

## Inward sensitive contextual allomorphy and its conditioning factors

Contextual allomorphy exhibits bidirectional sensitivity: the form of a morpheme *M* can be determined by another morpheme that is either closer to the root than *M*, or farther away from the root than *M* (inward vs. outward sensitivity). A major question about allomorphy is whether its direction of sensitivity correlates with the type of feature that conditions allomorphy (see Carstairs-McCarthy 2001 for discussion). Here we take up Bobaljik's (2000) claim that inward sensitive allomorphy only makes reference to non-syntactic (morphophonological) features while syntactic features are only relevant for outward sensitive allomorphy.

To account for this, Bobaljik (2000:3) assumes the following about the architecture of grammar and the nature of morphology: [**A**] **Separation**: morphology interprets syntax; i.e. phonological material undergoes "late", post-syntactic, insertion; [**B**] **Cyclicity**: the insertion of phonological material proceeds root-outwards; and [**C**] **Rewriting**: as morphosyntactic features are expressed by phonological material, these features are used up and no longer part of the representation. **A** and **B** are standard within the theory of Distributed Morphology (Halle & Marantz 1993, *et seq.*) and **C** is easily accommodated within such a theory (although differing perspectives exist, compare e.g. Halle 1990 and Bobaljik 2000 with Halle & Marantz 1993). Based on data from definiteness marking in Bulgarian, we argue that *both* morphosyntactic *and* phonological features are relevant for inward sensitive allomorphy (contra Bobaljik). Therefore, the three assumptions above cannot *all* be maintained. We then explore and compare two versions of lexical insertion that are consistent with the retention of **A** and **B**, but reject the strongest version of **C**.

The suffixal definiteness marker (<sub>DEF</sub>) in Bulgarian exhibits inward sensitive allomorphy as it is the most peripheral suffix to appear on a noun or nominal modifier (e.g. external to plural morphology). Crucially, the form of <sub>DEF</sub> depends on both morphosyntactic and phonological properties of the stem to which it attaches (Franks 2001, *i.a.*). First, allomorph selection makes reference to the gender/number features of the noun which hosts <sub>DEF</sub>: the majority of masculine singular nouns take the *-a* allomorph (1); all feminine singular nouns take the *-ta* allomorph (2); all neuter singular nouns take the *-to* allomorph (3); finally, in the plural (where gender distinctions are neutralized), <sub>DEF</sub> is *-te* (4). Homonyms which take distinct allomorphs of <sub>DEF</sub>—(1b,c) vs. (2b,c)—clearly indicate that phonological information is not a sufficient conditioning factor.

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|-------------------------------|----------------------------------|
| (1) <i>Singular masculine</i> | (2) <i>Singular feminine</i>     |
| a. dvor 'yard' — dvora        | a. voda 'water' — vodata         |
| b. med 'honey' — meda         | b. med 'copper' — medta          |
| c. prăst 'finger' — prăsta    | c. prăst 'soil' — prăstta        |
| (3) <i>Singular neuter</i>    | (4) <i>Plural</i>                |
| a. pole 'field' — poleto      | a. maže 'men' — mažete           |
| b. taksi 'taxi' — taksito     | b. kolene 'knees' — kolenete     |
| c. dărvo 'tree' — dărvoto     | c. ramene 'shoulders' — ramenete |

Second, the phonological shape of the host noun is another conditioning factor for allomorphy. There is a small set of vowel-final masculine singular nouns which end in *-a* or *-o* and they take the *-ta* and *-to* allomorphs of <sub>DEF</sub>, respectively (not *-a*) (5, 6). Similarly, there are a few pluralizing suffixes which end in *-a* and these are similarly followed by the *-ta* allomorph instead of *-te* (7). Thus, when <sub>DEF</sub> is attached to a stem ending in *-a* or *-o*, it is realized as *-tV* where *V* must match the vowel immediately preceding it (i.e. *-a* or *-o*). Furthermore, certain nouns in the language are exceptional in that they have two plural forms in free variation. Each of these appears with a

different allomorph of DEF—(4d,e) vs. (7d,e)—demonstrating that gender/number features do not uniquely determine allomorph selection either.

