Bayesian Updating in Experiment: Good News and Bad News in Small Feedback-Based Decision Problems

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Abstract

This literature discusses experimental study on decision making in small feedback-based problems in the light of the fact that many common activities in bygone days involve small feedback-based decision problems. Some early experimental studies on that problems have been conducted. There have however been no experimental studies which include calibration of numerical optimal solution by Bayesian updating and agents' tendency in the laboratory experiment in small feedback-based decision problems. To accomplish calibration above and explore our analysis, we conduct current experiment on small feedback-based decision problems in which subjects' initial payoff distribution is limited to either high (favourable) distribution ("*Good News*") or low (unfavourable) distribution ("*Bad News*"). We in this paper report calibration of numerical optimal solution by Bayesian updating and agents' tendency in the laboratory experiment in small feedback-based problems. One assumption on an rational agent is that an agent is to behave to maximise his expected payoff. Results of the current experiment, however, show subjects' seemingly puzzled tendency inconsistent with the assumption above. The law of small numbers is observed in the experiment. The law of small numbers tells us that an agent will gather too little data and will overgeneralise from small samples to distributions. Agent's overgeneralisation of distribution may lead him to behave not to maximise expected payoff.

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