Division of
Linguistics and Multilingual Studies

cordially invites you to a seminar on

Aero-tactile integration in speech: Effects and limitations

by

Donald Derrick

New Zealand Institute of Language, Brain and Behaviour

University of Canterbury

DATE:
Friday,
16 November,
2018

TIME:
4:30pm

VENUE:
HSS
Seminar Room 7
(HSS-01-06)

ABSTRACT

In 2009, Bryan Gick and I (Donald Derrick) published evidence that air puffs, directed at the skin and time-aligned with audio-in-noise, can help enhance or interfere with distinguishing between voiced and voiceless stops. I will present evidence that this enhancement works when air is directed at the neck, hand, or ankle. The temporal window of integration indicates the integration works in an ecologically valid asynchronous window, much like audio-visual integration. Results have been replicated and extended in an independent lab (Goldenberg, 2015). In addition, colleagues have shown the process works without an audio component, in visual-tactile speech perception, and may interact with participants' social skills as measured in the Autism Quotient Scale (Bicevskis, 2015). However, testing of integration during continuous speech has not shown similar speech perception enhancement, raising questions as to how aero- tactile stimuli integrates into speech perception. Ongoing brain research to resolve such questions will be discussed, as will new methods of recording oral and nasal airflow during speech.

ABOUT THE SPEAKER

Donald Derrick studies speech production and perception in order to identify what environmental, sensory and physical constraints on speech can enhance or interfere with speech perception.

Derrick researches how speech airflow contacting the skin enhances and interferes with speech perception, much as researchers have done with visual speech since the 1950s. This includes studying speech air flow production, skin response to speech air flow touch, speech perception enhancement and interference, and brain responses from seeing, feeling, and feeling speech.

Derrick's goal is to produce a multi-sensory model of speech perception that takes into account the relationship between audio, visual, and tactile speech signal strength, along with low-level speech production constraints.

ALL ARE WELCOME