# Christian C. Luhmann, Ph.D.

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(Updated 10/2/14)

#### **Education:**

2000 - 2006	Ph.D. in Cognitive Psychology, Vanderbilt University
1995 - 2000	B.S. in Computer Science, Northeastern University

#### **Academic Positions:**

2014 – present	Associate Professor, Stony Brook University
2008 - 2014	Assistant Professor, Stony Brook University
2006 - 2008	Postdoctoral Fellow, Yale School of Medicine

### **Professional Affiliations**

Psychonomic Society Cognitive Science Society Association for Psychological Science Society for Judgment and Decision-Making Society for Mathematical Psychology

### **Editorial Service:**

### **Review Editor:**

Frontiers in Decision Neuroscience (2012 – present) Frontiers in Cognitive Science (2010 – present)

### Ad hoc Reviewer for:

Psychological Review, Journal of Experimental Psychology: General, Journal of Experimental Psychology: Language, Memory & Cognition, Cognitive Psychology, Journal of Neuroscience, Neuron, Cerebral Cortex, Human Brain Mapping, Psychophysiology, Psychonomic Bulletin & Review, Cognition, Addiction Biology, Cognitive Science, Journal of Experimental Social Psychology, Memory & Cognition, Acta Psychologica, Biological Psychology, Thinking and Reasoning, Cognition and Emotion, The European Journal of Cognitive Psychology, Journal of Vision, NeuroImage, Journal of Applied Research in Memory and Cognition

#### **Grant Review Panels:**

National Science Foundation, Panelist (2014)
National Science Foundation, Graduate Fellowship Review Panel (2014)
National Science Foundation, Graduate Fellowship Review Panel (2013)
National Science Foundation, Ad hoc panelist
National Institutes of Health, Ad hoc panelist

### **Peer-Reviewed Publications:**

- \*Indicates a mentored graduate student author
- \*\*Indicates a mentored undergraduate/high school student author
- \*Bixter, M. T., \*Trimber, E. M. & Luhmann, C. C. (2014). Contagion effects in intertemporal decision making. In P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.), *Proceedings of the 36<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 1929-1934). Austin, TX: Cognitive Science Society.
- **Luhmann, C. C.**, & \*Bixter, M. T. (2014). Subjective hazard rates rationalize "irrational" temporal preferences. In P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.), *Proceedings of the 36<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 904-909). Austin, TX: Cognitive Science Society.
- \*Bixter, M. T., & Luhmann, C. C. (2014). Shared losses reduce sensitivity to risk: A laboratory study of moral hazard, *Journal of Economic Psychology*, 42, 63-73.
- **Luhmann, C. C.** (2013). Discounting of delayed rewards is not hyperbolic. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 39, 1274-1279.
- **Luhmann, C. C.**, & Rajaram, S. (2013). Mnemonic diffusion: An agent-based modeling investigation of collective memory. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Proceedings of the 35<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 936-941). Austin, TX: Cognitive Science Society.
- **Luhmann, C. C.**, & \*\*Pak, S. S. (2013). Won't you think of the children?: Traits predicting intergenerational preferences. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Proceedings of the 35<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 2949-2954). Austin, TX: Cognitive Science Society.
- \*Bixter, M. T., & **Luhmann, C. C.** (2013). Adaptive intertemporal preferences in foraging-style environments. *Frontiers in Decision Neuroscience*, 7.
- \*Liu, P., & Luhmann, C. C. (2013). Evidence that a transient, but cognitively demanding process underlies forward blocking. *Quarterly Journal of Experimental Psychology*, 66,744-766.

