

# TIMOTHY BEECHEY

## CONTACT INFORMATION

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**Email**      [tim.beechey@nottingham.ac.uk](mailto:tim.beechey@nottingham.ac.uk)

## EDUCATION

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**Ph.D. in Audiology**      November 2015–February 2019  
*Macquarie University*      *Sydney, Australia*

- Thesis title: *Communication difficulty and effort in conversation*
- Thesis URL: <http://hdl.handle.net/1959.14/1268694>

**Master of Audiology Studies**      February 2009–December 2010  
*The University of Queensland*      *Brisbane, Australia*

**Master of Arts in Linguistics**      September 2003–June 2007  
*The University of Massachusetts Amherst*      *Amherst, United States*

**Bachelor of Arts**      February 1999–December 2002  
*The University of Melbourne*      *Melbourne, Australia*

- Major: Linguistics and Applied Linguistics
- Graduated with First Class Honours

## EMPLOYMENT

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**Research Fellow**      September 2021–Present  
*The University of Nottingham*      *Glasgow, United Kingdom*

- Project planning and research experiment design
- Qualitative analysis of spoken dialogues
- Implementation of ordinal statistical analysis software
- Statistical analysis and data visualisation
- Dissemination of experimental and theoretical work through peer-reviewed publications and conference presentations
- Management of budget and expenditure

**Postdoctoral Associate**      July 2019–August 2021  
*The University of Minnesota, Twin Cities*      *Minneapolis, United States*

- Teaching and coordinating graduate and undergraduate speech and hearing classes, online and in-person
- Planning research projects investigating hearing impairment, speech perception, speech production and communication
- Experimental design
- Developing realistic functional assessments of communication
- Authoring research protocols
- Statistical analysis and data visualization using R and Julia
- Authorship of scientific publications

**Research Scientist**  
*National Acoustic Laboratories*

October 2014–June 2019  
*Sydney, Australia*

- Planning of individual and collaborative audiological research projects, particularly in relation to linguistic aspects of hearing assessments, and connections between hearing impairment, speech production and speech perception
- Experimental design
- Developing realistic speech assessment assessments
- Linguistic analysis of speech data including acoustic phonetic, phonological and discourse pragmatic analysis
- Authoring scientific publications
- Authoring research grant proposals
- Authoring research protocols
- Creation of psychoacoustic test stimuli
- Testing audiological research subjects using a range of clinical and psychoacoustic tests
- Digital signal processing
- Statistical analysis and simulation using R, Julia and MATLAB

**Clinical Specialist**  
*MED-EL Hearing Implants Australasia*

December 2013–October 2014  
*Sydney, Australia*

- Provided face-to-face and phone-based clinical and technical support to audiologists
- Provided individual and group training on all aspects of hearing implants including candidature, device selection, mapping, objective measures, rehabilitation, troubleshooting and minor repairs
- Authored written documentation, presentations and training materials
- Conducted intra-operative monitoring and testing of implant function and neural responses
- Conducted electrophysiological testing including electrically-evoked cochlear microphonic, EABR and ECAPs

**Clinical Leader**  
*Australian Hearing*

June 2013–December 2013  
*Perth, Australia*

- Oversight of audiologists and clinical standards across Western Australia, South Australia and The Northern Territory
- Provided face-to-face, phone and internet-based clinical and technical support to clinicians
- Monitored clinical quality and compliance with federal government regulations
- Delivered face-to-face mentoring and training to clinicians individually and in groups
- Modeled excellent clinical practice and acted as a clinical role model
- Developed written training materials and presentations
- Monitored hearing aid, FM and ALD sales across clinics and regions
- Developed computer programs to summarise and analyse clinical and sales data
- Liaised with centre and regional managers, clinical leaders and principle audiologists

**Clinical Audiologist**  
*Australian Hearing*

January 2011–June 2013  
*Hobart, Australia*

- Conducted hearing assessments to determine type and degree of hearing impairment
- Completed behavioral testing including pure-tone audiometry and speech audiometry
- Completed objective testing including tympanometry, otoacoustic emissions and acoustic stapedial reflex assessment
- Fitted, verified and fine-tuned hearing aids, FMs and assistive listening devices

- Provided counseling on hearing loss, communication skills and strategies

**Teaching Associate/Teaching Assistant**  
*University of Massachusetts Amherst*

September 2003–June 2007  
*Amherst, United States*

- Authored and delivered lectures, in-person and online, on theoretical linguistics, including syntax, morphology, semantics, phonetics and phonology
- Led tutorials related to introductory theoretical linguistics
- Authored course policies
- Graded student assignments and exams

## PEER-REVIEWED PUBLICATIONS

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Orcid ID: <https://orcid.org/0000-0001-8858-946X>

