

CONNOR MAYER

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Academic Employment

University of California, Irvine Assistant Professor, Department of Language Science	2021 - Present
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Education

University of California, Los Angeles Ph.D., Linguistics <i>PhD thesis title:</i> Issues in Uyghur backness harmony: Corpus, experimental, and computational studies <i>Committee:</i> Bruce Hayes (chair), Kie Zuraw, Tim Hunter, Adam McCollum	2021
University of California, Los Angeles M.A., Linguistics <i>Master's thesis title:</i> An algorithm for learning phonological classes from distributional information <i>Committee:</i> Bruce Hayes (chair), Kie Zuraw, Tim Hunter, Pat Keating	2018
University of British Columbia Bachelor of Computer Science Recipient of the UBC CS Department Academic Award of Excellence (BCS)	2013
University of British Columbia B.A. with Honours in Linguistics, Minor in Japanese <i>Honours thesis title:</i> Talking while chewing: Speaker response to natural perturbation of speech <i>Advisor:</i> Bryan Gick	2010

Publications

Peer reviewed articles, proceedings, and chapters

Weller, J., Faytak, M., Steffman, J., Mayer, C., Texeira, G., & Tankou, R. (submitted). Supralaryngeal articulation across voicing and aspiration in Yemba vowels. Selected papers from the 51st & 52nd Annual Conference on African Linguistics.

Major, T., & Mayer, C. (under revision). A phonological model of Uyghur intonation. In Jun, S.-A. and Khan, S.D. (Eds), *Prosodic Typology III*.

Mayer, C. (2021). Capturing gradience in long-distance phonology using probabilistic tier-based strictly local grammars. *Proceedings of the Society for Computation in Linguistics*. Vol. 4. Article 5.

Mayer, C., & Daland, R. (2020). A method for projecting features from observed sets of phonological classes. *Linguistic Inquiry*, 51(4), 725-763.

Gick, B., Mayer, C., Chiu, C., Widing, E., Roewer-Despres, F., Fels, S., Stavness, I. (2020). Quantal biomechanical effects in speech postures of the lips. *Journal of Neurophysiology* 124(3), 833-843.

Mayer, C. (2020). An algorithm for learning phonological classes from distributional similarity. *Phonology*, 37(1), 91-131.

Mayer, C., & Nelson, M. (2020). Phonotactic learning with neural language models. *Proceedings of the Society for Computation in Linguistics*. Vol. 3. Article 16.

Gick, B., Chiu, C., Widing, E., Roewer-Despres, F., Mayer, C., Fels, S., & Stavness, I. (2019). Quantal biomechanical effects in speech postures of the lips. In Calhoun, S., Escudero, P., Tabain, M., and Warren, P. (Eds), *Proceedings of the 19th International Congress of Phonetic Sciences, Melbourne, Australia 2019*: Canberra, Australia: Australasian Speech Science and Technology Association Inc., 1749-1753.

Graf, T., & Mayer, C. (2018). Sanskrit n-Retroflexion is Input-Output Tier-Based Strictly Local. *Proceedings of the 15th SIGMORPHON Workshop on Computational Research in Phonetics, Phonology, and Morphology*. The Special Interest Group on Computational Morphology and Phonology: Brussels, Belgium, 151-160.

Mayer, C., & Major, T. (2018). A challenge for tier-based strict locality from Uyghur backness harmony. In Foret, A., Kobele, G., and Pogodalla, S. (Eds). *Formal Grammar 2018. FG 2018. Lecture Notes in Computer Science, vol 10950*. Springer, Berlin, Heidelberg. doi: 10.1007/978-3-662-57784-4_4

Major, T., & Mayer, C. (2018). Towards a phonological model of Uyghur intonation. In K. Klessa, J. Bachan, A. Wagner, M. Karpiński, and D. Śledziński (Eds). *Proceedings of the 9th Speech Prosody International Conference*. doi: 10.21437/SpeechProsody.2018

Mayer, C., Roewer-Despres, F., Stavness, I., & Gick, B. (2017). Do innate stereotypies serve as a basis for swallowing and learned speech movement? *Behavioral and Brain Sciences*, 40. doi:10.1017/S0140525X16001928

Mayer, C., Gick, B., Weigel, T., & Whalen, D.H. (2013). Perceptual Integration of Visual Evidence in the Airstream from Aspirated Stops. *Canadian Acoustics*, 41(3), 23-27.

Mayer, C., & Gick, B. (2012). Talking while Chewing: Speaker Response to Natural Perturbation of Speech. *Phonetica*, 69(3), 109-123.

