Analysis of the Effects on Pronunciation of Training by Using Song or Native Speech

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What we did
• This research is an investigation of whether Japanese speakers’ English pronunciation improves more after training with sung or spoken speech.
• We recorded 30 Japanese learners of English who trained on sung speech or spoken speech. Then, we got 108 native or near-native listeners evaluate those data samples.

Introduction
Intelligibility of sung passages is seven times less than spoken counterparts. [1]
Sung lyrics are often unintelligible for listeners because listeners have significant difficulty in discriminating different sung vowels. [2]
Music changes pitch and rhythmic patterns of phrase. It makes understanding more difficult for the listeners. [3]
Recently, many Japanese junior high schools use English songs as a resource for learning English pronunciation. To investigate whether practicing English music affects English pronunciation or not might be helpful for future planning of Japanese English education.

Method
Participants:
18 Japanese participants from University of Aizu

12 native or near-native English listeners from Rose-Hulman Institute of Technology

18 native English listeners from Amazon Mechanical Turk

Stimuli:
• Used song lyrics: Meet me under the shining light, I’ve been waiting right here all my life (From Alive by Krewella)

Judgement Criteria:
1. Phrase pronunciation:
   (i) light (ii) I’ve been (iii) right here (iv) all my life
2. Foreign accent
3. Intonation

Data Collection & Analysis

Results
Training by using sung speech resulted in generally worse judgements than training by regular speech. Results for each of the criteria can be seen to the right in Figs. 1–6.
• The two criteria, “right here” (Fig.3) and intonation (Fig.6) had significant interactions relative to the default “all my life”.

• The criteria “right here” (Fig.3) shows that the phrase “right here” got negatively affected by training on sung speech. The number of “Bad” ratings decreased after spoken training, but increased after music training.
• The criteria intonation (Fig.6) shows, perhaps surprisingly, that the intonation of the whole sentence was negatively affected by training on sung speech.

Discussion and Future Work
• The main effect was discovered where stimuli from the post-training condition received higher judgement scores than those pre-training condition (a = 0.177, z = 2.43, p < 0.05).
• The main effect where the musical training condition yielded overall higher scores (independent of pre- or post-training) was also seen (a = 0.000, z = 2.38, p < 0.01). This may suggest that Experiment group (used sung speech) had higher Judgement ratings prior to any training effect.
• Training with the music stimuli had a negative effect on ratings in the post-training condition (a = -0.349, z = -3.39, p < 0.01). It shows training by using regular speech is more effective for English learners than training by using songs.
• Our results suggest that if Japanese English learners want to improve their English pronunciation, it is reasonable for learners to use spoken speech rather than sung speech.
• Due to the relatively short stimulus phrase, in the future we would like to collect more data to get more varied generalizable results.

References

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