

COMPUTATIONAL PHYSIOLOGY LAB

Emotional Coupling/Decoupling Between Critical Audience and Speaker



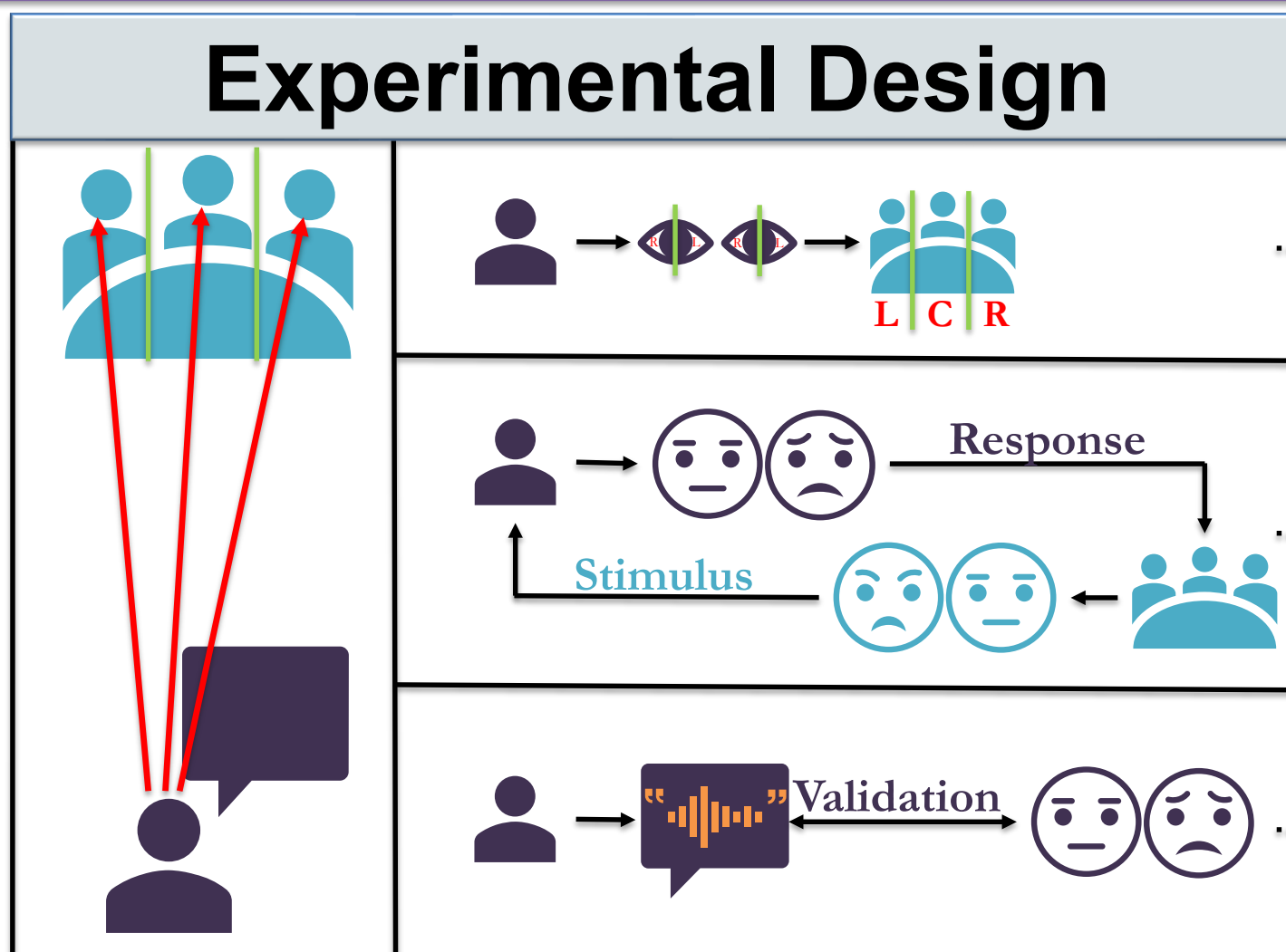
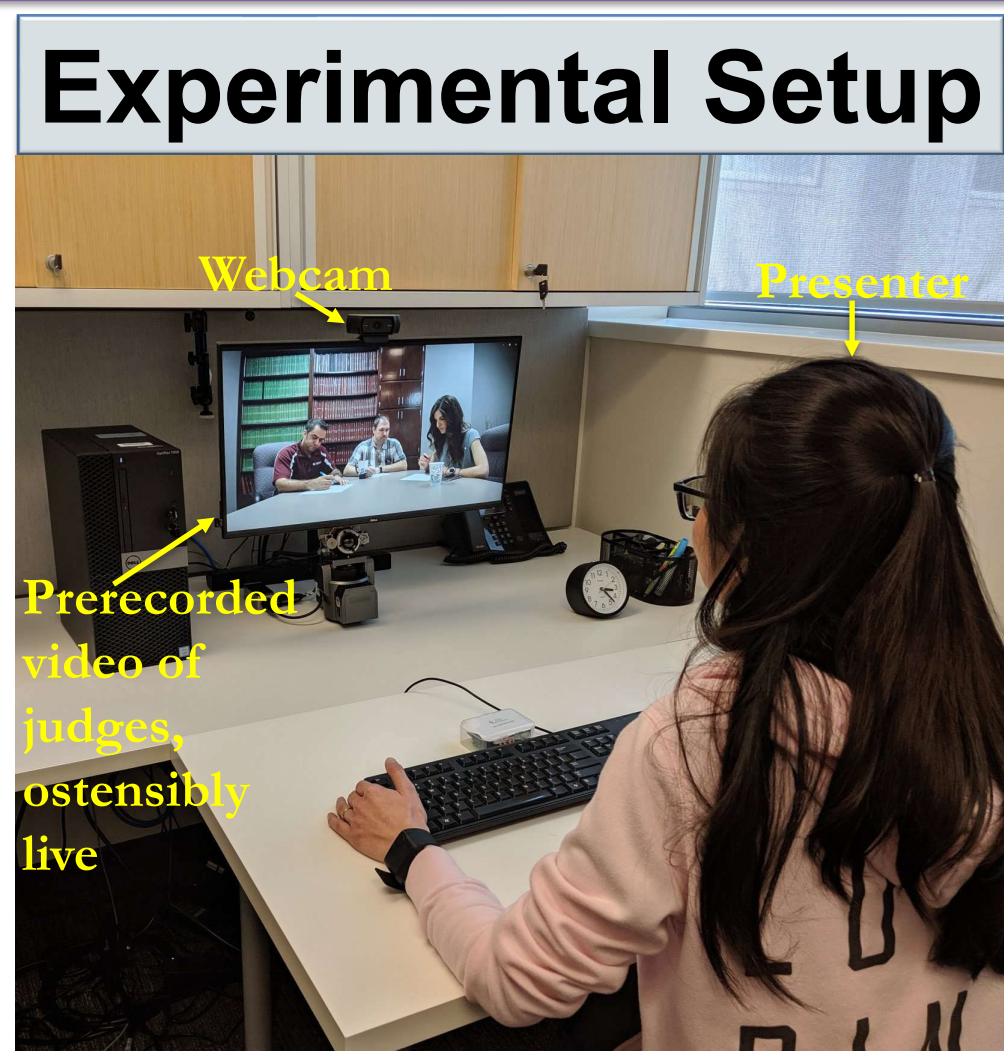
Christopher Blank, Shaila Zaman, Amanveer Wesley, and Ioannis Pavlidis
Computational Physiology Lab, Department of Computer Science, University of Houston, Houston, TX, 77004

