

# CENDRI HUTCHERSON

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<http://decisionneurolab.com>

## EMPLOYMENT

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<b>University of Toronto</b>	<b>Assistant Professor</b>	<b>2015-</b>
<ul style="list-style-type: none"><li>• Director, Toronto Decision Neuroscience Lab</li><li>• Cross-appointed at the Rotman School of Management, Dept. of Marketing</li><li>• Member, Graduate Department of Psychological Clinical Science</li></ul>		

## EDUCATION

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<b>California Institute of Technology</b>	<b>Post-doctoral Scholar</b>	<b>2008-2015</b>
<ul style="list-style-type: none"><li>• Supervisor: Antonio Rangel</li></ul>		
<b>Stanford University</b>	<b>Ph.D. in Psychology</b>	<b>2002-2008</b>
<ul style="list-style-type: none"><li>• Advisor: James Gross</li></ul>		
<b>Harvard University</b>	<b>B.A. in Psychology</b>	<b>1998-2002</b>
<ul style="list-style-type: none"><li>• Advisors: Daniel Simons and Robert Stickgold</li><li>• Graduated <i>summa cum laude</i></li></ul>		

## RESEARCH INTERESTS

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**Affective and cognitive influences on decision making** – Computational dynamics of value construction and response selection; controlled and automatic influences on value judgments and decisions; neural mechanisms for the cognitive control of choice behavior

**Computational and neural bases of social behavior** – Computational underpinnings of altruistic and moral behavior; interaction of controlled and automatic processes on social decision making; emotion's role in moral judgment; neural bases of choice for self and other.

## RESEARCH GRANTS AND CONTRACTS

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<b>2018-2021</b>	<b>P.I., Canada Foundation for Innovation - John R. Evans Leadership Fund and Ontario Ministry of Research and Innovation</b>
<ul style="list-style-type: none"><li>• Title: The Decision Neuroscience Laboratory: Tracking the computational dynamics of decision making and self-control</li><li>• Total Amount: CAD \$250,000</li></ul>	

- 2017-2022 Co-Investigator, NIH Conte Center Grant**
- Title: The neurobiology of social decision-making: social inference and context.
  - Total Sub-contract Amount: CAD\$371,810
- 2016-2021 P.I., Natural Sciences and Engineering Research Council Discovery Grant**
- Title: Testing the implications of a dynamic, neurally-informed computational model of valuation, decision making, and self-control.
  - Total Amount: CAD\$140,000
- 2016-2020 P.I., Social Sciences and Humanities Research Council Insight Grant**
- Title: Why are people generous? New model-based approaches to long-standing questions.
  - Total Amount: CAD\$130,468
- 2016-2018 P.I., Connaught New Researcher Award**
- Title: Tracking the dynamics of attention and inhibition during dietary self-control
  - Total Amount: CAD\$34,250
- 2007 P.I., Flora Family Foundation Research Grant**
- Title: Neural Correlates of Socio-moral Judgment
  - Total Amount: \$5,000
- 2005 P.I., Francisco K. Varela Research Grant Mind and Life Institute**
- Title: Neural and Behavioral Correlates of Loving-Kindness Meditation
  - Total Amount: \$10,000

## HONORS AND AWARDS

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- 2018-2023 Canada Research Chair in Decision Neuroscience, Government of Canada
- 2014 Best Poster Award, Society for Neuroeconomics
- 2008 Psychology Department Continued Excellence in Teaching Award
- 2006 Psychology Department Graduate Student Teaching Award
- 2006 Wisconsin Health and Emotions Research Symposium Fellow
- 2003-2006 NIMH Pre-doctoral Training Grant in Affective Science
- 2002-2005 Stanford Graduate Fellowship, Regina Casper Fellow
- 2002 Harvard University Psychology Faculty Distinguished Thesis Prize
- 2001 Phi Beta Kappa (*one of 48 elected in the fall of senior year*)
- 2000-2002 John Harvard Scholarship
- 1999 Harvard College Scholarship
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## PUBLICATIONS

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*Supervised trainees indicated via underline.*

Roberts, I. D., & **Hutcherson, C.A.** (2019). Affect and decision making: Insights and predictions from computational models. *Trends in Cognitive Science*, 23, 602-614.

