

# “He maybe did” or “He may be dead”? The use of acoustic & social cues in applying perceptual learning of a new dialect



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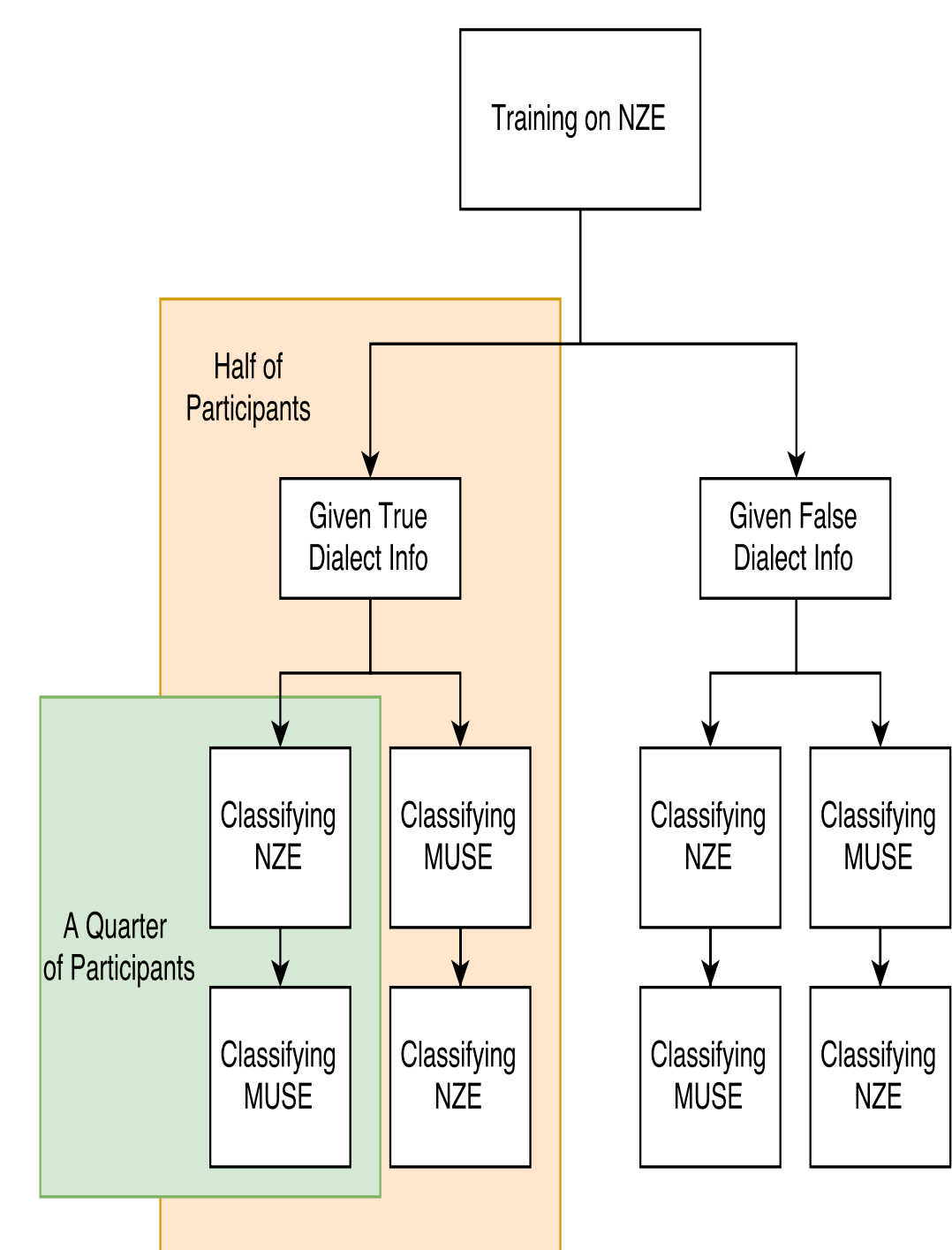
173rd Meeting of the Acoustical Society of America  
Boston, MA, June 25-29

## Introduction

- ▶ Previous work has found that listeners use top-down extra-linguistic social information during speech perception [1, 2, 3]
- ▶ A previous study [4] found that even after training on New Zealand English, US listeners classified NZ vowels as if they were from their own dialect if told speaker was from US

Listeners will classify vowels from a new dialect as if they were from their own if told that the speaker is from their dialect. Will they rely on top-down information to the same degree when listening to their own dialect?