Motivation

- ★ Public speaking
 - ☆ stresses inexperienced presenters
 - ☆ degrades the quality of presentations
 - ☆ + hostile/disinterested audience = looming disaster
- ★ Understand speaker-audience interactions
 - ☆ first step to designing an interventional system

Objective

- ★ Multimodal analysis of emotional interactions between science speakers and a panel of judges
- ☆ $n = 26$ undergraduate students each wrote a report and presented key findings to three discouraging judges



Methods

Eye Gaze Detection [1] calculates the ratio of white pixels between the left and right halves of each eye

Real Time Facial Expression Recognition [2] measures normalized probability values for 7 basic emotions: anger, sadness, happiness, fear, disgust, surprise, and neutral

OpenVokaturi [3] measures 5 normalized emotions in speech: anger, sadness, happiness, fear, and neutral

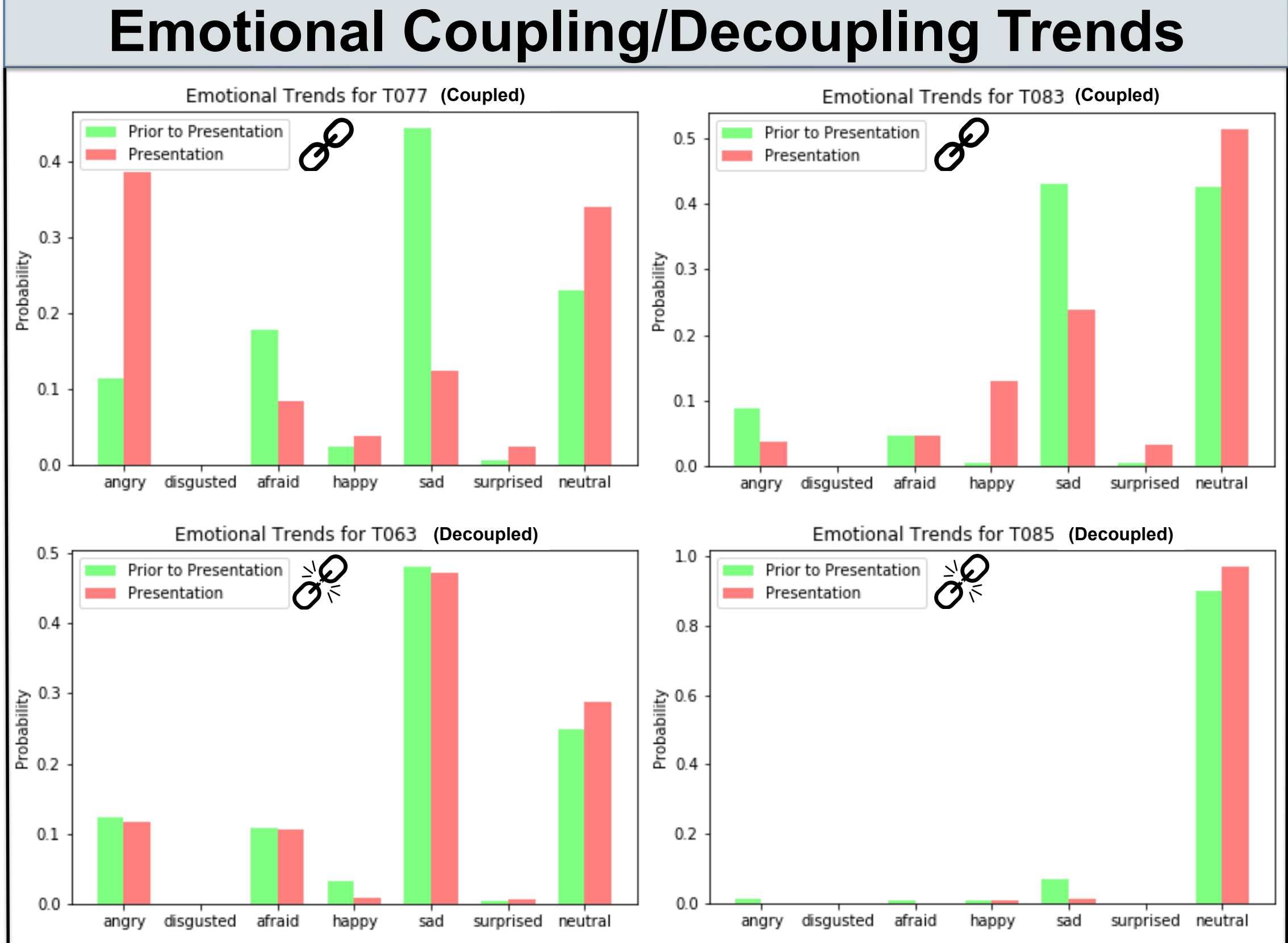
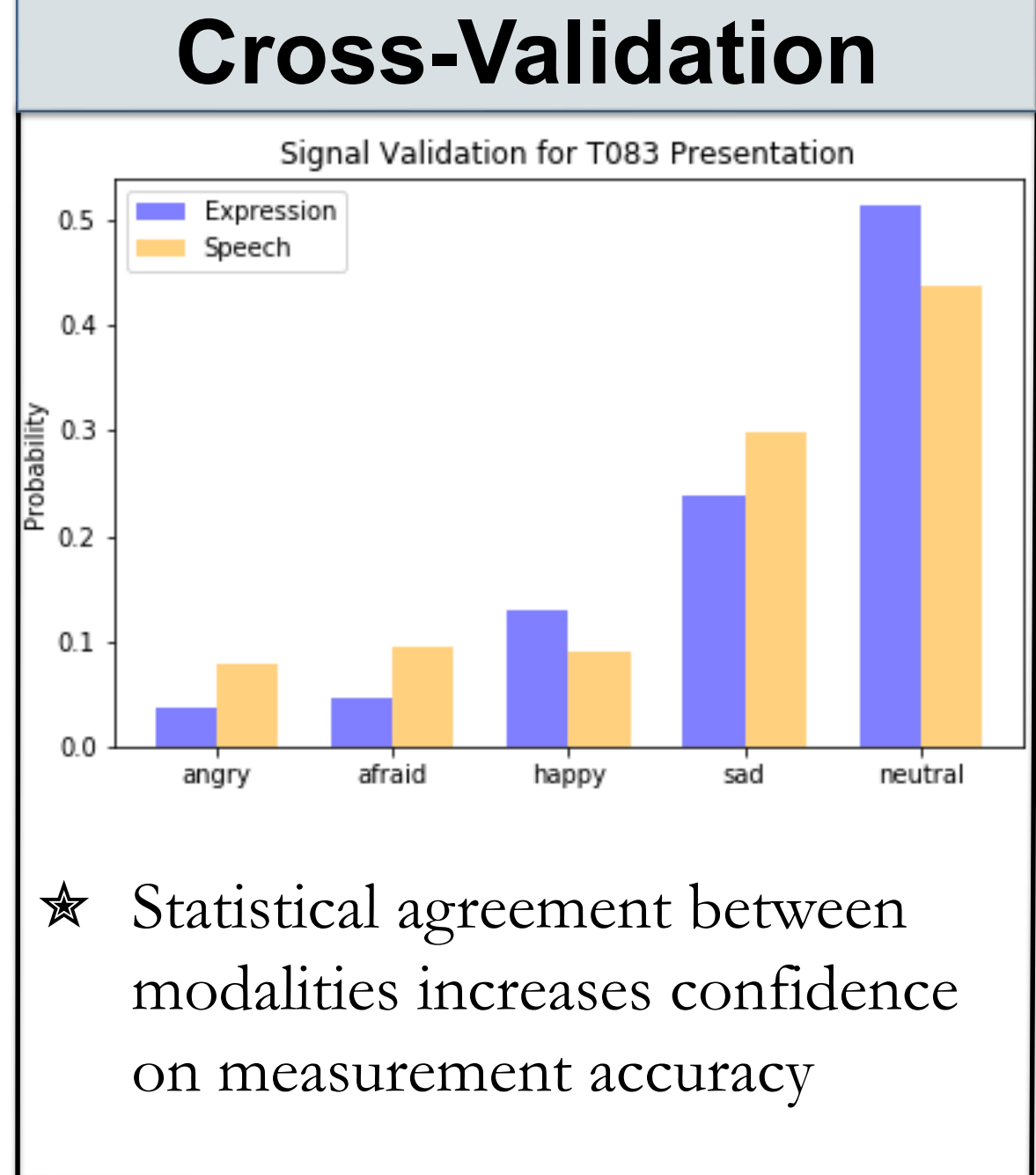
Data Collection

