

Daniel R. Cavagnaro

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California State University, Fullerton
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EDUCATION

Ph.D. Mathematical Behavioral Sciences, University of California, Irvine, 2004-07
Advisor: Jean-Claude Falmagne

Master of Arts in Mathematics, University of California, Los Angeles, 2002-04

Bachelor of Science in Mathematics, with honors, Santa Clara University, 1998-2002
Minor in Philosophy

EMPLOYMENT

Lecturer *August 2011 to present*
California State University Fullerton
Department of Information Systems and Decision Sciences

Lecturer *September 2010 to June 2011*
The Ohio State University
Department of Psychology

Postdoctoral Researcher *August 2008 to June 2011*
The Ohio State University
Primary Advisors: Jay Myung and Mark Pitt

NRSA Fellow in Quantitative Methods *August 2007 to August 2008*
University of Illinois, Urbana-Champaign
Primary Advisor: Michel Regenwetter

PUBLICATIONS

Peer Reviewed Journal Articles

1. Regenwetter, M., & **Cavagnaro, D.R.** (in press). Removing the Shackles of Regression Analysis: How to Stay True to Your Theory of Binary Response Probabilities. *Psychological Methods*.
2. **Cavagnaro, D.R.**, Sensoy, B.A., Wang, Y., & Weisbach, M.S. (in press). Measuring Institutional Investors' Skill from their Investments in Private Equity. *Journal of Finance*.
3. **Cavagnaro, D.R.**, & Davis-Stober, C.P. (in press). A Model-Based Test for Treatment Effects With Probabilistic Classification. *Psychological Methods*.
4. Davis-Stober, C.P., McCarthy, D., **Cavagnaro, D.R.**, Price, M., Brown, N. & Park, S. (in press). Is Cognitive Impairment Related to Violations of Rationality? An Alcohol Intoxication Study Testing Transitivity of Preferences. *Decision*.

5. Aranovich, G., **Cavagnaro, D.R.**, Pitt, M.A., Myung, J.I., & Mathews, M.D. (2017). A Model-based Analysis of Decision Making under Risk in Obsessive-Compulsive and Hoarding Disorders. *Journal of Psychiatric Research*, 90, 126-132.
6. Regenwetter, M., **Cavagnaro, D.R.**, Popova, A., Guo, Y., Zwilling, C., Lim, S.H., & Stevens, J.R. (2017). Heterogeneity and Parsimony in Intertemporal Choice. *Decision*, 5(2), 63-94.
7. **Cavagnaro, D.R.**, Aranovich, G., McClure, S., Pitt, M.A., & Myung, J.I. (2016). On the functional form of temporal discounting: An optimized adaptive test. *Journal of Risk and Uncertainty*, 52(3).
8. Davis-Stober, C.P., Brown, N., & **Cavagnaro, D.R.** (2015). Individual Differences in the Algebraic Structure of Preferences. *Journal of Mathematical Psychology*, 66, 70-82.
9. **Cavagnaro, D.R.** & Davis-Stober, C.P. (2014). Transitive in our preferences but transitive in different ways: an analysis of choice variability. *Decision*, 1(2), 102-122.
10. **Cavagnaro, D.R.**, Pitt, M.A., Gonzalez, R., & Myung, J.I. (2013). Discriminating Among Probability Weighting Functions Using Adaptive Design Optimization. *Journal of Risk and Uncertainty*, 47(3), 255-289.
11. **Cavagnaro, D.R.**, Gonzalez, R., Myung, J.I. & Pitt, M.A. (2013). Optimal Decision Stimuli for Risky Choice Experiments: An Adaptive Approach. *Management Science*, 52(2), 358-375.
12. Myung, J.I., **Cavagnaro, D.R.**, & Pitt, M.A. (2013). A Tutorial on Adaptive Design Optimization. *Journal of Mathematical Psychology*. 57(3-4), 53-67.
13. **Cavagnaro, D.R.**, Pitt, M.A., & Myung, J.I. (2011). Model Discrimination through Adaptive Experimentation. *Psychonomic Bulletin & Review*, 18(1), 204-210.
14. **Cavagnaro, D.R.**, Myung, J.I, Pitt, M.A. & Kujala, J.V. (2010). Adaptive Design Optimization: A Mutual Information Based Approach to Model Discrimination in Cognitive Science. *Neural Computation*, 22(4), 887-905.
15. Regenwetter, M., Grofman, B., Popova, A., Messner, W., Davis-Stober, C.P. & **Cavagnaro, D.R.** (2008). Behavioural social choice: a status report. *Philosophical Transactions of the Royal Society B*, 364(1518), 833-843. [Top-10 Biology Journal]
16. **Cavagnaro, D.R.** (2007). Projection of a medium. *Journal of Mathematical Psychology*, 52(1), 55-63.

