

Sahil Luthra

Department of Psychology, Carnegie Mellon University
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Education	Ph.D., Psychological Sciences (Language and Cognition) 2021 University of Connecticut; Advisors: Jim Magnuson, Emily Myers <i>Dissertation:</i> Neural mechanisms underlying talker-specific influences on speech perception
	M.S., Psychological Sciences (Language and Cognition) 2019 University of Connecticut; Advisors: Jim Magnuson, Emily Myers <i>Thesis:</i> The influence of sentence context on phonetic recalibration
	Graduate Certificate, Neurobiology of Language 2019 University of Connecticut
	B.S. with Honors, Cognitive Neuroscience 2014 Brown University; Advisor: Sheila Blumstein <i>Thesis:</i> Speaker information in spoken word recognition: An investigation using false memories
Academic Employment	Postdoctoral Researcher 2021-Present Carnegie Mellon University; Supervisors: Lori Holt, Fred Dick (University of London Birkbeck)
	Research Assistant 2014-2016 Brown University; Supervisors: Emily Myers, Sheila Blumstein
	Research Assistant 2013 Boston University; Supervisor: Swathi Kiran
Honors and Awards	Dissertation Prize, Society for Neurobiology of Language 2021
	Diversity and Inclusion Award, Cognitive Science Society 2021
	Isabelle Y. Liberman Award, University of Connecticut 2020
	NSF Graduate Research Fellowship 2018-2021
	NSF Research Traineeship (Science of Learning & Art of Communication) 2018-2021
	Jorgensen Scholarship, University of Connecticut 2018-2021
	NSF IGERT Fellowship (Language Plasticity) 2016-2018
	Premium for Excellence in Cognitive Neuroscience, Brown University 2014
	Royce Fellowship, Brown University 2012
	August P. Reccord Scholarship, Brown University 2010-2014
Eagle Scout Scholarship, Frank Livermore Trust 2010-2014	
National Merit Scholarship 2010	

**Peer-
Reviewed
Publications
(Published)**

Saltzman, D., **Luthra, S.**, Myers, E. B., & Magnuson, J. S. (2021). Attention, task demands, and multi-talker processing costs in speech perception. *Journal of Experimental Psychology: Human Perception and Performance*, 47(12), 1673-1680.

Luthra, S., Saltzman, D., Myers, E. B., & Magnuson, J. S. (2021). Listener expectations and the perceptual accommodation of talker variability: A pre-registered replication. *Attention, Perception & Psychophysics*, 83(6), 2367-2376.

Luthra, S., Li, M. Y. C., You, H., Brodbeck, C., & Magnuson, J. S. (2021). Does signal reduction imply predictive coding in models of spoken word recognition? *Psychonomic Bulletin & Review*, 28(4), 1381-1389.

Luthra, S., Peraza-Santiago, G., Beeson, K., Saltzman, D., Crinnion, A. M, & Magnuson, J. S. (2021). Robust lexically-mediated compensation for coarticulation: Christmash time is here again. *Cognitive Science*, 45(4), 1-20.

Luthra, S., Mechtenberg, H., & Myers, E. B. (2021). Perceptual learning of multiple talkers requires additional exposure. *Attention, Perception, & Psychophysics*, 83(5), 2217-2228.

Luthra, S. (2021). The role of the right hemisphere in processing phonetic variability between talkers. *Neurobiology of Language*, 2(1), 138-151.

Luthra, S., Magnuson, J. S., & Myers, E. B. (2021). Boosting lexical support does not enhance lexically guided perceptual learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 47(4), 685-704.

Luthra, S., You, H., Rueckl, J. G., & Magnuson, J. S. (2020). Friends in low-entropy places: Orthographic neighbor effects on visual word identification differ across letter positions. *Cognitive Science*, 44(12), 1-31.

Luthra, S., Correia, J. M., Kleinschmidt, D. F., Mesite, L. & Myers, E. B. Lexical information guides retuning of neural patterns in perceptual learning of speech. (2020). *Journal of Cognitive Neuroscience*, 32(10), 2001-2012.