Stimulus: 1:23:20.2

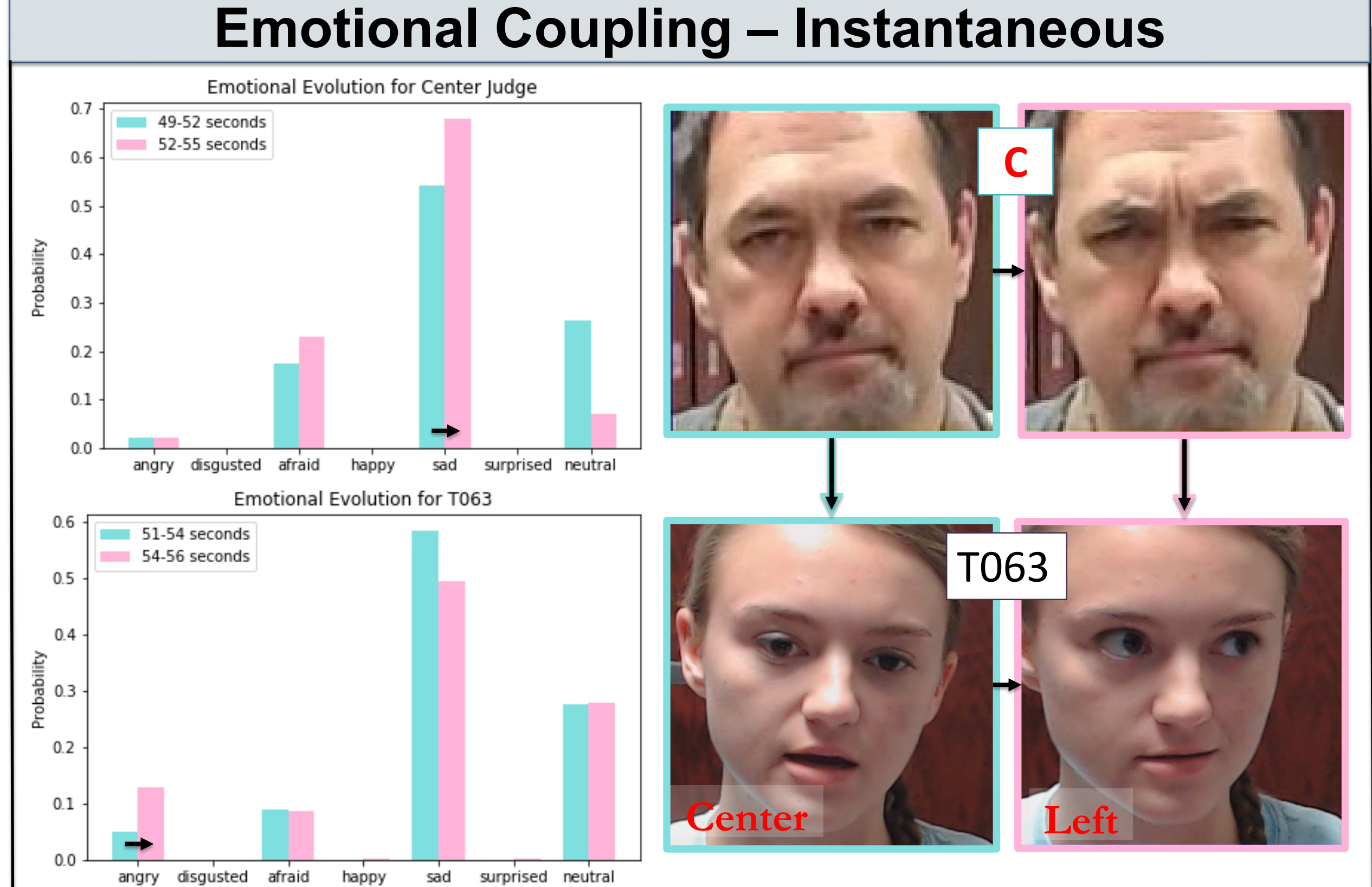
Response: afraid

- neutral: 0.0068522906
- surprised: 0.0044072047
- sad: 0.025244154
- happy: 0.01851351
- afraid: 0.940475
- disgusted: 0.0006873365
- angry: 0.003820642

RIGHT: 0.008734290672616664



★ In coupling, expressions tend to become more neutral during presentations, suggesting participants attempt to 'guard' emotions



Emotional Decoupling – Trend

Prior to Presentation During Presentation

★ Participant T085 remains unexpressive throughout all treatments and appears emotionally decoupled from the judges during his presentation

★ Some presenters consistently react to the judges. Others, like T063, respond occasionally, or, like T085, don't react at all

Remaining Work

- ★ Perform quantitative analysis
- ★ Examine the effect of emotional coupling/decoupling on performance

References

[1] Canu, S. (2019, January 7) Eye Gaze detection 2. Retrieved July 2019 from psource.com
 [2] Serengil, S. (2019, February 23) TensorFlow 101: Introduction to Deep Learning. Retrieved June 2019 from github.com
 [3] Vokaturi Developers. (2019, June 2). Retrieved July 2019 from vokaturi.com

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