Cameron, C.D., **Hutcherson, C.A.**, Scheffer, J., Ferguson, A., & Inzlicht, M. (2019) Empathy is hard work: People choose to avoid empathy because of its cognitive costs. *Journal of Experimental Psychology: General*, 148, 962-976.

Roberts, I. D., Teoh, Y., & **Hutcherson, C.A.** (2019). Oxytocin and the altruistic “Goldilocks Zone.” *Nature Neuroscience*, 22, 510-512.

Rosenthal, I.A., **Hutcherson, C.A.**, Adolphs, R., & Stanley, D.A. (2019). Model-based analysis of theory-of-mind learning in autism. *Current Biology*, 29, 513-519.

Harris, A.\* , Clithero, J.\* & **Hutcherson, C.A.\*** (2018). Accounting for taste: A multi-attribute neurocomputational model explains the neural dynamics of choices for self and others. *Journal of Neuroscience*, 38, 7952-7968.

Schmidt, L., Tusche, A., Manoharan, N., **Hutcherson, C.A.**, Hare, T., Plassmann, H. (2018). Neuroanatomy of the vmPFC and dlPFC predicts individual differences in cognitive regulation during dietary self-control across regulation strategies. *Journal of Neuroscience*, 38, 5799-5805.

Tusche, A., & **Hutcherson, C.A.** (2018). Cognitive regulation alters social and dietary choice by changing both domain-general and domain-specific attribute representations. *eLife*, 7, e31185.

Lin, H.S., Saunders, B., **Hutcherson, C.A.**, & Inzlicht, M. (2018). Midfrontal theta and pupil dilation parametrically track subjective conflict (but also surprise) during intertemporal choice. *NeuroImage*, 172, 838-852.

Berkman, E., **Hutcherson, C.A.**, Livingston, J. L., Kahn, L. E., & Inzlicht, M. (2017). Self-control as value-based choice. *Current Directions in Psychological Science*, 26, 422-428.

Inzlicht, M. & **Hutcherson, C.A.** (2017). People work less hard for others. *Nature Human Behaviour*, 1, s41562-017-0148.

**Hutcherson, C.A.**, Bushong, B., & Rangel, A. (2015). A neurocomputational model of altruistic choice and its implications. *Neuron*, 87, 451-462.

**Hutcherson, C.A.**, Montaser Kouhsari, L., Woodward, J. & Rangel, A. (2015). Emotional and utilitarian appraisals of moral dilemmas are encoded in separate areas and integrated in ventromedial prefrontal cortex. *Journal of Neuroscience*, 35, 12593-12605.

**Hutcherson, C.A.**, Seppälä, E.M., & Gross, J.J. (2015). The neural correlates of social connection. *Cognitive, Affective, and Behavioral Neuroscience*, *15*, 1-15.

Sullivan, N., **Hutcherson, C.A.**, Harris, A.M., & Rangel, A. (2015). Dietary self-control is related to the speed with which health and taste attributes are processed. *Psychological Science*, *26*, 122-134.

Seppala, E.M., **Hutcherson, C.A.**, Nguyen, D.T.H., Doty, J.R. & Gross, J.J. (2014). Loving-kindness meditation: A tool to improve healthcare provider compassion, resilience, and patient care. *Journal of Compassionate Healthcare*, *1*, 1-9.

**Hutcherson, C.A.**, Plassmann, H., Gross, J.J., & Rangel, A. (2012). Cognitive regulation during decision-making shifts behavioral control between ventromedial and dorsolateral value systems. *Journal of Neuroscience*, *32*(39), 13543-13554.

Sokol-Hessner, P., **Hutcherson, C.A.**, Hare, T., & Rangel, A. (2012). Decision value computation in DLPFC and VMPFC adjusts to the available time. *European Journal of Neuroscience*, *35*, 1065-1074.

