Decision making is often made in an environment of uncertainty. The uncertainty tends to increase when confronted with an interactive adversarial agent: an agent that reacts perniciously to the decision maker's choice. This uncertainty is often Knightian in nature - it cannot be probabilistically modeled, at least not reliably.

We examine the use of info-gap decision theory for decision making under Knightian uncertainty. The basic approach of this theory is that when confronted with a severe uncertainty it may not be beneficial to optimize - that is, to choose the “best” decision under our best estimate of the model. Instead, info-gap decision theory encourages the decision maker to satisfice - to choose a decision that yields an acceptable result for a wide range of contingencies. That is, to choose the most robust alternative.

We exemplify the potential contribution of the info-gap approach using three general problems: profiling, an actuarial law-enforcement method that allocates policing resources differentially between sub-groups within the population; strategic voting, a phenomenon in which voters vote for a candidate other than their favorite; and the detection of an incursive agent. In these problems the decision maker is faced with severe uncertainty regarding responsiveness to policing of the different sub-groups, the preferences of other voters, and the characteristics of the next incursion attempt. We show how info-gap theory may be used for choosing a robust strategy, as well as explaining observed phenomena. We also study the theoretical relation between robustness and probability.