

## **Earwitness memory: Factors that influence voice recognition accuracy across the lifespan**

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We aimed to explore the effect of change in frequency (F0 in Hz) and speech rate (syllables per second - SPS) on voice recognition accuracy. In part one of our experiment, participants (M= 36; F=36; aged 18-30 years) were given a 2AFC voice matching task which involved hearing (binaural headphone presentation) synthesised (using NaturalReader 12) voices (uttering the phrase "spring is the season where flowers appear, summer is the warmest season of the year"). Participants had to identify whether the two voices were the 'same' or 'different' (using a key press, left/right). There were six target voices (six different identities, three male and three female) in total. In each trial the to be matched voices comprised the original voice or a modulated version (increased/decreased F0 or increased/decreased SPS) of the original voice presented in a random order. In part two of our experiment, the same participants heard the original voice and the modulated versions in a random order. After presenting each voice, participants had to decide whether the voice they heard was 'male' or 'female' (using a key press, left/right). Results from part one indicated that participants could discriminate a more subtle pitch shift than they could for speech rate. Results from part two indicated that participants correctly identified the sex of the speaker when SPS was modulated for both male and female voices, and when F0 was modulated for male voices. However, participants incorrectly identified a female voice as 'male' when F0 decreased. This suggests that both pitch and speech rate variations are important for accurate speaker identification and voice discrimination.