Magnuson, J. S., You, H., **Luthra, S.**, Li, M. Y. C., Nam, H., Escabí, M., Brown, K., Allopenna, P. D., Theodore, R. M., Monto, N., & Rueckl, J. (2020). EARSHOT: A minimal neural network model of incremental human speech recognition. *Cognitive Science*, 44(4), 1-17.

Luthra, S., Fuhrmeister, P., Molfese, P. J., Guediche, S., Blumstein, S. E., & Myers, E. B. (2019). Brain-behavior relationships in incidental learning of non-native phonetic categories. *Brain & Language*, 198, 1-12.

Luthra, S., Guediche, S., Blumstein, S. E., & Myers, E. B. (2019). Neural substrates of subphonemic variation and lexical competition in spoken word recognition. *Language, Cognition & Neuroscience*, 34(2), 151-169.

Luthra, S., Fox, N. P., & Blumstein, S. E. (2018). Speaker information affects false recognition of unstudied lexical-semantic associates. *Attention, Perception & Psychophysics*, 80(4), 894-912.

Magnuson, J. S., Mirman, D., **Luthra, S.**, Strauss, T., & Harris, H. (2018). Interaction in spoken word recognition models: Feedback helps. *Frontiers in Psychology*, 9, 1-18.

Theodore, R. M., Blumstein, S. E., & **Luthra, S.** (2015). Attention modulates specificity effects in spoken word recognition: Challenges to the time-course hypothesis. *Attention, Perception & Psychophysics*, 77(5), 1674-1684.

**Peer-
Reviewed
Publications
(In Progress)**

Luthra, S., Mechtenberg, H., Giorio, C., Theodore, R. M., Magnuson, J. S., & Myers, E. B. Using TMS to evaluate a causal role for right posterior temporal cortex in talker-specific phonetic processing. Under review.

Heffner, C. C., Fuhrmeister, P., **Luthra, S.**, Mechtenberg, H., Saltzman, D., & Myers, E. B. Reliability for perceptual flexibility in speech: Identification, learning, and adaptation. In revision.

Magnuson, J. S., Grubb, S., Crinnion, A. M., **Luthra, S.**, & Gaston, P. Contra assertions, feedback improves word recognition. In revision.

**Conference
Presentations**

Crinnion, A. M., **Luthra, S.**, Gaston, P., & Magnuson, J. S. Resolving competing predictions in speech perception. Oral presentation at Psychonomic Society, Virtual Conference, November 2021.

Mechtenberg, H., **Luthra, S.**, & Myers, E. B. Cents and Shensibility: The role of reward in talker-specific phonetic recalibration. Poster presentation at Psychonomic Society, Virtual Conference, November 2021.

Luthra, S. A right hemisphere role in talker-specific phonetic processing. Dissertation award lecture presented at Society for Neurobiology of Language, Virtual Conference, October 2021.

Luthra, S., Magnuson, J. S., & Myers, E. B. Right posterior temporal cortex supports integration of phonetic and talker information. Poster presentation at Society for Neurobiology of Language, Virtual Conference, October 2021.

Luthra, S., Mechtenberg, H., Giorio, C., Theodore, R. M., Magnuson, J. S., & Myers, E. B. Using TMS to evaluate a causal role for right posterior temporal cortex in talker-

specific phonetic processing. Poster presentation at Society for Neurobiology of Language, Virtual Conference, October 2021.

Luthra, S., Rueckl, J. S., & Magnuson, J. S. A computational investigation of the transformation from talker-specific detail to talker-invariant lexical representations. Poster presentation at Society for Neurobiology of Language, Virtual Conference, October 2021.

Brodbeck, C., **Luthra, S.,** Gaston, P., & Magnuson, J. S. Discovering computational principles in models and brains. Poster presentation at Cognitive Science Society, Vienna, Austria (In-Person/Virtual Hybrid), July 2021.

