Daniel Woods - List of Experimental Economics Papers

Hudja, S. & Woods, D. (2020). "Behavioral Bandits: Analyzing the Exploration Versus Exploitation Trade-Off in the Lab." Working Paper.

- This paper uses a laboratory experiment to analyze how individuals resolve an exploration versus exploitation trade-off. The experiment implements a single-agent exponential bandit model. We find that, as predicted, subjects respond to changes in the prior belief, safe action, and discount factor. However, we commonly find that subjects give up on exploration earlier than predicted. We estimate a structural model that allows for risk aversion, base rate neglect/conservatism, and probability mis-weighting. We find support for risk aversion, conservatism, and probability mis-weighting as potential factors that influence subject behavior. Risk aversion appears to explain the finding that subjects explore less than predicted.

Woods, D., Abdallah, M., Bagchi, S., Sundaram, S., & Cason, T. (2020). "Network Defense and Behavioral Biases: An Experimental Study." Working Paper.

- How do people distribute defenses over a directed network attack graph, where they must defend a critical node? This question is of interest to computer scientists, information technology and security professionals. Decision-makers are often subject to behavioral biases that cause them to make sub-optimal defense decisions, which can prove especially costly if the critical node is an essential infrastructure. We posit that nonlinear probability weighting may lead to sub-optimal decision-making in this environment, and provide an experimental test. We find support for this conjecture, and also identify other empirically important forms of biases such as naive diversification and preferences over the spatial timing of the revelation of an overall successful defense. The latter preference is related to the concept of anticipatory feelings induced by the timing of the resolution of uncertainty.

Woods, D. & Servátka, M. (2019). "Nice to you, nicer to me: Does self-serving generosity diminish the reciprocal response?" Experimental Economics. 22:(506-529).

- Abstract: Reciprocity has been shown to be sensitive to perceived intentions, however, not much is known about the intensity of reciprocal responses to the precise nature of those intentions. For example, a person can strategically appear to be kind while being self-serving or can be selflessly (genuinely) kind. Do these two intentions elicit different reciprocal reactions? We propose a conjecture that self-serving but generous actions diminish the positively reciprocal response, compared to selfless generous actions. We classify actions that increase a recipient's maximum payoff, but by less than the giver's maximum payoff, as being self-serving generous actions, while classifying actions that increase a recipient's maximum payoff by more than the giver's as selfless generous actions. We hypothesize that selfless generous actions are considered more generous than self-serving generous actions, and that self-serving generous actions will therefore result in a diminished reciprocal response. We test this conjecture using two novel experimental designs. We find some evidence that subjects perceive self-serving generous actions as being less generous than selfless generous actions, but no empirical support for our conjecture on the diminished reciprocal response.

Collins, S.M., James, D., Servátka, M., & Woods, D. (2017). "Price-setting and attainment of equilibrium: Posted offers versus an administered price." Games and Economic Behavior. 106:(277-293).

- Abstract: The operation of the posted offer market with advance production environment (Mestelman & Welland, 1988), appropriately parameterized, differs from that of the market entry game (Selten & Güth, 1982), appropriately presented, only in terms of price-setting. We establish the effect of this difference in price-setting on attainment of the competitive equilibrium allocation while controlling for effects relating to the presentation of the market entry game and to the stationarity or non-stationarity of environment. Free posting of prices promotes convergence to the competitive equilibrium allocation, while the typical market entry game data can be characterized as displaying cycling prices.

Woods, D. & Servátka, M. (2016). "Testing Psychological Forward Induction and the Updating of Beliefs in the Lost Wallet Game." Journal of Economic Psychology. 56:(116-125).

- Abstract: This paper studies psychological forward induction and the updating of beliefs in the lost wallet game (Dufwenberg & Gneezy, 2000), which is required to derive a prediction for guilt averse agents. Our experiment tests whether the second movers psychologically induct forward and update their beliefs after observing their paired first mover's decision by eliciting beliefs with different second mover knowledge of first mover decision, depending on treatment. We find that second movers do update their beliefs conditional on receiving information on the first mover's action, supporting psychological forward induction.