# Introduction to Special Issue in Honor of John Hey

by

Morten I. Lau, Tibor Neugebauer and Ulrich Schmidt*

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* Department of Economics, Copenhagen Business School, Denmark (Lau); Durham University Business School, UK (Lau); University of Luxembourg (Neugebauer); and Institute of Economics, University of Kiel, Germany (Schmidt). E-mail contacts: mla.eco@cbs.dk, tibor.neugebauer@uni.lu, and uschmidt@economics.uni-kiel.de.

John Dennis Hey was born on September 26, 1944 and is a Professor of Economics and Statistics and Director of the Centre for Experimental Economics (EXEC) at the University of York. Between 1997 and 2011, he held a dual appointment as Professore Ordinario in Italy, first at the University of Bari and later at LUISS in Rome. He was Managing Editor of the *Economic Journal* from 1986 to 1996, and co-founder of several centres and laboratories in experimental economics, including EXEC at the University of York, Centro di Economia Sperimentale A Roma Est (CESARE) at LUISS, and Economia Sperimentale al Sud d'Europa (ESSE) at the University of Bari. He is the author or co-author of more than 100 research articles; and author, editor or co-editor of more than 20 books.

To celebrate John Hey's 70th birthday, this special issue has been prepared to acknowledge his important contributions in the field of economic theory and decision making. A workshop preceding the special issue was held at Durham University on September 17-18, 2013, and John indeed started his academic career as a Lecturer in Economics at Durham University back in 1969.[1] Throughout his impressive career, John has been an outstanding figure and a role-model for young economists. Following this brief introduction to the special issue, John provides a personal view on his own work.

The special issue collates papers that were presented at the workshop in Durham, or based on closely related research, to acknowledge John Hey's important contributions in the field of economic theory and decision making. The papers are related to John's work on (I) economic search rules, (II) inter-temporal decision making, (III) individual decision making under risk and uncertainty, (IV) decision making by groups under risk, and (V) methodology in economic research.

**I.** In the early 1980s John was enthusiastic about economic search and optimal stopping rules. He found that some search problems were very complicated and difficult to

[1] The workshop was funded by Durham University Business School and the Center for the Economic Analysis of Risk (CEAR) at Georgia State University. We are grateful to Glenn Harrison for his contribution to the organization of the workshop and the special issue in *Theory and Decision*.

solve even on the mainframe computer at the University of York. This finding sparked his interest in investigating how people might try to solve these complicated problems. In his first economic experiments John focused on identifying behavioural rules and heuristics in sequential search problems (Hey [1981][1982]). Hey's [1987] observation of a recall effect, that people search for longer if they have the facility to recall earlier offers than if they have to instantaneously accept or reject offers, is now considered a stylized fact in the literature on search rules. Di Cagno, Neugebauer, Rodriguez and Sadrieh revisit John's original experimental design and replicate the recall effect. However, their results also suggest that the recall effect disappears with repetition.

**II.** Later in the 1980s John published his first experimental work on inter-temporal decision making. Carbone and Infante present an experimental test of inter-temporal consumption and saving decisions under risk and ambiguity. Their study extends the earlier research of Hey and Dardanoni [1988] and Carbone and Hey [2004], which were done under risk, by comparing inter-temporal consumption and savings decisions under risk with those under ambiguity. Carbone and Infante report that participants generally fail to optimize inter-temporal utility; however, they report under-consumption under ambiguity versus over-consumption under risk relative to the conditional optimum.

**III.** Since the 1990s John Hey has dedicated much of his time the study of individual decision making under risk and uncertainty. His most famous paper is probably "Investigating Generalizations of Expected Utility Theory using Experimental Data," published with Chris Orme in *Econometrica* in 1994. The broad conclusion in this paper is that Expected Utility Theory (EUT) performs equally well as alternative theories of choice under risk. Schmidt and Seidl support, in some sense, this conclusion by showing that the common ratio effect can be resolved if lotteries are presented in an appropriate way, i.e. without involving coalescing. Andersen, Di Girolamo, Harrison and Lau study risk and time preferences of entrepreneurs in a Danish field experiment in Denmark and find some support for probability weighting among

small business entrepreneurs and non-entrepreneurs, with entrepreneurs being more optimistic about the chance of occurrence for the best outcome in lotteries with real monetary outcomes. The results also suggest that entrepreneurs are willing to wait longer for certain rewards than the general population. This study thus relates to John's work on risk preferences (Hey and Orme [1994]), the ability of individuals to plan over time (Bone, Hey and Suckling [2003]), and the interaction of the two (Carbone and Hey [2004]).

