

# **A Lakatosian Perspective on the Development of Theories of Decision Making Under Risk**

**Dale J. Poirier**

University of California, Irvine

November 20, 2006

## **Abstract**

The primary goal of this paper is to investigate whether the variable performance of the expected utility hypothesis and other theories across data sets can be formally linked to variation in experimental design so that a *progressive* (in the sense of the philosopher Lakatos) explanation emerges. For example, numerous authors have noted that EU works well inside the Marschak-Machina triangle, but does not work well on the boundary of the triangle. Harless and Camerer (1994, *Econometrica*) organize their analysis around such considerations. Here the spirit of their analysis is formalized in an extension of the *model occurrence framework* developed by Poirier and Klepper (1981, *Journal of Econometrics*), Poirier (1989, *Journal of Econometrics*), and Koop and Poirier (1994, *JRSSA*). Observations about theory performance “inside” versus “on” the triangle suggest predictions for the performance of a theory in an out-of-sample data set. When a pet theory fails and a rationalization is offered that it really wasn’t designed to work for situation underlying a particular data set, then it also implies something about performance in future data sets. Progressivity is measured by whether common rationalizations poor performance of EU and its rivals provide accurate indications of theory performance in data sets not involved in the initial analysis.