- Kujawa, A., Smith, E., **Luhmann, C. C.**, & Hajcak, G. (2013). The feedback negativity reflects favorable compared to non-favorable outcomes based on global, not local, alternatives. *Psychophysiology*, *50*, 2, 134–138.
- Weinberg, A., **Luhmann, C. C.**, Bress, J. N., & Hajcak, G. (2012). Better late than never? The effect of feedback delay on ERP indices of reward processing. *Cognitive, Affective, and Behavioral Neuroscience*, 12, 671-677.
- **Luhmann, C. C.** (2011). Integrating spatial context learning over contradictory signals: Recency effects in contextual cueing. *Visual Cognition*, *19*, 846-862.
- **Luhmann, C. C.**, & Ahn, W. (2011). Order effects during learning: Expectations and interpretations. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 37*, 568-587.
- \*Liu, P., & Luhmann, C. C. (2011). Blocking requires uncertainty about novel cues. In L. Carlson, C. Hölscher, & T. Shipley (Eds.), *Proceedings of the 33<sup>rd</sup> Annual Conference of the Cognitive Science Society* (pp. 1697-1702). Austin, TX: Cognitive Science Society.
- **Luhmann, C. C.**, \*\*Ishida, K., & Hajcak, G. (2011). Intolerance of uncertainty and decisions about delayed, probabilistic rewards. *Behavior Therapy*, 42, 378-386.
- **Luhmann**, C. C. (2009). Temporal decision-making: Insights from cognitive neuroscience. *Frontiers in Behavioral Neuroscience*, 3.
- Kim, N. S., **Luhmann, C. C.**, Pierce, M. L., & Ryan, M. M. (2009). The conceptual centrality of causal cycles. *Memory & Cognition*, *37*, 744-758.
- **Luhmann, C. C.**, Chun, M. M., Yi, D., Lee, D., & Wang, X. (2008). Neural dissociation of delay and uncertainty in inter-temporal choice. *Journal of Neuroscience*, 28, 14459-14466.
- **Luhmann, C. C.**, & Ahn, W. (2007). BUCKLE: A model of unobserved cause learning. *Psychological Review, 114*, 657-677.
- **Luhmann, C. C.**, Ahn, W., & Palmeri, T. J. (2006). Theory-based categorization under speeded conditions. *Memory & Cognition*, *34*, 1102-1111.
- **Luhmann, C. C.**, & Ahn, W. (2006). Evaluating the role of unobserved causes in causal learning. In R. Sun & N. Miyake (Eds.), *Proceedings of the 28<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 1741-1746). Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- **Luhmann, C. C.**, & Ahn, W. (2005). The meaning and computation of causal power: A critique of Cheng (1997) and Novick and Cheng (2004). *Psychological Review*, 112, 685-692.
- **Luhmann, C. C.**, & Ahn, W. (2005). Postscript: Abandonment of causal power. *Psychological Review*, 112, 692–693.

- **Luhmann, C. C.** (2005). Confounded: Causal inference and the requirement of independence. In B. G. Bara, L. Barsalou, & M. Bucciarelli (Eds.), *Proceedings of the 27<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 1355-1360). Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- **Luhmann, C. C.**, & Ahn, W. (2003). Evaluating the causal role of unobserved variables. In R. Alterman & D. Kirsh (Eds.), *Proceedings of the 25<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 734-739). Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- **Luhmann, C. C.**, Ahn, W., & Palmeri, T. J. (2002). Theories and similarity: Categorization under speeded conditions. In W. D. Gray & C. D. Schunn (Eds.), *Proceedings of the 24<sup>th</sup> Annual Conference of the Cognitive Science Society* (pp. 590-595). Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- Ahn, W., Marsh, J. K., **Luhmann, C. C.**, & Lee, K. (2002). Effect of theory-based feature correlations on typicality judgments. *Memory & Cognition*, 30, 107-118.
- Ahn, W., Kalish, C., Gelman, S. A., Medin, D. L., **Luhmann, C.**, Atran, S., Coley, J. D., & Shafto, P. (2001). Why essences are essential in the psychology of concepts. *Cognition*, 82, 59-69.

## **Book Chapters and Book Reviews:**

- Rottman, B., Ahn, W., & **Luhmann, C. C.** (2011). When and how do people reason about unobserved causes? In P. M. Illari, F. Russo, & J. Williamson (Eds.), *Causality in the Sciences* (pp. 150-183), Oxford: Oxford University Press.
- Ahn, W., Marsh, J. K., & **Luhmann, C. C.** (2007). Dynamic interpretations of covariation data. In Gopnik, A., & Schultz, L. (Eds.), *Causal Learning: Psychology, Philosophy, and Computation* (pp. 280-293). Oxford: Oxford University Press.
- Ahn, W., & Luhmann, C. C. (2005). Demystifying theory-based categorization. In L. Gershkoff-Stowe & D. Rakison (Eds.), *Building Object Categories in Developmental Time* (pp. 277-300). Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- Ahn, W., **Luhmann, C. C.**, & Marsh, J. (2003). Review of "The big book of concepts" by Gregory Murphy. *Acta Psychologica*, 113, 227-229.

#### **Presentations:**

\*Bixter, M. T., Trimber, E. M. & **Luhmann, C. C.** (2014, July). *Contagion Effects in Intertemporal Decision Making*. Poster presented at the 36<sup>th</sup> Annual Conference of the Cognitive Science Society, Quebec City, Canada.

