

Abstract:

In a model inspired by neuroscience, we show that constrained optimal perception encodes lottery rewards using an S-shaped encoding function and over-samples low-probability events. The implications of this perception strategy for behavior depend on the decision-maker's understanding of the risk. The strategy does not distort choice in the limit as perception frictions vanish when the decision-maker fully understands the decision problem. If, however, the decision-maker underrates the complexity of the decision problem, then risk attitudes reflect properties of the perception strategy even for vanishing perception frictions. The model explains adaptive risk attitudes and probability weighting as in prospect theory and, additionally, predicts that risk attitudes are strengthened by time pressure and attenuated by anticipation of large risks.