

# Physiological change or identity formation? A sociophonetic study of bilingual transmasculine voices

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For transgender men, the changes that occur to their voice as the result of hormone replacement therapy (HRT) can be an important part of their identity: the administration of exogenous testosterone causes physiological changes that result in a lowering of pitch, which allows these speakers to be more easily perceived as men. Recent research on transmasculine speakers in both speech therapy and sociolinguistics has focused on charting change in gendered linguistic variables that is thought to be linked to physiological processes (e.g., pitch) or to social processes (e.g., the production of /s/) (Azul, 2015; Azul et al., 2017, 2018; Damrose, 2009; Van Borsel et al., 2000; Weirich & Simpson, 2018; Zimman, 2016, 2017ab, 2018).

Studies have so far focused on the analysis of monolingual speech. However, bilingual production may provide an additional window on transmasculine voice change. Although people may be variably aware of sociolinguistic patterns in their L2, the sociolinguistic production of gender (in particular masculinity) differs between languages (Boyd, 2018), while physiological processes necessarily remain the same, independent of language. Comparing the same speakers across languages, then, gives us additional evidence that can help us explore which changes are part of agentive identity formation, and which are physiological.

In this paper, we present data from a longitudinal study on voice change in five transgender men. They were interviewed monthly over a period of two years from the onset of HRT, resulting in about 50 hours of speech in L1 Dutch and L2 English. The data is analysed for changes in pitch (Henton, 1989; Hillenbrand & Clark, 2009; Traunmüller & Eriksson, 1995; Zimman, 2017a), vowel formants (Hillenbrand & Clark, 2009; Pierrehumbert et al., 2004; Puts et al., 2012), and production of /s/ in both languages (Fuchs & Toda, 2010; Levon et al., 2017; Zimman, 2017ab).

Differential developments in Dutch and English show not only a distinction between physiological and sociolinguistic change — the former showing parallel change in both languages, and the latter showing differences — but also sheds light on how speakers respond to changes in how they are perceived in society.

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