



Contextual activation of Australia can affect New Zealanders' vowel productions



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ABSTRACT

The short front vowels KIT /ɪ/, TRAP /æ/, and DRESS /ɛ/ differ in their realization between speakers in New Zealand and Australian English. This paper analyses how New Zealanders produce these vowels when in an Australian-primed context. Two studies are undertaken. The first – a corpus analysis – looks at the realization of these vowels in New Zealanders' spontaneous talk about Australia. The second – an experiment – looks at the realization of these vowels in a word reading task, following the production of Australia-related lexical items. Both the experiment and the corpus analysis show differences in participant productions across Australia and non-Australia contexts. The corpus analysis shows a significant effect on the realization of the KIT and TRAP vowels, with Australian contexts associated with more Australian realizations. Both the corpus and the experiment reveal a significant interaction between speaker experience and context for DRESS. Only speakers who have ample previous experience with Australian English produce more Australian variants in an Australian context. These results highlight how different methodological approaches can provide different angles on the same question. Together, they show that subtle topic-based variation in speech production can occur. They also indicate that individual speakers' experience and beliefs can also play an important mediating role.

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1. Introduction

This paper asks whether contextual reference to a known dialect region can shift speaker's vowel productions in the direction associated with that region. The particular population under study are speakers of New Zealand English, most of whom have had at least some exposure to Australian English. Several recent studies have demonstrated that New Zealanders seem to respond to Australia related primes in a way that affects their speech perception (Drager & Hay, 2010; Hay & Drager, 2010; Hay, Nolan, & Drager, 2006). This paper extends this line of research by investigating the effect of Australia related information on the *production* of New Zealand vowels. First, in a corpus investigation, we find that there are phonetic consequences for the production of some short front vowels when New Zealanders are talking about topics relating to Australia. This finding is important in establishing that such effects are not confined to the laboratory, as they are demonstrated here to occur in a natural conversational setting.

Second, an experiment was conducted to follow-up on the corpus results to further investigate the role of preceding Australia-related words (primes) on vowel production in an experimentally controlled manner. We find that there are phonetic consequences for the production of a word when it is immediately preceded by two words relating to Australia. In addition, the experimental work revealed that a speaker's experience with Australia plays an important role in speech shifts – an effect that is replicated when revisiting the corpus data. The results demonstrate that the mention of Australia can affect vowel productions in both experimental and relatively natural settings. Taken together, these findings also exemplify the usefulness of pursuing questions with a dual corpus-based/experimental approach.

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1.1. New Zealand and Australian English

The regional dialects of interest in this study are New Zealand (NZE) and Australian (AE) English. This work builds on a series of past investigations on these dialects; as such it is useful to discuss the differences between these dialects. In this investigation, the short front vowels will be emphasized, as the differences between the dialects in these vowels are well documented. Although the front short vowels differ markedly, the other monophthongs of NZE and AE share similar locations in vowel space (Watson, Harrington, & Evans, 1998). While there is, of course, structured variation within each dialect with respect to the realization of these vowels (see e.g. Cox & Palethorpe, 2008; Maclagan & Hay, 2007), the overall differences observed in production between the dialects are relatively sizeable. This paper therefore concentrates on the realizations of the short front vowels: /ɪ/, /æ/, and /ɛ/, which we will refer to as the KIT, TRAP, and DRESS vowels, respectively, following Wells (1982).

Among these three vowels, the stressed KIT vowel is the most readily identifiable linguistic feature that separates NZE and AE (Watson et al., 1998). The AE variant tends to be high and front compared to the more central location of the NZE variant (Watson et al., 1998). This difference is widely known and is salient to speakers of each variety, and it is often the target of humor from speakers of both dialects. Thus, the KIT vowel serves as a salient and stereotyped feature between NZE and AE. In both dialects, unstressed KIT has a tendency to be centralized.

