

# Sihan Chen

PHD CANDIDATE · DEPARTMENT OF BRAIN AND COGNITIVE SCIENCES

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## Education

### Massachusetts Institute of Technology

PHD IN COGNITIVE SCIENCE

- Advisor: Dr. Edward Gibson

Cambridge, MA, United States

September 2020 - present

### University of Miami

BS IN MECHANICAL ENGINEERING

- Minor in Mathematics
- graduated summa cum laude

Coral Gables, FL, United States

January 2016 - December 2019

## Professional Experience

2020 **Assistant Scientist**, SilicoSpine Inc. Miami, FL

2018-2019 **Undergraduate Research Assistant**, Mechanical Engineering, University of Miami

2017-2019 **Peer Tutor**, Camner Academic Resource Center, University of Miami

## Publications

### JOURNAL ARTICLES

1. Benítez-Burraco, A., **Chen, S.**, Gil, D., (2024), The absence of a trade-off between morphological and syntactic complexity, *Frontiers in Language Sciences*
2. Zhan, M., **Chen, S.** (equal contributions), Levy, R., Lu, J., Gibson, E. (2023), Rational Sentence Interpretation in Mandarin Chinese. *Cognitive Science*, 47 (12), e13383
3. **Chen, S.**, Futrell, R., Mahowald, K. (2023), Investigating information-theoretic properties of the typology of spatial demonstratives. *Cognition*, 240, 105505.
4. **Chen, S.**, Nathaniel, S., Ryskin, R., Gibson, E., (2023), The effect of context on noisy-channel sentence comprehension. *Cognition*, 238, 105503.
5. Everett, C., **Chen, S.** (2021), Speech adapts to differences in dentition within and across populations. *Scientific Reports* 11, 1066.
6. Zhu, Q., Gao, X., **Chen, S.**, Gu, W., Brown, M. D., (2020) Effects of Intervertebral Disc Degeneration on Mechanical and Electrical Signals at the Interface between Disc and Vertebra. *Journal of Biomechanics*, 104, 109756.

### CONFERENCE PROCEEDINGS

1. **Chen, S.**, Gil, D., Benítez-Burraco, A., (2024), Languages of esoteric societies provide a window into a previous stage in the evolution of human languages. *Proceedings to the 15th International Conference on the Evolution of Language*, Madison, WI
2. Gil, D., **Chen, S.**, Benítez-Burraco, A., (2024), The Mekong-Mamberamo Mystery. *Proceedings to the 15th International Conference on the Evolution of Language*, Madison, WI
3. **Chen, S.** & Everett, C. (2020), Did Post-Neolithic Changes in Bite Configuration Impact Speech? A New Approach to the Question. *Proceedings to the 13th International Conference on the Evolution of Language*, Brussels, Belgium

### CONFERENCE PRESENTATIONS / POSTERS

1. **Chen, S.**, Benítez-Burraco, A., Cahuana, C., Gil, D., Progovac, L., Reifegerste, J., Yuditha, T., & Tatarinova, T. (2023), Cognitive and genetic correlates of a single macro-parameter of crosslinguistics variation. *Protolang 2023*, Rome, Italy, September 27, 2023

2. **Chen, S.**, Benítez-Burraco, A., Gaponov, S., Gil, D., Progovac, L., Reifegerste, J., Tatarinova, T. (2023), Linking language variation to sociopolitical variation. *Sociotypology: linking language variation to sociological diversity; Workshop at the 56th Annual Meeting of the Societas Linguistica Europaea* Athens, Greece, August 31, 2023
3. Benítez-Burraco, A., **Chen, S.**, Gil, D., Gaponov, S., Reifegeste, J., Yuditha, T., Tatarinova, T., & Progovac, Lj. (2023). Patterns of correlation between linguistic and sociopolitical complexity. Presentation at Complexity in Language Variation and Change 2023. Tokyo, Japan. August 4 2023 [online]
4. Yuditha, T., **Chen, S.**, Benítez-Burraco, A. (2023). Exotericity and Esotericity in Languages of Indonesia: A Preliminary Study. Talk presented at the 26th International Symposium on Malay and Indonesian Linguistics (ISMIL) 26, The University of Hawai'i at Mānoa, April 19, 2023. [online].
5. Washington, L., **Chen, S.**, Gibson, E. (2023), The Influence of Prior Semantic Knowledge in Noisy Channel Interpretation. Poster at the 36th Annual Conference on Human Sentence Processing, Pittsburgh, PA, March 9 2023
6. **Chen, S.**, Conway, B., Gibson, E. (2023), Russian blues do not reveal an effect of language on perception: a reanalysis of the original study. Poster at the 36th Annual Conference on Human Sentence Processing, Pittsburgh, PA, March 9 2023
7. Benítez-Burraco, A., Cahuana, C., **Chen, S.**, Gil, D., Progovac, L., Reifegerste, J., Tatarinova, T. (2022), Cognitive and genetic correlates of a single macro-parameter of crosslinguistics variation. *Joint Conference on Language Evolution*. Kanazawa, Ishikawa, Japan, September 7, 2022
8. Fleming, J., **Chen, S.**, Gibson, E., (2022), Noisy-Channel Sentence Interpretation in Spanish. ABRCMS 2022, Anaheim, CA, November 2022
9. **Chen, S.**, Futrell, R., Mahowald, K. (2022), An information-theoretic approach to the typology of spatial adverbs. *The 4th Workshop on Research in Computational Typology and Multilingual NLP*. Seattle, WA, July 14, 2022
10. **Chen, S.**, Futrell, R., Mahowald, K. (2022), An information-theoretic approach to the typology of spatial adverbs. 35th Annual Conference on Human Sentence Processing. Santa Cruz, CA. March 25, 2022.
11. Zhu, Q., Gao, X., Brown, M. D., **Chen, S.**, Gu, W., (2020), Effects of Intervertebral Disc Degeneration on Mechanical and Electrical Signals at the Interface between Disc and Vertebra. Orthopaedic Research Society 2020 Annual Meeting. New Orleans, LA. February 5, 2020.

