

# Zhe-chen Guo (郭哲宸)

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## Academic Appointments

### Postdoctoral Scholar

Department of Communication Sciences and Disorders, Northwestern University  
PI: Bharath Chandrasekaran

Oct. 2023 –

## Education

### Ph.D. in Linguistics, University of Texas at Austin (UT Austin) 2023

Dissertation: The effects of speaking style, noise, and semantic context on speech segmentation: Evidence from artificial language learning and eye-tracking experiments  
Committee: Rajka Smiljanic (chair), Scott Myers, Fernando Llanos, Georgia Zellou (UC Davis)

### M.A in Applied Linguistics, National Sun Yat-sen University (NSYSU) 2017

Thesis: *The cue of rising tone to spoken word segmentation: A study of listeners of Taiwanese Southern Min*  
Committee: Shu-chen Ou (chair), Aleck Shih-wei Chen, Yung-hsiang Shawn Chang

### B.A. in Foreign Languages and Literature, NSYSU 2014

## Publications

### Peer-reviewed journal articles:

1. **Guo, Z.-C.**, & Smiljanic, R. (in revision). Ham or hamster? Eye-tracking evidence of clear speech benefit for word segmentation in quiet and in noise.
2. **Guo, Z.-C.**, & Smiljanic, R. (2023). Speakers coarticulate less in response to both real and imagined communicative challenges: An acoustic analysis of the LUCID corpus. *Journal of Phonetics*, 97, 101210. 10.1016/j.wocn.2022.101210
3. Ou, S.-C., & **Guo, Z.-C.** (2022). The effect of lengthening aspiration on speech segmentation. *JASA Express Letters*, 2(4), 045202. 10.1121/10.0010242
4. **Guo, Z.-C.**, & Smiljanic, R. (2021). Speaking clearly improves speech segmentation by statistical learning under optimal listening conditions. *Laboratory Phonology*, 12(1), 14. 10.5334/labphon.310
5. **Guo, Z.-C.**, & Ou, S.-C. (2021). The use of tonal coarticulation in segmentation of artificial language speech: A study with Mandarin listeners. *Applied Psycholinguistics*, 42(3), 631–655. 10.1017/S0142716420000818
6. Ou, S.-C., & **Guo, Z.-C.** (2021). The language-specific use of F0 rise in segmentation of an artificial language: Evidence from listeners of Taiwanese Southern Min. *Language and Speech*, 64(2), 437–466. 10.1177/0023830919886604
7. Ou, S.-C., & **Guo, Z.-C.** (2021). The differential effects of vowel and onset consonant lengthening on speech segmentation: Evidence from Taiwanese Southern Min. *The Journal of Acoustical Society of America*, 149(3), 1866–1877. 10.1121/10.0003751
8. **Guo, Z.-C.**, & Ou, S.-C. (2014). Perception of articulatorily different Mandarin retroflexes by Japanese speakers: A pilot study. *NTU Working Papers in Chinese Language Teaching*, 2, 1–28. Taipei: National Taiwan University. 10.6664/NTUTCSL.201408\_(2).0004
9. Ou, S.-C., & **Guo, Z.-C.** (2014). Mandarin retroflex sounds perceived by non-native speakers. *Journal of Language and Literature Studies*, 26, 41–76.

**Peer-reviewed conference proceedings:**

1. **Guo, Z.-C.**, & Smiljanic, R. (2023). Clear speech facilitates word segmentation: Evidence from eye-tracking. In Radek Skarnitzl & Jan Volín (Eds.), *Proceedings of the 20th International Congress of Phonetic Sciences* (pp. 177–181). Guarant International. (presented orally, Prague, Czech Republic, August 7–11)
2. Ou, S.-C., & **Guo, Z.-C.** (2023). The effect of shortening onset consonants on speech segmentation by Taiwanese Southern Min listeners. In Radek Skarnitzl & Jan Volín (Eds.), *Proceedings of the 20th International Congress of Phonetic Sciences* (pp. 167–171). Guarant International. (poster, Prague, Czech Republic, August 7–11)
3. **Guo, Z.-C.**, & Smiljanic, R. (2021). Speakers coarticulate less when facing real and imagined communicative difficulties: An analysis of read and spontaneous speech from the LUCID corpus. In *Proceedings of Interspeech 2021* (pp. 4009–4013). 10.21437/Interspeech.2021-1640 (presented virtually, Brno, Czech Republic, August 30–September 3)
4. Ou, S.-C., & **Guo, Z.-C.** (2020). The opposite effects of vowel and onset consonant lengthening on speech segmentation. In *Proceedings of the 10th International Conference on Speech Prosody*. 10.21437/SpeechProsody.2020-16 (presented virtually, Tokyo, Japan, May 24–28)
5. **Guo, Z.-C.**, & Ou, S.-C. (2019). The use of tonal coarticulation in speech segmentation by listeners of Mandarin. In *Proceedings of the 19th International Congress of Phonetic Sciences*. (presented orally, Melbourne, Australia, August 4–10)
6. Ou, S.-C., & **Guo, Z.-C.** (2019). The role of initial F0 rise in speech segmentation: A cross-linguistic study. In *Proceedings of the 19th International Congress of Phonetic Sciences*. (poster, Melbourne, Australia, August 4–10)
7. Ou, S.-C., & **Guo, Z.-C.** (2015). The effect of stress on English word recognition by native speakers of typologically different languages. In *Proceedings of the 18th International Congress of Phonetic Sciences*. (presented orally, Glasgow, UK, August 10–14)