1. Miles, K., **Beechey, T.**, Best, V. & Buchholz, J. M. (2022). Measuring speech intelligibility and hearing-aid benefit using everyday conversational sentences in real-world environments. *Frontiers in Neuroscience*. <https://doi.org/10.3389/fnins.2022.789565>
2. **Beechey, T.** (in-press). Ecological validity, external validity and mundane realism in hearing science. *Ear and Hearing*. <https://doi.org/10.1097/AUD.0000000000001202>
3. **Beechey, T.**, Buchholz, J.M. & Keidser, G. (2020). Hearing aid amplification reduces communication effort of people with hearing impairment and their conversation partners. *Journal of Speech, Language, and Hearing Research*, 63(4), 1299–1311. [https://doi.org/10.1044/2020\\_JSLHR-19-00350](https://doi.org/10.1044/2020_JSLHR-19-00350)
4. Miles, K., Keidser, G., Freeston, K., **Beechey, T.**, Best, V. & Buchholz, J.M. (2020). Development of the everyday conversational sentences in noise test. *Journal of the Acoustical Society of America*. 147(3), 1562–1576. <https://doi.org/10.1121/10.0000780>
5. **Beechey, T.**, Buchholz, J.M. & Keidser, G. (2020). Hearing impairment increases communication effort during conversations in noise. *Journal of Speech, Language, and Hearing Research*. 63(1), 305–320. [https://doi.org/10.1044/2019\\_JSLHR-19-00201](https://doi.org/10.1044/2019_JSLHR-19-00201)
6. Weisser, A., Buchholz, J.M., Oreinos, C., Badajoz-Davila, J., Galloway, J., **Beechey, T.**, & Keidser, G. (2019). The ambisonics recordings of typical environments (ARTE) database. *Acta Acustica United with Acustica*. 105, 695–713. <https://doi.org/10.3813/AAA.919349>
7. **Beechey, T.**, Buchholz, J.M. & Keidser, G. (2019). Eliciting naturalistic conversations: a method for assessing communication ability, subjective experience, and the impacts of noise and hearing impairment. *Journal of Speech, Language, and Hearing Research*, 62(2), 470–484. [https://doi.org/10.1044/2018\\_JSLHR-H-18-0107](https://doi.org/10.1044/2018_JSLHR-H-18-0107)
8. **Beechey, T.**, Buchholz, J.M. & Keidser, G. (2018). Measuring communication difficulty through effortful speech production during conversation. *Speech Communication*. 100, 18–29. <https://doi.org/10.1016/j.specom.2018.04.007>
9. Cameron, S., Chong-White, N., Mealings, K., **Beechey, T.**, Dillon, H., & Young, T. (2018). The Parsing Syllable Envelopes Test for Assessment of Amplitude Modulation Discrimination Skills in Children: Development, Normative Data, and Test–Retest Reliability Studies. *Journal of the American Academy of Audiology*. 29(2). 151–163. <https://doi.org/10.3766/jaaa.16146>
10. Cameron, S., Chong-White, N., Mealings, K., **Beechey, T.**, Dillon, H., & Young, T. (2018). The Phoneme Identification Test for Assessment of Spectral and Temporal Discrimination

Skills in Children: Development, Normative Data, and Test–Retest Reliability Studies. *Journal of the American Academy of Audiology*. 29(2). 135–150.  
<https://doi.org/10.3766/jaaa.16145>

## LETTERS TO THE EDITOR

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1. **Beechey, T.** (2022). On perspective taking in conversation and in research: A comment on Bambara et al. (2021). *Journal of Speech, Language, and Hearing Research*.  
[https://doi.org/10.1044/2021\\_JSLHR-21-00606](https://doi.org/10.1044/2021_JSLHR-21-00606)

## PRE-PRINTS

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1. **Beechey, T.** (2022). Ordinal pattern analysis tutorial. *OSF*.  
<https://doi.org/10.17605/OSF.IO/W32DK>

## OPEN-SOURCE SOFTWARE

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1. **Beechey, T.** (2022). opa: An Implementation of Ordinal Pattern Analysis [R package version 0.2.0]. <https://CRAN.R-project.org/package=opa>

## CONFERENCE PRESENTATIONS AND POSTERS

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1. Nelson, P., Anderson, E., **Beechey, T.**, Waggenspack, M., & Westmann, M. (2020). Virtual Scenarios for Evaluating Communication, Sensory Aids, and Social Engagement. *47th Annual Scientific and Technology Conference of the American Auditory Society*, Scottsdale, AZ, United States.
2. **Beechey, T.**, Buchholz, J., & Nelson, P. (2020). How representative of everyday speech signals are clinical speech test materials? *Association for Research in Otolaryngology 43rd Annual Mid-Winter Meeting*, San Jose, CA.
3. Nelson, P., Anderson, E., & **Beechey, T.** (2019). Laboratory simulations of conversation scenarios: Questionnaire results from patient and partner. *Proceedings of Meetings on Acoustics*, 39, 050004. <https://doi.org/10.1121/2.0001245>
4. **Beechey, T.**, Keidser, G. & Buchholz, J. (2018). On the impact of hearing impairment on spoken conversation. *51st Australian Association of Gerontology Conference*, Melbourne, Australia.
5. **Beechey, T.**, Keidser, G. & Buchholz, J.M. (2017). Measuring communication effort in patterns of speech variability during conversations in realistic noise. *Fourth International Conference on Cognitive Hearing Science for Communication*. Linköping, Sweden.
6. **Beechey, T.**, Buchholz, J.M., & Keidser, G. (2016) Eliciting natural conversational Lombard speech in realistic acoustic environments. *Fifth joint meeting of the Acoustical Society of America and the Japanese Acoustic Society*. Honolulu, HI.  
<https://doi.org/10.1121/1.4970120>
7. Buchholz, J.M., Weisser, A., **Beechey, T.**, Galloway, J., Keidser, G., & Freeston, K. (2016). Estimating realistic speech levels for virtual acoustic environments. *Fifth joint meeting of the Acoustical Society of America and the Japanese Acoustic Society*. Honolulu, HI.  
<https://doi.org/10.1121/1.4971077>

