



KU LEUVEN

## Statistics and Econometrics Seminar

Joint organization by  
ORSTAT, Faculty of Business and Economics and the Statistics Research Group,  
Faculty of Science  
Leuven Statistics Research Center

**Prof. Dr. Theodoros Evgeniou**

INSEAD

### “Dynamic experiments for estimating preferences: an adaptive method of eliciting time and risk parameters”

Thursday, February 16, 2012  
12.00–13.00h

Location: Room HOG 03.101, Naamsestraat 69, Leuven.  
Supporting research project: GOA-project 2007/04

**Abstract.** In this seminar I will present a recently developed method that dynamically designs elicitation questions for estimating risk and time preference parameters of people - a type of “conjoint analysis for behavioral economics applications”. Typically these parameters are elicited by presenting decision makers with a series of static choices between alternatives, gambles or delayed payments. The proposed method dynamically (i.e., adaptively) designs such choices to optimize the information provided by each choice, while leveraging the distribution of the parameters across decision makers (heterogeneity) and capturing response error. We explore the convergence and the validity of our approach using simulations. The simulation results demonstrate that the proposed method recovers true parameter values well under various circumstances. We then use an online experiment to compare our approach to a standard one used in the literature that requires comparable task completion time. We assess predictive accuracy in an out-of-sample task and completion time for both methods. For risk preferences, our results indicate that the proposed method predicts subjects willingness to pay for a set of out-of-sample gambles significantly more accurately, while taking respondents about the same time to complete. For time preferences, both methods predict out-of-sample preferences equally well while the proposed method takes significantly less completion time. For risk and for time preferences, average completion time for our approach is approximately three minutes. Finally, we briefly review three applications that used the proposed methodology with various populations, and discuss the potential benefits of the proposed methodology for research and practice.

*Joint work with:* Olivier Toubia, Eric Johnson, and Philippe Delquie.