- **Luhmann, C. C.**, & \*Bixter, M. T. (2014, July). *Subjective Hazard Rates Rationalize "Irrational" Temporal Preferences*. Presentation at the 36<sup>th</sup> Annual Conference of the Cognitive Science Society, Quebec City, Canada.
- **Luhmann, C. C.**, & \*Bixter, M. T. (2014, July). *Subjective Hazard Rates Imply Non-Stationary Intertemporal Preferences*. Presentation at the 47<sup>th</sup> Annual Conference of the Society for Mathematical Psychology, Quebec City, Canada.
- \*Bixter, M. T., & Luhmann, C. C. (2013, November). Adjusting, but From Where? Judgment in the Presence of Multiple Anchors. Poster presented at the Annual Meeting of the Society for Judgment and Decision Making, Toronto, Canada.
- \*Bixter, M. T., \*Trimber, E., M., & **Luhmann, C. C.** (2013, November). *Social Transmission of Intertemporal Preferences During Collaborative Decision Making*. Poster presented at the 53<sup>rd</sup> Annual Meeting of the Psychonomic Society, Toronto, Canada.
- **Luhmann, C. C.** & Rajaram, S. (2013, November). *Social Transmission of Memory: An Agent-Based Modeling Investigation*. Poster presented at the 53<sup>rd</sup> Annual Meeting of the Psychonomic Society, Toronto, Canada.
- **Luhmann, C. C.**, Congleton, A. R., \*Zhou, X., & Rajaram, S. (2013, November). *When Less is More: Retrieval-Refined Representations Produce the Testing Effect*. Poster presented at the 53<sup>rd</sup> Annual Meeting of the Psychonomic Society, Toronto, Canada.
- \*Arfer, K. A., & **Luhmann, C. C.** (2013, August). *The Predictive Accuracy of Intertemporal-Choice Models*. Presentation at the 46<sup>th</sup> Annual Meeting of the Society for Mathematical Psychology, Potsdam, Germany.
- **Luhmann, C. C.**, & Rajaram, S. (2013, August). *Mnemonic Diffusion: An Agent-Based Modeling Investigation of Collective Memory*. Presentation at the 35<sup>th</sup> Annual Conference of the Cognitive Science Society, Berlin, Germany.
- **Luhmann, C. C.**, & \*\*Pak, S. S. (2013, August). *Won't You Think of the Children?: Traits Predicting Intergenerational Preferences*. Poster presented at the 35<sup>th</sup> Annual Conference of the Cognitive Science Society, Berlin, Germany.
- **Luhmann, C. C.,** & \*Liu, P. (2013, March). *Causal Learning as Iterated Causal Reasoning*. Presentation at the 2013 Meeting of the Eastern Psychological Association, New York, NY.
- **Luhmann, C. C.** (2012, December). *The Evolutionary Value (and Costs) of Ambiguity Aversion*. Presentation at Imprecision Friday, Applied Biomathematics, Setauket, NY.
- Ferson, S., Goode, J., **Luhmann. C.,** McGill, W., O'Rawe, J., & Siegrist, J. (2012, December). *Traditional and Ludic Quantification of the Meanings of Hedges in Numeric Expressions*. Presentation at the Meeting of the Society for Risk Analysis, San Francisco, CA.