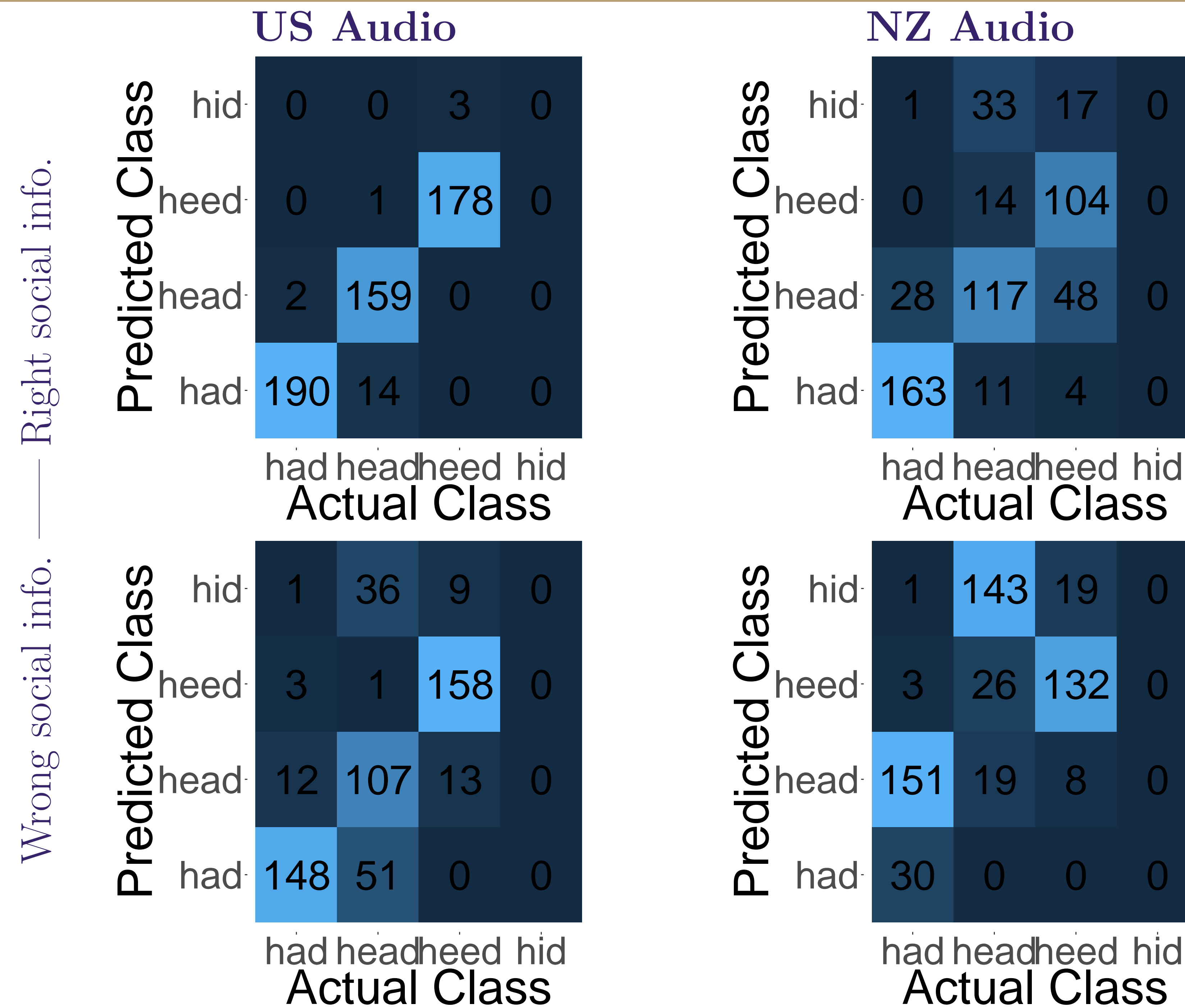
## Experiment



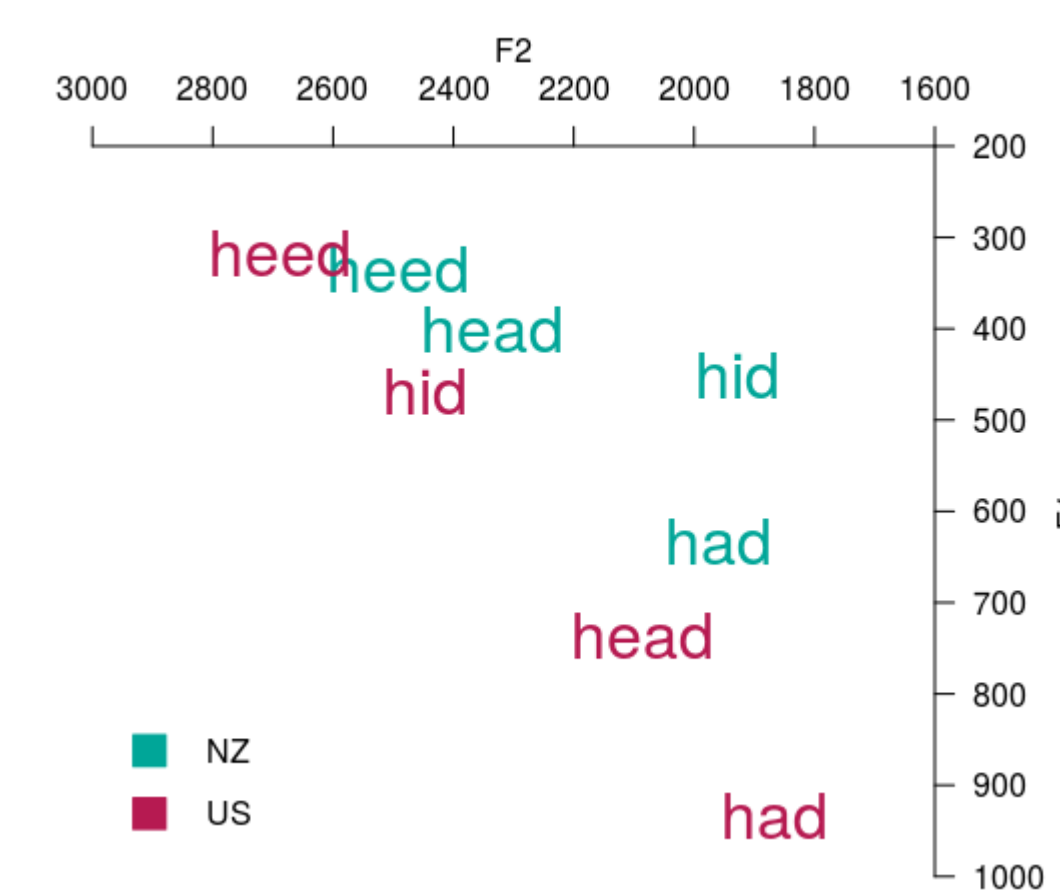
- ▶ Listeners played 150ms snippet of vowel, asked to pick which word it was from: “heed”, “hid”, “head”, “had”
- ▶ Training included feedback on answers, repeated until mastery
- ▶ New Zealand English recordings courtesy Dr. Catherine Watson [5]
- ▶ Listeners never given “hid” tokens due to duration contrast [6]
- ▶ Listeners were 21 native MUSE speakers with little to no previous experience with NZE

Flow chart summarizing experimental design. Note that during the testing portion, each participant was given only correct or only incorrect information about both talkers.

