XIN XIE, Ph.D.

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RESEARCH INTERESTS

Psycholinguistics, phonetics, laboratory phonology, computational modeling, native and non-native speech communication, bilingualism, corpus-based research, neuroimaging

EDUCATION

Summer 2017	Kavli Summer Institute in Cognitive Neuroscience, UC Santa Barbara, Santa Barbara, CA.
2009-2015	Ph.D. in Psychology, University of Connecticut
2005-2009	B.S.E. in Systems Science and Engineering, Zhejiang University, China

ACADEMIC POSITIONS

2021-present	Assistant Professor, Department of Language Science, UC Irvine
2016-2021	Postdoctoral Associate. Department of Brain and Cognitive Sciences, University of Rochester.
2015-2016	Postdoctoral Researcher. Department of Speech, Language and Hearing Sciences, University of Connecticut.

RESEARCH FUNDING

Submissions & Pending Awards

2023-2025 NSF #2240353 (Pending). *Collaborative Research: Mechanisms of adaptive changes in speech perception.* Requested: $523,699. Role: Principal Investigator.

2023-2028 NIH R01DC020995 (Pending). *Identifying the mechanisms of adaptive speech perception.* Requested: $1,793,406. Role: Principal Investigator.

2022-2025 NSF #2219301 (Declined). *Collaborative Research: Mechanisms of adaptive changes in speech perception.* Requested: $455,852. Role: Principal Investigator.

JOURNAL ARTICLES

* manuscripts prepared with mentored students

13. **Xie, X.,** Jaeger, T. F. & Kurumada, C. (under review). What we do (not) know about the mechanisms underlying adaptive speech perception: A computational framework and review. Submitted to *Cortex*.

12. *Tan, M., **Xie, X.,** & Jaeger, T. F. (2021). Using rational models to interpret the results of experiments on accent adaption. *Frontiers in Psychology.* 2021 Nov 5;12:676271. doi: 10.3389/fpsyg.2021.676271. PMID: 34803790; PMCID: PMC8603310.

11. **Xie, X.,** Liu, L., & Jaeger, T. F. (2021) Cross-talker generalization in the perception of nonnative speech: A large-scale replication. *Journal of Experimental Psychology: General, 150*(11), e22–e56. doi: /10.1037/xge0001039.

10. **Xie, X.,** Buxó-Lugo, A., & Kurumada, C. (2021). Encoding and decoding of meaning through structured variability in intonational speech prosody. *Cognition.* Jun; 211:104619. doi: 10.1016/j.cognition.2021.104619. Epub 2021 Feb 15. PMID: 33601018.

9. Mechtenberg, H., **Xie, X.,** & Myers, E. B. (2021). Sentence predictability modulates cortical response to phonetic ambiguity. *Brain and Language.* 2021 Jul;218:104959. doi: 10.1016/j.bandl.2021.104959. Epub 2021 Apr 28. PMID: 33930722.

8. **Xie, X.,** & Jaeger, T. F. (2020). Comparing non-native and native speech: Are L2 productions more variable? *Journal of the Acoustical Society of America, 147*, 3322-3347.

7. **Xie, X.,** Weatherholtz, K., Bainton, L., Rowe, E., Burchill, Z., Liu, L., & Jaeger, T. F. (2018). Rapid adaptation to foreign-accented speech and its limits. *Journal of the Acoustical Society of America, 143,* 2013-2031.

6. **Xie, X.,** & Myers, E. (2018). Left inferior frontal gyrus sensitivity to phonetic competition in receptive language processing: a comparison of clear and conversational speech. *Journal of Cognitive Neuroscience, 30,* 267-280.

5. **Xie, X.,** Earle, F. S. & Myers, E. B. (2018). Sleep facilitates generalization of accent adaptation to a new talker. *Language, Cognition and Neuroscience, 33*, 196-210.

4. **Xie, X.,** & Myers, E. B. (2017). Learning a talker or learning an accent: Acoustic similarity constrains generalization of foreign accent adaptation to new talkers. *Journal of Memory and Language, 97,* 30-46.

