



ARTIFICIAL INTELLIGENCE AND ANTHROPOGENY

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Co-chairs:

Terry Sejnowski, Salk Institute for Biological Studies & University of California, San Diego

Patricia Churchland, University of California, San Diego

Sponsored by:

Center for Academic Research and Training in Anthropogeny (CARTA)

BIOGRAPHICAL SKETCHES: CO-CHAIRS



Terrence Sejnowski is a Howard Hughes Medical Institute Investigator and professor and director of the Computational Neurobiology Laboratory at The Salk Institute. He is also professor of biology and an adjunct professor of physics, neurosciences, psychology, cognitive science, and computer science and engineering at UC San Diego. He is director of the Institute for Neural Computation and director of Training Programs in Cognitive Neuroscience and Computational Neurobiology at UC San Diego and serves on the CARTA External Advisory Board. The goal of his research is to build linking principles from brain to behavior using a combination of theoretical and experimental approaches ranging from the biophysical to the systems level. He is founding editor of *Neural Computation* and President of the Neural Information Processing Systems Foundation. He is a past recipient of the Presidential Young Investigator Award, and was Wiersma

Visiting Professor of Neurobiology and a Sherman Fairchild Distinguished Scholar at the California Institute of Technology, and is a fellow of the Institute of Electrical and Electronic Engineers. With Patricia Churchland, he co-authored *The Computational Brain* (Bradford Books, 1992). He was elected to the Institute of Medicine in 2008, to the National Academy of Sciences in 2010, and to the National Academy of Engineering in 2011. He is one of only ten living persons to be a member of all three national academies.



Patricia Churchland is Professor Emerita and former chair of Philosophy at UC San Diego as well as adjunct professor at the Salk Institute. She holds degrees from Oxford University, the University of Pittsburg and the University of British Columbia. For decades, Churchland has contributed to the fields of philosophy of neuroscience, philosophy of the mind and neuroethics. Her research has centered on the interface between neuroscience and philosophy with a current focus on the association of morality and the social brain. She has been awarded the MacArthur Prize, The Rossi Prize for Neuroscience and the Prose Prize for Science. She has authored multiple pioneering books, her most recent being, *Touching a Nerve: The Self as Brain* (W.W. Norton & Company, 2013). She has served as President of the American Philosophical Association and the Society for Philosophy and Psychology.

BIOGRAPHICAL SKETCHES: SPEAKERS



Blaise Agüera y Arcas is a VP and Fellow at Google Research where he leads an organization working on both basic research and new products in AI. His focus is on augmentative, privacy-first, and collectively beneficial applications, including on-device ML for Android phones, wearables, and the Internet of Things. One of the team's technical contributions is Federated Learning, an approach to training neural networks in a distributed setting that avoids sharing user data. Blaise also founded the Artists and Machine Intelligence program, and has been an active participant in cross-disciplinary dialogs about AI and ethics, fairness and bias, policy, and risk. Until 2014 he was a Distinguished Engineer at Microsoft. Outside the tech world, Blaise has worked on computational humanities projects including the digital reconstruction of Sergei Prokudin-Gorskii's color photography at the Library of Congress, and the use of computer vision

techniques to shed new light on Gutenberg's printing technology. Blaise has given TED talks on Seadragon and Photosynth (2007, 2012), Bing Maps (2010), and machine creativity (2016), and gave a keynote at NeurIPS on social intelligence (2019). In 2008, he was awarded MIT's TR35 prize. In 2018 and 2019 he taught the course "Intelligent Machinery, Identity, and Ethics" at the University of Washington, placing computing and AI in a broader historical and philosophical context.



Damián Blasi is a Harvard Data Science Initiative Fellow, a Branco Weiss Fellow, and a recipient of the 2019 Glushko Prize in Cognitive Sciences, among other honors. He is currently a researcher at the Culture, Cognition, and Coevolution Lab based at the Department of Human Evolutionary Biology at Harvard University. In addition, Blasi is a research affiliate of the Department of Linguistic and Cultural Evolution at the Max Planck Institute for the Science of Human History in Jena (Germany), and at the Human Relations Area Files, Yale University. He currently serves as a member of the UNESCO expert committee of the World Atlas of Languages. He received a Ph.D. in Computer Sciences from the Max Planck Institute for Mathematics in the Sciences and a B.Sc. in Physics and M.Sc. in Interdisciplinary and Statistical Physics from the Balseiro Institute in Bariloche (Argentina).



Ray Jackendoff is the Seth Merrin Professor Emeritus and former co-director of the Center for Cognitive Studies at Tufts University. He is currently a Research Affiliate in Brain and Cognitive Sciences at Massachusetts Institute of Technology (MIT). He has written widely on syntax, semantics, the architecture of grammar, the evolution of language, music cognition, social cognition, and consciousness. He was the recipient of the 2003 Nicod Prize in Cognitive Philosophy and the 2014 David E. Rumelhart Prize for Outstanding Contributions to the Theoretical Foundations of Human Cognition, as well as five honorary degrees. His books include *Semantics and Cognition* (MIT Press, 1983), *A Generative Theory of Tonal Music* (with Fred Lerdahl) (MIT Press, 1983), *Consciousness and the Computational Mind* (MIT Press, 1987), *Foundations of Language* (Oxford University Press, 2002), *A User's Guide to Thought and Meaning* (Oxford University Press, 2012), and *The Texture of the Lexicon* (Oxford University Press, 2020).



