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Title: Using Neuroscience to Predict Consumer Social Media Engagement and Energy-Efficient Purchases

Abstract: How can we analyze the behavior and decision processes of small groups of individuals in ways that can scale outward to predict sustainable and pro-environmental choices at the national or global levels? This talk explores the results of a trio of studies from the field of neuroeconomics that use functional magnetic resonance imaging (fMRI) data to investigate the thought processes underlying pro-environmental decisions, from conservation philanthropy to energy-efficient purchases, and to predict global phenomena including the response to nature imagery on social media. This will focus on the implications for messaging, both in the design of ecolabeling and the construction of visual imagery to promote engagement with and support for environmental issues, and will introduce how neuroeconomics studies can be designed to explore consumer decisions on energy use and augment and complement more established techniques such as surveys, behavioral experiments, and field studies. Neuroeconomics uses neuroimaging to examine the processes underlying financial decision-making, and in recent years has been able to successfully predict the behavior of national populations in contexts as diverse as music sales, the efficacy of anti-smoking ad campaigns, and the success of microloan funding ventures, using brain data from small samples of 20-40 individuals. Moreover, in many of these studies, brain data outperforms traditional behavioral measures in forecasting population-level responses. This creates an opportunity for those wishing to design better policies and campaigns to encourage a wide array of pro-environmental and energy use behaviors, both because of this scaling potential as well as neuroimaging's ability to understand the neural mechanisms which underlie and predict different elements of choice.