Book Chapters

1. Myung, J.I., **Cavagnaro, D.R.**, & Pitt, M.A. (2017). Model Evaluation and Selection. In W.H. Batchelder, H. Colonius, E. Dzhafarov, and J.I. Myung, (Eds.), *The new handbook of mathematical psychology, Volume 1: Measurement and methodology*. London: Cambridge University Press: pp. 552-598.
2. **Cavagnaro, D.R.** (2015). Computational Approaches to Model Evaluation. In J.D. Wright (Ed.), *International Encyclopedia of Social and Behavioral Sciences, 2nd edition, Vol 4*. Oxford: Elsevier. pp. 475-479.

3. **Cavagnaro, D.R.**, Myung, J.I. & Pitt, M.A. (2013). Mathematical Modeling. In T. Little (Ed.), *Oxford Handbook of Quantitative Methods Vol. 1*. Oxford University Press. pp. 438-553.

Peer Reviewed Conference Papers

1. **Cavagnaro, D.R.**, Pitt, M.A. & Myung, J.I. (2010). Adaptive Design Optimization in Experiments with People. *Advances in Neural Information Processing Systems*, 22, 234-242. MIT Press.
2. **Cavagnaro, D.R.**, Tang, Y., Myung, J.I. & Pitt, M.A. (2009). Better data with fewer participants and trials: Improving experiment efficiency with adaptive design optimization. In N. A. Taatgen & H. Van Rijn (eds.), *Proceedings of the 31th Annual Conference of the Cognitive Science Society*. (pp. 93-98). Austin, TX: Cognitive Science Society.
3. Myung, J.I., Pitt, M.A., Tang, Y. & **Cavagnaro, D.R.** (2009). Bayesian Adaptive Design of Psychology Experiments. In *Proceedings of the 2nd International Workshop in Sequential Methodologies*.

Working Papers

1. "Institutional Investors' Investments in Private Equity: The More the Better?" (with Yingdi Wang), submitted.
2. "Quantitative Testing of Theories of Binary Choice Using Bayesian Inference" (with Christopher Zwilling, Michel Regenwetter, Shiao Hong Lim, Bryanna Fields, and Yixin Zhang), submitted.
3. "Distribution-free Fechnerian Binary Choice" (with Michel Regenwetter), in preparation.

RESERCH GRANTS

1. *CSUF Junior Intramural Research Grant*
"Better data and shorter experiments using ADO for random preference models."
Funding Period: 2015-2016
Role: PI
2. *CSUF Centers and Institutes Planning and Expansion Program Grant*
"Decision Research Center"
Funding period: 2013-2014
Role: PI
3. *National Science Foundation (NSF), Extreme Science and Engineering Discovery Environment (XSEDE) award SES120010*
"Testing Multiple Specifications of Theories of Decision Making."
Funding period: 2012-2013
Role: Co-PI

AWARDS AND FELLOWSHIPS

1. *The Scholar Award*, Mihaylo College of Business and Economics, CSUF (2014).
2. National Science Foundation (NSF) Travel award for Workshop on Web-based research in Decision and Risk Management (2011, January).
3. Conference Board of the Mathematical Sciences (CBMS) Travel award for Regional Conference: Bayesian Nonparametric Statistical Methods (2010, August).
4. University of California Regents Pre-Dissertation Fellowship (2007).