- \*Liu, P., & Luhmann, C. C. (2012, November). *Cognitive Constraints on Cooperation in an Iterated Prisoner's Dilemma*. Presentation at the 53<sup>rd</sup> Meeting of the Psychonomic Society, Minneapolis, MN.
- Ferson, S., Siegrist, J., & Luhmann, C. C. (2012, June). *Probability Paradoxes Explained by the Second Uncertainty Processor*. Presentation at the Meeting of the International Association for Probabilistic Safety Assessment and Management, Helsinki, Finland.
- Jacovina, M. E., Gerrig, R. J., & Luhmann, C. C. (2012, May). *Social Context for Decisions: The Presence and Role of Advisors*. Poster presented at the 24<sup>th</sup> annual meeting of the American Psychological Society, Chicago, IL.
- \*\*Sewack, C., & Luhmann, C. C. (2012, April). *The Face of Consistency: Human Faces Reduce Irrational Delay Discounting Preferences*, Presentation at the Stony Brook University Undergraduate Research & Creative Activities (URECA) Symposium, Stony Brook, NY.
- \*\*Massi, B., & Luhmann, C. C., (April 2012). *Neural Correlates of Inequality Aversion*. Presentation at the NorthEast Undergraduate Research Organization for Neuroscience (N.E.U.R.O.N.), New York, NY.
- \*\*Massi, B., & Luhmann, C. C. (2012, April). *Neural Correlates of Inequality Aversion*, Presentation at the Stony Brook University Undergraduate Research & Creative Activities (URECA) Symposium, Stony Brook, NY.
- \*\*Massi, B., & Luhmann, C. C. (2012, April). *Using Genetic Programming to Model Altruism*, Poster presented at the Stony Brook University Undergraduate Research & Creative Activities (URECA) Symposium, Stony Brook, NY.
- Sussman, T., Szekely, A., & Luhmann, C., & Mohanty, A. (2012, April). *Expectation of Emotional Stimuli Enhances Perceptual Decisions*. Poster presented at the annual meeting of the Cognitive Neuroscience Society, Chicago, IL.
- Siegrist, J., Ferson, S., & **Luhmann, C.**, Ginzburg, L. (2011, December). *Probability Paradoxes Explained by the Second Uncertainty Processor*. Presentation at the Meeting of the Society for Risk Analysis, Charleston, SC.
- **Luhmann, C. C.** (2011, November). *Preferences toward Delayed Gratification: Distinguishing between Descriptive Models*. Presentation to the Psychometric Area, Fordham University, Bronx, NY.
- \*Bixter, M. T., & Luhmann, C. C. (2011, November). Evidence for Implicit Risk: Delay Information Primes the Processing of Uncertainty Information. Poster presented at the Meeting of the Society for Judgment and Decision Making, Seattle, WA.
- **Luhmann, C. C.** (2011, November). Can't Hardly Wait: Ego Depletion Selectively Modulates Delay Discounting. Presentation at the 52<sup>nd</sup> Meeting of the Psychonomic Society, Seattle, WA.

- \*Liu, P., & **Luhmann, C. C.** (2011, July). *Blocking Requires Uncertainty about Novel Cues*. Presentation at the 33<sup>rd</sup> Annual Conference of the Cognitive Science Society, Boston, MA.
- **Luhmann, C. C.** (2011, July). *The Discriminability of Delay Discounting Models*. Presentation at the 44<sup>th</sup> Annual Conference of the Society for Mathematical Psychology, Medford, MA.
- \*\*Massi, B., & Luhmann, C. C. (2011, April). *Uncertainty and the Origins of Loss Aversion*. Poster presented at the Stony Brook University Undergraduate Research & Creative Activities (URECA) Symposium, Stony Brook, NY.
- **Luhmann, C. C.** (2011, March). *The Origins of Loss Aversion: Uncertainty about Value*. Presentation at Imprecision Friday, Applied Biomathmatics, Setauket, NY.
- Dunning, J. P., Bronheim, R., **Luhmann, C. C.**, & Hajcak, G. (2010, October). What News Do You Want First? The Feedback Negativity is Sensitive to Unselected Outcomes but Only When Presented First. Poster presented at the 50<sup>th</sup> Meeting of the Society for Psychophysiological Research, Portland, OR.
- **Luhmann, C. C.,** & \*\*Ishida, K. (2010, May). *Anxiety and Delayed Gratification: Worrying about Delayed, Probabilistic Rewards.* Poster presented at the 22<sup>nd</sup> Meeting of the Association for Psychological Science, Boston, MA.
- **Luhmann, C. C.** (2010, May). *Decisions over Time: The Role of Risk and Uncertainty*. Presentation at Imprecision Friday, Applied Biomathematics, Setauket, NY.
- \*\*Ishida, K., & Luhmann, C. C. (2010, April). *Anxiety and Decisions about Delayed, Probabilistic Rewards*, Presentation at the Stony Brook University Undergraduate Research & Creative Activities (URECA) Symposium, Stony Brook, NY.
- **Luhmann, C. C.** (2009, November). *Confounded: Causal Reasoners Fail to Appreciate the Requirement of Independence*. Poster presented at the 50<sup>th</sup> Meeting of the Psychonomic Society, Boston, MA.
- **Luhmann, C.C.** (2009, September). *Cognitive and Neural Bases of Learning*, Presentation to the BioPsychology Area, Department of Psychology, Stony Brook University, Stony Brook, NY.
- **Luhmann, C.C.** (2009, July). *Delay Discounting: Cognitive and Neural Mechanisms of Self-Defeating Behavior*, Neuropsychoimaging Group, Brookhaven National Laboratory, Upton, NY.
- **Luhmann, C.C.** (2008, September). *Order Effects in Learning*. Presentation to the Cognitive Area, Department of Psychology, Stony Brook University, Stony Brook, NY.
- **Luhmann, C.C.** (2008, April). *Learning and Decision Making under Uncertainty*. Presentation to the Department of Psychology, Stony Brook University, Stony Brook, NY.

