DANIEL R. McCLOY

Postdoctoral Research Associate
Laboratory for Auditory Brain Science & Neuroengineering

OVERVIEW

I am a scientist trained in acoustic phonetics, speech perception, and auditory neuroscience. I research auditory attention and speech processing in multitalker environments, individual differences in speech intelligibility, and the relationship between speech perception and distinctive feature theory.

CURRENT POSITION

Postdoctoral research associate, Laboratory for Auditory Brain Science & Neuroengineering (*[LABS]*^{N}, PI: Adrian KC Lee), part of the Institute for Learning & Brain Sciences at the University of Washington. Current research projects:

- Investigating the influence of linguistic structure on auditory selective and divided attention
- Measuring effort-related pupillary response in auditory attention tasks
- Predicting non-native phone (mis)perception using EEG

EDUCATION

ACADEMIC DEGREES

- PhD in Linguistics (University of Washington, 2013): "Prosody, intelligibility and familiarity in speech perception" (PDF). Committee: Richard Wright (chair), Erick Gallun, Sharon Hargus, Gina-Anne Levow.
- MA in Linguistics (University of Washington, 2009): "The semantics of implicitly relational predicates" (PDF). Thesis advisor: Toshiyuki Ogihara.
- BA in Philosophy (University of Washington, 2002).
- BS in Neurobiology (University of Washington, 2002).

OTHER EDUCATION / TRAINING

- Machine Learning (Stanford University / Coursera, 2016).
- Biomedical Research Integrity Program (University of Washington, 2013).
- Protection of Human Research Subjects: Biomedical, Social/Behavioral, HIPAA (University of Washington / CITI, 2011, 2013).
- International Chinese Language Program (National Taiwan University, 2008).

RESEARCH PRODUCTS

Reference information for all listed publications is available in this BibTeX file.

PEER-REVIEWED ARTICLES

- McCloy D., Larson E., Lau B., & Lee A. K. C. (2016). Temporal alignment of pupillary response with stimulus events via deconvolution. *The Journal of the Acoustical Society of America*, *139*(3),

EL57–EL62. DOI: 10.1121/1.4943787 (Published version | Pre-publication manuscript | code/data repository).

- McCloy D., & Lee A. K. C. (2015). Auditory attention strategy depends on target linguistic properties and spatial configuration. *The Journal of the Acoustical Society of America*, *138*(1), 97–114. DOI: 10.1121/1.4922328 (Published version | Pre-publication manuscript | code repository).
- McCloy D., Wright R., & Souza P. (2015). Talker versus dialect effects on speech intelligibility: A symmetrical study. *Language and Speech*, *58*(3), 371–386. DOI: 10.1177/0023830914559234 (Pre-publication manuscript)
- Barrack C., McCloy D., & Wright R. (2014). Did murmur spread in Pre-Proto-Indo-European? *Indogermanische Forschungen: Zeitschrift für Indogermanistik und historische Sprachwissenschaft*, *119*(1), 149–158. DOI: 10.1515/if-2014-0009 (Pre-publication manuscript)
- Souza P., Gehani N., Wright R., & McCloy D. (2013). The advantage of knowing the talker. *Journal of the American Academy of Audiology*, *24*, 689–700. DOI: 10.3766/jaaa.24.8.6 (Pre-publication manuscript)
- Moran S., McCloy D., & Wright R. (2012). Revisiting population size vs. phoneme inventory size. *Language*, *88*(4), 877–893. DOI: 10.1353/lan.2012.0087 (Pre-publication manuscript | Data and R script)

CONFERENCE PROCEEDINGS & WORKING PAPERS

- McCloy D., Wright R., & Souza P. (2014). Modeling intrinsic intelligibility variation: Vowel-space size and structure. *Proceedings of Meetings on Acoustics*, *18*, 060007. DOI: 10.1121/1.4870070 (PDF)
- McCloy D. (2014). Phonetic effects of morphological structure in Indonesian vowel reduction. *Proceedings of Meetings on Acoustics*, *12*, 060009. DOI: 10.1121/1.4870068 (PDF)
- McCloy D. (2013). Corpus-based productivity measures of English -er agentives and instrumentals. *UW Working Papers in Linguistics*, *31* (PDF)
- McCloy D. (2010). The semantics of implicitly relational predicates. In *Proceedings of the 26th Northwest Linguistics Conference (SFU Working Papers in Linguistics)* (PDF)

TECHNICAL REPORTS

- McCloy D. (2012). Vowel normalization and plotting with the phonR package. Technical Report 2012-01, UW Linguistic Phonetics Laboratory, Seattle, WA. (PDF)