Publications refereed by abstract

Mayer, C., Chiu, C., & Gick, B. (2021). Biomechanical simulation of lip compression and spreading. *Canadian Acoustics*, 49(3).

Major, T., & Mayer, C. (2019). What indexical shift sounds like: Uyghur intonation and interpreting speech reports. In M. Baird and J. Pesetsky (Eds). *NELS 49: Proceedings of the Forty-Ninth Annual Meeting of the North East Linguistic Society*, 2, 255-264..

Mayer, C., Stavness, I., & Gick, B. (2018). A biomechanical model for infant speech and aerodigestive movements. *Canadian Acoustics*, 46(4), 30-31.

Mayer, C., Stavness, I., & Gick, B. (2018). A biomechanical model for infant speech and aerodigestive movements. *Journal of the Acoustical Society of America*, 144(3), Pt. 2: 1963. (published abstract).

Mayer, C., Roewer-Despres, F., Stavness, I., & Gick, B. (2016). Does Swallowing Bootstrap Speech Learning? *Journal of the Canadian Acoustical Association*, 44(3), 194-195.

Abel, J., Barbosa, A.V., Black, A., Mayer, C., & Vatikiotis-Bateson, E. (2011). The labial viseme reconsidered: Evidence from production and perception. In Y. Laprie and I. Steiner (Eds). *Proceedings of the 9th International Seminar on Speech Production*, 337-344.

Mayer, C. (2010). Voice onset time and the realization of voiced stops in Kwak'wala. In Proceedings of the 45th International Conference on Salish and Neighbouring Languages. *The University of British Columbia Working Papers in Linguistics*, 27, 238–244.

Mayer, C., Gick, B., Weigel, T., & Whalen, D.H. (2010). Perceptual effects of visual evidence of the airstream. *Canadian Acoustics*, 38(3), 126–127.

Mayer, C., Gick, B. & Ferch, E. (2009). Talking while chewing: Speaker response to natural perturbation of speech. *Canadian Acoustics*, 37(3), 144–145.

Books

Gick, B., & Mayer, C. (in prep). *How bodies talk*.

Other publications

Mayer, C. (2021). Issues in Uyghur backness harmony: Corpus, experimental, and computational studies (Unpublished doctoral dissertation). University of California, Los Angeles.

Mayer, C., Stavness, I., & Gick, B. (2018). Understanding how we speak using computational models of the vocal tract. Popular version of presentation at 176th Meeting of the Acoustical Society of America. Acoustical Society of America World Wide Press Room.

<https://acoustics.org/5asc1-understanding-how-we-speak-using-computational-models-of-the-vocal-tract-connor-mayer/>

Mayer, C. (2018). An algorithm for learning phonological classes from distributional similarity (Unpublished master's thesis). University of California, Los Angeles.

Edited Volumes

Szakay, A., Mayer, C., Rogers, B., Gick, B., & Dunham, J. (Eds.). (2009). *Papers for the Interlocution Conference. Interlocution: Linguistic structure and human interaction*. Vancouver, BC: The University of British Columbia Working Papers in Linguistics, 24.

Presentations

(* indicates presenting author)

Conference talks

*Mayer, C., Chiu, C., & Gick, B. Biomechanical simulation of lip compression and spreading. Presented at Acoustics Week in Canada. October, 2021.

*Weller, J., Faytak, M., Steffman, J., Texeira, G., Mayer, C., and Tankou, R. Tongue root position and laryngeal state in Yemba vowels. Presented at the 51st and 52nd Annual Conference on African Linguistics. April 2021.

*Mayer, C. Capturing gradience in long-distance phonology using probabilistic tier-based strictly local grammars. Presented at the fourth annual meeting of the Society for Computation in Linguistics. Held virtually. February, 2021.

*Mayer, C., Major, T., & Yakup, M. Conflicting trigger effects in Uyghur backness harmony. Presented at the 5th Workshop on Turkic and languages in contact with Turkic. Newark, Delaware. February 2020.

*Mayer, C., Gick, B., Chiu, C., Widing, E., Roewer-Despres, F., Fels, S., Stavness, I. Quantal biomechanical effects in speech postures of the lips. Presented at the 19th International Congress of Phonetic Sciences (ICPhS). Melbourne, Australia. August, 2019.

Major, T., & *Mayer, C. A phonological model of Uyghur intonation. Presented at the ICPhS Satellite Meeting on the Intonational Phonology of Typologically Rare or Understudied Languages. Melbourne, Australia. August, 2019.