## IN REVIEW

1. **Chen, S.**, Gil, D., Gaponov, S., Reifegeste, J., Yuditha, T., Tatarinova, T., Progovac, L., and Benitez-Burraco, A. (in review), Cognitive and linguistic correlates of societal variation: A quantitative analysis.
2. Mao, R., **Chen, S.**, Gibson, E. (in review). How do Mandarin native speakers interpret implausible sentences?
3. Ramscar, M., **Chen, S.**, Mahowald, K. (in review), Cross-Cultural Structures Of Personal Name Systems Reflect General Communicative Principles.
4. **Chen, S.**, Gibson, E., Ramscar, M. (in review), Measuring the availability of Chinese nouns and classifiers in production: How corpus frequency measures fail to capture the dynamicity of usage.
5. **Chen, S.**, An information-theoretic approach to language complexity.

## IN PREP

1. **Chen, S.**, Washington, L., Gibson, E. (in prep), The influence on prior semantic knowledge on noisy-channel interpretation.
2. **Chen, S.**, Conway, B., Gibson, E. (in prep), Russian blues do not reveal an effect of language on perception: a reanalysis of the data in the original study.
3. **Chen, S.**, Gibson, E., & Ramscar, M. (in prep). Corpus frequency measures fail to capture the dynamic nature of human communicative codes.
4. Yuditha, T., **Chen, S.**, Gil, D., Reifegeste, J., Benítez-Burraco, A. (in prep), Cognitive correlates of the trade-off between morphological and syntactic complexity: the languages of Indonesia as a case study.

## Awards, Fellowships, & Grants

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2020-2022 **Hilibrand Fellowship**, MIT Dept of Brain and Cognitive Sciences  
2022-2023 **Singleton Fellowship**, MIT Dept of Brain and Cognitive Sciences

## Presentations

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### INVITED TALKS

December 2021. *Investigating the efficiency of spatial deictic adverbs*, Cog Lunch, MIT

May 2022. *Winawer et al. (2007) revisited: the role of language on color cognition*, Cog Lunch, MIT

November 2022. *Explaining language complexity from sociopolitical complexity*, Cog Lunch, MIT

## Teaching Experience

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Spring 2023	<b>Lab in Psycholinguistics (9.59)</b> , Teaching Assistant	MIT
Fall 2021	<b>Computational Cognitive Science (9.66)</b> , Teaching Assistant	MIT
Fall 2018, Spring 2019	<b>Calculus II review session</b> , Peer Tutor	Univ. of Miami

## Mentoring

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Summer 2022	<b>Jorie Fleming</b> , MSRP Student, Washington University in St Louis	Cambridge, MA
Summer 2022	<b>Lia Washington</b> , Post-Baccalaureate Reserch Scholar, MIT	Cambridge, MA

## Outreach & Professional Development

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### SERVICE AND OUTREACH

August 2024	<b>Linguistic typology and the cognitive science of non-WEIRD languagesm, Workshop at the 57th Annual Meeting of the Societas Linguistica Europaea</b> , Co-organizer	Helsinki, Finland
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### PEER REVIEW

- 2022: Open Mind, Nature, PNAS

## Media coverage

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2023	<b>Uncovering the invisible pressures shaping language</b> , MIT News (MIT), <a href="https://news.mit.edu/2023/sihan-chen-uncovering-invisible-pressures-shaping-language-0627">https://news.mit.edu/2023/sihan-chen-uncovering-invisible-pressures-shaping-language-0627</a>
2021	<b>Scholars link diet, dentition, and linguistics</b> , NewsTheU (University of Miami), <a href="https://news.miami.edu/stories/2021/01/scholars-link-diet,-dentition,-and-linguistics.html">https://news.miami.edu/stories/2021/01/scholars-link-diet,-dentition,-and-linguistics.html</a>
2019	<b>In Search for Hidden Worlds</b> , NewsTheU (University of Miami), <a href="https://news.miami.edu/stories/2019/03/in-search-of-hidden-worlds.html">https://news.miami.edu/stories/2019/03/in-search-of-hidden-worlds.html</a>

## Languages

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- Native / bilingual proficiency: Chinese Mandarin, English
- Intermediate: Spanish
- Beginner: Greek
- Programming languages: Python, R, Matlab

- Writing systems: Chinese, Latin, Cyrillic, Greek, Armenian