

Abstract: I analyse how economic agents adapt to new risky opportunities, such as new technologies, when the agents can invest in increasing the likelihood of a successful outcome, while also learn about its original quality. I build on a single risky arm Poisson bandit environment and explore how the ability to endogenously change the arm, by investing, affects the incentives for experimentation. More specifically, I assume that successful investment turns a bad arm into a good one.

As opposed to standard good news Poisson bandits, I find that beliefs may evolve non-monotonically and that the agent may converge to a certain belief and invest at some intensity until the news arrives. In the context of adaptation, this means that the agent may keep pursuing the new opportunity forever despite not reaching a success for a long time, in contrast to necessarily giving up according to the traditional experimentation models. This creates discontinuity in the long-term outcomes of experimentation and suggests strong implications for innovation design and organisational strategies for technological adaptation.