Deriving the scale of finiteness from parasitic syncretism

The intricacy of mutual dependencies of various verbal forms in Polish has been a long standing and controversial issue for both phonologists and morphologists. On the one hand, in morpheme-based incremental theories the efforts were directed to explain various allomorphy patterns, most often in derivational generative terms (see e.g. Laskowski (1975), Rubach (1984), *inter alia*). On the other hand, the 'shared desinence' or 'parasitic syncretism' (Matthews (1972)) of various inflectional forms were tackled by so-called 'rules of referral' (Zwicky (1985)). As amply evidenced in Gussmann (2008), however, only a tiny portion of the proposed rules in rule-ordering based accounts of allomorphy are phonological in nature, with the overwhelming majority being synchronically simply tendencies and requiring lexical diacritics for each particular lexeme. With Gussmann (2008), we believe that the assumption that all allomorphs of a morpheme derive from one common underlying source should not be upheld. On the other hand, we also think that there is some hope in trying to avoid the arbitrariness of 'rules of referral' or lexical diacritics, given a nanosyntactic approach to finiteness.

Consider Table 1, where various alternations of Polish verbal forms have been illustrated for FIN (finite non-past tense), CONV.SIM (simultaneous converb), IMP (imperative), INF (infinitive), CONV.ANT (anterior converb), PAST (polysemous form present in Past Tenses and irrealis contexts). Most of the rows display multiple alternations, but we concentrate here on the contrast: shaded vs non-shaded part of the table. What distinguishes INF (and the left side of the table) from CONV.ANT (and the right side of the table) is the substitution [ɛ] - [a] in row 1 and suppletion [i] - [ʃɛ] in row 2. The difference between IMP and INF involves substitutions: [uj] - [ɔv], [ʃ] - [s] and [tn] - [ɕV] in rows 3, 4, 5 respectively. The difference between CONV.SIM and IMP is the substitution [ɔr] - [ɛʃ] in row 7 and [ɔj] - [uj] in row 8. Finally, apart from a uniform palatalized desinence *kłopocz-ą* ('trouble.3pl.pres') with [tʃ] there is also an alternative finite variant with [ts] *kłopoc-ą*, but no such desinence for CONV.SIM and the forms to the right of it. Although no replacement has been found to distinguish CONV.ANT (and the left of the table) from PAST, we take morphological containment (i.e. -ł- present in both forms) to be indicative of this ordering.

Table 1: Parasitic syncretism in Polish verb forms

3 pl FIN	CONV.SIM.	IMP	INF	CONV.ANT.	PAST	GLOSS
mdl-ej-ą	mdl-ej-ąc	mdl-ej	mdl-e-ć	ze-mdl-a-w-szy	mdl-a-ł	1.'faint'
id-ą	id-ąc	idź	iś-ć	po-szed-ł-sz-y	szed-ł	2. 'go'
kup-uj-ą	kup-uj-ąc	kup-uj	kup-owa-ć	N/A	kup-owa-ł	3. 'buy'
pisz-ą	pisz-ąc	pisz	pis-a-ć	na-pis-a-w-szy	pis-a-ł	4. 'write'
tn-ą	tn-ąc	tn-ij	cią-ć	u-cią-w-szy	cią-ł	5. 'cut'
bior-ą	bior-ąc	bierz	br-a-ć	za-br-a-w-szy	br-a-ł	6. 'take'
boj-ą	boj-ąc	bój	ba-ć	N/A	ba-ł	7. 'fear'
kłopoc-ą	kłopocz-ąc	kłopocz	kłopot-a-ć	za-kłopot-a-w-szy	kłopot-a-ł	8. 'trouble'

