

- Affiliations**
- Neurobiology of Language group | Post-doctoral fellow
The Basque Center on Brain, Cognition, and Language (BCBL), San Sebastián, Spain
 - Neuroscience of Language Lab | Research affiliate
Psychology Department, New York University (NYU), New York

Academic Employment

- 10/2022– **Post-doctoral fellow**—[Neurobiology of Language research group](#) | Advisor: Manuel Carreiras
The Basque Center on Brain, Cognition, and Language (BCBL)
- 2021– **Consultant**—[the SAVANT project](#) | PI: Linnaea Stockall (Queen Mary University of London, UK)
funded by the Economic and Social Research Council (ESRC; UK)

Education

- 2016–2022 **Ph.D. in Psychology** | Cognition & Perception program, Psychology Department, New York University
Neuroscience of Language Lab | Advisor: Alec Marantz
Dissertation: *Processing Latent Information in Language Comprehension*
- 2008–2011 **Master of Science (M.Sc.) in Biomedical Engineering**, *summa cum laude* | Technion–I.I.T, Haifa
Neural Interface Engineering Lab | Advisor: Shy Shoham
Thesis: *Diffraction Multiphoton Neural Interfaces*
- 2004–2008 **Bachelor of Science (B.Sc.) in Biomedical Engineering**, *summa cum laude* | Technion–I.I.T, Haifa
Major: Medical imaging and biological signal processing

Honors, Awards, and Grants

- 2021–2023 Voted Society for the Neurobiology of Language's student & post-doc representative
- 2020 Abstract Merit Awards, honorable mention—Society for the Neurobiology of Language
- 2020–2021 NYU's GSAS Dean's Dissertation Fellowship (\$29,500/year)
- 2019 NYU's GSAS Dean's Student Travel Grant (\$500)
- 2018 Cold Spring Harbor Labs' *Genetics & Neurobiology of Language* course funding (\$700)
- 2018 Society for the Neurobiology of Language Travel Award (\$550)
- 2018 NYU's GSAS Dean's Student Travel Grant (\$500)
- 2016–2022 NYU's GSAS MacCracken Fellowship (\$29,000/year)
- 2012 Winner of the Young Palestinian Writer Award—A. M. Qattan Foundation, Ramallah (\$2000)
- 2011 Graduated *summa cum laude* (1st) from M.Sc. in Biomedical Engineering, Technion—I.I.T
- 2009–2011 Excellence Scholarship during M.Sc.—Israeli Council for Higher Education (\$20,000/year)
- 2008 Graduated *summa cum laude* (1st) from B.Sc. In Biomedical Engineering, Technion—I.I.T
- 2004–2008 President's Honor Roll for scholastic achievement, 8 B.Sc. semesters, Technion—I.I.T

Publications and Proceedings

- **Matar S.** & Marantz A. (2022). Models of processing complex spoken words: the naïve, the passive, and the predictive, *Proceedings of the 2022 Conference on Cognitive Computational Neuroscience*. [Link](#)
- **Matar S.**, Dirani J., Marantz A., & Pykkänen L. (2021). Left posterior temporal cortex is sensitive to syntax within conceptually matched Arabic expressions, *Scientific Reports* 11, 7181. [Link](#)

- **Matar S.**, Pykkänen L., & Marantz A. (2019). Left occipital and right frontal involvement in syntactic category prediction: MEG evidence from Standard Arabic, *Neuropsychologia* 135, 107230. Special issue: *The Neural basis of Linguistic Prediction* (ed: Mante Nieuwland, Nina Kazanina). [Link](#)
- †Farah N., †Zoubi A., †**Matar S.**, Golan L., Marom A., Butson C.R., Brosh I. & Shoham S. (2013). Holographically patterned activation using photo-absorber induced neural–thermal stimulation, *Journal of Neural Engineering* 10(5) 056004 [†equal contribution]. [Link](#)
- **Matar S.**, Golan L. & Shoham S. (2011). Reduction of two-photon holographic speckle using shift-averaging, *Optics Express* 19(27), 25891-25899. [Link](#)
- **Matar S.**, Golan L., Farah N., Reutsky I. & Shoham S., Holographic photo-stimulation for dynamic control of neuronal population activity, *Proceedings of the IEEE EMBS 4th International Conference on Neural Engineering*. [Link](#)

Manuscripts in preparation

- **Matar S.** & Marantz A. Bilateral temporal involvement in predictive morphological segmentation and processing during spoken word comprehension (*in preparation*)
- **Matar S.**, King R., Leong W., & Pykkänen L. Interaction between morphological processing and resolving long-distance dependencies during reading comprehension (*in preparation*)

Invited Talks

- **Matar S.** (2022, April). Processing Latent Information in Language Comprehension. *The Basque Center on Cognition, Brain and Language (virtual)*.
- **Matar S.** (2021, April). Left posterior temporal cortex is sensitive to syntax within conceptually matched Arabic expressions. *The Basque Center on Cognition, Brain and Language (virtual)*.