INVITED TALKS

1. Probabilistic Specification and Quantitative Testing of Decision theories: Bayesian Approaches. *EMPG Workshop on Probabilistic Specification and Quantitative Testing of Decision Theories*. Copenhagen, DK (2016, June).
2. On the Functional Form of Temporal Discounting: An Optimal Adaptive Test. *COGSCI Workshop on Optimizing Experimental Designs: Theory, Practice and Applications*, Pasadena, CA (2015, July).
3. Adaptive Design Optimization for Temporal Discounting Experiments. *University of Illinois Urbana-Champaign, Quantitative Psychology Brownbag*, (2014, April).
4. Adaptive Design Optimization for Temporal Discounting Experiments. *California State University Fullerton, Economics Department Brownbag* (2014, March).
5. Discriminating Among Temporal Discounting Models Using Adaptive Design Optimization. *California State University Long Beach, College of Business Administration* (2014, February).
6. Discriminating Among Probability Weighting Functions Using Adaptive Design Optimization. *Institute for Mathematical Behavioral Sciences Colloquium Series* (2013, May).
7. Discriminating Among Probability Weighting Functions Using Adaptive Design Optimization. *California Institute of Technology Research Seminar* (2013, September).
8. Optimal Decision Stimuli for Risky Choice Experiments: An Adaptive Approach. *University of California San Diego, Psychology Department Brownbag* (2013, March).
9. Optimal Decision Stimuli for Risky Choice Experiments: An Adaptive Approach. *The Gary A. Anderson Graduate School of Management Seminar Series, University of California, Riverside* (2013, February).
10. Optimal Decision Stimuli for Risky Choice Experiments: An Adaptive Approach. *California State University Fullerton, Department of Information Systems and Decision Sciences Research Seminar* (2011, November).
11. Optimal Decision Stimuli for Risky Choice Experiments: An Adaptive Approach. *Institute for Mathematical Behavioral Sciences Colloquium Series* (2012, April).
12. Optimal Decision Stimuli for Risky Choice Experiments: An Adaptive Approach. *Workshop on Testing Theories of Choice Behavior, Max Planck Institute for Human Development, Berlin, Germany* (2012, July).
13. Better Data from Fewer Participants and Trials: Adaptive Design Optimization. *University of Missouri, Psychological Sciences Research Seminar* (2010, December).

14. Adaptive Design Optimization for Comparing Generalized Utility Theories.
The Ohio State University Quantitative Psychology Brownbag (2010, November).
15. Much ADO about Model Discrimination.
The Ohio State University, Quantitative Psychology Brownbag (2009, October).
16. Much ADO about Model Discrimination.
University of Michigan, Design Science Research Seminar (2009, September).
17. Much ADO about Model Discrimination.
University of Illinois Urbana-Champaign, Quantitative Psychology Brownbag (2009, September).

CONFERENCE PRESENTATIONS

1. **Cavagnaro, D.R.**, & Davis-Stober, C.P. (2017). Distributional Change We Can Believe In. *55th Edwards Bayesian Research Conference*, Fullerton, CA, USA.
2. **Cavagnaro, D.R.**, Regenwetter, M & Popova, A. (2016). Distribution-Free Fechnerian Binary Choice. *The 17th Conference on the Foundations of Utility and Risk (FUR)*, University of Warwick Business School, Coventry, UK.
3. **Cavagnaro, D.R.**, Regenwetter, M. & Popova, A. (2016). Distribution-Free Fechnerian Binary Choice. *2016 Meeting of the European Mathematical Psychology Group*, University of Copenhagen, Denmark.
4. **Cavagnaro, D.R.**, Regenwetter, M. & Popova, A. (2015). Distribution-Free Fechnerian Binary Choice. *The 48th Meeting of the Society for Mathematical Psychology*, Newport Beach, CA, USA.
5. Aranovich, G. & **Cavagnaro, D.R.** (2015). Mind the (Explanatory) Gap. *The 53rd Edwards Bayesian Research Conference*, Fullerton, CA, USA.
6. **Cavagnaro, D.R.**, Aranovich, G., McClure, S., Myung, J.I. & Pitt, M.A. (2014). Discriminating Among Temporal Discounting Models Using Adaptive Design Optimization. *The 34th Annual Meeting of the Society for Judgment and Decision Making*, Long Beach, CA, USA.
7. **Cavagnaro, D.R.**, Aranovich, G., McClure, S., Myung, J.I. & Pitt, M.A. (2014). Discriminating Among Temporal Discounting Models Using Adaptive Design Optimization. *The 16th Conference on the Foundations of Utility and Risk (FUR)*, Erasmus School of Economics, Rotterdam, Netherlands.
8. **Cavagnaro, D.R.**, Aranovich, G., McClure, S., (2014). One Parameter, Two Parameter, Three Parameter, Four? *The 52nd Edwards Bayesian Research Conference*, Fullerton, CA, USA.
9. Davis-Stober, C.P., Brown, N. & **Cavagnaro, D.R.** (2013). Evaluating Decision Makers' Preferences via Lexicographic Semiorders. *International Choice Modeling Conference*, Sydney, Australia.