**Hutcherson, C.A.**, & Gross, J.J. (2011). The moral emotions: a social functionalist account of anger, disgust, and contempt. *Journal of Personality and Social Psychology*, *100*, 719-737.

Pace-Schott, E.F., **Hutcherson, C.A.**, Bemporad, B., Morgan, A., Kumar, A., Hobson, A., & Stickgold, R. (2009). Failure to find executive function deficits following one night's total sleep-deprivation in university students under naturalistic conditions. *Behavioral Sleep Medicine*, *7*, 136-163.

**Hutcherson, C.A.**, Seppälä, E.M., & Gross, J.J. (2008). Loving kindness meditation increases social connectedness. *Emotion*, *8*, 720-724.

**Hutcherson, C.A.**, Goldin, P.R., Ramel, W., McRae, K.N., & Gross, J.J. (2008). Attention and emotion influence the relationship between extraversion and neural response. *Social Cognitive and Affective Neuroscience*, *3*, 71-79.

Bailenson, J.N., Pontikakis, E. D., Mauss, I.B., Gross, J.J., Jabon, M.E., **Hutcherson, C.A.C.**, Nass, C., & John, O. (2008) Real-time classification of evoked emotions using facial feature tracking and physiological responses. *International Journal of Human Machine Studies*, *66*, 303-317.

**Hutcherson, C.A.**, Goldin, P.R., Ochsner, K.N., Gabrieli, J.D., Feldman Barrett, L., & Gross, J. J. (2005). Attention to emotion: Does rating emotion alter neural response to sad and amusing films? *NeuroImage*, *27*, 656-668.

Goldin, P.R., **Hutcherson, C.A.C.**, Ochsner, K.N., Glover, G.H., Gabrieli, J.D.E., & Gross, J.J. (2005). The neural bases of amusement and sadness: A comparison of block and subject-specific emotion intensity regression approaches. *NeuroImage*, *27*, 26-36.

\* Equal contribution.

## MANUSCRIPTS UNDER REVIEW AND IN PREPARATION

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*Supervised trainees indicated via underline.*

Teoh, Y., Yao, Z., Cunningham, W., & Hutcherson, C.A. (under review). Attentional priorities drive effects of time pressure on altruistic choice.

HajiHosseini, A., Hutcherson, C.A., & Holroyd, C. B. (under review). Beta oscillations following performance feedback predict subsequent recall of task relevant information.

O'Leary, D., **Hutcherson, C.A.**, Smith, A., & Gross, J.J. (in prep). Socioeconomic status and food choice: A value-based decision-making account.

HajiHosseini, A., & Hutcherson, C.A. (in prep). Computational dynamics of different regulatory strategies in dietary decision making.

**Hutcherson, C.A., Lin, H.S., Ilangomaran, D., & Inbar, Y.** (in prep). Taboo for you? When and how people resist the temptation to violate sacred moral values.

**Hutcherson, C.A.\***, Rangel, A. & Tusche, A.\* (in prep). Conflict, control, and virtuous choice: A neurocomputational model explains when and why virtue is easy.

Wilson, D. J., & Hutcherson, C.A. (in prep). Neural and behavioral correlates of different regulatory strategies in food choice.

\* Equal contribution.

## SELECTED POSTERS AND PRESENTATIONS

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*Supervised trainees indicated via underline.*

**Hutcherson, C.A.** (2019). Knowing and valuing others' preferences: Novel insights from neural and computational models. *Invited lecture presented at the Kavli Summer Institute in Cognitive Neuroscience, Santa Barbara, CA.*

**Hutcherson, C.A.** (2019). Thinking, feeling and choosing fast and slow: Implications for mediation. *Invited address presented at the International Academy of Mediators spring conference, Banff, AB.*

**Hutcherson, C.A.** (2019). Modeling computational dynamics of decision making: implications for dual process models of choice. *Talk presented at the Computational Social Affective Neuroscience preconference, Miami, FL.*