8. Cameron, S., Dillon, H., Chong-White, N., **Beechey, T.**, Young, T., & Mealings, K. (2016). Development and evaluation of the Phoneme Identification Test (PIT) for assessment of frequency and timing discrimination skills in children. *Audiology Australia National Conference 2016*, Melbourne, Australia.
9. Cameron, S., Dillon, H., Chong-White, N., **Beechey, T.**, Young, T., & Mealings, K. (2016). Development and evaluation of a test for the assessment of syllabic parsing ability in children. *Audiology Australia National Conference 2016*, Melbourne, Australia.
10. Mejia, J., Dillon, H., Van Hoessel, R., Beach, E., Glyde, H., Yeend, I., **Beechey, T.**, McClelland, M., O'Brien, A., Buchholz, J., Sharma, M., Valderrama, J., & Williams, W. (2015). Loss of speech perception in noise – causes and compensation. *Proceedings of the International Symposium on Auditory and Audiological Research*, 5, 205-216.  
<https://proceedings.isaar.eu/index.php/isaarproc/article/view/2015-24>

## TEACHING

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### **The physics and biology of spoken language** *Department of Speech-Language-Hearing Sciences*

Spring 2021

*University of Minnesota, Twin Cities*

- Role: Lecturer
- Course type: Undergraduate
- Modality: Online

### **Advanced rehabilitative audiology** *Department of Speech-Language-Hearing Sciences*

Spring 2020

*University of Minnesota, Twin Cities*

- Role: Lecturer
- Course type: Graduate
- Modality: In-person and online

### **Introductory phonetics for linguists** *Department of Linguistics*

Spring 2007

*University of Massachusetts, Amherst*

- Role: Teaching assistant
- Course type: Undergraduate
- Modality: In-person

### **Introduction to linguistic theory** *Department of Linguistics*

Spring 2006; Autumn 2006

*University of Massachusetts, Amherst*

- Role: Teaching associate (Lecturer)
- Course type: Undergraduate
- Modality: In-person

### **People and their language** *Department of Linguistics*

Spring 2005; Autumn 2005

*University of Massachusetts, Amherst*

- Role: Teaching assistant
- Course type: Undergraduate
- Modality: In-person

## GRANTS

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### **Medical Research Foundation**

September 2021–August 2024

- Project title: *Incorporating active strategies in speech testing to predict communication performance*
- Role: PI
- Amount: £302,348

#### **Starkey Hearing Technologies**

January 2017–December 2017

- Project title: *Changes in the conversational behavior of people with hearing impairment across realistic acoustic environments*
- Role: PI
- Amount: \$50,000 (USD)

### **SERVICE**

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#### **Editorial Board Member**

January 2022–December 2022

*Journal of Speech, Language, and Hearing Research*

- Review of scientific manuscripts

#### **Expert Panel Member**

December 2021

*Centre for Rehabilitation & Ageing Research, University of Nottingham*

- Mock panel member for Health Education England Postdoctoral Bridging Programme presentations

#### **Peer-reviewing**

- *American Journal of Audiology*
- *Ear and Hearing*
- *Frontiers in Psychology*
- *Journal of the American Academy of Audiology*
- *Journal of Speech, Language, and Hearing Research*
- *Trends in Hearing*

Publons profile: <https://publons.com/researcher/1681512/timothy-beechey/peer-review/>

### **CLINICAL CERTIFICATION**

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#### **Accredited Audiologist**

January 2012–Present

*Audiology Australia*

### **PROFESSIONAL MEMBERSHIPS**

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#### **Audiology Australia**

January 2011–Present

*Full member*

#### **Acoustical Society of America**

January 2016–Present

*Associate member*

### **SKILLS AND KNOWLEDGE**

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**Statistics**  
**Programming**  
**Linguistics**

Bayesian statistics, resampling methods, Monte Carlo simulation  
Julia, SQL, R (including writing C++ extensions)

Acoustic phonetic analysis, Optimality Theory, functional grammar,  
ToBI intonation transcription, Conversation Analysis, normal and  
abnormal language acquisition, speech production development

**Clinical**

Principles of person-centred and family-centred care, adult and paediatric  
objective and behavioral hearing assessment, hearing aid fitting and  
verification, cochlear implant mapping, intra-operative monitoring of  
cochlear implant and bone-anchored hearing aid function, counselling and  
communication training