eNunciate! Empowering Pronunciation Teaching and Learning

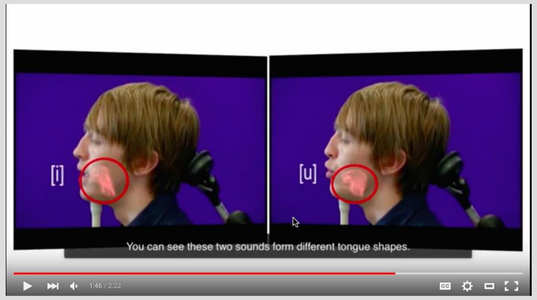
Heather Bliss, Strang Burton, Bosung Kim, Blake Allen, and Bryan Gick

Other Team Members: Jennifer Abel, Evan Ashworth, Kathleen Currie-Hall, Joe D'Aquisto, Tiffany Doe, Amir Entezaralmahdi, Lewis Haas, Tsuyoshi Hamanaka, Hisako Hayashi, Melissa Henderson, Misuzu Kazama, Andrea Lau, Matthew Law, Derek Lew, Yoshitaka Matsubara, Masaki Noguchi, Hotze Rullmann, Asami Tsuda, Joyce Tull, Martina Wiltschko, Noriko Yamane, and Kazuhiro Yonemoto

OBJECTIVES

- Pronunciation is an integral part of communication, but it has proven to be one of the most challenging aspects to incorporate into language pedagogy and to implement in the classroom
- Our project brings to language pedagogy technological innovations that address the challenges faced in teaching and learning pronunciation, and give learners control and autonomy over their own learning
- Our tools and resources draw on ultrasound and other speech visualization technology and its application in articulatory phonetics
- Evidence-based approach: we evaluate and report on the impact of our resources on teaching and learning; 9 presentations and publications to date, others forthcoming

MULTIMODAL TOOLS TO VISUALIZE SPEECH



- Educational resources enable students to visualize speech sounds of world's languages
- **Ultrasound overlay videos** combine mid-sagittal images of tongue movements with external profile views of a speaker's head (1)
- **High-quality animations** present stylized representations of speech mechanisms
- View videos at enunciate.arts.ubc.ca

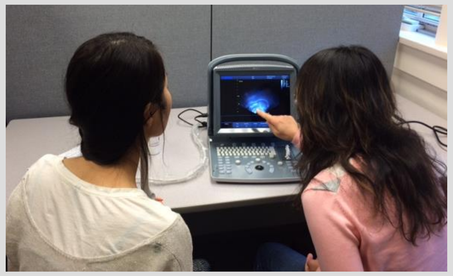
INTERACTIVE AND AUTONOMOUS TRAINING

- **Japanese Pronunciation Tutorial** website offers learners opportunities for self-directed, interactive pronunciation training
- blogs.ubc.ca/enunciatejapanese

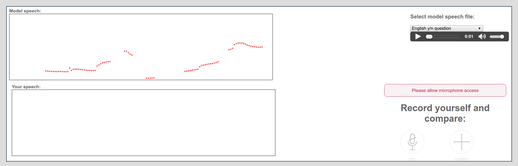
- Learners have control and autonomy over their learning, engaging with site in a way that mimics one-on-one interactions with speakers
- Tutorial consists of instructional videos, practice exercises, and quizzes
- Content developed collaboratively, drawing on Japanese instructors' knowledge of pronunciation challenges and linguists' understanding of speech production
- Student surveys report that learners' understanding and pronunciation of Japanese sounds improved (6)
- Future developments include similar websites for other languages, including **French, Spanish, German, and Chinese**

BIOVISUAL FEEDBACK FOR PRONUNCIATION TRAINING

- Novel use of **biovisual feedback** using visualization technology can improve pronunciation for language learners (4) and other populations (2, 3)
- Repetition and feedback are essential for pronunciation training, but difficult to implement in a classroom setting
- **Ultrasound-based tutorials** allow learners to get feedback on their pronunciation of challenging sounds (5)



- **Online prosody visualizer** allows students to record utterances and compare with model speaker



ULTRASOUND KIT FOR CUSTOMIZED RESOURCES

- **"Tongue visualizer" software** enables language instructors and other users to develop customized ultrasound overlay videos
- Ultrasound kit includes software + all required hardware (portable ultrasound machine, camcorder, laptop computer, accessories)
- Language instructors will be able to produce **custom resources** focusing on specific pronunciation challenges in their own languages
- Particularly useful for the sounds of BC's First Nations languages
- Custom videos in development for:
  - → **Cantonese** (final obstruents, vowels)
  - → **Upriver Halq'emeylem** (dorsal sounds)
  - → **SENĆOŦEN** (full alphabet; created by community language apprentices)

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