*Mayer, C., & Daland, R. A method for learning features from observed phonological classes. Presented at the 2019 Canadian Linguistics Association Meeting. Vancouver, BC. June, 2019.

*Mayer, C., Major, T., & Yakup, M. Wug-testing Uyghur vowel harmony: Trigger conflicts, variation, and distance-based decay. Presented at the 27th Manchester Phonology Meeting. Manchester, England. May, 2019.

*Mayer, C., & Major, T. A challenge for tier-based strict locality from Uyghur backness harmony. Formal Grammar 2018. Sofia, Bulgaria. August, 2018.

*Mayer, C., Roewer-Despres, F., Stavness, I., & Gick, B. Does swallowing bootstrap speech learning? Acoustics Week in Canada. Vancouver, BC. September, 2016.

Abel, J., Barbosa, A., Black, A., Mayer, C., & *Vatikiotis-Bateson, E. The labial viseme reconsidered: Evidence from production and perception. The 9th International Seminar on Speech Production. Montreal, QC. June, 2011.

*Mayer, C., Gick, B., Weigel, T., & Whalen, D.H. Perceptual effects of visual evidence of the airstream. Acoustics Week in Canada. Victoria, BC. October, 2010.

*Mayer, C., Gick, B., & Ferch, E. Talking while chewing: Speaker response to natural perturbation of speech. Acoustics Week in Canada. Niagara-on-the-Lake, ON. October, 2009.

Poster presentations

*Mayer, C., Major, T., & Yakup, M. Are neutral roots in Uyghur really neutral? Experimental and structural evidence. Presented at the Annual Meeting on Phonology. Toronto, ON. October, 2021.

*Mayer, C. Gradient opacity in Uyghur backness harmony. Presented at the Annual Meeting on Phonology. Santa Cruz, CA. September, 2020.

*Mayer, C., & *Nelson, M. Phonotactic learning with neural language models. Presented at the third annual meeting of the Society for Computation in Linguistics. New Orleans, LA. January, 2020.

*Gick, B., & Mayer, C. Tonic activations in speech production. Presented at the 178th Meeting of the Acoustical Society of America. San Diego, CA. December, 2019.

*Nelson, M., & Mayer, C. Learning and generalizing phonotactics with recurrent neural networks. Presented at the Annual Meeting on Phonology. Stony Brook, NY. October, 2019.

*Mayer, C., Stavness, I., & Gick, B. A biomechanical model for infant speech and aerodigestive movements. Joint 2018 Acoustics Week in Canada and 176th Meeting of the Acoustical Society of America. Victoria, BC. November, 2018.

Sundara, M., & *Mayer, C. Modeling developmental changes in infants' discrimination of English vowels. Boston University Conference on Language Development. Boston, MA. November, 2018.

Graf, T., & *Mayer, C. Sanskrit n-retroflexion is Input-Output Tier-Based Strictly Local. SIGMORPHON 2018. Brussels, Belgium. October, 2018.

*Mayer, C. An algorithm for learning phonological classes from distributional similarity. Annual Meeting on Phonology. San Diego, CA. October, 2018.

*Major, T., & Mayer, C. What indexical shift sounds like: Uyghur intonation and interpreting speech reports. North East Linguistics Society. Ithaca, NY. October, 2018.

*Sundara, M., & *Mayer, C. Does the developing lexicon constrain infants' learning of English vowels? 2018 International Congress of Infant Studies. Philadelphia, PA. July, 2018.

*Major, T., & *Mayer, C. Towards a phonological model of Uyghur intonation. 9th International Conference on Speech Prosody. Poznań, Poland. June, 2018.

*Sundara, M. & Mayer, C. Does the developing lexicon constrain infants' discrimination of English vowels? Fall Acoustical Society of America meeting in New Orleans. December, 2017.

*Mayer, C. & Gick, B. Talking while chewing: Speaker response to natural perturbation of speech. Ultrafest V at Haskins Labs, Yale. New Haven, CT. March, 2010.

Invited Talks

*Mayer, C. Vowel raising processes in Uyghur. Guest lecture for Elementary Uyghur I taught by Gulnar Eziz. Harvard University. July 2021.

*Mayer, C., Major, T., and Yakup, M. Phonetic biases and locality in Uyghur backness harmony. Department of Linguistics Colloquium Series. University of California, Los Angeles. June, 2021.

*Mayer, C. Acquisition of speech sound categories. Department of Classics. Washington University in St. Louis. April, 2021.

