

Sound changes tend to reduce morphotactic ambiguity

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Our paper discusses ambiguity in the semiotic relation between phonotactic shapes and morphotactic structures. We hypothesize that such ambiguity is dispreferred because it impedes the processing and the acquisition of morphological regularities (Korecky-Kröll et al. 2014; Post et al. 2008), and that it might, therefore, be a significant factor in the actuation and implementation of phonological changes.

To test that hypothesis, we investigated three English sound changes and asked whether they reduced or increased the morphotactic ambiguity of the phonotactic shapes they affected. To measure morphotactic ambiguity, we used appropriate corpora (such as the EEBO, the PPCME, the PPCEME, and the LAEME Corpus) to establish type and token frequencies of word forms with pre- and post- change shapes. Then we determined the proportions of morphologically simple and complex items among word shapes before and after the changes. Our prediction was that the changes should significantly skew the distribution of complex vs. simple items among words with the same phonotactic shapes, so that some word form shapes would become increasingly indicative of morphotactic complexity and others of simplicity.

The sound changes we investigated were (a) the Middle English lenition (or voicing) of final /s/ in noun plurals (ModE *stone*[z] < OE *stan+a*[s]), genitives (ModE *man*[z] < OE *monn+e*[s]), and third person present indicatives (ModE *sin*[z] < Northern ME *sinne*[s]; Ringe 2003); (b) Early Middle English Open Syllable Lengthening (MEOSL), which lengthened short non-high vowels in open disyllables of words regularly if they became monosyllabic (EME /makə/ > /ma:kə/ > /ma:k/ 'make'), but only rarely in disyllables whose second syllable remained stable (EME /bodi/ > */bo:di/ 'body'; Mailhammer, Kruger & Makiyama 2015, Minkova & Lefkowitz 2020); as well as (c) the (sporadic) devoicing of past tense /d/ after sonorants in forms such as *spoilt* or *burnt* (Lahiri 2009; Wełna 2009).

The findings from all three studies provided considerable support for our hypothesis. (a) The lenition of plural /s/ significantly reduced the morphotactic ambiguity of forms in which the plural morpheme surfaced as /z/ (i.e., after vowels and sonorants). After the change, the vast majority of these items were complex, while forms ending in sonorants or vowels followed by /s/ were predominantly simple (Baumann, Prömer & Ritt 2019). (b) MEOSL and its failure to affect open disyllables had the combined effect that disyllabic wordforms with heavy first syllables became increasingly indicative of morphologically complex words, while disyllables with light first syllables strongly signalled morphologically simple words (Matzinger & Ritt 2021). Finally, (c) the irregular past tense forms produced by the devoicing of final /d/ after sonorants were – at least for a while – slightly less ambiguous than their regular competitors, since these shared the shapes of many simple items ending in voiced /d/ (such as *wind*, *round*, *build*, or *bold*; Baumann, Prömer & Ritt 2019).

Our findings suggest that sound change tends to reduce morphotactic ambiguities and to be blocked where its implementation would increase them. Our paper describes our methods and our findings in greater detail, and relates our study to extant research on morphotactics (Dressler & Dziubalska-Kořaczyk 2006, 2010; Baumann & Kaźmierski 2018), on the way in which sound changes interact with the frequency of phonotactic patterns in the lexicon and in use (Wedel 2006; Blevins 2009; Kelley & Tucker 2017), and on principles underlying the way in which languages exploit the design space of phonotactically well-formed sound patterns for building actual words and word forms (Tamariz 2004, 2008; Vitevich 2005; Reali & Griffiths 2009; Monaghan et al. 2014; Pierrehumbert 2016; Dautriche et al. 2017).

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