3. **Xie, X.,** Theodore, R.M., & Myers, E. B. (2017). More than a boundary shift: perceptual adaptation to foreign-accented speech reshapes internal structure of phonetic categories. *Journal of Experimental Psychology: Human Perception and Performance, 43*, 206 - 217.

2. **Xie, X.,** & Myers, E. B. (2015). The impact of musical training and tone language

experience on talker identification. *Journal of the Acoustical Society of America, 137*, 419-432.

1. **Xie, X.,** & Fowler, C. A. (2013). Listening with a foreign-accent: The interlanguage speech intelligibility benefit in Mandarin speakers of English. *Journal of Phonetics, 41,* 369-378.

PEER-REVIEWED CONFERENCE PROCEEDINGS

* manuscripts prepared with mentored students

2. *Tan, M., **Xie, X.,** & Jaeger, T. F. (2019). A single-case study of non-native Swedish word-final stop voicing pronunciations. *Proceedings of the 10th International Conference of Experimental Linguistics*. Lisbon, Portugal.

1. **Xie, X.,** & Myers, E. B. (2015). General language ability predicts talker identification. In Noelle, D. C., Dale, R., Warlaumont, A. S., Yoshimi, J., Matlock, T., Jennings, C. D., & Maglio, P. P. (Eds.), *Proceedings of the 37th Annual Meeting of the Cognitive Science Society* (pp. 2697-2702). Austin, TX: Cognitive Science Society.

BOOK CHAPTERS

2. Myers, E., Johns, A.R., Earle, F.S., and **Xie, X.** (2017). Invariance problem in the acquisition of non-native phonetic contrasts: from instances to categories. In Lahiri, A. and S. Kotzor (Eds.). *The Speech Processing Lexicon: Neurocognitive and Behavioural Approaches* (pp. 52-84). Berlin: De Gruyter/Mouton.

1. Fowler, C. A., & **Xie, X.** (2016). Involvement of the speech motor system in speech perception. In P. van Lieshout, B. Maassen, and H. Terband (Eds.). *Speech motor control in normal and disordered speech: Future developments in theory and methodology* (pp. 1-24). Rockville, MD: ASHA Press.

MANUSCRIPTS IN PREPARATION

* manuscripts prepared with mentored students

*Li, R., & **Xie, X.,** (in preparation). A new cross-linguistic speech corpus for acoustic and production research.

Xie, X., Myers, E. B., Magnuson, J. S., Mencl, W. E., Irwin, J. R., Brancazio, L., & Rueckl, J. (in preparation). Encoding articulator information in the brain during speech perception.

CONFERENCE PRESENTATIONS

* presentations completed with mentored students

Xie, X., Jaeger, T. F., & Kurumada, C. (March 2022). Mechanisms of change: Do we know when our underlying phoneme representations actually adapt to talker variability?

Poster accepted at *The 35th Annual Conference on Human Sentence Processing.* Santa Cruz, CA.

*Tan, M., **Xie, X.,** & Jaeger, T. F. (June 2021). L2-Accent adaptation as distributional learning. Talk presented at *International Symposium on Bilingual and L2 Processing in Adults and Children (ISBPAC).* Nijmegen, Netherlands.

Xie, X., & Jaeger, T. F. (June 2021). Non-native and native speech are different, but not in terms of within-talker variability. Poster presented at *3rd International Symposium on Bilingual and L2 Processing in Adults and Children (ISBPAC 2021).* Nijmegen, Netherlands.

Xie, X. & Jaeger, T. F. (June 2021). Talker-specific adaptation and cross-talker generalization in the perception of L2 speech: individual differences between *talkers*. Poster presented at *International Symposium on Bilingual and L2 Processing in Adults and Children (ISBPAC).* Nijmegen, Netherlands.

*Tan, M., **Xie, X.,** & Jaeger, T. F. (2020). Accent adaptation as distributional learning. Talk accepted at *The 12th Nordic Conference on Bilingualism.* Stockholm, Sweden.