Conference Talks

- **Matar S.** & Marantz A., Early cortical sensitivity to ambiguous morpheme boundaries in speech: MEG evidence from Arabic. 28th edition of *Architectures and Mechanisms for Language Processing Conference (AMLaP)*; 2022 September 7-9; York, UK.
- **Matar S.**, Dirani J., Marantz A. & Pykkänen L., Dissociating syntactic processing and semantic composition in the left temporal lobe: MEG evidence from Standard Arabic. *12th annual meeting of the Society for the Neurobiology of Language (SNL)*; 2020 Oct 21-24 (*virtual*).
- **Matar S.**, Dirani J., Pykkänen L. & Marantz A., Syntactic category prediction during reading: MEG evidence from adjectival modification in Standard Arabic. *Experimental Arabic Linguistics Conference 2018 (EXAL18)*; 2019 Oct 28-29; Al Ain, United Arab Emirates.
- **Matar S.**, Dirani J., Pykkänen L. & Marantz A., Syntactic category prediction during reading: MEG evidence from adjectival modification in Standard Arabic. *1st Workshop on Predictive Processing*; 2018 Jun 20-22; San Sebastián, Spain.
- **Matar S.** & Shoham S., Two-photon holographic photo-stimulation for dynamic control of neuronal population activity. *18th Annual Meeting of Israeli Society for Neuroscience*; 2009 Nov 22-24; Eilat, Israel.

Conferences Poster Presentations

- **Matar S.** & Marantz A., Bilateral temporal involvement in predictive morphological segmentation and processing during spoken word comprehension: MEG evidence from Arabic. *Neuroscience 2022 (annual SfN meeting)*; 2022 Nov 12-16; San Diego, USA.
- **Matar S.** & Marantz A., Bilateral temporal involvement in predictive morphological segmentation and processing during spoken word comprehension: MEG evidence from Arabic. Poster and “Slam”. *14th annual meeting of the Society for the Neurobiology of Language (SNL)*; 2022 Oct 5-8; Philadelphia, USA.
- **Matar S.** & Marantz A., Models of processing complex spoken words: the naïve, the passive, and the predictive. *Conference on Cognitive Computational Neuroscience (CCN)*; 2022 August 25-28; San Francisco, USA.
- †Tulling M., †**Matar S.**, Abrams E., Gueguera R., Hauptman M., Parrish A., Phillips S., & Pykkänen L., Naturalistic Expository Discourse Processing in School-Aged Children and Adults. *12th annual meeting of the Society for the Neurobiology of Language (SNL)*; 2020 Oct 21-24 (*virtual*). [†equal contribution].

- **Matar S.**, Dirani J., Marantz A. & Pylkkänen L., Lower LIFG activation for higher syntactic complexity: MEG evidence from conceptually-matched Arabic stimuli. *11th annual meeting of the Society for the Neurobiology of Language (SNL); 2019 Aug 20-22; Helsinki, Finland.*
- **Matar S.**, Dirani J., Marantz A. & Pylkkänen L., Left inferior frontal gyrus less active for greater syntactic complexity: MEG evidence from minimal Arabic phrases and sentences. *Cognitive Neuroscience Society (CNS); 2019 Mar 23-26; San Francisco, California.*
- **Matar S.**, King R., Leong W., & Pylkkänen L., Interaction of morphological and long-distance dependency processing: MEG evidence. Poster and “Slam”. *10th annual meeting of the Society for the Neurobiology of Language; 2018 Aug 16-18; Québec, Canada.*
- **Matar S.**, Dirani J., Pylkkänen L. & Marantz A., Syntactic category prediction during reading: MEG evidence from adjectival modification in Standard Arabic. *31st Annual CUNY Sentence Processing Conference; 2018 Mar 15-17; Davis, California.*
- **Matar S.**, Golan L., Farah N., Reutsky I. & Shoham S., Holographic photo-stimulation for dynamic control of neuronal population activity. *IEEE EMBS 4th International Conference on Neural Engineering; 2009 Apr 29-May 2; Antalya, Turkey.*

Academic Teaching

Prospective Teaching Interests (UG=Undergraduate | G=Graduate)

General	Introduction to Psychology (UG)
Cognition	Cognitive Psychology (UG/G) Cognitive Neuroscience (UG/G)
Language	Cognitive Science of Language (UG/G) Neuroscience of Language (UG/G)
Quantitative	Advanced Statistics (UG) Introduction to Analysis of Neural Data (UG)
Seminars	Predictive Mechanisms in Language Processing (G) Natural Language Processing in the Brain (G)

Teaching Experience (TA=Teaching Assistant | CA=Class Assistant | UG=Undergraduate | G=Graduate)

Guest lectures:

11/2018	Language <i>Cognition</i> (NYU Psychology, UG)
10/2018	Predictive Processing in Comprehension <i>Neural Bases of Language</i> (NYU Psych/Linguistics, UG+G)
12/2017	<i>Language and Mind</i> Lecture on <i>Neurolinguistics</i> (NYU Psychology and Linguistics, UG)

New York University (NYU):

