	‘student’	‘bone’	‘mother’
NOM SG	stol-Ø	student-Ø	kost'-Ø
ACC SG	stol-Ø	student-a	kost'-Ø
GEN SG	stol-a	student-a	kost-i
LOC SG	stol-e	student-e	kost-i
DAT SG	stol-u	student-u	kost-i
INSTR SG	stol-om	student-om	kost-ju
		mat'-Ø	mater-i
NOM PL	stol-y	student-y	kost-i
ACC PL	stol-y	student-ov	kost-i
GEN PL	stol-ov	student-ov	kost-ej
LOC PL	stol-ax	student-ax	kost-jax
DAT PL	stol-am	student-am	kost-jam
INSTR PL	stol-ami	student-ami	kost-jami
		mater-i	mater-ej
		mater-ej	mater-ej
		mater-jax	mater-jax
		mater-jam	mater-jam
		mater-jami	mater'-mi

#### (2) Directional analysis:

- ACC = NOM
- ACC in animate *o*-stem or in plural = GEN

#### (3) a. NOM SG = stem + -Ø

- GEN SG in *o*-stem = stem + -a
- GEN SG in *i*-stem = stem + -y/-i
- NOM PL = stem + -y/-i
- GEN PL in *o*-stem = stem + -ov
- GEN PL in *i*-stem = stem + -ej

#### (4) First attempt at a symmetrical analysis:

- {NOM ∪ ACC} = X
- {GEN ∪ ACC} = Y
- X SG = stem + -Ø
- Y SG in *o*-stem = stem + -a
- X PL = stem + -y/-i
- X PL in *o*-stem = stem + -ov

- Why doesn’t this work?

#### (5) a. {NOM ∪ ACC} = X

- {GEN ∪ ACC} in animates = Y

- How does rule ordering help?

- What would an impoverishment version of this analysis look like?

## Divergent bidirectional syncretism

There is a feature value  $x$  that takes the form associated with feature value  $y$  in some contexts, while in other contexts  $y$  takes the form associated with  $x$ .

### (6) Bidirectional syncretism in the Latin second declension:

	Neuter <sub>a</sub>	Masculine	Neuter <sub>b</sub>
	'war'	'slave'	'crowd'
NOM SG	bell-um	serv-us	vulg-us
ACC SG	bell-um	serv-um	vulg-us
GEN SG	bell-ī	servi-ī	vulg-ī
DAT SG	bell-ō	serv-ō	vulg-ō
ABL SG	bellō	serv-ō	vulg-ō

### (7) Directional analysis:

- a. NOM SG = stem + *-us*
- b. ACC SG = stem + *-um*
- c. NOM SG in neuter<sub>a</sub> = ACC
- d. ACC SG in neuter<sub>b</sub> = NOM

### (8) Symmetrical analysis:

- a.  $\{\text{NOM SG} \cup \text{ACC SG}\} = X$
- b.  $X$  in neuter<sub>a</sub> = stem + *-um*
- c.  $\{\text{NOM SG} \cup \text{ACC SG}\} = Y$
- d.  $Y$  in neuter<sub>b</sub> = stem + *-us*

- What about the masculine forms?
- Does ordering help here like it did with the Russian case?

## Baerman's conclusions

- Directional rules (i.e. rules of referral) can capture all kinds of directional syncretism.
- Symmetrical rules can describe unidirectional syncretism.
- Symmetrical rules + ordering can describe convergent bidirectional syncretism.
- Symmetrical rules cannot describe divergent bidirectional syncretism.

What about impoverishment + underspecification + ordering?

- What do we notice about the paradigmatic 'shape' of convergent vs. divergent bidirectional syncretism?

## 2 Müller (2013)

### Müller's approach

- Since bidirectional syncretism is problematic for feature-based natural class approaches, he abandons natural classes.
- Radically 'non-morphemic' approach – what does this mean?
- Feature co-occurrence restrictions + phonologically-driven marker selection.
- The exponent chosen for a given cell is the most phonologically well-formed (i.e. least marked) exponent that is not blocked by an FCR.

