



Department of  
*Linguistics and Modern Languages*  
語言學及現代語言系

# Evidential Value of Long-term Laryngeal Voice Quality Acoustics

**Dr. Ricky CHAN**  
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**Date:** November 8, 2022 (Tuesday)  
**Time:** 4:30pm - 6:15pm (Hong Kong Time, UTC +8)  
**Venue:** Lee Shau Kee Building 208,  
The Chinese University of Hong Kong



## Abstract

Forensic voice comparison (FVC) typically involves the comparison of voices on two sets of recordings: an unknown voice of an offender and a known voice of a suspect. A key goal in FVC research is to empirically evaluate the evidential value of speech features under forensic conditions. Voice quality (VQ) is one of the most useful and popular features in FVC casework, and is typically analysed in terms of categorical auditory-based labels. However, empirical validation on the usefulness of VQ features are surprisingly limited, not to mention the acoustic aspects of VQ. In this talk, I will report a study that empirically tested the evidential strength of long-term voice quality acoustics. 75 male speakers aged 18-45 were selected from a forensically-oriented database of Australian English speakers. The evidential strength of a number of spectral tilt, additive noise parameters, and combinations thereof were assessed under the Bayesian likelihood-ratio framework. Results show that system performance was mostly stable across 100 replications. Individual VQ parameters yielded poor speaker-discriminatory performance, but in general performance improved when more parameters were used. Speech style mismatch had clearer detrimental effects on system validity than non-contemporaneous recordings. Implications for FVC will be discussed.

## Speaker

Dr. Ricky Chan obtained his PhD from the University of Cambridge. He is currently Assistant Professor at School of English, the University of Hong Kong and the principal investigator of the Speech, Language and Cognition Laboratory. His research spans experimental phonetics, forensic speech science, psycholinguistics, and implicit learning. He recently completed an ECS project on assessing the evidential value of voice quality acoustics, and will embark on a new research project on forensic voice comparison in China.

All are Welcome

Enquiries

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