Carmen Amo Alonso is a Ph.D. candidate in Control and Dynamical Systems in the Department of Computing and Mathematical Sciences at Caltech, where she works under the advice of Professor John Doyle. Broadly, her research focuses on robust and distributed optimal control for large-scale networks, as well as in and the applications to computational linguistics and biology.



John Doyle is the Jean-Lou Chameau Professor of Control and Dynamical Systems, Electrical Engineering, and Bioengineering at California Institute of Technology. His research is on theoretical foundations for complex technological, biological, medical, neurological, and social networks integrating control, communications, computing, and multiscale physics. Layered architectures such as brains integrate high level planning with fast lower level sensing, reflex, and action and facilitate learning, adaptation, augmentation (tools), and teamwork, despite being implemented in energy efficient hardware with sparse, quantized, noisy, delayed, and saturating sensing, communications, computing, and actuation, on time scales from milliseconds to minutes to days. Doyle is developing a mathematical framework that deals with all of these features and constraints in a coherent and rigorous way with broad applications in science, technology, ecology, and society.



Eva Wittenberg is an Associate Professor in the Department of Cognitive Science at the Central European University (CEU) in Vienna (Austria). She received her Ph.D. in Linguistics from Potsdam University (Germany), and her postdoctoral training at UC San Diego, where she also held a faculty position before moving to CEU. The aim of Eva's research is to understand the architecture of the language system within broader cognition, asking fundamental questions about the interaction of grammar, meaning, and broader cognitive processes. This includes how linguistic structure maps onto conceptual structure, and, most relevant to this symposium, how this mapping came to be.



Erich Jarvis is a Professor of Neurobiology and Genomics at the Rockefeller University in New York, and with the Howard Hughes Medical Institute. He uses innovative research techniques to study what songbirds and other species can help reveal about the evolution of human language and its disorders. His work thus far has resulted in some compelling hypotheses, including: establishing a close anatomical similarity in the brain mechanisms that control vocal communication in songbirds and humans. Erich graduated from Hunter College in New York City with a bachelor's degree in Biology and Mathematics and later earned his Ph.D. Neurobiology and Animal Behavior from Rockefeller University. He continued as a postdoc at Rockefeller, before becoming an Assistant Professor at Duke University. He later returned to Rockefeller as a full professor, where he presently does his research. Erich is the recipient of many awards and honors for his achievements, including: one of the highest awards given by the National Institutes of Health (NIH) -- the NIH Director's Pioneer Award, and one of the highest given by the National Science Foundation (NSF) -- the NSF Alan T. Waterman Award. He is also a research investigator of the prestigious Howard Hughes Medical Institute, and recently received an NIH transformative R01 award. Future efforts are focused on testing hypothesis of vocal learning evolution in mice.



Alison Barker is a Research Group Leader at the Max Planck Institute for Brain Research in Frankfurt (Germany). Her group employs a broad evolutionary approach to investigate the links between vocal communication and cooperation. A key area of interest is in mapping the neural circuitry for complex social behaviors. Currently, the lab uses the naked mole-rat as a model to investigate the evolution of neural mechanisms for the processing and production of socially meaningful vocal cues.



Gerd Gigerenzer is the Director of the Harding Center for Risk Literacy, University of Potsdam (Germany), and Director emeritus at the Max Planck Institute for Human Development. He is former Professor of Psychology at the University of Chicago and John M. Olin Distinguished Visiting Professor, School of Law at the University of Virginia. He is Member of the Berlin-Brandenburg Academy of Sciences, the German Academy of Sciences, the American Academy of Arts and Sciences and the American Philosophical Society. Awards for his work include the AAAS Prize for the best article in the behavioral sciences, the Association of American Publishers Prize for the best book in the social and behavioral sciences, the German Psychology Award, and the Communicator Award of the German Research Foundation. His award-winning popular books *Calculated Risks* (Simon & Schuster, 2003), *Gut Feelings* (Penguin Books, 2007), *Risk Savvy* (Penguin Books, 2013) and *How to Stay Smart in a Smart World* (MIT Press, 2022) have been translated into more than 20 languages. His academic books include *Simple Heuristics That Make Us Smart* (Oxford University Press, 2000), *Rationality for Mortals* (Oxford University Press, 2010), *Simply Rational* (Oxford University Press, 2015), and *Bounded Rationality* (with Reinhard Selten, a Nobel Laureate in economics) (MIT Press, 2001). Gigerenzer has trained U.S. federal judges, German physicians, and international top managers in decision making. The Swiss Duttweiler Institute has distinguished Gigerenzer as one of the top-100 Global Thought Leaders worldwide.



Pulkit Agrawal is the Steven and Renee Finn Chair Assistant Professor in the Department of Electrical Engineering and Computer Science at Massachusetts Institute of Technology (MIT), where he directs the Improbable AI Lab. His research interests span robotics, deep learning, computer vision, and reinforcement learning. His work received the Best Paper Award at Conference on Robot Learning 2021 and Best Student Paper Award at Conference on Computer Supported Collaborative Learning 2011. He is a recipient of the Sony Faculty Research Award, Salesforce Research Award, Amazon Research Award, a Fulbright fellowship, etc. Before joining MIT, he co-founded SafelyYou Inc., received his Ph.D. from UC Berkeley, and Bachelor's degree from the Indian Institute of Technology (IIT) Kanpur (India), where he was awarded the Directors Gold Medal.