

Valerie Reyna

Web Bio

Information

Biography

Biographical Statement

Valerie Reyna is Professor of Human Development, Director of the Human Neuroscience Institute, Co-director of the Cornell University Magnetic Resonance Imaging Facility, and Co-director of the Center for Behavioral Economics and Decision Research. Her research integrates brain and behavioral approaches to understand and improve judgment, decision making, and memory across the life span. Her recent work has focused on the neuroscience of risky decision making and its implications for health and well-being, especially in adolescents; applications of cognitive models and artificial intelligence to improving understanding of genetics (e.g., in breast cancer); and medical and legal decision making (e.g., about jury awards, medication decisions, and adolescent culpability). She is a developer of fuzzy-trace theory, a model of the relation between mental representations and decision making that has been widely applied in law, medicine, and public health.

Dr. Reyna is a Fellow of the Society of Experimental Psychologists, the oldest and most prestigious honorary society in experimental psychology. She is also a Fellow of the American Association for the Advancement of Science, the Divisions of Experimental Psychology, Developmental Psychology, Educational Psychology, and Health Psychology of the American Psychological Association, and the Association for Psychological Science. Dr. Reyna has been a Visiting Professor at the Mayo Clinic, a permanent member of study sections of the National Institutes of Health, and a member of advisory panels for the National Science Foundation, MacArthur Foundation, and the National Academy of Sciences. For example, she is on the Advisory Committee of the National Research Council's Division of Behavioral and Social Sciences and Education (DBASSE) which oversees 10 boards and standing committees, and serves as the Chief Scientific Liaison and representative to the Federation of Associations in Behavioral and Brain Sciences of the Psychonomic Society.

Taking a leave from academia, Dr. Reyna helped create a new research agency in

the U.S. Department of Education, where she oversaw grant policies and programs. Her service has also included leadership positions in organizations dedicated to equal opportunity for minorities and women, and on national executive and advisory boards of centers and grants with similar goals, such as the Arizona Hispanic Center of Excellence, National Center of Excellence in Women's Health, and Women in Cognitive Science (supported by a National Science Foundation ADVANCE leadership award).

Dr. Reyna is the incoming Editor of *Psychological Science in the Public Interest*, winding up a second term as Associate Editor of *Psychological Science*, and sits on the editorial board of such journals as *Decision* and *Journal of Experimental Psychology: Learning, Memory, and Cognition*, leading journals in psychology. Dr. Reyna has received many years of research support from private foundations and U.S. government agencies, and currently serves as principal investigator of several grants and awards (e.g., from the National Institutes of Health).

Teaching

Professional

Current Professional Activities

Editor, *Psychological Science in the Public Interest*

Associate Editor, *Psychological Science*

Associate Editor, *Developmental Review*

Editorial Board, *Psychological Review*, *Decision*, *Psychonomic Bulletin and Review*, *Journal of Experimental Psychology: Learning, Memory, & Cognition*, *Journal of Behavioral Decision Making*

Advisory (steering) Committee, National Research Council's Division of Behavioral and Social Sciences and Education, National Academy of Sciences.

Chief Scientific Liaison, Governing Board of the Psychonomic Society.

Chair, Communications Committee, Governing Board of the Psychonomic Society.

MacArthur Foundation's Law and Neuroscience Network, Group to Individual project

Roundtable and Advisory Committee, Research Center for Excellence in Clinical Preventive Services, funded by the Agency for Healthcare Research and Quality, 2011-present.

Committee on Values Clarification of the International Patient Decision Aids Standards

U.S. Food and Drug Administration Risk Communication Advisory Committee

National Academies of Sciences' Board on Behavioral, Cognitive, and Sensory Sciences.

Editorial Advisory Board, Biennial Bronfenbrenner Conference Series.

National Advisory Board, Center for Learning and Human Development, Miami University.

Research

Current Research Activities

See Biographical Statement.

Topics: Judgment and Decision Making; Risk and Rationality; False Memory; Aging and Cognitive Impairment; Cognitive and Social Neuroscience; Developmental Neuroscience.

Dr. Reyna's research focuses on dual processes in memory, judgment, and decision making, on how these processes change with age and expertise, and on their implications for risky decision making in law, health, medicine, and neuroscience. She is a developer of fuzzy-trace theory, a theory of memory and its relation to higher cognitive processes.

Extension

Current Extension Activities

Director of Extension, Department of Human Development, Cornell University

Director of Central New York outreach programs for risk reduction and obesity-prevention in youth.