MANUSCRIPTS & WORK IN PROGRESS

- Hasegawa-Johnson M., Jyothi P., McCloy D., Mirbagheri M., di Liberto G., Das A., Ekin B., Liu C., Manohar V., Tang H., Lalor E. C., Chen N., Hager P., Kekona T., Sloan R., & Lee A. K. C., (submitted). ASR for under-resourced languages from probabilistic transcription. *IEEE Transactions on Audio, Speech and Language Processing*
- McCloy D., Lau B., Larson E., & Lee A. K. C., (in prep). Pupil dilation indexes auditory spatial attention switching

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INVITED LECTURES

- McCloy D. (2016). What pupillometry can do for linguistic research. Talk presented at the UCSB Linguistics Department, Santa Barbara, CA.

CONFERENCE PRESENTATIONS

- McCloy D., Yurong, & Puthuval S. (2016). Phonetically-conditioned vowel devoicing in Chahar Mongolian. Poster presented at the 90th Annual Meeting of the Linguistic Society of America, Washington, DC. (Poster)
- McCloy D., Kishline L., & Lee A. K. C. (2014). Listener strategy and performance in linguistic and non-linguistic auditory divided attention tasks. Poster presented at the Gordon Research Conference on the Auditory System — Encoding Hearing: From Genes to Behavior, Lewiston, ME. (Poster)
- McCloy D., & Lee A. K. C. (2014). Effects of cognitive load on selective and divided auditory spatial attention. Poster presented at the 167th Meeting of the Acoustical Society of America, Providence, RI. (Poster)
- Kishline L., McCloy D., Larson E., & Lee A. K. C. (2014). Can you divide attention across two streams or are you rapidly switching between them? Poster presented at the 37th Annual MidWinter Meeting of the Association for Research in Otolaryngology, San Diego, CA. (Poster)
- McCloy D., & Lee A. K. C. (2013). Effects of auditory spatial attention in a semantic classification task. Poster presented at the 166th Meeting of the Acoustical Society of America, San Francisco, CA. (Poster)
- McCloy D. (2013). Separating segmental and prosodic contributions to intelligibility. Poster presented at the 4th International Summer School on Speech Production and Perception: Speaker-Specific Behavior, Aix-en-Provence, FR. (Poster)
- McCloy D., Moran S., & Wright R. (2013). Revisiting 'The role of features in phonological inventories'. Paper presented at the CUNY Conference on the Feature in Phonology and Phonetics, New York, NY. (Slides)
- McCloy D., Wright R., & McGrath A. (2012). Modelling talker intelligibility variation in a dialect-controlled corpus. Poster presented at the 164th Meeting of the Acoustical Society of America, Kansas City, MO. (Poster)
- Moran S., McCloy D., & Wright R. (2012). Revisiting the population vs phoneme-inventory correlation. Paper presented at the 86th Meeting of the Linguistic Society of America, Portland, OR. (Slides | Extended abstract)
- McCloy D. (2011). Vowel laxing in Indonesian as a test case for interaction of morphological and syllabic structure. Poster presented at the 161st Meeting of the Acoustical Society of America, Seattle, WA. (Poster)
- McCloy D. (2010). The semantics of implicitly relational predicates. Paper presented at the 26th Northwest Linguistics Conference, Burnaby, BC.

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SOFTWARE & CORPORA

- Co-editor: PHOIBLE Online, a database of over 1600 phonological inventories.
- Co-developer: PN/NC Corpus, a 2-dialect, 20-talker corpus of 200 parallel sentences of English.
- Co-developer: python library "expyfun: Experimental paradigm functions." doi:10.5281/zenodo.11640.
- Developer: R package "phonR: Tools for Phoneticians and Phonologists." doi:10.5281/zenodo.15878.
- Developer: Praat script library "Praat Semi-Auto," a set of scripts designed to streamline manual acoustic measurements for cases where forced alignment and automatic measurement are not precise enough.

OTHER RESEARCH ACTIVITIES

- Workshop participant: Probabilistic Transcription team, JSALT 2015.

TEACHING EXPERIENCE

COURSES TAUGHT

- Instructor: Introduction to Phonetics (LING 450), five-week intensive summer course (2010, 2011).
- Teaching Assistant: Introduction to Linguistics (LING 200), four sections (2008–2009).
- Co-facilitator: New Majors Seminar (PHIL 199), proseminar for incoming Philosophy students (2001, 2002).