- Hutcherson, C.A.** (2019). Neural and computational dynamics of self-regulation during decision making. *Invited talk presented at the Oregon Decision Neuroscience Symposium, University of Oregon, Eugene, OR.*
- Hutcherson, C.A.** (2019). Eat healthy, or don't eat at all?: Distinct computational dynamics underlie different self-regulatory strategies. *Invited talk presented at the Emotion Regulation Preconference, Society for Affective Science annual meeting, Boston, MA.*
- Hutcherson, C.A.** (2018). Prefrontal cortex and the cognitive regulation of value-based decision making. *Invited talk presented at the 6<sup>th</sup> Workshop on the Computational Properties of Prefrontal Cortex, Vanderbilt University, Nashville, TN.*
- Hutcherson, C.A.** (2018). Neurocomputational insights into social decision making, morality, and self-control. *Invited talk presented at the MindCORE seminar series, University of Pennsylvania, Philadelphia, PA.*
- Hutcherson, C.A.** (2018). Neurocomputational insights into social decision making. *Invited talk presented at the 2018 Mind and Life European Summer Research Institute, Fraueninsel am Chiemsee, Germany.*
- Hutcherson, C.A.** (2018). Programming for psychologists: Tips and tricks. *Invited workshop presented at the 2018 annual meeting of the American Psychological Society, San Francisco, CA.*
- Hutcherson, C.A.** (2018). No time to be nice? Motivational and computational dynamics underlying altruistic choice. *Invited talk presented at the 2018 annual meeting of the Social Affective Neuroscience Society meeting, New York, NY.*
- Lin, H., Ilangomaran, D., & Bhagat, K., & Hutcherson, C.A. (2018). Computational insights into moral temptation in taboo tradeoffs. *Poster presented at the 2018 annual meeting of the Social Affective Neuroscience Society meeting, New York, NY.*
- Roberts, I.D., Tusche, A., & Hutcherson, C.A. (2018). Brain regions associated with “Theory of Mind” encode first-order beliefs during altruistic choice. *Poster presented at the 2018 annual meeting of the Social Affective Neuroscience Society meeting, New York, NY.*
- Teoh, Y. Y., Yao, Z., Tharmaratnam, V., Cunningham, W., & Hutcherson, C.A. (2018). Eye-tracking and computational modeling reveals novel insights into altruistic choice under time pressure. *Poster presented at the 2018 annual meeting of the Social Affective Neuroscience Society meeting, New York, NY.*
- Wilson, D., & Hutcherson, C.A. (2018). Computational modeling of value, weighting and attention in multi-attribute choice. *Poster presented at the 2018 annual meeting of the Social Affective Neuroscience Society meeting, New York, NY.*

**Hutcherson, C.A.** (2018). Neurocomputational insights into social decision making, morality and self-control. *Invited talk presented at the Social Cognitive Science Seminar Series, Brown University, Providence RI.*

**Hutcherson, C.A.** (2018). Neurocomputational insights into social decision making, morality and self-control. *Invited talk presented at the Institute for the Study of Decision Making, New York University, New York, NY.*

**Hutcherson, C.A.** (2018). Computational insights into sacred values, temptation, and self-control. *Invited talk presented at the Wharton School of Marketing, University of Pennsylvania, Philadelphia, PA.*

**Hutcherson, C.A.** (2018). Why doing the right thing is hard, and how to make it easier. *Invited talk presented at Graduate Professional Day, University of Toronto Scarborough. Toronto, ON.*

**Hutcherson, C.A.** (2017). Neurocomputational insights into social decision making, morality, and self-control. *Talk presented at the Ryerson University Perception and Cognition colloquium series, Toronto, ON.*

**Hutcherson, C.A.** (2017). Neurocomputational insights into social decision making, morality, and self-control. *Talk presented at the York University Social Psychology colloquium series, Toronto, ON.*

**Hutcherson, C.A., Lin, H., Ilangomaran, D., & Inbar, Y.** (2017). Taboo for you? Computational approaches to sacred values and moral temptation. *Talk presented at the 2017 Society for Experimental Social Psychology annual meeting, Boston, MA.*

