Yiyang Xiang Vowel Quality: Comparability Across Two Recording Mediums

Abstract:

Current events have necessitated the sacrifice of some degree of recording quality in order to reach inaccessible or far-away areas, which would usually be reached through fieldwork. One possible solution is the use of video conferencing software like Zoom (Zoom Video Communications) for recording over traditional in-person microphone or sound booth recording. However, this causes issues of comparability when a portion of data collection has been done on one medium and another on the other.

The present research is an analysis of the acoustics of vowels in the Yiyang dialect of Xiang (Sinitic), comparing across two recording mediums: one online (Zoom) and another in person (Sound Booth). The ultimate goal is to determine whether Zoom-recorded data is comparable to sound-booth recorded data, speaker extrinsically, and whether it can still be used for analysis. Yiyang is a member of the Xiang subgroup of Sinitic, a chronically understudied and relatively diverse grouping of Sinitic, research of which has been made increasingly difficult due to the pandemic and the inability to conduct fieldwork. For this reason, it is often necessary to use a variety of methods to record speakers, some in person and some online. However, it is unclear whether or not this use of video conferencing software provides usable acoustic data (Freeman & DeDecker 2021; Ge et al. 2021; and others); are there quantifiably significant differences between these when analyzing the speech of two different speakers? Or can Zoom-recorded data be used more-or-less interchangeably with standard recording procedures?

This study analyzes three Yiyang Xiang recordings retelling the events of the 'Pear Stories' video (see Chafe 1980), performed by two speakers (Female, 24, college educated) one recorded in the sound-attenuated booth at the University of Hong Kong and another recorded through Zoom using a laptop microphone. In addition, the first speaker was recorded on Zoom performing the same task as well. Acoustic features analyzed include F1, F2, and F3. Findings suggest that while F1 is fairly comparable, the higher two formants are altered in ways that question the comparability of Zoom-recorded vs. Sound booth-recorded acoustic data.

Key Words: Xiang Chinese, recording methodology, acoustic phonetics, phonology

References

Freeman, V., & De Decker, P. (2021). 'Remote sociophonetic data collection: Vowels and nasalization over video conferencing apps'. *The Journal of the Acoustical Society of America*, 149(2), 1211-1223.

Ge, C., Xiong, Y., & Mok, P. (2021). 'How reliable are phonetic data collected remotely? Comparison of recording devices and environments on acoustic measurements'. Proc. Interspeech 2021, 3984-3988.