

Sayantan Mandal

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Ph.D. Scholar with successful record of teaching classes, mentoring students and contributing to research. Methodical professional with analytical approach. Passionate about Cognitive Science, Computational Theories of Mind, and Neurobiology of Language. Expertise in theoretical and experimental biolinguistics, specifically neuroimaging and neurocomputational methods in Cognitive Science. Experience in community outreach, and engagement with indigenous populations.

EDUCATION

Concordia Center for Cognitive Science & Linguistics, Concordia University

Dec, 2019 - Mar, 2024 (estimated.)

Ph.D. (Individualized Program in Cognitive Science and Linguistics)

Thesis:

Ghost in the Cell: Neurobiological Roots of Phonological Primes

Supervisory Panel:

Prof. Tobias Scheer

Prof. Charles Reiss

Dr. Sigwan Thivierge

MARCS Institute of Brain, Behavior and Development, Western Sydney University.

Apr, 2013 - Jul, 2017

Ph.D. (Psycholinguistics) [ABD]

Project:

- Impact of Phonological Grammar on Production and Perception of Speech.
- Dichotic Listening and Integration of Hemispheric Information in Speech Perception.

Supervisors:

Prof. Catherine T. Best.

Prof. Anne Cutler.

Prof. Jason Shaw.

Additional Details:

- Post-graduate student researcher in experimental psycholinguistics and laboratory phonology.
- Conducted research on dichotic listening and brain-hemispheric integration of auditory information in early-bilingual populations.
- Conducted electromagnetic articulometry (EMA) experimentations.
- Designed and implemented a modified-WUG test to probe the perception and production link in speech processing.
- All research findings presented in peer-reviewed conferences, and published in reputed journals.

The University of Auckland

Feb, 2012 - Mar, 2013

Master of Arts (Honours Thesis)

- Graduated with High Honours in Linguistics
- **Thesis:** Coronal dynamics and constraint interactions in Bangla: An Optimality Theoretic Approach.
- **Project (Other):** Rhythm and metrics in Urama, an undocumented Papuan language.
 - Conducted interviews with indigenous populations.
 - Helped create a dictionary and e-database for Urama.

E.F.L. University

Jun, 2008 - Jul, 2010

M.A. (Linguistics)

- Graduated with Distinction.

The University of Burdwan

May, 2005 - Mar, 2008

B.A. (Honours)

- Graduated with First Class Honours.

EXPERIENCE

CNRS, BCL Lab, Université Côte d'Azur

Nov, 2023 - Feb, 2024

MITACS Globalink Visiting & Guest Researcher

- Visiting researcher at the BCL Laboratories, CNRS
- Project: Neural Correlates of Phonological Computations
- Goal: Integrating neurophysiological data with formal phonological theory.
- Collaborators: Prof. Tobias Scheer, Dr. Alexander Marx Chabot, Prof. W.. Idsardi.

Concordia University

July, 2023

Instructor/Teacher (Ling 498: Research Methods in Neurolinguistics)

- Introduction to neuroimaging in cognitive science.
- fMRI data acquisition and analyses.
- Theoretical issues in fMRI interpretation.

Concordia University

Jan, 2023 - May, 2023

Graduate Teaching Assistant (Psycholinguistics)

- Conducted tutorials and practical sessions

- Assisted teaching, and held one-on-one sessions with students.
 - Grading and final evaluation.
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Concordia University

Sep, 2022 - Dec, 2022

Graduate Teaching Assistant (Psycholinguistics)

- Held tutorials, and practicals.
 - Responsible for grading and final evaluation.
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Concordia University

Jan 2022 - May 2022

Graduate Teaching Assistant (Language Acquisition and Universal Grammar)

- Checked assignments, proctored tests, and provided grades according to university standards.
 - Responsible for all tutorials and practicals.
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Concordia University

Jan, 2021 - Apr, 2021

Graduate Teaching Assistant (Language Acquisition and Universal Grammar)

- Checked assignments, proctored tests, and provided grades according to university standards.
 - Oversaw classes of up to FORTY students in Language Acquisition.
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Concordia University

Sep, 2020 - Jan, 2021

Research Assistant

- Gathered, arranged and processed natural language data from Bangla, Hindi and Assamese.
 - Implemented Model Theoretic semantic analyses.
 - Contributed to DATIVE database.
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The University of Auckland

Feb, 2017 - Jul, 2017

Professional Teaching Fellow

- Designed curriculum, study materials and evaluation standards for advanced undergraduate course in Morphosyntax.
 - Taught a class of over SIXTY undergraduate students.
 - Designed and administered mid-term and final examinations.
 - Sole instructor and evaluator.
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The University of Auckland

Feb, 2017 - Jul, 2017

Graduate Teaching Assistant

- Oversaw classes of up to FORTY students in Advanced Phonology.
 - Documented attendance and completed assignments to maintain full class and student records.
 - Checked assignments, proctored tests, and provided grades according to university standards.
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The University of Auckland

Sep, 2016 - Dec, 2016

Examination and Grading Assistant

- Explained test processes to students.
 - Administered tests to students.
 - Monitored students during tests.
 - Collected and graded examinations.
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The University of Auckland

Sep, 2016 - Dec, 2016

Research Assistant

- Conducted acoustic and computational analyses of phonetic data from Mandarin.
- Implemented short-time Fourier transform using PRAAT.
- Created visual graphics for presentation materials.