**IV.** In the late 1990s John Hey and two of his colleagues at the University of York, John Bone and John Suckling, began working on decision making by groups of two or more individuals. Their first paper, published in 1999, looked at common ratio effects. The "three Johns" were generally interested in the problem of jointly agreeing on a choice between pairs of risky financial prospects and the division of income from those prospects. This task is complex, and in theory can be viewed as two separable problems: the problem of *ex ante* efficient risk-sharing, and a bargaining problem. The risk-sharing problem was analysed in Bone, Hey and Suckling [2004], and the bargaining problem is addressed in their paper published in this issue. Isopi, Nosenzo and Starmer add to this line of research on group decision making under risk and uncertainty. They also take up an under-emphasized, but important, aspect of John's research: The study of behaviour which is hard to model as expected utility maximisation and perhaps better understood as arising from using heuristics or simple rules of thumb. The same goes for the findings of Isopi, Nosenzo and Starmer that groups are consensus seeking, and that this behavioural rule can, as they report, lead to poor decision making under uncertainty. Nonetheless, John has also had great affinity for developing structural models using individual level data and the economic interpretation of these parameters (Conte, Hey and Moffat [2011]). Bacon, Conte and Moffat adopt a structural econometric approach to investigate risk-taking by groups, which is again inspired by John's experimental work on risk-taking and risk-sharing by groups. Finally, the two Morone brothers study behaviour of groups under risk and compare this to the behaviour of

individuals under the same conditions. The preference functionals of different theories of choice under risk are estimated at the individual/group level following the approach established in the classic study of Hey and Orme [1994], bearing in mind that "people are different" (Hey [2003]). The study concludes with the affirmation that different groups make different decision.

**V.** In some of his more recent work, John has dedicated time to methodological issues. The paper by Harrison and Swarthout looks at tests of the independence axiom in designs that rely on the random lottery incentive mechanism. They investigate the implications of the experimental payment protocol in which subjects are paid for one of many tasks they undertake. Although this protocol is theoretically consistent under EUT, it is not consistent with most alternatives to EUT. This is a topic which John Hey has grappled with directly in Hey and Lee [2005a][2005b]. The extent of the problem is discussed in Hey and Lee [2005b; p. 234]: the crucial point is that, if the subject does not have EU preferences, and if the subject considers the experiment as a whole, then the responses on individual questions may well not reflect the true preferences of that subject with respect to the individual questions. This objection was raised by a referee on an experiment carried out by one of the authors in which subjects were asked 30 pair wise choice questions. The referee asked: "how do you know that the subjects were answering the questions individually and not answering to the experiment as a whole? How do you know that subjects were not choosing the best strategy for the experiment as a whole?" The response made to the referee was that if the subjects tried to do the latter, then they would have to choose between $2^{30}$ = 1,073,741,824 different strategies, and that this was computationally difficult and therefore unlikely. The referee was not satisfied by this response and countered with the usual "as-if" arguments. These were enough to convince the editor. The problem is obviously exacerbated dramatically when the specific lotteries to come in future stages are not known, and have to be guessed at if the subject is to choose the best strategy for the experiment as a whole. This turns a problem of decision

making under objective risk into a challenging problem of decision making under subjective ambiguity.

John Hey is still productive, full of research ideas and excitement for experimental economics and decision making under risk and ambiguity. We wish John many more productive and beautiful years.

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## References


Bone, John D; Hey, John D. and Suckling John R. Are Groups More (Or Less) Consistent than Individuals? *Journal of Risk and Uncertainty*, 18(1), 1999, 63-81.

Bone, John D; Hey, John D. and Suckling John R. Do People Plan Ahead? *Applied Economics Letters*, 10, 2003, 277-280.

Bone, John D; Hey, John D. and Suckling John R. A Simple Risk-Sharing Experiment, *Journal of Risk and Uncertainty*, 28(1), 2004, 23-38.

Carbone, Enrica, and Hey, John D., "The Effect of Unemployment on Consumption: an Experimental Analysis," *Economic Journal*, 114, 2004, 660-683.

Conte, Anna, Hey, John D., Moffatt, Peter G., Mixture models of choice under risk, *Journal of Econometrics* 162(1), 2011, 79–88.

Hey, John D., Are optimal search rules reasonable? And vice versa?(And does it matter anyway?), *Journal of Economic Behavior & Organization* 2(1), 1981, 47–70.

Hey, John D., Search for rules for search, *Journal of Economic Behavior & Organization* 3(1), 1982, 65–81.

Hey, John D., Still Searching, *Journal of Economic Behavior & Organization* 8(1), 1987, 137–144.

Hey, John D., Intermediate Microeconomics: People are Different. McGraw-Hill, 2003.

Hey, John D., and Dardanoni, Valentino, Optimal consumption under uncertainty: An experimental investigation, *Economic Journal* 98(390), 1988, 105-116.

Hey, John D., and Orme, Chris, "Investigating Generalizations of Expected Utility Theory Using Experimental Data," *Econometrica*, 62(6), November 1994, 1291-1326.

Hey, John D., and Lee, Jinkwon, "Do Subjects Remember the Past?" *Applied Economics*, 37, 2005a, 9-8.

Hey, John D., and Lee, Jinkwon, "Do Subjects Separate (or Are They Sophisticated)?" *Experimental Economics*, 8, 2005b, 233-265.

Hey, John D., and Orme, Chris, Investigating generalizations of expected utility theory using experimental data, *Econometrica* 62(6), 1994, 1291-1326.