Jaeger, T. F., & **Xie, X.** (2020). A powerful new analysis for token- and talker-level differences in L1 and L2 speech: Multivariate Multilevel Distributional Models. Talk accepted at *The 12th Nordic Conference on Bilingualism.* Stockholm, Sweden.

Xie, X., & Jaeger, T. F., (2020). Non-native and native speech are different, but not in terms of within-talker variability. Talk accepted at *The 12th Nordic Conference on Bilingualism.* Stockholm, Sweden.

Xie, X., Buxó-Lugo, A., & Kurumada, C. (March, 2020). Structures of talker variability in rising vs. falling declarative utterances. Poster presented at *The 33rd Annual CUNY Conference on Human Sentence Processing.* Amherst, MA.

*Tan, M., **Xie, X.,** Jaeger, T. F. (November, 2019). A single-case study of non-native Swedish word-final stop voicing pronunciations. Poster presented at *L2 Pronunciation Research Symposium.* Jyväskylä, Finland.

*Tan, M., **Xie, X.,** Jaeger, T. F. (September, 2019). A single-case study of non-native Swedish word-final stop voicing pronunciations. Paper presented at *The Tenth Tutorial and Research Workshop on Experimental Linguistics.* Lisbon, Portugal.

Mechtenberg, H., **Xie, X.,** & Myers, E. B. (August, 2019). Semantic predictability modulates cortical sensitivity to phonetic competition. Poster presented at *The Eleventh Annual Meeting of the Society for the Neurobiology of Language.* Helsinki, Finland.

Xie, X., *Li, R., & Jaeger, T. F. (September, 2018). Disentangling *intra-* and *inter*-talker variability in L2 phonetic production: L2 speech, but not talkers, is more variable. Poster presented at *The 24th Architectures and Mechanisms for Language Processing.* Berlin, Germany.

Xie, X., & Jaeger, T. F. (September, 2018). Modeling prior knowledge in the perception of native and foreign-accented speech. Poster presented at *The 24th Architectures and Mechanisms for Language Processing.* Berlin, Germany.

*Li, R., **Xie, X.,** & Jaeger, T. F. (September, 2018). A corpus of native and non-native speech for speech production research. Poster presented at *The 24th Architectures and Mechanisms for Language Processing.* Berlin, Germany.

Xie, X., *Li, R., & Jaeger, T. F. (June, 2018). Perceiving native- and foreign-accented speech: A problem of probabilistic inference under uncertainty. Poster presented at *International Max Planck Research School for the Language Sciences Conference 2018.* Nijmegen, Netherlands.

*Li, R., **Xie, X.,** & Jaeger, T. F. (April, 2018). Speech variability across talkers and accents. Talk presented at *The National Conferences on Undergraduate Research 2018.* Edmond, OK.

Xie, X., & Myers, E. B. (November, 2017). Inferior frontal gyrus activation is modulated by phonetic competition: An fMRI study of clear and conversational speech. Poster presented at *The Ninth Annual Meeting of the Society for the Neurobiology of Language*. Baltimore, ML.

Rothermich, K., Saltzman, D., **Xie, X.,** & Myers, E. B. (November, 2017). Sensitivity to phonetic competition in people with aphasia. Poster presented at *The Ninth Annual Meeting of the Society for the Neurobiology of Language.* Baltimore, ML.

Rothermich, K., Saltzman, D., **Xie, X.,** & Myers, E. B. (September, 2017). Sensitivity to phonetic competition in people with aphasia. Poster presented at *12th Annual Eleanor M. Saffran Conference on Cognitive Neuroscience and Rehabilitation of Communication Disorders.* Philadelphia, PA.

Xie, X., & Myers, E. B. (September, 2017). Inferior frontal gyrus activation is modulated by phonetic competition: An fMRI study of clear and conversational speech. Talk presented at *The 23rd Architectures and Mechanisms for Language Processing.* Lancaster, United Kingdom.

*Oey, L., *Lee, C., *Simon, E., **Xie, X.**, & Jaeger, T. F. (September, 2017). Talker generalization of accent adaptation: Questioning its robustness. Poster presented at *The 23rd Architectures and Mechanisms for Language Processing.* Lancaster, United Kingdom.

