Carlos A. Velázquez Vargas

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EDUCATION

Princeton University — *2021 -*
Ph.D. candidate in Psychology
Primary supervisor: Jordan Taylor, Ph.D.
Secondary supervisor: Nathaniel Daw, Ph.D.

Princeton University — *2019 - 2021*
M.A. in Psychology
Primary supervisor: Jordan Taylor, Ph.D.

National Autonomous University of Mexico (UNAM) — *2013 - 2017*
B.S. in Psychology
Primary supervisor: Arturo Bouzas, Ph.D.

GRANTS AND FELLOWSHIPS

Cognitive Science Society (Cogsci) Travel Grant, Sydney, Australia. — *2023*

Graduate Student Fellowship in Cognitive Science, Princeton University. — *2022-2023*

Walker McKinney '50 Life Sciences Fellowship, Princeton University. — *2019-2020.*

Computational and Systems Neuroscience (COSYNE) undergraduate travel grant award, Salt Lake, Utah. — *March 2017*

SEP-UNAM-FUNAM fellowship at the University of Arizona. — *July 2016 - January 2017*

Fellowship at the Program for the Support of Research Projects and Technological Innovation (PAPIIT IG120818, UNAM). — *March - August 2018*

Fellowship at the Program for the Support of Projects for Innovation and Improvement of Teaching (PAPIME PE310016, UNAM). — *January 2017 - 2018*

PREPRINTS

Velázquez, C., Daw, N.D., Taylor, A. J. (submitted). Learning generalizable visuomotor mappings for *de novo* skills. Retrieved from https://www.biorxiv.org/content/10.1101/2023.07.18.549179v1.

Poli, F., Koolen, M., **Velázquez, C.**, Ramos-Sanchez, J., Meyer, M., Mars, R. B., Rommelse, N., Hunnius, S. (submitted). Autistic traits foster effective curiosity-driven exploration. https://psyarxiv.com/jnfdw

PEER-REVIEWED PUBLICATIONS

Velazquez-Vargas, C. A, Taylor, J. (2023). Exploring human learning and planning in grid navigation with arbitrary mappings. Proceedings of the Annual Meeting of the Cognitive Science Society, 45. Retrieved from https://escholarship.org/uc/item/9gk999d2

Velázquez, C., Villarreal, M., and Bouzas, A. (2019). Velocity estimation in reinforcement learning. *Computational Brain and Behavior*. Retrieved from https://doi.org/10.1007/s42113-019-00026-1

Villarreal, M., **Velázquez, C.**, Baroja, J. L., Segura, A., Bouzas, A., Lee, M.D. (2019). Bayesian methods applied to the generalized matching law. *Journal of the Experimental Analysis of Behavior*.

BOOK CHAPTERS

Bouzas, A., **Velázquez, C.**, Villarreal, M. (2019). The future of Behavioral Sciences. *Especulaciones y certezas en torno al futuro de la ciencia*. Instituto de Matemáticas UNAM.

CONFERENCE TALKS

Velazquez, C., Taylor, A. (2023) Exploring human learning and planning in grid navigation with arbitrary mappings. Cognitive Science Society.

Wilterson, S. A., Wilterson, A. I., **Velazquez, C.**, McDougle, S., Taylor, J. A. (2020) Acquisition and adaptation of de novo sensorimotor mappings. Neural Control of Movement Conference.

Villarreal, M.,**Velázquez, C.**, Baroja, J.L, Segura, A., Bouzas, A. (2018). Bayesian analysis of the Generalized Matching Law in a concurrent random-interval random-ratio schedule. Biennal Meeting of the International Society of Comparative Psychology. Los Angeles, California.

Velázquez, C., Bouzas, A. (2018). Velocity of change in the environment in the delta-rule model of reinforcement. 51st Annual Meeting of the Society for Mathematical Psychology. Madison, Wisconsin.

Velázquez, C., Bouzas, A. (2017). Prediction in a gradually changing environment. At the symposium *Models of adaptability in changing environments. Studies on detection, preference and probability.* International Seminar of Behavior and its Applications. Tlaxcala, Mexico.

Bouzas, A.,**Velázquez, C.** (2017). Behavioral adaptation to changes in the statistical properties of the environment. Mexican Society of Behavior Analysis Meeting. Aguascalientes, Mexico.

CONFERENCE POSTERS

Kim, O., A. **Velázquez, C.**, Taylor, J. A. (2022). Mental rotation incurs a cognitive cost in a visuomotor adaptation task. Society for Neuroscience.

Velázquez, C., Taylor, J. A. (2022). Learning novel sensorimotor mappings in a grid navigation task. The Multi-disciplinary Conference on Reinforcement Learning and Decision Making

Velázquez, C., Taylor, J. A. (2022). Effects of training variability on the use of flexible sensorimotor mappings. Society for the Neural Control of Movement Conference.

Kim, O. A., **Velázquez, C.**, Taylor, J. A. (2022). The use of mental rotation strategies in a visuomotor adaptation task incurs a distinct cognitive effort cost. Society for the Neural Control of Movement Conference.

Velázquez, C., Taylor, J. (2021). Contextual cues can form separate motor memories in a novel action-outcome association task. Society for the Neural Control of Movement (Virtual Meeting).

Velázquez, C., Villarreal, M., and Bouzas, A. (2019). Prediction in the face of gradual and abrupt changes in the environment. 52nd Annual Meeting of the Society for Mathematical Psychology. Montreal, Canada.

Villarreal, M., **Velázquez, C.**, Bouzas, A. (2019). Choice behavior in dynamic Random-Interval Random-Ratio schedules of reinforcement. 52nd Annual Meeting of the Society for Mathematical Psychology. Montreal, Canada.

INVITED TALKS

Baby and Child Research Center
Donders Institute for Cognition, Netherlands *June 2021*

Center of Studies and Research of Behavior
University of Guadalajara, Mexico *June 2021*

TEACHING EXPERIENCE

Assistant of Instruction in the class Cognitive Psychology *Spring 2024*
at the Department of Psychology of Princeton University.

Assistant of Instruction in the class Cognitive Psychology *Fall 2022*
at the Department of Psychology of Princeton University.

Assistant of Instruction in the class Computational Models of Cognition, *Fall 2021*
at the Department of Psychology and Computer Science of Princeton University.

Assistant of Instruction in the class the course Introduction to Psychology, *Fall 2020*
at the Department of Psychology of Princeton University.

Assistant of Instruction in the class Learning and Adaptive Behavior, *Spring 2017*
at the Department of Psychology of the National Autonomous University of Mexico.

PRE-DOCTORAL RESEARCH EXPERIENCE

Research Assistant at the Laboratory of Adaptive Behavior directed by *2015-2019*
Professor Arturo Bouzas at the Department of Psychology of the National
Autonomous University of Mexico.

PROGRAMMING SKILLS

Python, R, Matlab, HTML, CSS, JavaScript.

LANGUAGE SKILLS

English (Fluent) and Spanish (native).