Semantically opaque prefixes and English phonology

The claim of this paper is that English words with opaque prefixes such as *begin, confer, emit* or *retain* are morphologically complex and that this complexity should be accessible to the phonology. Chomsky & Halle (1968: 94) acknowledged the complexity of this type of words and introduced the = boundary to account for their specific stress patterns. This boundary was later rejected by Siegel (1974: 114, 1980) and references to these prefixes in the generative literature were reduced to their specific reduction behaviour (see below). They are also a well-known problem for morpheme-based theories (see Anderson 1992: 55; Aronoff 1976: 12-15; Bauer *et al.* 2013: 15-16; Katamba & Stonham 2006: 23; Plag 2003: 30-33) because they challenge the standard definition of the morpheme as the minimal meaningful unit.

Some phenomena require the phonology to be able to refer to the internal structure of these words. First, opaque prefixes normally undergo vowel reduction, even in environments where reduction does not normally occur (see e.g. Burzio 1994: 56-57; Collie 2007: 318-319; Giegerich 1999: 231; Pater 2000), which may be due to the high frequency of these prefixes (Hammond 2003). Second, the stress of English verbs, under traditional analyses, is seen as depending on the weight of the final syllable but we claim, following Dabouis & Fournier (in preparation), Fournier (2010) and Guierre (1979) that it is mainly determined by their morphological structure and, more specifically, by the presence or absence of the opaque prefixes considered here. Even though prefixation and syllable weight generally make identical predictions because prefixed verbs often have a heavy ultima (e.g. *comply, destruct, retain*), words for which they do not, i.e. prefixed verbs with a light ultima (e.g. *compél, ìntermít, rebút*), do generally have final stress. Finally, recent empirical work on English secondary stress shows that semantically opaque prefixes influence the position of secondary stress in non-derived words (e.g. *amànuénsis, divèrtiménto, suppòsitítious*) and favours stress preservation on the second syllable (e.g. *collápsible > collàpsibílity, remédiate > remèdiátion*) (Dabouis 2016).

A number of psycholinguistic studies using lexical decision tasks (Taft 1994; Taft *et al.* 1986; Taft & Forster 1975) or masked priming tasks (Forster & Azuma 2000; Pastizzo & Feldman 2004) show that these prefixes play an important part in lexical access, which is, in certain cases, comparable to that played by semantically transparent prefixes. These studies, along with the phonological phenomena mentioned previously, show that the complexity in these prefixed words can be recognised by English speakers. The first question is therefore how they do so. A number of clues are available which could be used for that purpose. Constructions containing a prefix which can be semantically transparent (e.g. *de-, pre-, re-*) or a root with relatively transparent semantics (e.g. *below* (cf. *low*), *rejuvenate* (cf. *juvenile*), *revenge* (cf. *vengeful, vengeance*)) are more likely to be analysed as morphologically complex. The structure in opaque constructions can be identified through commutations of the prefix (e.g. ***ac****cept,* ***con****cept,* ***ex****cept,* ***inter****cept,* ***per****cept,* ***pre****cept,* ***re****cept*) or the root (e.g. *per****ceive****, per****cept****, per****mit****, per****tain***) (Fournier 1996). Root allomorphy (e.g. {*ad-/e-/com-/per-/sub-/trans-*}*mit* > {*ad-/e-/com-/per-/sub-/trans-*}*mission*) can be used to identify roots (Aronoff 1976: 12-15). Finally, phonotactics may signal the presence of a complex structure as certain consonant clusters are found only in words with opaque prefixes (Guierre 1990; Hammond 1999: §3.3).

Finally, we discuss the possible advantages of storing a word like *permit* as *per+mit*. Two possible answers are that morphological structure is necessary for syllabification, independently of semantic transparency (Levelt *et al.* 1999) or that "the language acquisition system looks for and uses structure wherever it can be found" (Forster & Azuma 2000).

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