



Technion—Israel Institute of Technology

## *Workshop on Decisions Under Severe Uncertainty*

### The 26th James H. (Jimmy) Belfer Memorial Symposium

Polak Auditorium  
Coler-California Visitors Center  
Monday 21 January 2013

The workshop examines decisions under uncertainty from diverse perspectives. The morning session focusses on the human side of decision making, presenting views on behavioral economics and the psychology of decision making. The afternoon speakers discuss engineering design, management, and policy decisions under uncertainty. The aim is to explore the challenges and implications of decision making over a broad range of disciplines and applications.

## Program

### **Morning Session. The Human Side of Decisions**

08:45–09:20 Greetings.

Prof. Peretz Lavie, President of the Technion.

Prof. Pinhas Bar-Yoseph, Dean of the Faculty of Mechanical Engineering.

Prof. Yoram Halevi, Belfer Fund representative.

Prof. Yakov Ben-Haim, co-organizer.

09:20–10:05 *Mike Smithson*. Are there different kinds of uncertainty? Ambiguity versus conflict.

10:05–10:50 *David Budescu*. Individual decision making with imprecise probabilities.

10:50–11:20 Coffee break.

11:20–12:05 *Thomas S. Wallsten*, Colette Nataf, Yaron Shlomi and Tracy Tomlinson  
Eliciting, representing and scoring judgments about future values of quantitative variables.

12:05–12:50 *Ido Erev*. Life in an unknown state.

12:50–14:00 **Lunch** All participants are invited to join us for lunch at the Coler Center.

### **Afternoon Session. Decision, Design, and Policy Making**

14:00–14:45 *Francois Hemez*. Can numerical simulations support high-consequence decisions?

14:45–15:30 *Scott Cogan*. Design of complex vibrating structures under uncertainty:  
paradigms and challenges.

15:30–16:00 Coffee break.

16:00–16:45 *Mark Burgman*. Expert judgement and mechanisms for group decision making:  
the role of intelligence.

16:45–17:30 *Yakov Ben-Haim*. When is (non-probabilistic) robustness a good (probabilistic) bet,  
and why.

## Registration

Registration is free, but space is limited. If you wish to participate please send an e-mail to Yakov Ben-Haim at yakov@technion.ac.il with your name and institutional affiliation.

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## Speakers

### Morning Session. **The Human Side of Decisions**

*Mike Smithson.* Studies ignorance and uncertainty, risk, decision making, social dilemmas, fuzzy logic, philosophy and social psychology of science. Professor of psychology at the Australian National University.

*David Budescu.* Studies human judgment, and individual and group decision making under uncertainty and with incomplete and vague information. Professor of psychology, Fordham University.

*Tom Wallsten.* Studies judgment and decision making with a focus on mathematical models of the underlying cognitive processes. Professor of psychology at the University of Maryland

*Ido Erev.* Studies the effect of the economic environment on human behavior, and focusses on simple models of learning and response for clarifying complex behavioral phenomena. Professor in the Faculty of Industrial Engineering, Technion.

### Afternoon Session. **Decision, Design, and Policy Making**

*Francois Hemez.* Studies high-consequence decisions with numerical simulations, and policy decisions depending on multi-layered hierarchies of people and technologies. Los Alamos Dynamics, L.L.C., Los Alamos, New Mexico, U.S.A.

*Scott Cogan.* Studies structural engineering analysis and design of complex aerospace and automotive systems. Laboratory of Applied Mechanics, University of Franche-Comté, Besançon, France.

*Mark Burgman.* Studies biological conservation, planning and prediction by groups under uncertainty. Director of the Australian Centre of Excellence for Risk Analysis, University of Melbourne. Fellow of the Australian Academy of Sciences.

*Yakov Ben-Haim.* Developed info-gap decision theory which is applied to decisions under uncertainty in many fields. Yitzhak Moda'i Chair in Technology and Economics, Professor in the Faculty of Mechanical Engineering, Technion.

## Sponsors

Belfer Symposia Fund

Theeman Foundation

Australian Centre of Excellence in Risk Analysis, University of Melbourne

Max Wertheimer MINERVA Center for Cognitive Processes

Yitzhak Moda'i Chair in Technology and Economics

### **Organizers:**

Prof. Yakov Ben-Haim, Faculty of Mechanical Engineering.

Prof. Ido Erev, Faculty of Industrial Engineering.