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4 MORPHOLOGY

5 Morphology and Phonology

6 The interface between phonology and morphology lies
 7 in the area covered by the terms *morphophonemics*,
 8 *morphophonology* or *morphonology*, and *lexical rules*.
 9 These terms have been used in a variety of ways. The
 10 uses all recognize a level of language or analysis of
 11 language that differs from pure phonology in that it
 12 involves lexical and grammatical information mixed with
 13 phonological information.

14 Of modern schools of phonology, only two reject or
 15 ignore the significance of the distinction between pure
 16 phonology and morphophonology. The generative pho-
 17 nology represented by Chomsky and Halle 1968 rejected
 18 the distinction. Most practitioners of Optimality Theory
 19 ignore the distinction, but there is nothing inherent in the
 20 theory that makes it impossible. In fact, Kiparsky 2000
 21 suggests the use in that theory of levels similar to those
 22 of Lexical Phonology.

23 Different schools that make the distinction draw the
 24 boundary in different places. We can illustrate this with
 25 concrete examples. (It is helpful to remember that the
 26 term “morphophonemic” has been used differently to
 27 describe levels of representation and rules.)

29 **1. Types of data.** The Russian verb *otbivat'* ‘to beat
 30 back’ is pronounced /adb'ivat'/. The change of *t* to *d*
 31 before *b* is the result of a fully automatic regressive
 32 assimilation of voice in obstruent clusters. (There is also
 33 an automatic change of unstressed *o* to /a/.) This change
 34 is treated as phonological by all modern theories. Tru-
 35 betzkoy 1934 would call it a “neutralization,” while
 36 Jakobson 1948 called it an “automatic alternation”, but
 37 both treat it as phonological. American descriptivists,
 38 however, would label this alternation morphophonemic,
 39 because it involves a level more abstract than that of
 40 phonemics.

41 The representation <ot-b'ivat'> is more widely la-
 42 beled “morphophonemic,” because to identify the first
 43 two segments as *ot* we must parse the word and recognize
 44 a prefix *ot-* added to a verb *b'ivat'*. This process is clearly
 45 morphological. Only the Moscow Phonological School
 46 (cf Avanesov and Sidorov 1970) would call this level of
 47 representation “phonemic”: they define phonemics as the
 48 level from which one can get to phonetics by the appli-
 49 cation of purely phonological rules.

50 The Russian noun *drug* ‘friend’ has a diminutive *dru-*
 51 *žok*, genitive *družka*. The change of *g* to *ž* (velar palatal-
 52 ization) before the diminutive suffix *-(o)k-* is morpholog-
 53 ically regular: it is triggered by the suffix. The vowel/
 54 zero alternation in *-(o)k-* is equally non-phonological.
 55 These two alternations were labeled “morphophonemic”

56 by Jakobson and are called “morphological” by most
57 European linguists.

58 M[orpho] P[honological] R[ule]s can be defined as
59 rules with lexical or grammatical conditioning. For those
60 who recognize the distinction between MPRs and
61 P[honological] R[ule]s, the only grammatical condition-
62 ing allowable for PRs is boundaries. The adherents of
63 Natural Generative Phonology (e.g. Hooper 1976) did not
64 allow even boundaries as positive conditioning factors.

65 An example of extreme lexical conditioning is found
66 in English plurals of the type *wife*, *wives*. This also
67 involves grammatical conditioning, since it specifically
68 the plural morpheme that conditions the change of *f* to *v*.
69 A common example of grammatical conditioning is the
70 umlaut (vowel fronting) in the plural of German nouns.
71 e.g. *Vogel* ‘bird’ pl. *Vögel*.

72 It is this mixture of lexical and grammatical condition-
73 ing that justifies the “morpho-” in “morphophonology.”
74 The “-phonology” is also justified, even for the rules
75 mentioned above: the velar palatalization applies specif-
76 ically to velars, and umlaut applies specifically to back
77 vowels. Kiparsky 1968 showed that in German dialects,
78 when new back vowels are created, there is a tendency
79 to umlaut them, and to adjust the output of umlaut so
80 that there is a simple back/front relationship between the
81 vowels. Other examples of phonological regularization
82 are found in Darden 1979.

83 Among the theoretical issues relevant to morphophon-
84 ology are (i) the relevance of the distinctions among
85 phonology, morphophonology, and morphology; and (ii)
86 the nature of morphophonological rules and representa-
87 tions. These are discussed below.

89 **2. Distinctions.** It is very difficult to justify a separa-
90 tion of phonologically automatic processes from the
91 allophonic processes that all linguists accept as “pure”
92 phonology. A single process may have both functions.
93 This is true of voicing assimilation in Russian, which
94 sometimes determines allophones of phonemes and
95 sometimes neutralizes oppositions between phonemes
96 (Halle 1959). Because there is no phonemic voiced al-
97 veopalatal affricate in Russian, the voicing of *č* to *dž*, in
98 *alč* -*ba* ‘hunger’ creates an allophone. However, the
99 voicing of palatalized *s*’ to *z*’ in *pros*’-*ba* ‘request’ neu-
100 tralizes the opposition between the two phonemes /*s*’/
101 and /*z*’/.