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|---|----------------------------------|
| (5) <i>Singular masculine, final -a</i> | (7) <i>Plural, final -a</i>      |
| a. bašta 'father' — baštata             | a. bratja 'brothers' — bratjata  |
| b. sādija 'judge' — sādijata            | b. kraka 'legs' — krakata        |
| (6) <i>Singular masculine, final -o</i> | c. pātišta 'roads' — pātištata   |
| a. tatko 'dad' — tatkoto                | d. kolena 'knees' — kolenata     |
| b. djado 'grandfather' — djadoto        | e. ramena 'shoulders' — ramenata |

It is just in the case of stems ending in *-a* or *-o* that the shape of DEF will be unusual: *-ta/-to* instead of *-a* for masculine singular or *-te* for plural. For instance, the terminal node D[DEF] in the context of the singular masculine noun *bašta* 'father' is realized by the phonologically conditioned allomorph *-ta* as dictated by the final segment of the stem (5a). But why does this allomorph win the competition for insertion over the morphosyntactically conditioned allomorph *-a*, which otherwise gets inserted in the context of singular masculine nouns? Since both allomorphs match the same number of features of the terminal node (DEF), the principle governing choice between competing allomorphs in Distributed Morphology (Subset Principle, Halle & Marantz 1993) should always choose the allomorph with the most specific context of insertion. This leads to the conclusion that the phonological context must be taken to be more specific for the purposes of allomorph selection than the morphosyntactic context (see Harizanov & Gribanova 2011). This analysis requires the rejection of assumption C so that lexical insertion has simultaneous access to both types of context. Bye & Svenonius (to appear) develop an alternative 2-step lexical insertion procedure which first matches possible allomorphs to a morpheme M according to M's own features and its morphosyntactic context and then selects a unique allomorph on purely phonological grounds. For D[DEF] in the context of *bašta* 'father', this system chooses the set of allomorphs {*-a*, *-ta*, *-to*} as possible matches leaving the phonological component to decide the actual exponent (based on the phonological shape of the stem).

We conclude on the basis of the Bulgarian data that inward sensitive contextual allomorphy can be conditioned by both morphosyntactic and phonological features. To model such data in a late insertion theory of morphology, lexical insertion (and, thus, allomorph selection) must be able to reference both types of information. What both of the analyses presented above have in common is that they allow the form of a morpheme M to be conditioned by both the morphosyntactic and phonological properties of material that is closer to the root than M.

**References.** Bobaljik, J. 2000. The ins and outs of contextual allomorphy. In *University of Maryland Working Papers in Linguistics*, eds. K. K. Grohmann and C. Struijke, 35–71. Carstairs-McCarthy. 2001. Grammatically conditioned allomorphy, paradigmatic structure, and the ancestry constraint. *Transactions of the Philological Society* 99:2, 223–245. Bye, P. & P. Svenonius. to appear. Exponence, phonology and non-concatenative morphology. In *The Morphology and Phonology of Exponence*, ed. J. Trommer. OUP. Franks, S. 2001. The internal structure of Slavic NPs, with special reference to Bulgarian. In *Generative Linguistics in Poland: Syntax and Morphosyntax*, eds. A. Przepiórkowski and P. Bański, 53–69. Halle, M. 1990. An approach to morphology. In *Proceedings of NELS 20*, eds. J. Carter, R.-M. Dechaine, B. Philip & T. Sherer, 150–184. Halle, M. & A. Marantz. 1993. Distributed morphology and the pieces of inflection. In *The View from Building 20*, eds. K. Hale and S. J. Keyser, 111–176. MIT Press. Harizanov, B. & V. Gribanova. 2011. The role of morphological and phonological factors in Bulgarian allomorph selection. In *Morphology at Santa Cruz*, eds. N. LaCara, A. Thompson, and M. A. Tucker. UCSC Linguistics Research Center.