E.F.L. University

Mar, 2009 - Jan, 2010

E-Learning Material Designer

- Created and edited video material using open-source tools.
- Transcribed and annotated video lectures.
- Provided transliteration services.
- Developed presentation materials for teacher outreach program.
- Designed adult education material.

RESEARCH AND PUBLICATIONS

Full-Length Book Chapters

- Mandal S.S. (2020). The Cognitive Revolution. In: Shackelford T., Weekes-Shackelford V. (eds) Encyclopedia of Evolutionary Psychological Science. Springer, Cham
- Mandal S.S. (2019). Noam Chomsky. In: Shackelford T., Weekes-Shackelford V. (eds) Encyclopedia of Evolutionary Psychological Science. Springer, Cham

Articles

- Mandal, S. & Biswas, B. (forthcoming). Partial-veridicality at the lower-interface. Proceedings of the Western Conference on Linguistics-2022, California State University, Fresno, California
- Biswas, B. & Mandal, S. (forthcoming). How flat can phonology be? Proceedings of the Western Conference on Linguistics-2023, California State University, Fresno, California
- Mandal, S., Best, C. T., Shaw, J., & Cutler, A. (forthcoming). Disentangling the phonetic from the phonological: a case study of Malayalam velar palatalization.
- Mandal, S. (2022). The Cognitive Phonetics of Velar Palatalization. In Proceedings of the Western Conference on Linguistics-2022, California State University, Fresno, California
- Mandal, S., Best, C. T., Shaw, J., & Cutler, A. (2020). Bilingual phonology in dichotic perception: A case study of Malayalam and English voicing. Glossa: A Journal of General Linguistics, 5(1), 73
- Brown, J., & Mandal, S. (2013, December). Rhythm, metrics, and the link to phonology. In Proceedings of the Australasian Language Technology Association Workshop 2013 (ALTA 2013) (pp. 112-117).

Conference Presentations and Talks

- Mandal, S. & Biswas, B. (2023). Partially-veridical transductions at the phonetics-phonology interface. 45th Annual Conference of the Linguistic Society of India, Aligarh Muslim University, Aligarh, India.
- Mandal, S. & Biswas, B. (2023). Partial-veridicality at the lower-interface. Western Conference on Linguistics-2022, California State University, Fresno, California
- Biswas, B. & Mandal, S. (forthcoming). How flat can phonology be? Western Conference on Linguistics-2023, California State University, Fresno, California
- Mandal, S. (2023): Ghosts in the Cell: Neural Substrates for Phonological Features. 2nd PhonolEEGy Conference, University of Massachusetts, Amherst, USA.
- Mandal, S. (2023): How Flat Can Phonology Be?. French Phonology Network (RFP) Annual Conference, 2023, Niece, France.

- Mandal, S. (2023): Ghosts in the Cells: From Vibrations in the Ear to Abstractions in the Brain. Cluster on Language Research Symposium, UC Davis, USA.
- Mandal, S. (2023): Implications of a Completely Flat Phonology. Twelfth North American Phonology Conference (NAPhCxii), Université Concordia, Montreal, Quebec.
- Mandal, S. (2023): Equally Bizarre: Partial Veridicality between Primes and Substance. Twelfth North American Phonology Conference (NAPhCxii), Université Concordia, Montreal, Quebec.
- Mandal, S. (2023): Syllable-Free Phonology. 47th Penn Linguistics Conference, University of Pennsylvania. [Withdrawn due to immigration issues].
- Mandal, S. (2023): Ghost in the Cell: How the Brain Creates Symbols from Vibrations. *Shifting the Balance*. INDI Research Day, Concordia University, Montreal.
- Mandal, S. (2022). The Cognitive Phonetics of Velar Palatalization. 2022 Western Conference on Linguistics, California State University, Fresno, California
- Mandal, S. (2021). The syntax of phonology: Mirror-Image Rules. 2021 Western Conference on Linguistics, California State University, Fresno, California
- Mandal, S. (2021). Computing long-distance dependencies: a strong procedural model. DUCOG-2021, Dubrovnik, Croatia. Central European Cognitive Science Association.
- Mandal, S. (2021). SEARCH & COPY: the syntax of long-distance phonology. Approaches to Phonetics and Phonology, Lublin, Poland.
- Mandal, S. (2021). The cognitive phonetics of Malayalam velar palatalization, 28th Manchester Phonology Meeting, Manchester, England.
- Mandal, S., Best, C.T., Shaw, J. & Cutler, A. (2017). Do rules rule: Evidence of Velar Palatalization in Malayalam, Old World Conference in Phonology, Düsseldorf
- Mandal, S. (2014). Perceiving Markedness. Australian Linguistics Society Annual Conference, University of Newcastle, Newcastle Australia
- Mandal, S. (2013). Rhythmic variation in Urama, Australasian Language Technology Association, Workshop-2013. Queensland University of Technology in Brisbane, Queensland, Australia
- Mandal, S., Brown, J., Lippsett, Z. (2012): Syllable structure and rhythm in Urama, ASSTA Workshop on the Phonetic Analysis of Rhythm in Indigenous Languages, Australasian Speech-Science and Technology Association. University of Auckland, Auckland, NZ.

