Formal and empirical arguments for Morpheme Structure Constraints
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McCarthy 2002:33 asserts that "OT attributes linguistic generalizations to the grammar, not the lexicon...this thesis is called "richness of the base": inputs are unrestricted..." This contrasts with both **Derivational Phonology** (Chomsky & Halle 1968), which allows for constraints to be formed over underlying representations (MSCs), and **Experimental Phonology** (Ohala & Ohala 1986, Pierrehumbert, Beckman, and Ladd 2001), which allows linguistic generalizations to be extracted from statistical properties of the lexicon. The use of MSCs (Halle 1959 et seqq.) has been assailed on two grounds, **duplication** and **gradient judgements of wellformedness**. Kisseberth 1970 observed that rules and MSCs are often needed for the same functions within a grammar, e.g. enforcing word and root harmony respectively in Turkish. MSCs moreover incorrectly predict that speakers can only make ternary well-formedness distinctions (Ohala & Ohala 1986).

We show that OT's response to these problems, quoted above, creates seven phonological problems: **1.** It incorrectly predicts the nonexistence of lexical generalizations utilized by speakers in constructing URs. Several nonrhotic varieties of English productively assign final /r/ to all low-vowel-final roots (Stampe 1991, Harris 1994); Mongolian assigns /g-/ to all long-vowel suffixes (Beffa & Hamayon 1975). **2.** It fails to deal with the assignment of abstract URs to segments that are themselves licit URs: Korean regularly assigns surface coda [t] to underlying /s/, as in internet → /intanes/ (Iverson & Lee 2004), and Lac Simon makes all stem-initial obstruents underlyingly voiced, even though it has an underlying voicing contrast (Kaye 1979). **3.** It requires that all non-alternating surface forms have fully specified URs, which has been disproven by Kaun and Harrison 1999 with respect to root harmony in Tuvan, Finnish, and Turkish, and by Krämer 2004 for English laxing. **4.** It predicts (assuming universal markedness constraint hierarchies à la Steriade 1999) the absence of languages containing the marked but not the unmarked member of a phonemic opposition, which is contradicted for example by Russian having palatalized /tʃʲ/ but not plain */tʃ/. **5.** It does not allow for generalizations extracted from statistical properties of the lexicon to play a role in the grammar, but see Greenberg and Jenkins 1964 and Ohala and Ohala 1986 on the well-formedness of English nonce words, or the fact that Polish speakers assign masculine gender to all consonant-final words and feminine gender to all [a]-final words. **6.** It wrongly predicts the absence of wellformedness constraints that hold specifically for stems, such as we find in Yokuts (Kager 1999, Kiparsky (to appear)). **7.** Incorporating ROTB into OT requires stipulating that GEN be able to alter inputs in ways that are invisible to faithfulness constraints (McCarthy 2002:38) and Ident constraints (Krämer 2004).

These seven problems are resolved straightforwardly by assuming that humans can extract generalizations from the structure of their lexicon. This move moreover is consistent with what we know about human and primate cognition (Dell et al. 2000, Ramus et al. 2000, Kirkham et al. 2002, Hauser et al. 2002)), and grounded in the fundamental linguistic tenet that extracting generalizations is the heart of grammar construction.

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