- **Luhmann, C.C.** (2008, February). *Causal Learning and Decision Making under Uncertainty*. Presentation to the Department of Psychology, Harvard University, Cambridge, MA.
- **Luhmann, C.C.** (2008, February). *Causal Learning and Decision Making under Uncertainty*. Presentation to the Department of Psychology, University of Maryland, College Park, MD.
- **Luhmann, C.C.** (2008, January). *Causal Learning and Decision Making under Uncertainty*. Presentation to the Department of Brain and Cognitive Sciences, University of Rochester, Rochester, NY.
- **Luhmann, C.C.** (2008, January). *Causal Learning and Decision Making under Uncertainty*. Presentation to the Department of Psychology, Michigan State University, East Lansing, MI.
- **Luhmann, C.C.** (2007, December). *Causal Learning and Decision Making under Uncertainty*. Presentation to the Department of Psychology, Williams College, Williamstown, MA.
- **Luhmann, C. C.**, Turk-Browne, N. B., & Chun, M. M. (2007, November). *Cognitive load boosts learning in a blocking paradigm: An fMRI study*. Poster presented at the 48<sup>th</sup> Meeting of the Psychonomic Society, Long Beach, CA.
- **Luhmann, C. C.**, Chun, M. M., Yi, D., Lee, D., & Wang, X. (2007, November). *Neural dissociations between uncertainty and delay in inter-temporal choice*. Poster presented at the Annual Meeting of the Society for Neuroscience, San Diego, CA.
- **Luhmann, C. C.**, Turk-Browne, N. B., & Chun, M. M. (2007, November). *Neural evidence that cognitive load boosts learning in a blocking paradigm*. Poster presented at 3<sup>rd</sup> Annual Computational Cognitive Neuroscience Conference, San Diego, CA.
- **Luhmann, C. C.**, Chun, M. M., Yi, D., Lee, D., & Wang, X. (2007, September). *Dissociating uncertainty and delay in inter-temporal choice*. Poster presented at the Annual Meeting of the Society for Neuroeconomics, Hull, MA.
- **Luhmann, C. C.**, Turk-Browne, N. B., & Chun, M. M. (2007, May). *Neural evidence that cognitive load boosts learning in a blocking paradigm*. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, New York, NY.
- **Luhmann, C. C.** (2007, January). *Interacting Mechanisms of Causal Learning*. Presentation to the Department of Psychology, NYU, New York, NY.
- **Luhmann, C. C.** (2006, November). *Causal learning with Imperfect Input*. Cognition & Perception Colloquia, NYU, New York, NY.
- **Luhmann, C. C.**, & Ahn, W. (2005, November). *The Role of Interpretation in Causal Learning*. Poster presented at the 46<sup>th</sup> Meeting of the Psychonomic Society, Toronto, ON.

- **Luhmann, C. C.** (2005, November). *BUCKLE: A model of unobserved cause learning*. Presentation to the Computational Cognitive Science Group, MIT, Cambridge, MA.
- **Luhmann, C. C.** (2005, July). *Confounded: Causal inference and the requirement of independence*. Poster presented at the 27<sup>th</sup> Annual Conference of the Cognitive Science Society, Stresa, Italy.
- Ahn, W., Marsh, J. K., & Luhmann, C. C. (2003, November). *Tight Interactions between Top-Down and Bottom-Up Processes in Causal Induction*. Presentation at the 44<sup>th</sup> Meeting of the Psychonomic Society, Vancouver, BC.
- **Luhmann, C. C.**, & Ahn, W. (2003, August). *Evaluating the causal role of unobserved variables*. Poster presented at the 25<sup>th</sup> Annual Conference of the Cognitive Science Society, Boston, MA.
- **Luhmann, C. C.**, Ahn, W., & Palmeri, T. J. (2002, August). *Theories and similarity:* Categorization under speeded conditions. Presentation at the 24<sup>th</sup> Annual Conference of the Cognitive Science Society, Fairfax, VA.
- Ahn, W., & Luhmann, C. C. (2002, June). *Demystifying theory-based categorization*. Presentation at the thirty-second Carnegie Symposium on Cognition, Carnegie Mellon University, Pittsburgh, PA.