10. **Cavagnaro, D.R.**, Pitt, M.A., Gonzalez, R. & Myung, J.I. (2013). Adaptive Experiments to Discriminate Probability Weighting Functions. *The 46th Annual Meeting of the Society for Mathematical Psychology*, Berlin, Germany.
11. **Cavagnaro, D.R.** & Davis-Stober, C.P. (2013). My Lovely Money Pumps. *The 51st Edwards Bayesian Research Conference*, Fullerton, CA, USA.
12. **Cavagnaro, D.R.** & Davis-Stober, C.P. (2012). A Bayesian Analysis of the Transitivity of Preference Axiom. *The 45th Annual Meeting of the Society for Mathematical Psychology* Columbus, OH, USA.
13. **Cavagnaro, D.R.** (2012). America's Next Top Model. *The 50th Edwards Bayesian Research Conference*, Fullerton, CA, USA.
14. Myung, J.I., **Cavagnaro, D.R.**, Gonzalez, R., & Pitt, M. A. (2011). Active Learning Approach to Risky Choice Experiments. *Eleventh Annual Summer Interdisciplinary Conference*, Cala Gonone, Sardinia.
15. Zwilling, C., Regenwetter, M., **Cavagnaro, D.R.**, & Popova, A. (2011). Quantitative Testing of Decision Theories: Probabilistic Specification and Empirical Results from a Frequentist and Bayesian Framework. *The 2011 Meeting of the European Mathematical Psychology Group*, Paris, France.
16. **Cavagnaro, D.R.**, Gonzalez, R., Pitt, M. A. & Myung, J.I. (2011). Adaptive Experiments to Discriminate Probability Weighting Functions. *The 32nd Annual Meeting of the Society for Judgment and Decision Making*, Seattle, WA, USA.
17. **Cavagnaro, D.R.**, Gonzalez, R., Pitt, M. A. & Myung, J.I. (2011). An adaptive experiment to assess probability weighting functions. *The 44th Annual Meeting of the Society for Mathematical Psychology*, Boston, MA, USA.
18. Zwilling, C., **Cavagnaro, D.R.**, & Regenwetter, M. (2011). Quantitative Testing of Decision Theories: A Bayesian Counterpart. *The 44th Annual Meeting of the Society for Mathematical Psychology*, Boston, MA, USA.
19. **Cavagnaro, D.R.** (2011). Much ADO about Model Discrimination. *The 49th Annual Edwards Bayesian Research Conference*, Fullerton, CA, USA.
20. **Cavagnaro, D.R.**, Myung, J.I., Pitt, M. A. & Gonzalez, R. (2010). Adaptive Experimentation Methods for Discriminating Risky Choice Models. *The 31st Annual Meeting of the Society for Judgment and Decision Making*, Saint Louis, MO, USA.
21. Myung, J.I., **Cavagnaro, D.R.** & Pitt, M. A. (2010). Adaptive optimal experimental design for model discrimination. *The 51st Annual Meeting of the Psychonomic Society*, Saint Louis, MO, USA.
22. **Cavagnaro, D.R.**, Myung, J.I. & Pitt, M. A. (2010). Adaptive Design Optimization for Discriminating Generalized Utility Models. *The 43rd Annual Meeting of the Society for Mathematical Psychology*, Portland, OR, USA.
23. Myung, J.I., Pitt, M.A., & **Cavagnaro, D.R.** (2010). Cognitive Modeling Repository. *The 43rd Annual Meeting of the Society for Mathematical Psychology*, Portland, OR, USA.

