## The Sociophonetic Investigation of the Effects of Opposing Forces during the Development of New Zealand English

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The present sociophonetic study investigates the effects of non-phonological pressures on language change in settlement colonies through the development of New Zealand English (NZE), the youngest inner circle variety. We examine what kind of factors motivate or constrain change in settlement colonies regarding the emerging language variety, and how the effects of these factors are reflected in pronunciation.

In the first part of the study, we use Schneider's (2003) dynamic model to illustrate that in colonial situations, two different forces operate at the same time. The external linguistic norm is stronger at the beginning but gradually weakens until the emerging internal linguistic norm replaces it. While the former militates against change preserving the standard pronunciation of the colonisers' language, the latter favours language change. Meanwhile, in the process of new dialect formation, new features arise and become well-established features of the new variety. Gordon (2010) reported on speakers' neutral attitudes towards later changes, and their negative attitudes regarding earlier changes in NZE. Hay et al. (2008) found that new features of the early period, such as the closing diphthongs, became social markers resulting in different realisations in the three social dialects in NZE; unlike those of the later period, such as centralised KIT, which are neutral with the same pronunciation regardless of the social dialect.

Based on the above findings, we propose that the same difference can be detected in the use of neutral and stigmatised features within the same social class between different registers, resulting in a similar pattern in style shifting as in the social dialects. To this aim, the acoustic analysis of four phonemes was carried out. We use keywords from Wells' (1982) lexical sets when referring to these vowels. We chose PRICE and MOUTH, which were affected by the diphthong shift in the 19<sup>th</sup> century, that is, in early NZE (Sóskuthy et al, 2017), and KIT and FLEECE, whose realisation changed later, in the 20<sup>th</sup> century. KIT centralised (Bauer and Warren, 2004), while FLEECE underwent diphthongisation (Bauer, 1994). Our method is based on Wells' (1982) observation that the use of positively valued forms is stable in the formal registers, but for stigmatised forms, it decreases.

By using Praat, we measured the F1 and F2 values in the speech samples of ten New Zealand speakers in casual speech and observed to what extent they have the features we examined. Then, we did the same in text reading and word list reading to see if the pronunciation changed or not, expecting a decrease in the use of stigmatised features in formal styles. As the first step, static measurements were made, and where a significant difference was found between the different speech styles, we also made dynamic spectral measurements (Ferguson and Kewley-Port, 2007) and calculated the Euclidean distance (Chartres, 2008) to see the relationship between vowel quality and dynamicity. The results of the static measurements invariably supported those of the dynamic measurements, and show that the informants avoid the innovative pronunciation of PRICE and MOUTH, but it is maintained for KIT and FLEECE. These findings correspond to the social evaluation of the phonemes and the pattern in the social dialects.

On the basis of Schneider's dynamic model, we have demonstrated that two opposing forces are at work in colonial situations. Besides previously documented differences in the social dialects, it has been found that stigmatised features are avoided in the formal styles within the same social class reflecting the norm-enforcing effect of the external norm. The realisation of the neutral features remains the same demonstrating the effect of the flexible internal norm.