

Francis Mollica

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Employment

- 2020 **Lecturer in Computational Cognitive Science**, *School of Informatics*, University of Edinburgh, Scotland.
- 2019-2020 **Postdoctoral Research Fellow**, *University of Melbourne*.

Education

- 2014-2019 **PhD Brain and Cognitive Sciences**, *University of Rochester*, Rochester, NY.
- 2014-2017 **MA Brain and Cognitive Sciences**, *University of Rochester*, Rochester, NY.
- 2010-2014 **BA Linguistics**, *University at Buffalo*, Buffalo, NY.
- 2010-2014 **BS Psychology**, *University at Buffalo*, Buffalo, NY.

Honors and Awards

- 2020 **The Pip Pattison Early Career Research Award**, *University of Melbourne*.
- 2018 **Student Travel Award**, *CUNY Sentence Processing*.
- 2017 **Student Travel Award**, *Cognitive Science Society*.
- 2016 **Honorable Mention**, *NSF Graduate Research Fellowship Program*.
- 2015 **Student Travel Award**, *Cognitive Science Society*.
- 2015 **Honorable Mention**, *NSF Graduate Research Fellowship Program*.
- 2014 **Outstanding Senior Award**, *Dept. of Linguistics, University at Buffalo*.
- 2012 **Grace W. Capen Academic Award**, *University at Buffalo*.

Funding

- 2017-2018 **Donald M. and Janet C. Bernard Fellowship**, *University of Rochester*.
- 2015 **Discover Grant**, *University of Rochester*.
- 2010-2014 **Provost Scholarship**, *University at Buffalo*.
- 2010-2014 **Johnson Controls Foundation Scholarship**.

Journal Publications

Mollica, F., C. Shain, M. Siegelman, J. Affourtit, H. Kean, C. Pallier, and E. Fedorenko. (in prep) *Cortical representation of the constituent structure of sentences: A partial replication of Pallier et al. (2011)*.

Mollica, F. and S. Piantadosi. (in prep) *Cultural influences in exact number word acquisition: A rational constructivist data analysis*.

Long, M., I. Moore, **Mollica, F.**, and P. Rubio-Fernández. (under review) *Contrast perception as a visual heuristic in the formulation of referential expressions*.

Rubio-Fernández, P., **Mollica, F.**, and J. Jara-Ettinger. (in revision) *Speakers and listeners exploit word order for communicative efficiency: A cross-linguistic investigation*.

Mollica, F. and S. T. Piantadosi. (in revision) *Logical word learning: The case of kinship*.

Register*, Y., **Mollica, F.**, and S. T. Piantadosi. (under review) *Semantic verification is flexible and sensitive to context*.

2020

Mollica, F.[†], M. Siegelman[†], E. Diachek, S.T. Piantadosi, R. Futrell, Z. Mineroff, H. Kean, P. Qian, and E. Fedorenko. “[Composition is the core driver of the language-selective network](#)”. In: *Neurobiology of Language* 1.1, pp. 104–134.

2019

Rubio-Fernández, P., **Mollica, F.**, M. Oraa Ali, and E. Gibson. “[How do you know that? Automatic belief inferences in passing conversation](#)”. In: *Cognition* 193, p. 104011.

2019

Mollica, F. and S. T. Piantadosi. “[Humans store about 1.5 megabytes of information during language acquisition](#).” In: *Royal Society Open Science* 6.3, p. 181393.

2018

Martí, L., **Mollica, F.**, S. T. Piantadosi, and C. Kidd. “[Certainty is primarily determined by past performance during concept learning](#)”. In: *Open Mind* 2.2, pp. 47–60.

2017

Mollica, F. and S. T. Piantadosi. “[How data drives early word learning: a cross-linguistic waiting time analysis](#).” In: *Open Mind* 1.2, pp. 67–77.

Conference Proceedings

2020

Mollica, F. and C. Kemp. “[An efficient communication analysis of morpho-syntactic grammatical features](#).” In: *Proceedings of the 42th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

- 2020 **Mollica, F.**, G. Bacon, Y. Xu, T. Regier, and C. Kemp. “[Grammatical marking and the tradeoff between code length and informativeness.](#)” In: *Proceedings of the 42th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- 2018 Yan, S.[†], **Mollica, F.**[†], and M. K. Tanenhaus. “[A context constructivist account of contextual diversity.](#)” In: *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- 2018 Oey*, L., **Mollica, F.**, and S. T. Piantadosi. “[Adults use gradient similarity information in compositional rules.](#)” In: *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
- 2017 **Mollica, F.** and S. T. Piantadosi. “[An incremental information theoretic buffer supports sentence processing.](#)” In: *Proceedings of the 39th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society., pp. 805–810.
- 2017 **Mollica, F.**, S. Wade, and S. T. Piantadosi. “[A rational constructivist account of the characteristic to defining shift.](#)” In: *Proceedings of the 39th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society., pp. 799–804.
- 2016 Martí, L., **Mollica, F.**, S. T. Piantadosi, and C. Kidd. “[What determines human certainty?](#)” In: *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society., pp. 698–703.
- 2015 **Mollica, F.** and S. T. Piantadosi. “[Towards semantically rich and recursive word learning models.](#)” In: *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society., pp. 1607–1612.
- 2015 **Mollica, F.**, S. T. Piantadosi, and M. K. Tanenhaus. “[The perceptual foundation of linguistic context.](#)” In: *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society., pp. 1613–1618.