24. Myung, J.I., **Cavagnaro, D.R.** & Pitt, M. A. (2010). Squeezing Every Ounce of Information from an Experiment: Adaptive Design Optimization. *Ninth Annual Summer Interdisciplinary Conference*, Bend, OR, USA.
25. Myung, J.I., **Cavagnaro, D.R.** & Pitt, M.A. (2010). Bayesian Adaptive Optimal Design for Discriminating Models of Cognition. *The 41st European Mathematical Psychology Group Meeting*, University of Jyväskylä, Finland.
26. Myung, J.I., **Cavagnaro, D.R.** & Pitt, M.A. (2010). Bayesian adaptive optimal design for discriminating models of cognition. *2010 World Meeting of the International Society for Bayesian Analysis*, Alicante, Spain.
27. **Cavagnaro, D.R.**, Myung, J.I, Pitt, M.A. & Kujala, J.V. (2009). Adaptive Design Optimization in Experiments with People. *Twenty-Third Annual Conference on Neural Information Processing Systems*, Vancouver, BC, Canada.
28. **Cavagnaro, D.R.**, Myung, J.I, Pitt, M.A. & Kujala, J.V. (2009). Adaptive Design Optimization: a Mutual Informatin Based Approach to Model Discrimination. *The 42nd Annual Meeting of the Society for Mathematical Psychology*, Amsterdam, Netherlands.
29. **Cavagnaro, D.R.**, Tang, Y., Myung, J.I. & Pitt, M.A. (2009). Better data with fewer participants and trials: Improving experiment efficiency with adaptive design optimization. *The 31th Annual Conference of the Cognitive Science Society*, Amsterdam, Netherlands.
30. **Cavagnaro, D.R.** (2008). When I want your opinion I'll tell you what it is. *46th Annual Edwards Bayesian Research Conference*, Fullerton, CA, USA.
31. **Cavagnaro, D.R.** (2007). Projection of a Medium. *The 40th Annual Meeting of the Society for Mathematical Psychology*, Irvine, CA, USA.
32. **Cavagnaro, D.R.** (2007). Media and Learning Spaces. *Institute for Mathematical Behavioral Sciences 5th Annual Graduate Student Research Conference*. Irvine, CA, USA.
33. **Cavagnaro, D.R.** (2006). Projection of a Medium. *The 39th Annual Meeting of the Society for Mathematical Psychology*, Vancouver, BC, Canada.

TEACHING

California State University Fullerton, Undergraduate Level

1. Business Analytics I
2. Business Analytics II
3. Quantitative Business Analysis: Probability & Statistics
4. Quantitative Business Analysis: Statistics & Management Science

Ohio State University, Graduate Level

1. Experimental Design and Analysis of Variance

Ohio State University, Undergraduate Level

1. Quantitative and Statistical Methods
2. Introduction to Data Analysis

University of California Irvine, Undergraduate Level (Teaching Assistant)

1. Computer Based Research in the Social Sciences (computer lab)
2. General Probability and Statistics (SocSci 10a, 10b, 10c; discussion sections)
3. Probability and Statistics in the Social Sciences (SocSci 9a, 9b, 9c; discussion section)

PROFESSIONAL MEMBERSHIPS

1. Institute for Operations Research and the Management Sciences (INFORMS)
2. Society for Judgment and Decision Making (SJDM)
3. Society for Mathematical Psychology (MathPsych)
4. National Center for Faculty Development & Diversity (NCFDD)

PROFESSIONAL SERVICE

Leadership

Co-Director of the CSUF Decision Research Center (2012 – present).

Organized Conferences

Edwards Bayesian Research Conference (Annually, 2013 - present)

Editorial Board Membership

Frontiers in Psychology: Psychopathology (2015 – present).

Grant Reviewing (alphabetical)

Air Force Office of Scientific Research (AFOSR)
National Science Foundation (NSF)

Ad Hoc Journal Reviewing (alphabetical)

Acta Psychologica
Behavior Research Methods
British Journal of Mathematical Psychology
Cognition
Cognitive Psychology
Cognitive Science
Decision
International Journal of Information Technology & Decision Making
Journal of Behavioral Decision Making
Journal of Experimental Psychology: General
Journal of Mathematical Psychology
Journal of Risk and Uncertainty

Management Science
Omega
Psychometrika
Psychonomic Bulletin & Review

SPOKEN LANGUAGES

1. English
2. Spanish
3. Mandarin Chinese