*Lee, C., *Oey, L., *Simon, E., **Xie, X.**, & Jaeger, T. F. (September, 2017). An investigation into audio perception studies on Amazon Mechanical Turk. Poster presented at *The 23rd Architectures and Mechanisms for Language Processing.* Lancaster, United Kingdom.

Jaeger, T. F., Kleinschmidt, D., Liu, L., & **Xie, X.** (September, 2017). Understanding accents and dialects: Speech perception as inference under uncertainty. Talk presented at *The 20th Conference of the European Society for Cognitive Psychology (ESCoP).* Potsdam, Germany.

Liu, L., **Xie, X.,** Weatherholtz, K., & Jaeger, T. F. (March, 2017). Talk presented at *The 30th Annual CUNY Conference on Human Sentence Processing.* Cambridge, MA.

Xie, X., Myers, E. B. (December, 2016). Sleep facilitates talker generalization of accent adaptation. Poster presented at *The 172nd Annual Meeting of the Acoustical Society of America.* Honolulu, HI.

Xie, X., *Fisher, R., *Patel, D., & Myers, E. B. (April, 2016). Talker similarity guides accent adaptation and its generalization. Poster presented at *The 6ᵗʰ Annual UCONN Language Fest.* Storr, CT.

Xie, X., Myers, E. B. (March, 2016). Learning a talker or learning an accent? Cross-talker generalization of phonetic adjustment to foreign-accented speech. Poster presented at *The 29ᵗʰ Annual CUNY Conference on Human Sentence Processing.* Gainesville, FL.

Xie, X., Theodore, R. M., Myers, E. B. (November, 2015). Perceptual adaptation to foreign-accented speech reshapes the internal structure of phonetic categories. Poster presented at *The 56ᵗʰ Annual Meeting of the Psychonomic Society.* Chicago, IL.

Xie, X., & Myers, E. B. (July, 2015). General language ability predicts talker identification. Poster presented at *The 37ᵗʰ Annual Meeting of the Cognitive Science Society.* Pasadena, CA.

Xie, X., *Patel, D., *Bugden, J., & Myers, E. B. (April, 2015). Effects of intra-talker variability on adaptation to foreign accents. Poster presented at *The 5ᵗʰ Annual UCONN Language Fest.* Storr, CT.

Xie, X., *Bugden, J., *Patel, D., & Myers, E. B. (April, 2015). Adaptation to a talker to adaptation to an accent. Poster presented at *The 5ᵗʰ Annual UCONN Language Fest.* Storr, CT.

Xie, X. & Myers, E. B. (November, 2014). Individual differences in talker identification: Do musical experience and linguistic background matter? Poster presented at *The 55ᵗʰ Annual Meeting of the Psychonomic Society.* Long beach, CA.

Xie, X. & Myers, E. B. (September, 2013). The role of language and musical experience in talker identification: investigating language familiarity effect. Poster presented at *The 19ᵗʰ International Conference of Architectures and Mechanisms for Language Processing (AMLaP, 2013).* Marseille, France.

Xie, X. & Fowler, C. A. (July, 2013). Listening with a foreign-accent: The interlanguage speech intelligibility benefit in Mandarin speakers of English. Poster presented at *Linguistic Society of America, Summer Institute 2013 Workshop: How the brain accommodates variability in linguistic representations.* Ann Arbor, MI.

Xie, X., *Ciullo, B. & Myers, E. B. (April, 2013). Individual differences in pitch perception and phonetic perception and their contribution to talker identification. Poster presented at *The 4ᵗʰ Annual UCONN Language Fest.* Storrs, CT.

Xie, X., *Ragonesi, M. & Myers, E. B. (April, 2013). The role of language and musical experience in talker identification: investigating language familiarity effect. Poster presented at *The 4ᵗʰ Annual UCONN Language Fest.* Storrs, CT.