Spring 2022	CA <i>Introduction to Psychology</i> Psychology, UG Instructor: Andrei Cimpian
Fall 2021	TA <i>Perception</i> Psychology, UG Instructor: Michael Landy
Spring 2021	CA <i>Introduction to Psychology</i> Psychology, UG Instructor: Eric Knowles
Fall 2020	CA <i>Introduction to Psychology</i> Psychology, UG Instructor: Jay Van Bavel
Fall 2019	TA <i>Cognitive Neuroscience</i> Psychology, UG Instructor: Pascal Wallisch
Fall 2018	TA <i>Cognition</i> Psychology, UG Instructor: Pascal Wallisch
Fall 2017	TA <i>Language and Mind</i> Psych & Linguistics, UG Instructors: Brian McElree, Ailís Cournane

The Technion—I.I.T.:

Winter 2010	TA <i>Analysis of Biological Signals</i> Division of Advanced Education, G Instructor: Shy Shoham
Fall 2009	TA <i>Medical Instrumentation</i> Biomedical Engineering, UG/G Instructor: Alex Vilensky

Supervision

- 2020–2021 *Abdelrahim Qaddoumi*, Research Assistant, New York University
Project: Towards a model of automatic diacritization of Arabic speech-to-text output
- 2020–2021 *Michael Marinaccio*, Research Assistant, New York University
Project: Annotation of naturalistic speech at different levels of linguistic hierarchy
- 2017 *Wesley Leong*, Intern, New York University
Project: Interaction between morphological complexity and long-distance dependencies in reading comprehension

Additional Training

- Summer 2022 Deep Learning Course — *NeuroMatch Academy*
Project: *Detecting anti-immigration bias in different news sources using word embeddings*
- Winter 2022 Level 3 Operator of MRI (Siemens Prisma 3T, New York University)
- Spring 2019 Diffusion MRI and Tractography workshop series (Instructor: Pablo Ripollés) — New York University
- Fall 2018 *Science Communication Course* — Arthur L. Carter Journalism Institute — New York University,
- Summer 2018 *Genetics & Neurobiology of Language Course* — Cold Spring Harbor Laboratories, New York
- Spring 2014 *Examiner Certificate, Spanish as a Foreign Language* — Instituto Cervantes, Spain (Tel Aviv branch)
- 2012–2013 *Teacher Certificate, Spanish as a Foreign Language* — Instituto Cervantes, Spain (Tel Aviv branch)
- Summer 2004 *XLAB — Experimental Laboratory for Young People* — Göttingen, Germany

Service

- University service
 - Mentor for three junior PhD students—NYU Psychology Department (2020–2022)
 - Judge on annual NYU Masters Psychology Research Conference (2019–2022)
- Elected representative
 - *Society for the Neurobiology of Language* (SNL)
2021–2023 Student and post-doc representative to the SNL Board
- ad hoc* reviewer
 - Journals: *Scientific Reports*; *NeuroImage*; *Journal of Neurolinguistics*
 - Conferences: *Psycholinguistics in Iceland—Parsing and Prediction* (PIPP 2019)
- Conference organization
 - Program committee: the 14th annual meeting of SNL (Philadelphia, 10/2022)
 - Organizing committee: Neuroscience of Language (Abu Dhabi, 4/2019)
- Knowledge transfer
 - Neuroscience of Language Lab (2021–2022)
Organized weekly *Methods Meetings* for horizontal knowledge transfer

Additional Employment

- 2012–2016 Staff Member, Arabic Psychometric Testing Team | *National Institute for Testing & Evaluation*, Jerusalem
- 2012–2014 Teacher of Arabic and Spanish as Foreign Languages | *Centro Hispano Palestino*, Ramallah
- 2012–2016 Translator and Interpreter (Arabic–English–Spanish–Hebrew) | *Roa'a Translation and Publishing*, Haifa
- 2011–2012 Signal processing engineer | *DHS medical start-up company*, Nazareth

Language Skills

Arabic Fluent

English Fluent

Hebrew Fluent

Spanish Fluent (C2*)

French Upper Intermediate (B2*)

Catalan Upper Intermediate (B2*)

Polish Beginner (A2)

* Official diploma obtained in accordance with the Common European Framework of Reference for Languages.

Research and Technical Skills

- Programming languages: Python | MATLAB | R | C | SQL | Fortran | Pascal
- Data acquisition and analysis: MEG and EEG data | structural and diffusion MRI volumes | in-person and online behavioral data | data acquisition boards
- Online experimentation: Amazon MTurk | Gorilla | Prolific
- Experimental setups: Optical and electrical set-ups for *in vitro* stimulation and imaging of neurons
- Graphics: Adobe Illustrator, Photoshop, ImageReady, InDesign | InkScape
- Other software: Praat | Simulink | Solidworks

Literary Publications

- **North of Andalusia, West of the Homeland** (شمال الأندلس، غرب الوطن) - a collection of short stories. Al-Ahilyya Publishing - Amman, Jordan (2014).
Winner of the 2012 Young Palestinian Writer Award (A. M. Qattan Foundation, Ramallah).