## Results



## Confusions between NZ & US Vowels

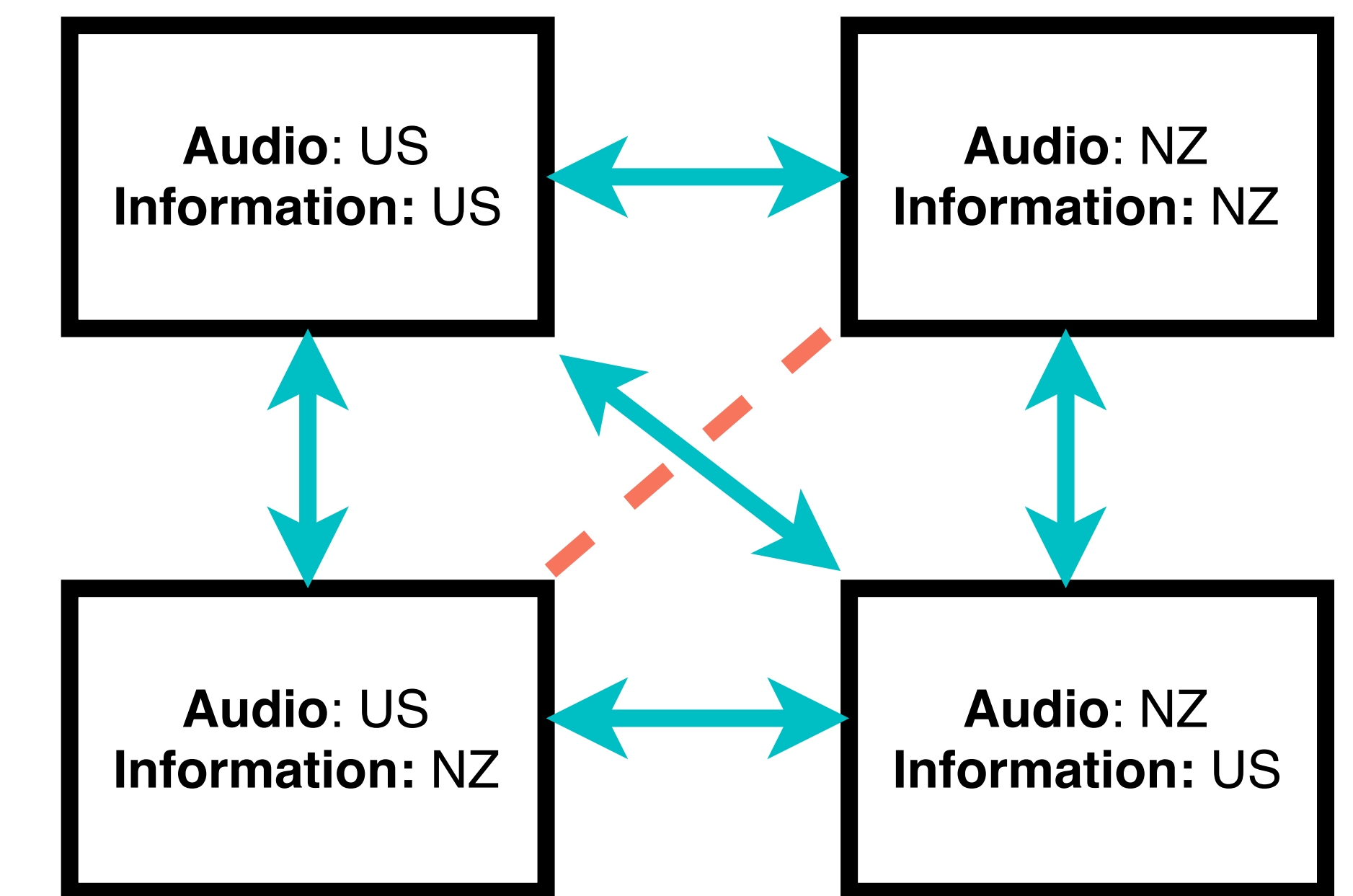


Vowels of socially-matched New Zealand English and Mainstream US English talkers.

- ▶ There is an ongoing vowel shift in the New Zealand English (NZE) front vowels relative to Mainstream US English (MUSE) [7, 8]
- ▶ This shift results in the following confusions:

#MUSE	#NZE
heed	heed
hid	head
head	had

## Analysis



Significant effects of manipulation on correct answers, using Bonferroni-corrected mixed effects logistic regression with item & subject as random intercepts. Green arrows = effect, red dashed line = no effect.

- ▶ **Incorrect social information changed listeners’ classifications of the vowels in a new dialect but not their own.**
- ▶ Listeners may be more sensitive to dialect cues (like formant dynamics) in varieties they’re familiar with & use these to ignore unhelpful social information
- ▶ If listeners can disregard top-down info based on just 150ms of speech, this explains earlier studies which failed to find top-down effects [9, 10, 11]

## References

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