INVITED TALKS

Resilience in adverse listening conditions: Roles for cognitive and linguistic diversity in older adults. *Center for Population, Inequality, and Policy. UC Irvine.* November 2022.

Understanding exposure-driven changes in speech perception. *Auditory & Language Neuroscience Lab. UC Irvine.* December 2021.

Navigating talker variability in speech perception. *Language Science Colloquium. UC Irvine.* February 2021.

Navigating speech variability via distributional learning: what is there to learn? *Phonatics Group Meeting. Northwestern University.* December 2020.

Robust speech perception in a multilingual society: how do human listeners adapt? *Language and Cognition Workshop. Stanford University.* May 2020.

Building talker knowledge from talker variability. *177th Meeting of the Acoustical Society of America, Louisville, Kentucky.* May 2019.

Speech perception as probabilistic inference over structured representations. *Auditory Neuroscience Lab, Boston University.* March 2018.

Dealing with speech variation in a multilingual society: The adaptive brain as a statistician. *Department of Psychology, American University.* January 2018.

The adaptive road to robust speech recognition: How do we accommodate phonetic variation in speech? *Department of Linguistics, University of California, Davis.* January 2017.

Encoding articulator information in the brain during speech perception. *Alvin and Isabelle Liberman Memorial Workshop, University of Connecticut.* June 2016.

Phonetic adaptation to foreign accents. *Department of Speech, Language and Hearing Sciences, Boston University.* December 2015.

Phonetic adaptation to foreign accents. *Bilingualism and Psycholinguistics Research Group, Northwestern University.* October 2015.

HONORS & AWARDS

2015	Psychonomic Society Graduate Student Travel Award, Psychonomic Society.
2014	Doctoral Dissertation Fellowship. University of Connecticut.
2013	Conference Travel Grant: Graduate School, University of Connecticut.
2013	Student Travel Award: LSA workshop "How the brain accommodates variability in linguistic representations", Linguistic Society of America.
2009	Award for Excellence in Undergraduate Thesis, Zhejiang University.

TEACHING & MENTORING EXPERIENCE

2012-2022	Research Mentor, 20 Undergraduates

Mentored undergraduate students who were research assistants, conducting independent study projects and/or completing honors theses. Taught experimental design, acoustic manipulation and analysis

techniques, statistical analyses, and other aspects of training in conducting research.

Summer 2022	Instructor, Summer School on Computational Cognitive Modeling for Language, UCI
Fall 2017	Co-instructor, Language & Psycholinguistics
Spring 2015	Coordinator, Language & Cognition Seminar
Spring 2015	Teaching Assistant, Psychology of Language
Spring 2014	Instructor, Psychology of Language
2010-2013	Lab Instructor, Principles of Research in Psychology
2009-2010	Lab Instructor, General Psychology I
Fall 2009	Teaching Assistant, General Psychology I; Cognitive Psychology

PROFESSIONAL SERVICE

Reviewer for *Attention, Perception, & Psychophysics*, *Cognition, Journal of the Acoustical Society of America*, *Journal of Experimental Psychology: Human Perception and Performance*, *Journal of Experimental Psychology: Learning, Memory, & Cognition Journal of Speech, Language and Hearing Research, Psychonomic Bulletin & Review, Laboratory Phonology, Language Learning, Language and Speech, Linguistics Vanguard, Journal of Phonetics, The Quarterly Journal of Experimental Psychology, Cognitive Science Society Annual Conference, CUNY Sentence Processing Annual Conference, Society for the Neurobiology of Language, National Science Foundation (US)*

2022-present	Director, Language Science Colloquium, UC Irvine.
Summer 2022	Co-organizer. UCI Summer School on Computational Cognitive Modeling for Language, UC Irvine.
Summer 2021	Co-organizer. The 2021 Summer Meeting Series on Talker Variability Across Levels of Speech Categories.

LANGUAGES

Mandarin	Native
English	Proficient
Cantonese	Proficient
Japanese/Spanish/French	Basic speaking and reading knowledge

PROGRAMMING LANGUAGES

R, Python, JavaScript, MATLAB, Praat