Invited Talks

Sep, 2022

- Substance-Free Phonology: A Biolinguistic Program for Phonological Theory., English and Foreign Languages University, Hyderabad, India.

Apr, 2017

- Rhythm in Urama: Implications for Isochrony. Auckland University of Technology, Auckland, NZ.

Aug, 2015

- Assimilation: Phonological and Perceptual. Macquarie University, Sydney, Australia

AWARDS AND ACCOMPLISHMENTS

Scholarships & Research Awards

- **2022-2024.** Mitacs Globalink Research Award (IT34244).
- **2019.** Louise Dandurand Scholarship in Interdisciplinary Studies, Concordia University, Montreal. [Valued At: CAD. 15,000.]
- **2019.** Concordia International Tuition Award of Excellence, Concordia University, Montreal. [Valued At: CAD. 43,211]

- **2018.** Norwegian Summer Institute of Language and Mind Student Scholarship. [Valued At: 8,900 KRON]
- **2016.** Research Bursary, University of Auckland (Declined). [Valued At: NZD. 15,000].
- **2015.** MARCS Professional Development Award, MARCS Institute, Western Sydney University. [Valued At: AUD. 5000]
- **2014.** MARCS Research Training Award, MARCS Institute, Western Sydney University. [Valued At: AUD. 5000].
- **2013.** MARCS HDR Scholarship, MARCS Institute, Western Sydney University. [Valued At: AUD. 93,600]

SERVICES RENDERED

New Zealand Linguistics Olympiads

2017

Examiner

- Graded and evaluated the annual New Zealand Linguistics Olympiad competition.

Australian Linguistics Society Annual Conference

2015

Editor: Book of Conference Abstracts

- Designed, edited and formatted the book of abstracts for the 2015 annual ALS Conference, held in Western Sydney University.

Red Cross, India

Nov, 2010 - Sep, 2011

Remote Camp Organizer

- Helped organize rural health and hygiene education and awareness camps.
- Provided technological support.
- Helped edit and design leaflets and educational brochures.

SKILLS

Teaching and Mentoring

- Over three years' experience in teaching undergraduate and graduate classes.
- Experienced in teaching second language learners.
- Extensive experience in teaching academic reading and writing in English.
- Taught classes in Canada, Australia, New Zealand and India.
- Subjects taught:
 - Academic reading and writing (English Language).
 - English Linguistics and Grammar.
 - Introduction to Linguistics
 - Psychology of Language.
 - Language Acquisition.
 - Neurobiology of Language.

Core Research Areas and Skills

- fMRI Methods in Biolinguistics & Cognitive Neuroscience
- EEG applications in Cognitive Neuroscience.
- Neurobiology of Language.
- Neurocomputational Modeling of Phonology-Phonetics Interface.
- Experimental Methods in Biolinguistics.
- Behavioral Psycholinguistics.
- Substance-Free Phonology.
- Formal Linguistic Theory.
- Generative Grammar.
- Theories of Computation & Computational Theory of Mind.

- Symbolic and Procedural Models of Phonology.
- **Computational and Quantitative Skills**
 - FSL (Advanced)
 - SPM (Intermediate)
 - Psychophysics Toolbox (Advanced)
 - Python (Advanced).
 - R (Intermediate).
 - Bash & Linux (Advanced).
 - Lisp (Intermediate).
 - Statistical Methods in Cognitive Science.

REFERENCES

1. Prof. Tobias Scheer

Department of Linguistics
BCL Laboratory, CNRS.
Université Côte d'Azur, Nice, France.
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2. Prof. Charles Reiss

Concordia Center for Cognitive Science & Linguistics.
Classics, Modern Languages & Linguistics
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3. Prof. Anne Cutler

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Max Planck Institute of Psycholinguistics, Nijmegen.
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4. Prof. Jason Shaw

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5. Prof. William James Idsardi

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