

From the Editor...

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In our first article, Samuel D. Bond, Kurt A. Carlson, and Ralph L. Keeney address the important stage of decision problem formulation in “Improving the Generation of Decision Objectives.” Next, Charles M. Harvey and Lars Peter Østerdal develop “Cardinal Scales for Health Evaluation.” We then move to consideration of risk taking and risk perception. In our third article, Alen Nosić and Martin Weber report their experimental study on “How Riskily Do I Invest? The Role of Risk Attitudes, Risk Perceptions, and Overconfidence.” In the next article, Michel Denuit and Louis Eeckhoudt provide results on “Bivariate Stochastic Dominance and Substitute Risk-(In)dependent Utilities.” In our final article, Bjørn Sandvik and Lars Thorlund-Petersen derive results on “Sensitivity Analysis of Risk Tolerance.” At the end of this article are some recent journal accomplishments, including the coverage in the Social Sciences Citation Index.

Key words: decision analysis; bivariate (s_1, s_2) -increasing concave orders; bivariate stochastic dominance; cardinal utility; conditional risk aversion; experimental; extended content domain specificity; health scales; identification of objectives; neoclassical welfare economics; overconfidence; preference intensity; population health; risk attitude; risk aversion; risk perception; return perception; risk taking; risk tolerance; portfolios; sensitivity analysis; social welfare; stochastic dominance; editorial

I can live with doubt and uncertainty. I think it's much more interesting to live not knowing than to have answers which might be wrong... In physics the truth is rarely perfectly clear, and that is certainly universally the case in human affairs. Hence, what is not surrounded by uncertainty cannot be the truth.

(Feynman 2005, pp. xiii, xvi)

Since three of the papers in this issue address uncertainty, as encompassed in risk perceptions, risk attitudes, and in utility models incorporating risk attitudes, I'd like to think that the late Richard Feynman would have enjoyed reading this issue, since he was comfortable living with uncertainty.

Our first article investigates ways to aid creativity in the generation of objectives. Feynman (1987, p. 14) described¹ how he got the creative idea of how to test how resilient the rubber in the O-rings of the Space Shuttle *Challenger* would have been at very cold temperatures during the catastrophic lift-off:

I look at the table, and there's a glass of ice water. I think, "Damn it, I can find out about that rubber without sending notes to NASA and getting back a stack of papers; all I've got to do is get a sample of the rubber,

stick it in ice water, and see how it responds when I squeeze it!"

Samuel D. Bond, Kurt A. Carlson, and Ralph L. Keeney address the important stage of decision problem formulation in “Improving the Generation of Decision Objectives,” by first pointing out two problems in the generation of decision objectives, not being broad enough to cover the span of objectives and not going deep within that span. Two interventions led to a larger number of generated objectives in experimental studies: the use of names of objectives categories and direct challenges to do better in generating objectives with a warning that important objectives are missing. With these insights from Bond et al. (2010), decision makers should be able to build clarity on their objectives. As Khalil Gibran said, “Vague and nebulous is the beginning of all things, but not their end,” which applies well to problem structuring.

Other papers in *Decision Analysis* addressing problem structuring include Butler et al. (2006) on using attributes to predict objectives in preference models and Shilling et al. (2007) on how effective decision analysis processes are. Examples of *Decision Analysis* papers reporting the use of decision models with multiple objectives include Bana e Costa et al. (2008) on bid evaluation models, Brothers et al. (2009) on

¹ See Feynman demonstrating his ice water test at http://www.youtube.com/watch?v=8qAi_9quzUY.

radioactive liquid process wastes, Dees et al. (2010) on reframing multiple objective results, Ewing and Baker (2009) on green building decisions, Ewing et al. (2006) on army base realignment, Feng and Keller (2006) on terrorism protection, and Merrick et al. (2005) on watershed improvement. Prior papers in *Decision Analysis* by Ralph Keeney, who also serves as a member of the editorial board, include Keeney and Vernik (2007) on a woman's childbearing plans in light of her biological clock and her three objectives for professional, social, and family life; Keeney (2004b) on making better decision makers; and Keeney (2004a) on communicating about decisions.