### (9) Bidirectional syncretism in Bonan noun declension:

	Noun	Pronoun
	'foliage'	'he'
NOM	labčon-∅	ndžan-∅
GEN	labčon-ne	ndžan-ne
ACC	labčon-ne	ndžan-de
DAT	labčon-de	ndžan-de
ABL	labčon-se	ndžan-se
INS	labčon-gale	ndžan-Gale

### (10) Symmetrical analysis:

- a. ACC in nouns = GEN
- b. ACC in pronouns = DAT
- c. GEN = stem + *-ne*
- d. DAT = stem + *-de*

### Müller's analysis of Bonan:

- (11) Inventory of markers in Bonan:  
{/se/, /∅/, /ne/, /gale/, /de/}
- (12) Phonological well-formedness scale for Bonan:  
/∅/ > /ne/ > /se/ > /de/ > /gale/

NB: /n/ is more sonorous than /s/, /s/ is more sonorous than /d/

### (13) Phonological natural classes:

- a. {/∅/} = [∅]
- b. {/ne/, /de/} = [-continuant]
- c. {/se/, /de/} = [+consonantal<sub>a</sub>]
- d. {/ne/, /se/} = [+consonantal<sub>b</sub>]

- (14) *Binary sonority scale:*  
 $/ne/ > /se/ > /de/$
- a.  $/ne/ > /se/, /de/$
  - b.  $/ne/, /se/ > /de/$
- (15) *Case decomposition:*
- a. nominative = +subj, -obj, -obl, -adv
  - b. genitive = +subj, +obj, -obl, -adv
  - c. accusative = -subj, +obj, -obl, -adv
  - d. dative = -subj, +obj, +obl, -adv
  - e. ablative = -subj, +obj, -obl, +adv
  - f. instrumental = -subj, +obj, +obl, +adv
- (16) *FCRs for Bonan:*
- a. FCR 1:  $[+obj] \supset \neg[\emptyset]$
  - b. FCR 2:  $[-subj, -adv], [+pron] \supset \neg[-cons_b]$
  - c. FCR 3:  $[+obj, +obl] \supset \neg[-cons_b]$
  - d. FCR 4:  $[+adv] \supset \neg[-continuant]$

$$\begin{aligned} [-cons_a] &> [+cons_a] \\ [-cons_b] &> [+cons_b] \end{aligned}$$

$$\begin{aligned} ^*/\emptyset/ \\ ^*/ne/, ^*/se/ \\ ^*/ne/, ^*/se/ \\ ^*/ne/, ^*/de/ \end{aligned}$$

## References

- Baerman, Matthew (2004). Directionality and (Un)Natural Classes in Syncretism. *Language* 80(4). 807–827.
- Müller, Gereon (2013). A Radically Non-Morphemic Approach to Bidirectional Syncretism. *Morphology* 23(2). 245–268.

What about the second declension in Latin?

- (17) *Phonological well-formedness scale:*  
 $/\emptyset/ > /m/ > /s/$
- (18) *Inflection class decomposition:*
- a. Neuter<sub>a</sub> =  $[-masc, -fem, -\alpha]$
  - b. Masculine =  $[+masc, -fem, +\alpha]$
  - c. Neuter<sub>b</sub> =  $[-masc, -fem, +\alpha]$
- (19)
- a. FCR<sub>II</sub> 1:  $[-obl] \supset \neg[\emptyset]$
  - b. FCR<sub>II</sub> 2:  $[-masc, -fem, +\alpha] \supset \neg[+sonorant]$
  - c. FCR<sub>II</sub> 3:  $[+subj, -obj, -obl], [\alpha] \supset \neg[+sonorant]$

NB: II refers to the position class for the final consonant in the markers (subanalysis).