*Mayer, C. Acquisition of speech sound categories. Department of Linguistics. Boston University. March, 2021.

*Mayer, C. Acquisition of speech sound categories. Department of Language Science. University of California, Irvine. February, 2021.

*Mayer, C. Gradient opacity in Uyghur backness harmony. Department of Linguistics. University of Washington. February, 2021.

*Mayer, C. Gradient opacity in Uyghur backness harmony. UC Berkeley Phonetics and Phonology Forum (Phorum). Berkeley, CA. October, 2020.

*Major, T., & *Mayer, C. A preliminary model of Uyghur intonation. Phonetics Circle, UCSB. Santa Barbara, CA. May, 2019.

*Mayer, C. & Sundara, M. Modeling developmental changes in infants' discrimination of English vowels. Infant Studies Center, University of British Columbia. Vancouver, BC. December, 2018.

*Mayer, C. Towards a computational model of emergent features. University of British Columbia West African Vowels Project Meeting. Vancouver, BC. October, 2018.

Employment Record

UCLA, Los Angeles, CA

Research Assistant, Department of Linguistics

Supervisor: Dr. K. Zuraw

- Designed and implemented an R package for carrying out Maximum Entropy Optimality Theory analyses

June 2020 - June 2021

UCLA, Los Angeles, CA*September 2017 – July 2018*

Research Assistant, Department of Linguistics

Supervisor: Dr. H. Koopman

- Worked on Terraling, a website for managing linguistic datasets
- Performed exploratory data analysis on linguistic data sets
- Fixed bugs in the Ruby on Rails backend

University of British Columbia, Vancouver, BC*June 2016 – July 2016*

Program Development Consultant. Department of Linguistics.

Supervisor: Dr. B. Gick.

- Assisted with curriculum and program planning.
- Conducted market research and interviews with industry professionals.
- Wrote funding applications.
- Performed linguistics research.

Demonware Inc., Vancouver, BC

Software developer

April 2013 – June 2016

- Responsible for developing new scalable and robust online features for AAA video games, helping studios integrate Demonware technology into their games, and maintaining and updating existing Demonware services.
- Titles worked on in this time period include Skylanders Superchargers (title lead), Call of Duty Online (使命召唤Online), Guitar Hero Live, Call of Duty: Black Ops 3, Call of Duty: Advanced Warfare, Skylanders Trap Team, Diablo 3: Ultimate Evil Edition, Transformers: Rise of the Dark Spark (title lead), Call of Duty: Ghosts, and Skylanders Swap Force.

Software development intern

July 2012 – September 2012

- Performed research into how router QoS settings apply to and affect video game traffic.

Software development intern

May 2011 – December 2011

- Wrote ETL software for the Demonware data warehouse.
- Worked on an internal web application used by Demonware engineers and studios.
- Titles worked on in this time period include Call of Duty: Modern Warfare 3 and Skylanders: Spyro's Adventure.

University of British Columbia, Vancouver, BC

NSERC Undergraduate Student Research Assistant. Department of Linguistics.

Summer 2010

Supervisor: Dr. E. Vatikiotis-Bateson.

- Wrote scripts in Matlab and Python to automatically extract multiple maximum and minimum peaks from discrete signals and format and tag the expected data for use in R.
- Wrote scripts in Matlab and Python to take the integrals on specified intervals of discrete signals and format and tag the extracted data for use in R.
- Work from this position was used in Abel et al. (2011).

Work Study Assistant. Department of Linguistics

2008 – 2010

Supervisor: Dr. B. Gick.

- Designed and ran experiments examining speech perception and production.
- Wrote online quizzes for LING 313, Introduction to Linguistic Phonetics and Speech Science.
- Proofread grant applications and academic papers.
- Helped to organize an academic conference as liaison between speakers and organizers.
- Work from this position was used in Mayer et al. (2013).

NSERC Undergraduate Student Research Assistant. Department of Linguistics.

Summer 2009

Supervisor: Dr. B. Gick.

- Designed and ran experiments examining speech perception and production.
- Analyzed experimental ultrasound and acoustic data.
- Work from this position was used in Mayer & Gick (2012).

- Worked on a system for archiving and cataloging Asian folklore.

**Advising
Experience**

Creating GUIs for phonological learning software

September 2019 - June 2021

Supervised two undergraduate research assistants to create graphical user Interfaces for the software presented in Mayer (2020) and Mayer and Daland (2020).