The TRAP and DRESS vowels are also features that distinguish NZE and AE. Both are lower and backer in AE than in NZE (Watson et al., 1998). In fact, this difference has been increasing over the last two decades, with the lowering of TRAP and DRESS in AE documented over the period 1995–2007 (Cox & Palethorpe, 2008), and the rising of the same vowels in NZE over a similar period (Maclagan & Hay, 2007). Fig. 1 illustrates the approximate relative positions of these three vowels in Australian and New Zealand English. Note that these overall general positions can also be influenced by selected phonological conditioning environments. DRESS and TRAP are merged before /l/ in NZE, for example (Hay, Drager, & Thomas, 2013), and TRAP can be raised in Australian English before nasals (Cox & Palethorpe, 2008).

In comparison, the differences in TRAP and DRESS are lesser known to NZ listeners than the difference in KIT. For example, in an open-response question, Ludwig (2007) asked NZE speakers to list the features that distinguish Australian and New Zealand English. Of her 40 respondents, over half (60%) mentioned vowels as features distinguishing AE from NZE, but few listed specific vowels. For those who did choose to list specific vowels, respondents were more likely to mention KIT (25% of respondents), than TRAP (10% of respondents), and were least likely to mention DRESS (5% of respondents) as distinguishing features. This suggests that the differences in NZE and AE for TRAP and DRESS are less readily identified compared to KIT.

In addition, Ludwig also tested NZE speakers' accent identification ability by using synthesized stimuli that matched typical realizations of New Zealand and Australian KIT, TRAP, and DRESS vowels. The New Zealand respondents were the most accurate in identifying the Australian KIT as Australian, with 83% of respondents correctly identifying the accent as Australian when the word contained an Australian KIT variant. Comparatively, respondents were far less accurate for TRAP. Here, performance was at chance, with 51% of the respondents correctly identifying the accent as Australian when the word contained an Australian TRAP variant. Finally, respondents were wrong more often than they were right when attempting to identify the regional origin of DRESS tokens. More respondents thought that Australian DRESS variant was more typical of an NZ accent (56%) than the AE accent (44%).

In sum, the key features that distinguish NZE and AE are KIT, TRAP, and DRESS. NZE KIT is more central than the high front AE KIT and the stereotypes are well known to speakers of both dialects. NZE TRAP and DRESS are higher than the AE variants, but are less known to speakers of both dialects. Although responses to TRAP seem to be consistent in their representation for both dialects, responses for DRESS seem to be flipped and – if anything – New Zealanders *incorrectly* associate a lowered DRESS vowel more with a New Zealand identity than an Australian one and incorrectly attribute NZE-featured items as Australian.

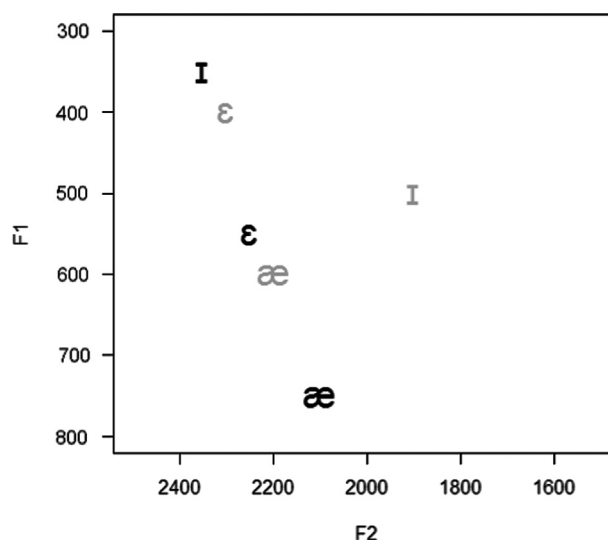


Fig. 1. Approximate relative position of DRESS, TRAP and KIT vowels in New Zealand English (gray) and Australian English (black). Approximate positions are based on Bauer, Warren, Bardsley, Kennedy and Major (2007) and Cox & Palethorpe (2008).

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