A lexical theory of variation

Most extent theories of variation in Optimality Theory locate variation directly in the grammar. Variation arises when the ranking between constraints (i.e. the grammar) is allowed to vary. These theories have been very successful at accounting for the role that grammar plays in determining variation. However, there is a large body of literature from historical linguistics and usage-based linguistics that shows that the lexicon also influences variation.

Variable processes that are phonologically motivated (such as reduction, lenition, deletion) usually affect frequent lexical items more often than less frequent lexical items. Although *mammary* and *memory* are virtually identical in terms of their phonological properties, schwa deletion applies more frequently in more frequent *memory* than in less frequent *mammary*.

On the other hand, analogically motivated variation, such as applying normal morphology to a form that can also take suppletive morphology, goes in the opposite direction. Frequent words resist application of regular morphology strongly, and are hence nearly always pronounced with suppletive morphology. Since *sleep* is a frequent word, its past tense is nearly always pronounced as *slept* rather than as *sleeped*. Less frequent words, however, show more variation between regular and suppletive morphology. Although *weep* is identical to *sleep* in terms of all relevant phonological properties, its past tense shows more variation between *wept* and *weeped*.

Exclusively grammatical theories of variation cannot account for this influence of lexical frequency on the frequency with which a variable process applies. I develop an alternative theory of variation in OT that locates the source of variation in the lexicon rather than the grammar. I propose a lexicon structured into lexical classes, and a grammar that can make reference to these lexical classes – in the spirit of Itô and Mester (1999). In this model, variation arises when a lexical item varies in terms of its lexical class membership. Since the lexical item varies its class membership, the constraints that evaluate it also vary, and hence the output selected for the lexical item can also vary. Imagine a grammar like $\text{MAX}_{\text{L1}} \gg \text{ONSET} \gg \text{MAX}_{\text{L2}}$. If there is a lexical item /apat/ that varies in affiliation between L1 and L2, it will vary in pronunciation between [apat] and [pat] depending on its lexical class affiliation.

I argue that every lexical item is stored in the lexicon with a probabilistic distribution function that determines how it is distributed across the lexical classes in the lexicon. These distribution functions are sensitive to the frequency with which the lexical item is used, so that the usage frequency of a lexical item can influence how it is distributed across lexical classes. In this manner, usage frequency can directly influence the frequency with which a variable process applies.

I apply this model to several variable processes in English, and show that the difference between phonologically motivated variation and analogically motivated variation follows naturally from this model.