**Conference Presentations**

\*: listed as citable abstract

1. **Guo, Z.-C.**, & Smiljanic, R. (2023). Clear speech benefit for word segmentation is modulated by contextual-semantic cues: Evidence from eye-tracking. *The Psychonomic Society 64th Annual Meeting*. (poster presentation, San Francisco, California, November 16–19)
2. \***Guo, Z.-C.**, Pangottl, K., Chandrasekaran, B., & Llanos, F. (2023). Decoding speech envelopes from electroencephalographic recordings: A comparison of regularized linear regression and long short-term memory deep neural network. *The Journal of the Acoustical Society of America*, 153(3), A158. 10.1121/10.0018496 (poster at the 184th Meeting of the Acoustical Society of America, Chicago, May 8–12)
3. \***Guo, Z.-C.**, Smiljanic, R. (2023). Clear speech improves word segmentation in quiet and in noise: Evidence from visual-world eye-tracking. *The Journal of the Acoustical Society of America*, 153(3), A168. 10.1121/10.0018543 (poster at the 184th Meeting of the Acoustical Society of America, Chicago, May 8–12)
4. \***Guo, Z.-C.**, Smiljanic, R. (2022). Coarticulation is reduced in clear speech produced with protective face masks. *The Journal of the Acoustical Society of America*, 152(4), A286. 10.1121/10.0016295 (poster at the 183rd Meeting of the Acoustical Society of America, Nashville, December 5–9)
5. Dai, S., Frank, K., Jess, N., **Guo, Z.-C.** (2022). Network effects on Twitter users' language use and issue disposition of CRT: A machine-learning approach investigating the influence model. *The 2022 Midwest Sociology of Education Conference* (Indiana, October 27–28).
6. **Guo, Z.-C.**, & Smiljanic, R. (2022). Coarticulatory vowel nasalization in read and listener-directed speech across communicative contexts: An analysis of the LUCID corpus. *The 18th Conference on Laboratory Phonology* (presented virtually, June 23–25).
7. Ou, S.-C., & **Guo, Z.-C.** (2022). Is onset-consonant lengthening a universal word beginning cue? A cross-linguistic study of English and French listeners. *The 29th Manchester Phonology Meeting* (presented virtually, May 25–27).

8. \***Guo, Z.-C.**, & Smiljanic, R. (2022). The degree and time course of nasal coarticulation across communicative contexts: A study of the LUCID corpus. *The Journal of the Acoustical Society of America*, 151(4), A65. 10.1121/10.0010676 (poster at the 182nd Meeting of the Acoustical Society of America, Denver, May 23–27).
9. \***Guo, Z.-C.**, & Smiljanic, R. (2021). Coarticulation across communicative contexts: An acoustic analysis of the LUCID corpus using spectral and temporal measures. *The Journal of the Acoustical Society of America*, 150(4), A70. 10.1121/10.0007659 (poster at the 181st Meeting of the Acoustical Society of America, Seattle, November 29–December 3)
10. Ou, S.-C., & **Guo, Z.-C.** (2021). The effect of aspiration lengthening on speech segmentation: An artificial language learning study. *The 28th Manchester Phonology Meeting* (presented virtually, May 26–28).
11. \***Guo, Z.-C.** (2020). Tonal carryover assimilation is exploited as a speech segmentation cue in the case of cue conflict. *The Journal of the Acoustical Society of America*, 148(4), 2504–2504. 10.1121/1.5146952 (presented virtually, December 7–11)
12. Ou, S.-C., & **Guo, Z.-C.** (2020). The effects of segment lengthening on speech segmentation. *The 13th International Symposium on Taiwanese Languages and Teaching* (presented orally, Hsinchu, October 16–17).
13. \***Guo, Z.-C.**, & Smiljanic, R. (2019). Speaking clearly improves speech segmentation in optimal listening conditions. *The Journal of the Acoustical Society of America*, 146(4), 3052–3052. 10.1121/1.5137579 (poster at the 178th Meeting of the Acoustical Society of America, San Diego, California, December 2–6)
14. Ou, S.-C., & **Guo, Z.-C.** (2018). The role of lexical tone in speech segmentation by listeners of Taiwanese Southern Min: A corpus and experimental study. *The 7th International Conference on Phonology and Morphology* (presented orally, Seoul, Korea, June 29–30).
15. Ou, S.-C., & **Guo, Z.-C.** (2017). The language-specific use of F0 rise in speech segmentation by listeners of Taiwanese Southern Min. *ILAS Workshop on Phonetics and Phonology* (presented orally, Taipei, October 23–24).
16. Ou, S.-C., & **Guo, Z.-C.** (2017). Is the cue of pitch rise to spoken word segmentation used in a language-specific or cross-linguistic way? A study of listeners of Taiwanese Southern Min. *Phonetics and Phonology in Europe 2017* (presented orally, Cologne, Germany, June 12–14).
17. Ou, S.-C., & **Guo, Z.-C.** (2016). The use of lexical tone in spoken word segmentation by Taiwanese Southern Min listeners. *The 24th Annual Conference of the International Association of Chinese Linguistics* (presented orally, Beijing, China, July 17–19).
18. **Guo, Z.-C.** (2014). Perception of articulatorily different Mandarin retroflexes by Japanese speakers: A pilot study. *The 2nd NTU Postgraduate Conference on Teaching Chinese as a Second Language* (presented orally, Taipei, March 29).

