

## **AMBIGUITY OVER TIME: HOW DO WE MANAGE AN UNCERTAIN FUTURE?**

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### **Abstract**

Most important decisions in life involve some degree of ambiguity where precise information about the probabilities and/or the range of possible outcomes is not available: Should I insure my home against an earthquake? What are the chances of success for an experimental medical treatment? What are the health risks associated with using cell phones? This lack of certainty is especially relevant for natural or man-made hazards. For cases such as terrorism attacks, major earthquakes and global warming, it is difficult to come up with a well-defined probability distribution or to predict the extent of potential losses. Howard Kunreuther's research on ambiguity has been instrumental in our understanding of how individuals perceive and manage such uncertain events. In a series of articles, Kunreuther and his colleagues have demonstrated that individuals are considerably ambiguity-averse for low probability-high consequence losses and they are especially sensitive to ambiguous probabilities, compared to uncertain outcomes (Hogarth and Kunreuther, 1989; Kunreuther et al, 1993; Kunreuther et al, 1995; Kunreuther, 2002, etc). These results have significant policy implications, such as how ambiguity-aversion can lead to limited insurance protection for ambiguous hazards due to overpricing of insurance premiums.

One interesting dimension of these ambiguity problems that is not explicitly investigated in behavioral literature is the fact that most of the time, the uncertainty is resolved sometime in the future. We do not know when (or if) an earthquake or a terrorist attack will occur. The consequences of global warming will be observed more intensely in the future. The health hazards associated with cell phones will not exactly be known in the near future. This delay in uncertainty resolution may impact individuals' ambiguity preferences. In the last decade or so, a growing body of experimental research investigates the relationship between risk and time preferences, showing that risk-aversion for gains may be less profound for future lotteries. If risk preferences do have a temporal dimension, it is natural to think that preferences for ambiguous events will also depend on the time period in which we evaluate our options. Converging two seemingly separate research streams, decision-making under ambiguity and intertemporal choice, is definitely worth investigating from an empirical point of view.