

Preface

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

11 To celebrate John Hey's 70th birthday, this special issue has been prepared to
12 acknowledge his important contributions in the field of economic theory and decision
13 making. A workshop preceding the special issue was held at Durham University on
14 17–18 September 2013, and John indeed started his academic career as a Lecturer in
15 Economics at Durham University back in 1969.¹ Throughout his impressive career,
16 John has been an outstanding figure and a role model for young economists. Following

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

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17 this brief introduction to the special issue, John provides a personal view on his own
18 work.

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

25 **I.** In the early 1980s, John was enthusiastic about economic search and optimal
26 stopping rules. He found that some search problems were very complicated and diffi-
27 cult to solve even on the mainframe computer at the University of York. This finding
28 sparked his interest in investigating how people might try to solve these complicated
29 problems. In his first economic experiments John focused on identifying behavioural
30 rules and heuristics in sequential search problems (Hey 1981, 1982). Hey's (1987)
31 observation of a recall effect, which people search for longer if they have the facility
32 to recall earlier offers than if they have to instantaneously accept or reject offers, is
33 now considered a stylized fact in the literature on search rules. Di Cagno, Neugebauer,
34 Rodriguez and Sadrieh revisit John's original experimental design and replicate the
35 recall effect. However, their results also suggest that the recall effect disappears with
36 repetition.

37 **II.** Later in the 1980s, John published his first experimental work on inter-temporal
38 decision making. Carbone and Infante present an experimental test of inter-temporal
39 consumption and saving decisions under risk and ambiguity. Their study extends the
40 earlier research of Hey and Dardanoni (1988) and Carbone and Hey (2004), which
41 were done under risk, by comparing inter-temporal consumption and savings decisions
42 under risk with those under ambiguity. Carbone and Infante report that participants gen-
43 erally fail to optimise inter-temporal utility; however, they report under-consumption
44 under ambiguity versus over-consumption under risk relative to the conditional opti-
45 mum.

46 **III.** Since the 1990s, John Hey has dedicated much of his time in the study of indi-
47 vidual decision making under risk and uncertainty. His most famous paper is probably
48 "Investigating Generalizations of Expected Utility Theory using Experimental Data",
49 published with Chris Orme in *Econometrica* in 1994. The broad conclusion in this
50 paper is that Expected Utility Theory (EUT) performs equally well as alternative theo-
51 ries of choice under risk. Schmidt and Seidl support, in some sense, this conclusion
52 by showing that the common ratio effect can be resolved if lotteries are presented in an
53 appropriate way, i.e. without involving coalescing. Andersen, Di Girolamo, Harrison
54 and Lau study risk and time preferences of entrepreneurs in a Danish field experiment
55 in Denmark and find some support for probability weighting among small business
56 entrepreneurs and non-entrepreneurs, with entrepreneurs being more optimistic about
57 the chance of occurrence for the best outcome in lotteries with real monetary outcomes.
58 The results also suggest that entrepreneurs are willing to wait longer for certain rewards
59 than the general population. This study thus relates to John's work on risk preferences
60 (Hey and Orme 1994), the ability of individuals to plan over time (Bone et al. 2003)
61 and the interaction of the two (Carbone and Hey 2004).

62 **IV.** In the late 1990s, John Hey and two of his colleagues at the University of York,
63 John Bone and John Suckling began working on decision making by groups of two or
64 more individuals. Their first paper, (Bone et al. 1999) looked at common ratio effects.
65 The “three Johns” were generally interested in the problem of jointly agreeing on a
66 choice between pairs of risky financial prospects and the division of income from
67 those prospects. This task is complex, and in theory can be viewed as two separable
68 problems: the problem of *ex ante* efficient risk sharing and a bargaining problem. The
69 risk-sharing problem was analysed in Bone et al. (2004), and the bargaining problem
70 is addressed in their paper published in this issue. Isopi, Nosenzo and Starmer add to
71 this line of research on group decision making under risk and uncertainty. They also
72 take up an under-emphasised, but important, aspect of John’s research: The study of
73 behaviour which is hard to model as expected utility maximisation and perhaps better
74 understood as arising from using heuristics or simple rules of thumb. The same goes
75 for the findings of Isopi, Nosenzo and Starmer that groups are consensus seeking,
76 and that this behavioural rule can, as they report, lead to poor decision making under
77 uncertainty. Nonetheless, John has also had great affinity for developing structural
78 models using individual level data and the economic interpretation of these parameters
79 (Conte et al. 2011). Bacon, Conte and Moffat adopt a structural econometric approach
80 to investigate risk taking by groups, which is again inspired by John’s experimental
81 work on risk taking and risk sharing by groups. Finally, the two Morone brothers study
82 behaviour of groups under risk and compare this to the behaviour of individuals under
83 the same conditions. The preference functionals of different theories of choice under
84 risk are estimated at the individual/group level following the approach established in
85 the classic study of Hey and Orme (1994), bearing in mind that “people are different”
86 (Hey 2003). The study concludes with the affirmation that different groups make
87 different decision.

88 **V.** In some of his more recent work, John has dedicated time to methodological
89 issues. The paper by Harrison and Swarthout looks at tests of the independence axiom
90 in designs that rely on the random lottery incentive mechanism. They investigate the
91 implications of the experimental payment protocol in which subjects are paid for
92 one of many tasks they undertake. Although this protocol is theoretically consistent
93 under EUT, it is not consistent with most alternatives to EUT. This is a topic which
94 John Hey has grappled with directly in Hey and Lee (2005a,b). The extent of the
95 problem is discussed in Hey and Lee (2005b, p. 234): the crucial point is that, if the
96 subject does not have EU preferences, and if the subject considers the experiment
97 as a whole, then the responses on individual questions may well not reflect the true
98 preferences of that subject with respect to the individual questions. This objection
99 was raised by a referee on an experiment carried out by one of the authors in which
100 subjects were asked 30 pair wise choice questions. The referee asked: “how do you
101 know that the subjects were answering the questions individually and not answering
102 to the experiment as a whole? How do you know that subjects were not choosing
103 the best strategy for the experiment as a whole?” The response made to the referee
104 was that if the subjects tried to do the latter, then they would have to choose between
105 $2^{30} = 1, 073, 741, 824$ different strategies, and that this was computationally difficult
106 and therefore unlikely. The referee was not satisfied by this response and countered
107 with the usual “as-if” arguments. These were enough to convince the editor. The

108 problem is obviously exacerbated dramatically when the specific lotteries to come in
 109 future stages are not known, and have to be guessed at if the subject is to choose the
 110 best strategy for the experiment as a whole. This turns a problem of decision making
 111 under objective risk into a challenging problem of decision making under subjective
 112 ambiguity.

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

116 Morten Lau, Tibor Neugebauer and Ulrich Schmidt
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