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

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)*.

Long, M., I. Moore, **Mollica, F.**, and P. Rubio-Fernandez. (in prep) *Color contrast as a visual heuristic in the formulation of referential expressions*.

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

Rubio-Fernández, P., **Mollica, F.**, and J. Jara-Ettinger. (under review) *Why searching for a blue triangle is different in English than in Spanish.*

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*.

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

2018 Yan, S.†, **Mollica, F.**†, and M. K. Tanenhaus. "A context constructivist account of contextual diversity." In: *Proceedings of the 40th Annual Meeting 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 Meeting 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 Meeting 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 Meeting 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 Meeting 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 Meeting 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 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.

Conference Posters

2020 **Mollica, F.** and C. Kemp. *An efficient communication account of grammatical features.* The 33rd CUNY Sentence Processing Conference. Amherst, MA.

2019 **Mollica, F.** and S.T. Piantadosi. *A cross-linguistic Bayesian data analysis of number word learning*. Budapest CEU Conference on Cognitive Development. Budapest, Hungary.

2018 Rubio-Fernández, P. and **Mollica, F.** *Incremental contrasts: Why spotting a blue triangle is different in English than in Spanish.* The 31st CUNY Sentence Processing Conference. Davis, CA.

2018 **Mollica, F.** and E. Gibson. *Towards a psychological evaluation metric for semantic representations.* The 31st CUNY Sentence Processing Conference. Davis, CA.

2016 Galette, C.*, **Mollica, F.**, and R. Raizada. *Unconvering the representation of ambiguous words.* The 30th Annual National Conference on Undergraduate Research. Asheville, NC.

2015 **Mollica, F.**, S.T. Piantadosi, and M.K. Tanenhaus. *The perceptual foundation of linguistic context.* The 28th CUNY Sentence Processing Conference. 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)

Departmental/Colloquia/Invited 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* Computational Cognitive Science Lab *University of Melbourne*, October, 2018

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

2016 *Formalizing conceptual development: The case of kinship.* NRT Mini-Conference *University of Rochester*, September, 2016

2016 *How data drives word learning: A cross-linguistic analysis.* Evolution and Development Talk Series *University of Rochester*, April, 2016

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

Ad-hoc Reviewing

Journals: Behavioral Research Methods, Language, Cognition & Neuroscience, Morphological Typology and Linguistic Cognition, Nature Human Behavior, PLOS One

Conferences: ACL, CogSci, COLING, CUNY