Luthra, S., Peraza-Santiago, G., Saltzman, D., Crinnion, A. M., & Magnuson, J. S. Lexically-mediated compensation for coarticulation in older adults. Oral presentation at Cognitive Science Society, Vienna, Austria (In-Person/Virtual Hybrid), July 2021.

Luthra, S., Mechtenberg, H., & Myers, E. B. Perceptual learning of multiple talkers requires additional exposure. Poster presentation at Psychonomic Society, Virtual Conference, November 2020.

Peraza-Santiago, G., Beeson, K., **Luthra, S.,** Saltzman, D., Crinnion, A. M., & Magnuson, J. S. Robust lexically-mediated compensation for coarticulation (LCfC) supports feedback in spoken word recognition. Poster presentation at Psychonomic Society, Virtual Conference, November 2020.

Grubb, S., Dalal, P., Daniel, J., Peraza-Santiago, G., **Luthra, S.,** Saltzman, D., Xie, B., Crinnion, A.M., & Magnuson, J. S. Talkers, time, tasks, and similarity in spoken word recognition. Poster presentation at Psychonomic Society, Virtual Conference, November 2020.

Saltzman, D., **Luthra, S.,** Myers, E. B., & Magnuson, J. S. Multi-talker processing costs in monitoring reflect task demands, not normalization. Poster presentation at Psychonomic Society, Virtual Conference, November 2020.

Luthra, S., Steiner, R. J., Magnuson, J. S., & Myers, E. B. The influence of sentence context on lexically guided perceptual learning. Poster presentation at Psychonomic Society, Montréal, QC, November 2019.

Luthra, S., Correia, J. M., Kleinschmidt, D. F., Mesite, L. & Myers, E. B. Lexical information guides retuning of neural patterns in perceptual learning of speech. Poster presentation at Society for Neurobiology of Language, Helsinki, Finland, August 2019.

Magnuson, J. S., You, H. Rueckl, J., Allopenna, P. D., Li, M. Y. C., **Luthra, S.,** Steiner, R. J., Escabí, M., Brown, K., Theodore, R. M., & Monto, N. Poster presentation at

EARSHOT: Emulating Auditory Recognition of Speech by Humans Over Time. Society for Neurobiology of Language, Helsinki, Finland, August 2019.

Magnuson, J. S., You, H., Rueckl, J., Allopenna, P. D., Li, M. Y. C., **Luthra, S.**, Steiner, R. J., Escabí, M., Brown, K., Theodore, R. M., & Monto, N. EARSHOT: A minimal model of human speech recognition (HSR) that operates on real speech. Poster presentation at Cognitive Science Society, Montréal, QC, July 2019.

Magnuson, J. S., Li, M. Y. C., **Luthra, S.**, You, H., & Steiner, R. J. Does predictive processing imply predictive coding in models of spoken word recognition? Oral presentation at Cognitive Science Society, Montréal, QC, July 2019.

Luthra, S., You, H., & Magnuson, J. S. Orthographic neighbor effects on visual word identification differ across letter positions. Poster presentation at Psychonomic Society, New Orleans, LA, November 2018.

Li, M. Y. C., You, H., **Luthra, S.**, Steiner, R. J., & Magnuson, J. S. Predictive processing in computational models of spoken word recognition. Poster presentation at Psychonomic Society. New Orleans, LA, November 2018.

Luthra, S., & Magnuson, J. S. Friends in low-entropy places: Letter position influences orthographic neighbor effects in visual word identification. Poster presentation at Cognitive Science Society, Madison, WI, July 2018.

Magnuson, J. S., Li, M. Y. C., You, H., **Luthra, S.**, & Steiner, R. J. Predictive processing in computational models of spoken word recognition. Oral presentation at Workshop on Predictive Processing. Donostia-San Sebastián, Spain, June 2018.