102 One can argue that phonology and morphophonology
103 are learned in different ways. A child does not learn to
104 perform phonological operations such as the voicing
105 assimilations in Russian, but rather *fails* to learn to make
106 distinctions of voice in obstruent clusters. The phonolog-
107 ical rule is there by default when the underlying forms
108 are mastered. It is therefore difficult for a native speaker
109 consciously to resist the application of a mandatory
110 phonological rule. It is part of his pronunciation habits,
111 and it will affect his attempt to learn a foreign language
112 or to borrow foreign words into his own language.

113 The status of MPRs is different because the child can
114 freely pronounce both alternants in the given phonologi-

115 cal environment: there is nothing hard about pronouncing
116 *wifes* as opposed to *wives*. Indeed, both pronunciations
117 must be mastered—one for the possessive form, the other
118 for the plural. In addition, a child must learn conceptually
119 when to pronounce which configuration. Children may
120 mistakenly produce the plural form without the change.

121 If morphophonological processes apply to borrowed
122 stems, it is because the morphological environment is
123 matched. Thus, the Russian velar palatalization is quite
124 regular when a native suffix that triggers it is added to a
125 stem that ends in a velar. This can happen with foreign
126 stems, as in *fračok*, diminutive from *frak* ‘frock coat.’
127 However, since foreign languages have no suffixes that
128 trigger the change, we expect no velar palatalization
129 inside foreign words borrowed into Russian; nor does
130 velar palatalization interfere with Russians’ learning other
131 languages.

132 The distinction between morphophonology and mor-
133 phology is harder to draw. When one deals with ablaut
134 systems such as that of Arabic, it is difficult to decide
135 whether to use rules to change base forms into derived
136 forms, or to use nonlinear morphology of the type sug-
137 gested by McCarthy 1981. Dressler 1985 suggests a third
138 type, which he calls an A[llomorphic] M[orphological]
139 R[ule], and he includes German ablaut among such rules.
140 The distinction between his AMRs and MPRs, however,
141 is not clear-cut. In Lexical Phonology, multiple distinc-
142 tions within the lexical rules have been proposed (Kipar-
143 sky 1983). The application of the rules is interlayered
144 within the morphology of word-formation, with rules ap-
145 plying as each affix is attached. This seems quite different
146 from other approaches, but it can be seen as more a
147 difference of form rather than of substance. Since the
148 output of each set of processes (and the input to the next
149 set) is supposed to be a word or the inflectional stem of
150 a word, this is essentially treating the input of each
151 derivation as a stem, with all the MPRs that formed that
152 stem already having had effect. New MPRs apply if the
153 new affixation triggers them. A great many theories
154 would accept that arrangement.

155 Theories vary in their treatment of the morphological
156 or phonological nature of MPRs. The lexical rules of
157 Lexical Phonology look very phonological, and abstract
158 segments are used to make them even more phonological.
159 Prague School phonologists such as Stankiewicz 1967,
160 as well as Natural Phonologists, deemphasize the pho-
161 nological nature of MPRs. For them, the resemblance of
162 MPRs to PRs is related to the fact that most MPRs
163 historically were PRs. Any diachronic changes after they
164 become MPRs seem to be based on morphological prin-
165 ciples such as regularity, iconicity, transparency, or func-
166 tional specialization. The phonological adjustments in
167 MPRs may increase surface regularity and transparency,
168 but do not render them more natural in a phonological
169 sense (Dressler 1985, chap. 10).

170 One of Dressler’s more interesting observations is that,
171 to be stable, an MPR should parallel the direction of
172 morphological derivation. This is true of the velar pala-

173 talization in the example above, where the change can be
 174 viewed a part of the process of adding the suffix. How-
 175 ever, this is more true of word-formational systems than
 176 of inflectional systems. In rich inflectional systems, we
 177 have less reason to consider members of a paradigm to
 178 be derived from a single unmarked member. It is often
 179 more reasonable to consider the paradigm as having a
 180 basic stem. The grammatically unmarked member may
 181 then have a form derived by rule. Ukrainian, for instance,
 182 has a rule that changes *o* to *i* in closed syllables. It
 183 operates in the nominative/accusative singular of word
 184 like *nis* ‘nose’, genitive *nosa*. This alternation seems to
 185 be very stable in the language.

186 Those who treat MPRs as morphological rather than
 187 phonological object to the use of abstract segments to
 188 make them appear more phonological. Abstract segments
 189 are, however, effective descriptive devices, and the alter-
 190 native to using them may be to employ powerful formal
 191 devices such as transderivational constraints (Darden
 192 1979, 1981).

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