Conference Talks

- 2020 **Mollica, F.** and C. Kemp. *An efficient communication analysis of morpho-syntactic grammatical features*. The 42nd Annual Conference of the Cognitive Science Society. virtual Toronto, ON.
- 2020 **Mollica, F.** and C. Kemp. *An fitness function for grammaticalization*. The Evolution of Morphological Systems Workshop Evolang XIII, Brussels, Belgium.
- 2019 **Mollica, F.**, J. Jara-Ettinger, and S.T. Piantadosi. *A cross-linguistic Bayesian data analysis of number word learning*. Biennial Meeting of the Society for Research in Child Development. Baltimore, MD.

- 2018 Yan, S.[†], **Mollica, F.**[†], and M. K. Tanenhaus. *A context constructivist account of contextual diversity*. The 40th Annual Conference of the Cognitive Science Society. Madison, WI.
- 2018 Oey*, L., **Mollica, F.**, and S. T. Piantadosi. *Adults use gradient similarity information in compositional rules*. The 40th Annual Conference of the Cognitive Science Society. Madison, WI.
- 2018 Oey*, L., **Mollica, F.**, and S. T. Piantadosi. *Like a horse but striped: Combining similarity and rules in conceptual representation*. The 32nd Annual National Conference on Undergraduate Research. Oklahoma City, OK.
- 2018 **Mollica, F.**[†], S. Yan[†], and M.K. Tanenhaus. *A context constructivist account of contextual diversity*. The 31st CUNY Sentence Processing Conference. Davis, CA.
- 2017 **Mollica, F.** and S.T. Piantadosi. *An incremental information theoretic buffer supports sentence processing*. The 39th Annual Conference of the Cognitive Science Society. London, UK.
- 2017 **Mollica, F.**, S. Wade, and S.T. Piantadosi. *A rational constructivist account of the characteristic to defining shift*. The 39th Annual Conference of the Cognitive Science Society. London, UK.
- 2017 **Mollica, F.** and S.T. Piantadosi. *An incremental information theoretic buffer supports sentence processing*. The 30th CUNY Sentence Processing Conference. Cambridge, MA.
- 2015 **Mollica, F.** and S.T. Piantadosi. *Characterizing data-driven word learning: A cross-linguistic analysis*. More on Development. Columbus, OH.
- 2015 **Mollica, F.**, S.T. Piantadosi, and M.K. Tanenhaus. *The perceptual foundation of linguistic context*. The 37th Annual Conference of the Cognitive Science Society. Los Angeles, CA.

Thesis

- 2019 **Mollica, F.** "[The Human Learning Machine: Rational Constructivist Models of Conceptual Development](#)". PhD thesis. University of Rochester.

* supervised undergraduate researcher

† co-authored work (equal contribution)

Teaching

- 2018 BCS 259: Language Development, *Teaching Assistant*, Spring, University of Rochester
- 2017 BCS 153: Cognition, *Teaching Assistant*, Spring, University of Rochester

- 2016
BCS 310: Senior Seminar, *Co-Instructor*, Fall, University of Rochester
- 2016
Building the Language Machine: An Intro to Computational Linguistics, *Instructor*, Summer, Rochester Scholars Program
- 2016
BCS 153: Cognition, *Teaching Assistant*, Spring, University of Rochester
- 2015
The Language Scientist: Linguist, Psychologist, Computer Scientist, *Instructor*, Summer, Rochester Scholars Program
- 2013
LIN 207: Language, Society and the Individual, *Teaching Assistant*, Fall, University at Buffalo
- 2013
PSY 207: Psychological Statistics, *Teaching Assistant*, Summer, University at Buffalo

Professional Activities

Editorial

- 2020-present: Associate Editor at *Collabora Psychology*
- 2020-present: Program committee for *Cognitive Science Conference*

Reviewing

- Journals:** Behavioral Research Methods, Cognition, Language, Cognition & Neuroscience, Morphological Typology and Linguistic Cognition, Nature Human Behavior, PLOS One
- Conferences:** ACL, CogSci, COLING, CUNY

Selected Talks

- 2019
The Human Learning Machine: Computational Models of Conceptual Development
Computational Cognitive Development Group *Rutgers University*, July, 2019
- 2018
The Human Learning Machine: Computational Models of Conceptual Development
Computation and Cognitive Development Lab *Yale*, April, 2018
- 2018
Simplicity, data and inter-related systems: A computational account of kinship term acquisition. Children's Acquisition of Kinship Knowledge: Theory and Method Workshop *University of Bristol*, January, 2018
- 2017
An information-theoretic buffer supports language processing. The Computational Psycholinguistics Lab *MIT*, November, 2017
- 2017
A contextual diversity hypothesis of lexical retrieval in online language processing. The Language Lab *MIT*, October, 2017
- 2017
How data drives word learning: A cross-linguistic analysis. The Language Lab *MIT*, September, 2017