Luthra, S., Fuhrmeister, P., Molfese, P. J., Guediche, S., Blumstein, S. E., & Myers, E. B. Brain-behavior relationships in implicit learning of non-native phonetic categories. Poster presentation at Society for Neurobiology of Language. Baltimore, MD, November 2017.

Luthra, S., & Magnuson, J. S. Cumulative response probabilities: Estimating time course of lexical activation from single-point response times. Poster presentation at Cognitive Science Society, London, UK, July 2017.

Luthra, S., Fuhrmeister, P., Guediche, S., Blumstein, S. E., & Myers, E. B. Neural correlates of task-irrelevant perceptual learning of non-native speech sounds. Poster presentation at Psychonomic Society. Boston, MA, November 2016.

Luthra, S., Guediche, S., Blumstein, S. E., & Myers, E. B. Effects of phonetic category structure on brain activity during word recognition. Poster presentation at Society for Neurobiology of Language. London, UK, August 2016.

Luthra, S., Fox, N. P., & Blumstein, S. E. Speaker information affects false recognition of unstudied lexical-semantic associates. Poster presentation at Society for Neurobiology of Language. Chicago, IL, October 2015.

Myers, E. B., Theodore, R. M., & **Luthra, S.** Neural encoding of talker-specific phonetic variation. Poster presentation at Society for Neurobiology of Language. Chicago, IL, October 2015.

Teaching Experience	<p>Instructor of Record PSYC 3500: Psychology of Language</p> <p>Guest Lectures PSYC 2501: Cognitive Psychology SLHS 3247: Introduction to Phonetic Principles</p> <p>Community Presentations The Science of Language (Haynes Elementary School, MA) Cognitive Neuroscience (Central High School, RI)</p> <p>Workshop Presentations Using fMRI for Cognitive Research (UConn “J-Term” Primers) Data Visualization (UConn “J-Term” Primers) Advanced Neuroimaging Techniques (UConn “J-Term” Primers)</p>	<p>Fall 2019</p> <p>October 2017 December 2016</p> <p>May 2020 February 2016</p> <p>January 2021 January 2020 January 2019</p>
Invited Talks	<p>Open Lab Meeting on Talker Variability, University of Rochester Spoken Language Interest Group, Basque Centre for Cognition, Brain, & Language</p>	<p>July 2021 July 2018</p>
Outreach	<p>Editor-in-Chief, <i>Brain, Cognition, & Language Digest</i>, Connecticut Institute for the Brain and Cognitive Sciences Team Member, Language Science for Everyone, AAAS Family Science Days</p>	<p>2018-2019 February 2017</p>
Service	<p>“J-Term” Committee for Neurobiology of Language (NBL) & Science of Learning & Art of Communication (SLAC) programs Academic Committee for NBL/SLAC programs Events Committee for NBL/SLAC programs Student Organizer, Language & Cognition Brown Bag Student Organizer, NBL “Talk Shop”</p>	<p>2016-present 2016-Present 2016-2018 2017-2019 2016-2017</p>

Ad Hoc Reviewer *Attention, Perception, & Psychophysics; JASA Express Letters; Journal of Cognitive Psychology; Journal of Cognitive Neuroscience; Journal of Experimental Psychology: Human Perception and Performance; Journal of Experimental Psychology: Learning, Memory and Cognition; Journal of Memory and Language; Journal of Neuroscience; NeuroImage; PLOS ONE; Psychonomic Bulletin & Review; Quarterly Journal of Experimental Psychology*

Professional Affiliations Cognitive Science Society, Psychonomic Society, Society for Neurobiology of Language, Boston University College of Communication SciComms

Professional Skills **MRI/DTI** (AFNI/SUMA, FreeSurfer, Tracula, TORTOISE, SPM/Matlab)
TMS (MagVenture)
Eyetracking (EyeLink)
Acoustic analysis (Praat, STRAIGHT)
Experiment programming (Gorilla, E-Prime, PsychoPy, OpenSesame)
Statistics (R, SPSS, Python)

Languages English (native), Spanish (professional fluency), Hindi (intermediate skill)