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Accident Aversion: An Experiment

Institutions and Economics Series

Despite the numerous and diverse tort models available today, little research has thus far been conducted to reveal individual precautionary preference and choice under different scenarios. In fact, at this moment, only six experiments have been conducted in a bid to address this gap.

Professor Francesco Parisi presented the results of one such experiment at the Johns Hopkins School of Advanced International Studies in Bologna. Conducted in conjunction with Alice Guerra of Copenhagen Business School, their research builds upon Brown and Shavell's traditional economic tort model, in which two parties are assigned the role of either tortfeasor or victim. By providing each side with symmetric incentives, the model hypothesizes that the two sides will exhibit the same precautionary behavior. With this foundational structure in hand, Parisi and Guerra pose the following research question: do uncompensated victims and liable tortfeasors behave symmetrically as predicted?

To answer this question, Parisi and Guerra set up a lab experiment in three parts. First, 200 undergraduate students from a number of academic fields at the University of Valencia were split into two groups with symmetric incentives, thereby maintaining the construction of the traditional tort model. The first group were categorized as tortfeasors under strict liability (TSL), incentivized by the threat of liability; the second group were victims under no liability (VNL), incentivized by the risk of uncompensated loss. Once assigned their roles, each student was provided with 140 tokens with which individuals assigned the TSL role could purchase precautionary measures to avoid accidents, with the knowledge that these purchases would compensate VNLs if an accident were to occur. Following the purchase of these precautionary measures, the two groups acted through 10 rounds of simulation, lasting in total approximately 90 minutes, before switching roles. After the completion of this experimental stage, the participants were tested for risk aversion and social values, which may include but not were not limited to altruism and benevolence.

Upon gathering and analyzing the results of this lab experiment, Parisi and Guerra found that the presumption that tortfeasors and victims would behave symmetrically when faced with the same incentives was far from accurate. Rather, their research revealed that the TSL and VNL groups would make considerably different investments in accident prevention; specifically, while both TSLs and VNLs invest more than the optimum level, VNLs are likely to invest a great deal more in precautionary measures compared to TSLs, regardless of risk aversion and social-value orientation types. In other words, accident aversion had a greater impact on VNLs than on TSLs despite symmetric incentives.

The results of the lab experiment also exposed the implications of order and historical memory. While VNLs are unlikely to refer back to their previous role as TSLs to shape their purchase of precautionary measures, TSLs who were formerly VNLs adjust their expectations by investing more in precautionary measures. Furthermore, Parisi and Guerra found a distinction between the persistence of accident aversion and of the experience effect. While both VNLs and TSLs invest above the optimum level of precautionary measures, VNLs remain far above the optimum level of precautionary measures for the entirety of the experiment while TSLs with VNL experience converge towards the expected level. In other words, the effect of accident aversion became more pronounced towards the end of the experiment.

By illustrating the divergence of VNL and TSL behavior despite symmetric incentives, Parisi and Guerra call into question the tort model, and consequently pose important questions regarding the impact of perception bias. One potential answer, which requires future research, is that human beings avoid immediate losses differently than those that are indirect. If this is the case, Parisi and Guerra's findings will have implications for future policy, including those for identifying and implementing insulating strategies against overconfidence and blind-spot biases.