Syllabification of diphthong plus glide rhymes: Perception and production

Just how many syllables are in the word *fire*? Dictionaries usually indicate a single syllable; water cooler conversations are much less consistent in responding to this question. Does the spelling of a word affect our pronunciation of that word? Does spelling affect our perception of the syllabification of the word? Putting aside the question in reference to *fire*, there is much more agreement on the monosyllabicity of *tire* and *wire*. Ask someone to identify the number of syllables in *tire*, *wire*, *fire* in rapid succession and the number of monosyllabic responses to *fire* increases. On the other hand, *liar* is generally agreed to be two syllables as opposed to *lyre* which is a single syllable. Is this because *liar* is composed of two morphemes while *lyre* is a monomorph? The question is not confined to words with an /ajɹ/ rhyme. Other rhymes composed of a (true) diphthong followed by a liquid are similarly ambiguous. *Flower* is two syllables, but is *flour* also two? *Towel* is clearly two syllables, isn't it? What about *dial* and *aisle*, *royal* and *roil*? The difficulty in syllabification stems from an articulatory difficulty coupled with representational ambiguity stemming from the orthographic representation of the words.

The articulatory difficulty runs counter to Clements' (1988) Sonority Dispersion Principle which states that the preferred final demisyllable (the *rhyme* in other approaches to the syllable) is one in which sonority dispersion is maximized. For VC rhymes, Clements' approach (using the sonority scale V(owel) > G(lide) > L(iquid) > N(asal) > O(bstruent)) predicts that VG is preferred over VL, which is in turn preferred over VN which is preferred over VO; a prediction that is not overly controversial. For VCC rhymes, however, Clements' approach returns the following (most to least preferred): VGL > VGN, VLN > VGO, VNO > VLO. This scale would predict that words containing a diphthong plus liquid rhyme would be optimal, but this is surely not the case. I argue here that a better model treats the glides in these rhymes as true consonants and applies a minimum sonority distance approach to the coda consonant clusters returning the following scale: VGO > VGN, VLN > VNO, VLN, VGL. Under this approach, the articulatory difficulty stems from a shallow GL slope.

The representational ambiguity is tested using a novel instrument developed from a corpus of recorded words composed of an initial consonant (or consonant cluster) followed by /ajɹ/, /ajl/, /awɹ/, /awl/ or /ɔjl/ (some of which are orthographically one syllable and some two) spoken by 75 native speakers of English. The recordings were manipulated to remove the initial consonant(s), creating the auditory equivalent of an initial glottal stop. The resulting corpus could then be described as consisting of multiple tokens of five 'words' – *ire, aisle, hour, owl,* and *oil* – that could be randomized and played back accompanied by the '*how many syllables*?' question. Preliminary results of the syllabification perception study will be presented along with an optimality theoretic analysis of the sonority relationships within these rhymes.

Reference:

Clements, G. N. 1988. The role of the sonority cycle in core syllabification. Working Papers of the Cornell Phonetics Laboratory 2, 1-68. Ithaca, NY: Cornell University.