In our next article, Charles M. Harvey and Lars Peter Østerdal develop "Cardinal Scales for Health Evaluation." Instead of an ordinal or expected utility scale for health levels, Harvey and Østerdal (2010) use the perspective of early neoclassical welfare economics to develop their health scale, which conveys information on strength of preference for changes in health levels, and not information on risk attitudes. Such a scale has also been called a measurable value function. Prior papers in *Decision Analysis* on decision models for health outcomes include Cantor (2004) on clinical applications, Hazen (2004, 2007) on quality-adjusted life years (QALYs), and Müller et al. (2006) on dose finding.

Now it is time for our *Trivia question*: What was future Nobel Prize winner Richard P. Feynman purportedly joking about in his memoir book *Surely You're Joking Mr. Feynman!* (Feynman 1985)?²

We now move to consideration of risk taking and risk perception. In our third article, Alen Nosić and Martin Weber report their experimental study on "How Riskily Do I Invest? The Role of Risk Attitudes, Risk Perceptions, and Overconfidence." Nosić and Weber (2010) examine investors' risk-taking behavior and find that it is affected by their subjective risk attitude and by the subjective risk and return of the investment alternative. They also find that miscalibration impacts risk behavior.

Prior contributions by Martin Weber include Glaser et al. (2007) on the trend recognition and forecasting

ability of professional traders and Weber and Zuchel (2005) on whether prior outcomes affect risk attitude. Other related papers in *Decision Analysis* include Vrecko et al. (2009) on the impact of lottery presentation format and risk aversion on lottery choices and Baucells and Rata (2006) on risk taking in real-world decisions.

Our next paper, on "Bivariate Stochastic Dominance and Substitute Risk-(In)dependent Utilities" is by Michel Denuit and Louis Eeckhoudt. Denuit and Eeckhoudt (2010) consider the substitute risk-independent utilities of Keeney (1973) and extend the work in Mosler (1984) to consider utility functions that exhibit properties beyond nonsatiation and risk aversion (such as prudence and temperance). By using correlation aversion, substitute risk-independent utilities are shown to generate bivariate stochastic dominance, and a portfolio comparison example is provided to assess the possible hedging effect between two outcomes.

Related articles in *Decision Analysis* include Abbas (2007) on invariant utility functions and certain equivalent transformations, Abbas and Howard (2005) on attribute dominance utility, Wakker et al. (2004) on anchor levels in multiattribute theory and measurement, and Tsetlin and Winkler (2006) on target-oriented formulations for multiattribute utility.

In our final article, Bjørn Sandvik and Lars Thorlund-Petersen derive results on "Sensitivity Analysis of Risk Tolerance." After noting that when facing a decision between two investments X and Y , a risk-averse decision maker with exponential utility may have more than one critical value of risk tolerance for which the decision is reversed from one investment to the other; Sandvik and Thorlund-Petersen (2010) show that if Y is preferred to X by all risk-seeking decision makers, then there is at most one such critical value. They also extend this result to linear plus exponential utility functions.

Related articles in *Decision Analysis* include Bickel (2006) on determinants of corporate risk aversion, Delquié (2008) on interpreting the risk tolerance coefficient in terms of the maximum acceptable loss, Abbas and Hann (2010) on risk aversion in a name-your-own price channel, Kirkwood (2004) on approximating risk aversion in applications, and Smith (2004) on risk sharing and corporate risk attitudes.

² *Trivia answer*: He was asked if he wanted milk or lemon in his tea and he said "Both," not knowing that combining milk and lemon in one tea cup is just not done. The tea-serving professor's wife at Princeton said to him, "Surely, you're joking Mr. Feynman."

Decision Analysis is now covered in the Social Sciences Citation Index, Current Contents/Social & Behavioral Sciences, and in Cabell's Directories of Publishing Opportunities. Also, INFORMS as a whole and all of the INFORMS journal websites have moved to a new content management system. The old *Decision Analysis* website at <http://da.pubs.informs.org> now resolves to <http://www.informs.org/Journal/DA>. *Decision Analysis* is a part of Articles in Advance; see <http://www.informs.org/Journal/DA/Future-Issues> for papers in future issues appearing online prior to print.

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