TUTORIALS & GUEST LECTURES

- "Statistical models for psychophysics: ANOVA vs. mixed models." *[LABS]*^{N} presentation (2014).
- "Advanced vowel plotting with phonR: Normalization, ellipses, polygons, and heatmaps." UW Phonetics Lab presentation (2012).
- "Introduction to R." Guest lecture in LING 553: Experimental Phonetics (2012).
- "Fitting and Plotting Linear Mixed Models in R." UW Phonetics Lab presentation (2011).
- "Design guidance for linguistics lecture slides." TA Training Workshop, UW Department of Linguistics (2011).
- "Troubleshooting SNR Problems in Laboratory Recordings." UW Phonetics Lab presentation (2011).
- "Teaching Linguistics with Moodle." TA Training Workshop, UW Department of Linguistics (2010).
- "Effective Team Teaching." TA Training Workshop, UW Department of Linguistics (2009).
- "Linguistics, Cognitive Science, and Philosophy of Mind." Guest lecture in PHIL 464: Philosophical Issues in the Cognitive Sciences (2009).

OTHER INSTRUCTIONAL ACTIVITIES

- Curriculum Development Associate: Department of Linguistics (2009–2010).

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- Tutor: UW Center for Learning and Undergraduate Enrichment (2009).
- Tutor: Philosophy Writing Center (2001–2002).

ACADEMIC SERVICE

MENTORSHIP

- Member: Doctor of Audiology capstone commitee for N. Gehani, Northwestern University Department of Communication Sciences & Disorders (2011–2012).
- Mentor: graduate student L. Kishline, UW Department of Speech & Hearing Sciences (2014–present); graduate student J. Crowgey, UW Department of Linguistics (2009–2013); undergraduate student A. McGrath, UW Department of Linguistics (2011–2012).

CONFERENCES & REVIEWS

- Session organizer/chair: "Quantitative Methodology in Physiological and Psychophysical Data Analysis," 171st Meeting of the Acoustical Society of America, Salt Lake City (2016).
- Reviewer: LSA Annual meeting (2015), Northwest Linguistics Conference (2008, 2012).
- *Ad hoc* reviewer: *Phonology* (2012, 2013, 2016), *Psychophysiology* (2016), *The Journal of the Acoustical Society of America* (2016), *UW Working Papers in Linguistics* (2007, 2012).
- Co-chair: 24th Northwest Linguistics Conference, Seattle (2008).

COMMITTEE SERVICE

- Member: LSA Committee on Scholarly Communication in Linguistics (2014–present).
- Member: LSA Technology Advisory Committee (2013–2014).

OTHER SERVICE ACTIVITIES

- Volunteer: Pacific Science Center's Paws On Science Weekend (2016).
- Participant: Mozilla Open Science Global Code Sprint (2016).
- Discussion leader: Biomedical Research Integrity Program (2013).

AWARDS AND FELLOWSHIPS

- NIH LRP award (2014—2016).
- Postdoctoral fellowship (NIH T32), UW Department of Speech and Hearing Sciences (2013–2014).
- "Research Excellence Award," UW Department of Linguistics (2013).
- Foreign Language and Area Studies (FLAS) fellowship for study of Modern Standard Chinese, U.S. Department of Education (2007–2008).
- "Outstanding Graduating Senior," UW Department of Philosophy (2002).
- "Outstanding Undergraduate Scholar," UW Department of Philosophy (2001).
- *Phi Beta Kappa* scholarship (2000).

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LANGUAGES

- Natural: English (native), Modern Standard Chinese (intermediate), Spanish (limited reading knowledge).
- General purpose: Python, R (advanced); Octave/MATLAB, Flash/Actionscript3 (intermediate but rusty).
- Specialized: Praat, Git, Bash, GNU Make, LaTeX, Markdown, HTML, CSS, CSL, BST.

PROFESSIONAL AND SCHOLARLY AFFILIATIONS

- Member, Association for Research in Otolaryngology (2014–present).
- Member, International Phonetic Association (2014–present).
- Member, Acoustical Society of America (2011–present).
- Member, Linguistic Society of America (2009–present).
- Member, *Phi Beta Kappa* (2002–present).

OTHER RELEVANT SKILLS

- Solid grasp of scientific method, experimental design, statistical analysis, and model interpretation.
- Knowledge of and contribution to open-source tools for scientific research.
- More than ten years' experience as a graphic designer & web developer. Strong skills in data visualization, color correction, and information structure and flow. Professional-level software skills in Adobe Creative Suite.
- Comfortable in Linux, Windows, and OS X environments.

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