Clithero, J., Harris, A., & **Hutcherson, C.A.** (2017). Accounting for taste: A multi-attribute neurocomputational model explains divergent choices for self and others. *Talk presented at the 2017 Society for Neuroeconomics annual meeting, Toronto, ON.*

Lin, H., Saunders, B., **Hutcherson, C.A.**, & Inzlicht, M. (2017). Self-control in decision making involves prefrontal theta band oscillatory dynamics. *Poster presented at the 2017 Society for Neuroeconomics annual meeting, Toronto, ON.*

Lin, H., Saunders, B., **Hutcherson, C.A.**, & Inzlicht, M. (2017). Midfrontal theta and pupil dilation parametrically track subjective conflict (but also surprise) during value-guided choice. *Poster presented at the 2017 Society for Neuroeconomics annual meeting, Toronto, ON.*

Wilson, D., & **Hutcherson, C.A.** (2017). Attention and value integration in multi-attribute choice. *Poster presented at the 2017 Society for Neuroeconomics annual meeting, Toronto ON.*

**Hutcherson, C.A.** (2017). Neurocomputational insights into self-regulation. *Lecture presented at the Duke Summer School for Social Neuroscience and Neuroeconomics, Durham, NC.*

**Hutcherson, C.A.,** Clithero, J., & Harris, A. (2017). Accounting for taste: A multi-attribute neurocomputational model explains divergent choices for self and others. *Talk presented at the 2017 Interdisciplinary Symposium on Decision Neuroscience, Stanford, CA.*

Lin, H., Saunders, B., **Hutcherson, C. A.,** & Inzlicht, M. (2017). Decision-conflict in the temporal discounting task: Midfrontal theta and pupil dilation track subjective conflict in value-based decisions. *Recipient of a Best Poster Award at the Social & Affective Neuroscience Society annual meeting, Los Angeles, CA.*

**Hutcherson, C.A.** (2017). Neurocomputational approaches to self-control in social and non-social contexts. *Talk presented at the 2017 Self Regulation Preconference at the Society for Personality and Social Psychology.*

**Hutcherson, C.A.** (2016). Neurocomputational insights into social decision making and self-control. *Talk presented at the Neuroimaging Rounds, Toronto Western Hospital, Toronto, ON.*

**Hutcherson, C.A.** & Inbar, Y. (2016). Taboo for you? Computational approaches to taboo tradeoffs and sacred values. *Talk presented at the Society for Judgment and Decision Making annual meeting, Boston, MA.*

**Hutcherson, C.A.** & Tusche, A. (2016). Neural and computational mechanisms for the attentional modulation of value. *Talk presented at the Society for Neuroscience annual meeting, San Diego, CA.*

**Hutcherson, C.A.** & Tusche, A. (2016). Neurocomputational insights into social decision making and self-control. *Talk presented at the California Institute of Technology Conte Meeting, Pasadena, CA.*

**Hutcherson, C.A.,** Tusche, A., & Rangel, A. (2016). Neurocomputational insights into values, morals, and self-control. *Talk presented at the Foundations of Utility and Risk Conference, University of Warwick, England.*

**Hutcherson, C.A.,** Tusche, A., & Rangel, A. (2016). Neurocomputational mechanisms for the attentional modulation of value in social and non-social choice domains. *Talk presented at the Center for Vision Science Symposium: The Future of Attention, Rochester, NY.*

**Hutcherson, C.A.,** Tusche, A., & Rangel, A. (2016). Neurocomputational insights into social decision making and self-control. *Talk presented at the 6<sup>th</sup> International Symposium on the Biology of Decision Making, Paris, France.*

**Hutcherson, C.A.,** Sullivan, N., & Rangel, A. (November, 2014). Delays in computing health information and inhibiting taste information influence healthy eating. *Talk presented at the 2014 meeting of the Society for Judgment and Decision Making.*



**Hutcherson, C.A.,** Bushong, B., & Rangel, A. (September, 2014). A neurocomputational model of altruistic choice and its modulation by attention. *Awarded Best Poster at the 2014 meeting of the Society for Neuroeconomics, Miami, FL.*

