Affrication of /tr/ and /dr/ onsets in English — phonetics or phonology?

Adam Olender, aolender@wa.amu.edu.pl Adam Mickiewicz University
Geoff Schwartz, geoff@wa.amu.edu.pl Adam Mickiewicz University

The affricated realization of the English onsets /tr/ and /dr/ may be found in most descriptions of English phonetics. Due to this affrication, the clusters have come to resemble the palato-alveolar affricates /tʃ/ and /dʒ/, such that speakers of some dialects may have difficulties distinguishing pairs such as *train-chain* (Cockney in particular, Vachek 1964a). While production data have suggested that affrication is variable (Prokofieva 2012), and that the status of these clusters is stable (Wells 2011), perception studies are needed to provide confirmation of the non-phonological status of affrication. That is, is affrication of /tr/ and /dr/ simply a phonetic detail associated with the realization of the cluster, or might we be witnessing the birth of a more systematic phonological change originating in the ears of listeners (Ohala 1981)?

This paper will present a pair of perception studies designed to investigate whether the affrication of /tr/ and /dr/ onsets remains a low-level phonetic effect filtered out by the listener, or, alternatively, whether it has gained phonological status. The stimuli included the words *train* and *drive*, forms with affricates (*chain* and *jive*), as well as cross-spliced tokens, in which the affricated rhotic portions of the clusters were replaced by non-affricated release bursts from *term* and *dirt.* We are interested in seeing whether the cross-spliced tokens, with non-affricated realizations of [tr] and [dr], induce percepts of *terrain* and *derive* in which schwa is commonly elided. A positive result would suggest that the affrication is indeed phonological, since if it were merely a phonetic detail then non-affricated /tr/ and /dr/ should still be heard as clusters. Tasks include a forced-choice identification procedure, in which subjects were asked to choose one of the labels provided upon hearing a stimulus sound. The second task examines the ability of the listeners to discriminate between two words separated by two ISIs of 50ms and 500ms (following the only similar perception study by Myers 1993).

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