Using ranked schemas to derive non-uniformity of Polish locative adjectives

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The paper presents a large-scale quantitative corpus analysis of the distribution of affixes in Polish locative adjectives (2,503 lemmas). A Polish locative adjective (LA) is formed using an optional intermorph and an obligatory suffix. There are four possible intermorphs and two suffixes, as represented in (1).

(1) root + {ij, ɨj, aɲ, ɛɲ} + {sk, tsk}$_{LA}$

The analysis provides evidence for (i) a selectional restriction formalized as a product-oriented schema (Bybee 2001), (ii) selectional restrictions formalized as source-oriented schemas (Pierrehumbert 2006), (iii) distinct native and foreign subgrammars (Selkirk 1982) and (iv) non-uniformity of outputs. The selectional restriction, which takes the form of the product-oriented segmental requirement in (2a), regulates the distribution of the available affixes. Bases with a final obstruent select an intermorph, (2b), while bases with a final sonorant select the bare suffix, (2c).

(2) a. R-sk (R= consonantal sonorant)

b.	marɔk-ɔ ‘Morocco’	marɔk-aɲ-sk-i	intermorph
c.	ukrain-a ‘Ukraine’	ukraiɲ-sk-i	no intermorph

Certain root-final consonants in the input show an idiosyncratic affinity for particular affixes. Crucially, the required generalizations refer to segmental material that is absent from the output but present in the input, which can be captured by source-oriented schemas, as shown in (3). This finding undermines Bybee’s (2001:129) claim that “any morphological pattern that can be described by a source-oriented rule can also be described by a product-oriented one” (see also Becker & Gouskova 2016)

(3)

a. s→ -sk-	nɨs-a ‘Nysa’ > nɨ-sk-i	s : ∅
b. g → -sk-	xag-a ‘the Hague’ > xa-sk-i	g : ∅
c. sk → -sk-	alask-a ‘Alaska’ > ala-sk-i	sk : ∅

A multinomial logistic regression analysis was run on the data to verify the gradient preferences for specific affixes in different consonantal contexts and in different lexical strata. The non-uniformity of outputs is derived using a model that assumes probabilistic weighting of competing generalizations operationalized as ranked schemas and constraints. Weighted/ranked schemas are useful for modeling patterns that are nonuniversal, learned by generalizing over the lexicon and involve competition between several possible outputs (Kapatsinski 2013). The weighting of the constraints is determined using simulations in Noisy Harmonic Grammar (Boersma & Pater 2016).

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