Education

Education

Ph.D. 1981 - Rockefeller University Experimental Psychology

B.A. 1976 - Clark University Psychology (Summa Cum Laude)

Courses

Courses Taught

Courses Taught (selected)

HD 4010 Independent Study, Department of Human Development, Cornell University

HD 4200 Laboratory in Risk and Rational Decision Making, Cornell University

HD 4250 Translational Research on Decision Making, Department of Human Development, Cornell University

HD 4990 Honors Thesis, Department of Human Development, Cornell University

HD 6020 Research on Risk and Rational Decision Making, Department of Human Development, Cornell University

HD 7000 Directed Readings, Department of Human Development, Cornell University

HD 7010 Empirical Research, Department of Human Development, Cornell University

HD 7030 Teaching Assistantship, Department of Human Development, Cornell University

HD 8990, Master's Thesis, Department of Human Development, Cornell University

HD 9990, Doctoral Thesis, Department of Human Development, Cornell University

Websites

Related Websites

[Search and Download Reyna Publications](#)

[Laboratory for Rational Decision Making](#)

[Risky Decision Making in Adolescents](#)

[Medical Decision Making](#)

[Workshop on Higher Cognition in Adolescents and Young Adults](#)

[Judgment, Decision Making, and Social Judgment Project](#)

[Human Development Today e-News](#)

[Human Development and Law Dual PhD/JD Degree program](#)

[Cornell MRI Facility](#)

Human Neuroscience Institute

Administration

Administrative Responsibilities

Director, Human Neuroscience Institute, Department of Human Development, Cornell University

Director of Extension, Department of Human Development, Cornell University

Co-Director, Cornell University Magnetic Resonance Imaging Facility

Co-Director, Center for Behavioral Economics and Decision Research

Publications

Selected Publications

Reyna, V. F., Chick, C. F., Corbin, J. C., & Hsia, A. N. (2014). Developmental reversals in risky decision-making: Intelligence agents show larger decision biases than college students. *Psychological Science*, 25(1), 76-84. doi: 10.1177/0956797613497022

Reyna, V. F., & Mills, B. A. (2014). Theoretically motivated interventions for reducing sexual risk taking in adolescence: A randomized controlled experiment applying fuzzy-trace theory. *Journal of Experimental Psychology: General*, 143(4), 1627-1648. doi: 10.1037/a0036717

Reyna, V. F., & Zayas, V. (Eds.). (2014). *The neuroscience of risky decision making*. Washington, DC: American Psychological Association.

Reyna, V. F., Croom, K., Staiano-Coico, L., Lesser, M. L., Lewis, D., Frank, J., & Marchell, T. (2013). Endorsement of a personal responsibility to adhere to the minimum drinking age law predicts consumption, risky behaviors, and alcohol-related harms. *Psychology, Public Policy, and Law*, 19(3), 380-394.

Reyna, V. F. (2012). A new intuitionism: Meaning, memory, and development in fuzzy-trace theory. *Judgment and Decision Making*, 7(3), 332-359.

Reyna, V.F. (2012). Risk perception and communication in vaccination decisions: A fuzzy-trace theory approach. *Vaccine*, 30, 3790-3797. doi:10.1016/j.vaccine.2011.11.070

Reyna, V.F., Chapman, S., Dougherty, M., Confrey, J. (2012) *The adolescent brain: Learning, reasoning, and decision making*. Washington DC: American Psychological Association.

- Reyna, V. F., Estrada, S. M., DeMarinis, J. A., Myers, R. M., Stanis, J. M., & Mills, B. A. (2011). Neurobiological and memory models of risky decision making in adolescents versus young adults. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 37(5), 1125-1142. doi:10.1037/a0023943
- Reyna, V. F., & Brainerd, C. J. (2011). Dual processes in decision making and developmental neuroscience: A fuzzy-trace model. *Developmental Review*, 31, 180-206. doi: 10.1016/j.dr.2011.07.004
- Reyna, V. F., Nelson, W., Han, P., & Dieckmann, N. F. (2009). How numeracy influences risk comprehension and medical decision making. *Psychological Bulletin*, 135, 943-973.
- Lloyd, F. J., & Reyna, V. F. (2009). Clinical gist and medical education: Connecting the dots. *Journal of the American Medical Association*, 302(12):1332-1333.
- Reyna, V. F. (2008). [A theory of medical decision making and health: Fuzzy-trace theory](#). *Medical Decision Making*, 28, 850-865.
- Reyna, V. F., & Farley, F. (2006). [Risk and rationality in adolescent decision making: Implications for theory, practice, and public policy](#). *Psychological Science in the Public Interest*, 7, 1-44.
- Reyna, V.F., & Lloyd, F. (2006). Physician decision making and cardiac risk: Effects of knowledge, risk perception, risk tolerance, and fuzzy processing. *Journal of Experimental Psychology: Applied*, 12, 179-195.
- Reyna, V.F. (2004). How people make decisions that involve risk. A dual-processes approach. *Current Directions in Psychological Science*. 13, 60-66.