Voluntary social trait expression in voices

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Background

The voice is a dynamic social tool, which can influence how talkers are perceived. (Hellbernd & Sammler, 2016)

Voice characteristics can predict social outcomes, such as job interview success, election results and dating preferences.
(Feinberg et al., 2005; Pavela et al., 2017; Schroeder & Epley, 2015; Tigue et al., 2012)
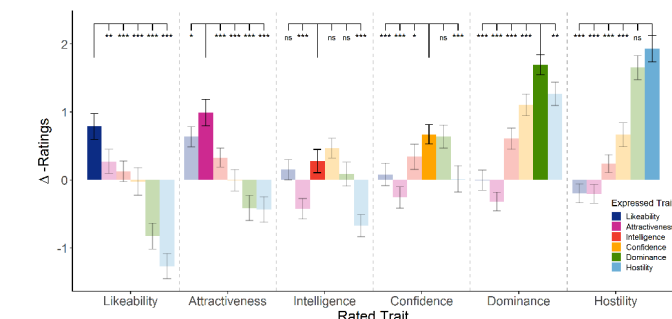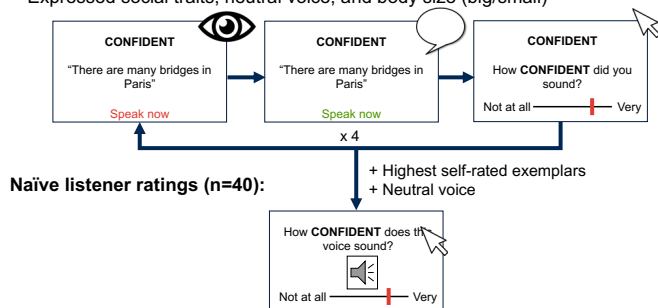
Research question:

**Can talkers voluntarily modulate their voice to express specific social traits (e.g. confidence)?**

Exp 1: Social trait ratings

Speaker recordings (n=40):
• Reading aloud neutral-content sentences
• Expressed social traits, neutral voice, and body size (big/small)

Naïve listener ratings (n=40):
+ Highest self-rated exemplars
+ Neutral voice

Vocal modulations evoked higher ratings for the intended social trait compared to neutral voices, and in comparison to the majority of other expressed traits.
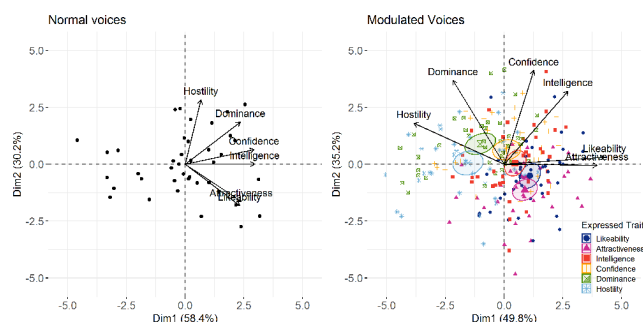
A principal component analysis showed that neutral voices were rated along two dimensions (affiliation and competence), which have previously been proposed as the 'social voice space'. (McAleer et al., 2014) **This was amplified by modulation.**

No evidence that vocal modulation efficacy is related to basic vocomotor control (shown by modulations to reflect body size).

Voluntary voice modulations amplify social trait impressions in naïve listeners.

Exp 2: Trait-based judgements

Forced choice task (within-speaker judgements)
• Highly-rated exemplars from Exp 1
• HOSTILE / LIKEABLE / CONFIDENT
• 40 naïve listeners

Which of these recordings sounds like the person is **CONFIDENT**?
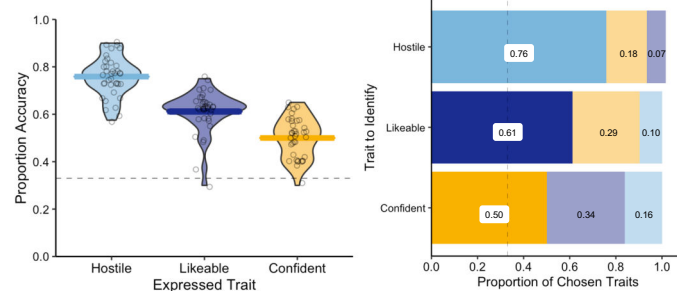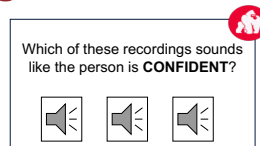
L: Mean listener accuracy for each Expressed Trait condition. R: Proportion of responses for each intended trait in each trait identification condition. If participants did not pick the intended expressed trait, what did they choose instead?
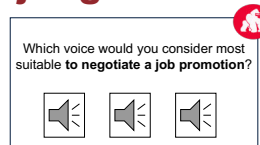
A confusion analysis indicated that naive listeners demonstrated the sensitivity and specificity required to distinguish the voice modulation expressing the intended trait from other voice modulations by the same speaker ($K = 0.43$, $p < .001$).

Speakers can voluntarily modulate their voice to convey an intended social trait, which naïve listeners can distinguish from other intended expressed traits.

Exp 3: Scenario-based judgements

Forced choice task (within-speaker judgements)
• Identical exemplars to Exp 2
• 40 naïve listeners

Which voice would you consider most suitable **to negotiate a job promotion**?

Which voice would you consider most suitable
• to portray a villain in a film? **(hostile)**
• to ask a new friend to go hiking with you? **(likeable)**
• to negotiate a job promotion? **(confident)**
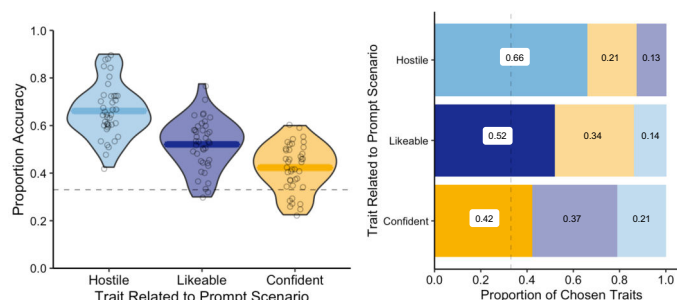
A confusion analysis indicated that naive listeners were most likely to select the intended expressed trait that matched the scenario prompt ($K = 0.30$, $p < .001$).

Voluntary voice modulation can improve speakers' chances of achieving social goals, in which a specific trait is desirable.

Conclusions

• Voluntary voice modulation is a highly effective tool for favourable self-preservation and navigating social outcomes.

• These findings advance our understanding of the mechanisms underlying non-verbal vocal behaviour for social communication.