Effects of auditory feedback consistency on vowel production

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Introduction
- Auditory feedback is crucial for speech production [1]
- Studies on auditory feedback during speech production find two types of responses to unexpected feedback:
  - Compensation: short-term, online-based, corrective articulations [2]
  - Adaptation: longer-term changes in feedforward articulation [3,4]
- Whether or not people show compensation and/or adaptation might depend on the context of the unexpected feedback

Does a consistent error in auditory feedback lead to more adaptation, compared to inconsistently altered feedback?
- We predict that consistently altered feedback leads to an increase in adaptation responses.

Methods and Measures
- task: produce 3s-long /e:/
- 6.6% perturbation of F1 (positive or negative)
- 4 blocks: 2 conditions * 2 directions

F1 as a function of Trial Type

F1 compensation in perturbation trials for consistent, but not for random condition

Adaptation Rate

Consistent condition shows increased F1 compensation compared to random condition at the group level, suggesting an adaptation effect.
For negative perturbation, same number of subjects show adaptation for both conditions, but more followers for random condition.
Feedback consistency affects adaptation effects, though with large interindividual variability.

References
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