Creating a corpus of Spanish vowels

April 2019 - June 2021

Co-supervised, with Megha Sundara, one undergraduate research assistant to record, segment, and analyze acoustic data for a corpus of Spanish vowel Acoustics.

Uyghur vowel harmony and prosody, UCLA

January 2019 - June 2021

Co-supervised, with Travis Major, six undergraduate research assistants to code, segment, and analyze acoustic data.

**Teaching
Experience**

Instructor (UCI)

Computational skills for language science research (LSCI 202A)

Fall 2021

Instructor (UCLA)

Computational linguistics I (LING 185A)

Summer 2020

Computational linguistics I (LING 185A)

Summer 2019

Teaching assistant (UCLA)

Computational linguistics I (LING 185A), with Dr. Timothy Hunter

Winter 2019

Introduction to linguistic analysis (LING 20), with Dr. Carson Schütze

Spring 2018

Experimental phonetics (LING 104), with Dr. Patricia Keating

Winter 2018

Introduction to general phonetics (LING 103), with Dr. Patricia Keating

Fall 2017

Teaching assistant (University of British Columbia)

Basic algorithms and data structures (CPSC 221), with Dr. Alan Hu

Spring 2013

Languages of the world (LING 101), with Dr. Strang Burton

Spring 2010

Guest lecturer

Teaching demo (University of British Columbia)

March 2021

Lecture: Introduction to vector models of semantics

Teaching demo (University of California, Irvine)

March 2021

Lecture: Introduction to vector models of semantics

Honours

UCLA, Dissertation Year Fellowship (2020)
Wisconsin Intensive Summer Language Institutes Partial Tuition Scholarship (2020)
Central Eurasian Studies Summer Institute Tuition Remission (2020)
Social Sciences and Humanities Research Council (SSHRC), Doctoral Fellowship (2017-2021)
SelfScore Scholarship for International Students (2016)
UCLA, Graduate Dean's Scholar Award (2016)
UBC Computer Science Department Academic Award Of Excellence (BCS) (2013)
UBC, David Macaree Prize in English 301 (2010)
UBC Trek Excellence Scholarship for Continuing Students (2009)
UBC, Margaret Lawrence Scholarship in Arts (2008)
UBC, Timothy Martin Canfield Memorial Scholarship (2008)
UBC, Trek Excellence Scholarship for Continuing Students (2008)
UBC, Trek Excellence Scholarship for Continuing Students (2007)
UBC, Okamatsu Family Scholarship for Japanese Studies (2007)
UBC, President's Entrance Scholarship (2006)
Langara College, Leon and Simma Holt Arts and Science Scholarship (2006)

Affiliations

Institutional affiliations

Visiting researcher 2016 - present
Interdisciplinary Speech Research Lab, University of British Columbia

Professional organizations

Member, Association for Computational Linguistics
Member, Association for Laboratory Phonology
Member, Canadian Acoustical Association
Member, Linguistic Society of America

Professional Service

Virtual Presence Manager (website, social media, Youtube), UCI Language Science. July 2021 - present

Head of UCLA linguistics department open house committee September 2019 - March 2020

Student volunteer, SALT 29 May 2019

Reviewer, Abstracts Review Board April 2019
Southern California Undergraduate Linguistics Conference

Linguistics blog maintainer, UCLA September 2018 - June 2021

Housing organizer, WCCFL 36 April 20-22, 2018

Food committee, UCLA linguistics department open house September 2017 - February 2018

Vice president, Graduate Linguistics Circle, UCLA September 2017 - August 2018

Organizer. Southern California April Meeting on Phonology May 6, 2017

Linguistics department website committee member, UCLA January 2017 - June 2021

**Computer
Experience****Languages:** Python, C++, MySQL, C, Java, R, Matlab, Bash, Latex, Javascript, Erlang, Prolog, Haskell, Ruby**Source control:** git, SVN**Operating Systems:** Windows, OSX, Linux (Ubuntu and Centos)**Programs:** Visual Studio, XCode, Eclipse, Praat, ELAN, Palatoglossatron, Edgetrak, Psyscope, Artisynth

Languages**Native:** English**Proficient:** Japanese (JLPT Level 2)**Basic:** French, Spanish, Uyghur**Fieldwork:** Kwak'wala, Nuu-chah-nulth, Yemba

**Non-degree
training***Central Eurasian Studies Summer Institute - Intermediate Uyghur**June 2020 - August 2020**European Summer School in Language Logic and Information 2018, Sofia, Bulgaria**August 2018*