**Hutcherson, C.A.,** Montaser-Kouhsari, L., & Rangel, A. (April, 2014). Neural correlates of emotional and utilitarian considerations in moral decision-making. *Talk presented at the 2014 meeting of the Social and Affective Neuroscience Society, Denver, CO.*

**Hutcherson, C.A.,** (November, 2013). Investigating the dynamics of reactivity and regulation of food choice using fMRI and computational modeling. *Talk given at the 2013 meeting of the Society for Neuroscience, San Diego, CA.*

**Hutcherson, C.A.** (April, 2013). Consciousness, self-control, and the brain. *Invited talk presented at the University of Delaware's Center for Science, Ethics, and Public Policy, Dover, DE.*

Stanley, D.A., **Hutcherson, C.A.,** Adolphs, R. (April, 2013). A novel paradigm for investigating the neural and computational mechanisms of Theory of Mind. *Poster presented at the 2013 meeting of the Social and Affective Neuroscience Society, San Francisco, CA.*

## TEACHING

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**PSYD17. Social Neuroscience** (University of Toronto Scarborough)

- Instructor (Student Evaluations: 4.7/5)

**PSY5403. Computational and Neural Models of Decision Making** (University of Toronto)

- Instructor (Student Evaluations: 4.4/5)

**PSYC57H3. Cognitive Neuroscience of Decision Making** (University of Toronto Scarborough)

- Instructor (Student Evaluations: 4.3/5)

**PSYC13H3: Social Cognition** (University of Toronto Scarborough)

- Instructor (Student Evaluations: 4.2/5)

**Psych 70: Social Psychology** (Stanford, Spring 2008)

- Teaching Assistant (Student Evaluations: 4.8/5)

**Psych 104S: Affective Neuroscience** (Stanford, Summer 2006 & 2007)

- Co-Instructor (Student Evaluations: 4.6/5)

**Psych 114S: Personality and Individual Differences** (Stanford, Summer 2006 & 2007)

- Co-Instructor (Student Evaluations: 4.9/5)

**Psych 120/Bio 153: Cellular Neuroscience** (Stanford, Winter 2005, Fall 2007)

- Head Teaching Assistant

**Psych 1: Introductory Psychology** (Stanford, Fall 2005 & 2006, Spring 2006)

- Teaching Assistant

**Psych 50: Cognitive Neuroscience** (Stanford, Winter 2004)

- Teaching Assistant

**Psych 20: Brain and Behavior** (Stanford, Fall 2003)

- Teaching Assistant

## ASSOCIATION MEMBERSHIPS

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*American Psychological Association*

*Association for Psychological Science*

*Cognitive Neuroscience Society*

*Neuroethics Society*

*Organization for Human Brain Mapping*

*Social and Affective Neuroscience Society*

*Society for Judgment and Decision-Making*

*Society for Neuroeconomics*

*Society for Neuroscience*

*Soc. for Personality and Social Psychology*

## AD HOC REVIEWER

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*Cerebral Cortex*

*Cognitive, Affective, and Behavioral Neuroscience*

*Current Directions in Psychological Science*

*eNeuro*

*Emotion*

*Frontiers in Decision Neuroscience*

*Human Brain Mapping*

*Journal of Compassionate Healthcare*

*Journal of Experimental Psychology: General*

*Journal of Neuroscience*

*Journal of Neurophysiology*

*Journal of Personality and Social Psychology*

*Memory and Cognition*

*Mindfulness*

*Nature Communications*

*Nature Human Behavior*

*Nature Neuroscience*

*Neurobiology of Stress*

*Neuroimage*

*Neuropsychologia*

*Organizational Behavior and Human Decision Processes*

*Philosophical Psychology*

*PLOS One*

*PLOS Computational Biology*

*PNAS*

*Psychological Review*

*Psychological Science*

*Social and Personality Psychology*

*Compass*

*Social Cognitive and Affective  
Neuroscience*  
*Social Psychological and Personality  
Science*

*Social Theory and Health*  
*Spanish Journal of Psychology*  
*Trends in Cognitive Sciences*