## Fellowships, Grants, and Honors

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IPA Student Travel Award for ICPHS 2023 (\$743) International Phonetic Association	2023
University Graduate Continuing Fellowship (\$46,601) Full stipend, tuition, and insurance support for 12 months Graduate School, UT Austin	2022 – 2023
Taiwanese Overseas Pioneers Grants (\$29,700) National Science and Technology Council, Taiwan	2022 – 2023
Dissertation Fellowship for ROC Students Abroad (\$20,000, declined) Chiang Ching-kuo Foundation for International Scholarly Exchange	2022
Graduate Research Fellowships (\$1,000) British, Irish and Empire Studies (BIES) program, UT Austin	2022
Interspeech 2021 travel grant (\$141) International Speech Communication Association	2021

Carlota Smith Fellowship (\$1,231) Department of Linguistics, UT Austin	2020
Government Scholarship to Study Abroad (\$32,000) Ministry of Education, Taiwan	2019 – 2021
Acoustical Society of America Student Travel Subsidies (\$390)	2019 – 2022
Professional Development Awards (\$1,499)	2019
Spring Supplemental Graduate Fellowship (\$5,000) Graduate School, UT Austin	2019
Candidate for Best Master's Thesis of the Year Linguistic Society of Taiwan	2017
Five-year B.A./M.A. Combined Degree Program Fellowship (\$3,966) Department of Foreign Languages and Literature, NSYSU	2014 – 2015
College Student Research Grant (\$1,421) Ministry of Science and Technology, Taiwan (Project ID: 102-2815-C-110-010-H)	2013 – 2014
NSYSU Excellent Student Award (5 awards, \$992 total)	2011 – 2013

## Research Experience

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Graduate Research Assistant Assistant for Neural Speech Decoding project (full-time: Jul – Aug 2022; PI: Jun Wang) Department of Computer Science, UT Austin	2022
Graduate Student Lab Member UTSoundLab (PI: Rajka Smiljanic) Department of Linguistics, UT Austin	2018 – 2023
Research Assistant Assistant (full-time: 2017–2018; part-time: 2013–2017) for NSYSU Phonetics and Phonology Lab (PI: Shu-chen Ou) Department of Foreign Language and Literature, NSYSU	2013 – 2018

## Teaching Assistantships

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### UT Austin:

*Exploring Accents*, Scott Myers (Fall 2020)  
*Introduction to the Study of Language*, Nora England (Spring 2019)  
*Sound Patterns: Sound to Word*, Megan Crowhurst (Fall 2018, Spring 2021) and Scott Myers (Fall 2019; Spring 2020, Fall 2021, Spring 2022)

### NSYSU:

*Phonetics*, Shu-chen Ou (Fall 2015, Fall 2016)  
*Phonology in English Language Teaching and Learning*, Shu-chen Ou (Spring 2016)  
*Introduction to English Linguistics (I)*, Shu-chen Ou (Fall 2015)  
*English Writing I*, Shu-chen Ou (Fall 2016, Spring 2016)  
*General English: Intermediate*, Shu-chen Ou (Fall 2016, Spring 2016)

## Professional Service

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### Invited talks/workshops/conferences:

NYCU Phon Brown Bag Series Virtual talk at National Yang Ming Chiao Tung University (Dec 16, 2022)	2022
Conference co-organizer The 19th Meeting of the Texas Linguistics Society (Feb 14–15, 2020)	2019 – 2020
Co-lecturer of Workshop on Speech Perception Experiments Led hands-on tutorial on designing perceptual experiments using E-Prime 2.0 (National Chengchi University, Oct 30, 2015)	2015

**Invited journal reviewer:**

*Applied Psycholinguistics* (2023)  
*Language and Speech* (2021)  
*JASA Express Letters* (2022, 2023)  
*Quarterly Journal of Experimental Psychology* (2022, 2023)

**Technical Skills**

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Programming languages	Python, R/R Markdown
Phonetic analysis	Praat/Praat scripting
Experiment builders	E-Prime 2.0/3.0, PsychoPy, Experiment Builder, Gorilla, Paradigm
Eye-tracker	EyeLink Portable Duo
Statistical software	MATLAB, SPSS, SAS
Audio editor	Audacity, GoldWave

**Languages**

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Taiwan Mandarin	Native
Taiwanese Southern Min	Native
English	Proficient
Japanese	Beginner