What is significant about these replacements is that the shaded vs non shaded parts are always contiguous. In other words, labeling the columns from the left as X, Y, Z, etc. the occurrence

of a phonological exponent /a/ in column Z rules out the occurrence of the same exponent /a/ in column X, if there is Y intervening between X and Z and /a/ is absent in Y. Paraphrasing still, syncretism of the form ABA does not seem to occur (cf. Bobaljik (2007)). One caveat w.r.t. Table 1 needs to be made, however. The syncretism pattern described above arises not only as a result of ordering particular inflectional forms in a specific way, but also the choice of the form. For finite verbs 3 plural form has been chosen, even though for verbs of conjugation I and II (*brać* 'take' being one of them) the 'stem' of the IMP is identical to the stem of 3 singular form (e.g. *bierz-e* ('take.3sg.non-past') vs *biorąc* ('taking' - CONV.ANT) vs *bierz* ('take.IMP'), thus creating an offending pattern *ABA. We take it to mean that even the Person/Number distinctions interact with the hierarchy and will revise the Table accordingly.

We submit that the nanosyntactic approach where the fine-grained universal sequence of functional projections $[F_nP [... [F_2P [F_1P]]]$ (henceforth, f_{seq}) is spelled out by phonological exponents lexicalizing whole subsequences of f_{seq} (i.e. non-terminals) (proposed by Michal Starke in unpublished work, see also Caha (2008)) offers an elegant solution to the syncretism patterns described above. Phonological exponents are inserted in accordance with the Superset Principle in (1).

(1) *The Superset Principle*
     A phonological exponent /a/ can be inserted to lexicalize a subsequence $[F_nP]$ iff /a/ is lexically specified for a set of features identical to the set of $[F_nP]$ or a superset thereof.

Consider a translation of the finiteness hierarchy into f_{seq}, together with an example of the lexicalization possibilities of phonological exponents involved with just one root $\sqrt{nVs}$ ('carry').

(2) $[_{.F_6P} F_6^0$ -ą $[_{.F_5P} F_5^0$ -ąc- $[_{.F_4P} F_4^0$ -V- $[_{.F_3P} F_3^0$ -ć- $[_{.F_2P} F_2^0$ -szy- $[_{.F_1P} F_1^0$ -t- $]]]]]]$
     $\vdash$ /ɲus/ $\dashv$
     $\vdash$ /ɲɛɕ/ $\dashv$
     $\vdash$ /ɲɔs/ $\dashv$

When f_{seq} is aborted, say at the level of IMP, i.e. F_4P (possibly spelled out by a vowel without any melody attached, as in Gussmann (2008)), the complement of F_4P can be spelled out by both exponents: /ɲɛɕ/ and /ɲɔs/ in accordance with (1). Therefore, we need a principle to govern the choice between the two in (3).

(3) *Maximize Feature Spell out*
     When two phonological exponents /a/ and /b/ compete for insertion, and the set of features /a/ is specified for $Za \subset Zb$ - the set of features /b/ is specified for, then /a/ is selected for insertion.

(3) yields /ɲɛɕ/ as the only possible spell out of IMP. Note that it is not in principle exluded that some of the replacements are purely phonologically conditioned. Crucially, however, when no phonological account can be offered, the insertion mechanism consults the lexicon and chooses an appropriate desinence for a given syntactic structure, without any mediating role of the morphological component. In this kind of system there are no forms with a privileged status, traditionally referred to as (primary and secondary) stems, as replacements can potentially take place at any

point in the hierarchy.

References

Bobaljik, Jonathan. 2007. On comparative suppletion. Ms., University of Connecticut.

Caha, Pavel. 2008. The case hierarchy as functional sequence. In *Scales*, ed. Marc Richard and Andrej L. Malchukov, Linguistische Arbeits Berichte, 247–276. Leipzig: Universität Leipzig.

Gussmann, Edmund. 2008. *The Phonology of Polish*. Oxford: OUP.

Laskowski, Roman. 1975. *Studia nad morfonologia współczesnego języka polskiego*. Wrocław: Ossolineum.

Matthews, P.H. 1972. *Inflectional Morphology: a Theoretical Study based on Aspect of Latin Conjugation*. Cambridge: CUP.

Rubach, Jerzy. 1984. *Cyclic and Lexical Phonology. The Structure of Polish*, volume 17 of *Studies in Generative Grammar*. Dordrecht: Foris Publications.

Zwicky, Arnold M. 1985. How to describe inflection. *Berkeley Linguistic Society* 11:372–86.