

Decision Analysis Newsletter



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From The President

Jim Smith



Spring is upon us! I hope you are doing well.

This is a very busy teaching term for me. Our "Decision Models" course is no longer a required core course in Duke's daytime MBA program, but the course remains a popular elective. Indeed this term we have approximately 370 students (in 6 sections) drawn from a program with 420 students in each class. It is gratifying that so many of our MBA students want to learn about decision analysis,

but it sure is a lot of work when we are teaching!

In the last few years, my predecessor as President of DAS, Craig Kirkwood, has used this "From the President" column in the spring newsletter to review the Decision Analysis Society's membership statistics. I am pleased to report that DAS is now the largest of the INFORMS subdivisions with 1081 members as of the end of 2008 – "We're number one!" The Marketing Science Society (MSS) is the next largest with 1056 members, followed by the Manufacturing and Services Operations Management Society (MSOM) with 951 members and the Optimization Society (OPT) with 868 members. All of these numbers are down slightly from last year, reflecting a slight decrease in INFORMS membership overall. Specifically, at the end of last year, DAS, MSS, MSOM and OPT had 1129, 1157, 991, and 911 members, respectively. These decreases in membership almost certainly reflect tight budgets in the current economic environment.

The DAS membership is strikingly diverse and has a very broad range of interests. Our members include academics interested in the foundations of decision theory and cutting edge methodology, practitioners interested in helping their firms (or clients) make sound decisions, students who are in the process of refining their interests and forming their professional goals, and educators who are helping others understand and appreciate decision analysis. And many who fill more than one of these roles! In comparison to other INFORMS societies, DAS has a larger share of student and practitioners among its members.

DAS supports its diverse membership in a variety of ways. The INFORMS journals – Management Science, Operations Research, and especially our flagship journal Decision Analysis – provide outlets for innovative research in decision analysis. Our conferences provide an opportunity to get together and discuss new ideas. The annual fall conference includes sessions on both research and practice. The

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spring features a practice conference focused on topics of interest to practitioners: Bill Klimack and Dave Leonhardi have put together a very interesting set of sessions for this year's practice conference in Phoenix later this month (April 26-28). Don Keef-er and Craig Kirkwood have also arranged some decision analysis session for INFORMS Western Regional conference that takes place just before the INFORMS practice conference in Phoenix. Ali Abbas has arranged some sessions on decision analysis at the international INFORMS meeting in Toronto in June. In addition to these conferences, we provide this newsletter (thanks to Jeff Keisler!), a website, email distribution lists, and discussion forums to help disseminate news and keep our members in touch.

In addition to the Decision Analysis Society's efforts, there are several "sister" organizations that also support decision analysis and decision analysts. The Decision Analysis Affinity Group (DAAG) has been hosting annual meetings focused on decision analysis practice in firms, since 1995. This year they will be holding their annual meeting in May in Indianapolis; there is an announcement of this meeting elsewhere in the newsletter. I have been to several of the DAAG meetings and have found them to be interesting and stimulating as well as a great way for academics to learn about the "state of the art" in decision analysis practice.

And now, we have the Decision Professionals Network (DPN), an online professional community for practitioners of decision analysis, announced in this newsletter. The DPN is about to launch an online network and website that provides a resource for tools, models, cases, and best practices. The goals of the DPN dovetail nicely with the mission of DAS. There will be a session discussing the DPN initiative at the upcoming INFORMS practice meeting. I am looking forward to the development of the DPN and rooting for its success as it has the potential to become an excellent resource to support professional decision analysts.

Finally, please keep in touch. If you have any ideas or suggestions for DAS, I would be pleased to hear them. Best wishes for the spring and summer,

Jim Smith
Durham, North Carolina

Editor's Letter

Jeffrey Keisler

There is a lot of newsletter this issue. I have several things to say about that.

1) Thank you very much to those who contributed to this issue. Ralph Keeney got a lot attention for DA with a recent article that was featured in News-week magazine, and he tells us how that went. Alec Morton reports on an interesting panel session from last fall's INFORMS meeting. Rocky Gay wrote an excellent and detailed article about how DA practice faces the challenges of our current economic situation -- this is also the first full contribution in the Practice column. Andrés Lartigue Debián and Mauro Cevasco share their knowledge of DA in Argentina with Martin Schilling. Thanks also to all the other DAS officers and members who contributed news, notes and commentary, thereby helping to bring the field together. Please keep all this great material coming (at whatever length works for you)!

2) Since we have gone digital and added columns, the newsletter is a large PDF file. Due to the increase in email security problems, the mass mailed newsletter has been getting caught in spam filters (of DAS President Jim Smith, for example). After some discussion within the DAS council, we decided to change the circulation as follows:

- a. The current newsletter will be posted as a PDF file on the DAS website.
- b. DAS members will receive an email notice announcing the newsletter with a link to the file on the website.

We felt that with the range of email filters out now, it would be best to ensure that the newsletter is easily available to those who want to read it. In addition, although non-members will not receive the email and the link, they will be able to read the newsletter at the website without a delay until the next issue. This will help disseminate information more quickly within the DA community and will let those who have not yet joined DAS see how exciting it is.

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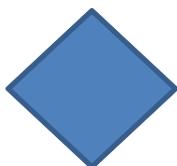
3) We have added columns to reach different segments of the DAS membership. We still could use something that focuses on the needs of our student members, hence this **Call for Column Editor**. At last year's INFORMS meeting, we discussed having a flexible student news and advice column, where a column editor would answer or ask experts to answer real or fabricated (but useful) questions relating to early career advice, e.g., "How can I work on real business projects that use DA?" If you are interested in doing this, or if you have any suggestions for someone who might enjoy it, please let me know and I'll be more than happy to discuss.

4) We have gone back to 12 point font. Let me know if you have preferences one way or the other.

5) We are considering changing the name of the newsletter. Robin Keller suggested this, pointing out that other organizations have done something similar. Why? As a publication that has articles that go beyond administrative announcements, we now really are something more than a newsletter. Contributors are putting substantial effort into providing material of value to the DA community. By giving a more dignified name to the publication, we give contributors more credit for their work (i.e., they can refer to their article in something like "Decision _____, Vol. x.y, pp. 15-17") and more incentive to keep the contributions coming.

I will put out some possible names right now: Decision News, Decision Time, Chronicles of the Decision Analysis Society, DAS Magazine, Decision Analysis Magazine, Decision Space: News of the Decision Analysis Society, or some combination of the above, etc.). Please send me your response to this idea, your suggestions, or your and preferences on these names. A blue-ribbon committee (OK, the DAS Council) will make the decision.

Enjoy the issue!



Calls for Award Nominations

The Ramsey Award Selection Committee is soliciting nominations for the 2009 Ramsey Medal.

The Frank P. Ramsey Medal is the highest award of the Decision Analysis Society. The medal is named in honor of Frank Plumpton Ramsey, a Cambridge University mathematician who was one of the pioneers of decision theory in the 20th century. His 1926 essay "Truth and Probability" (published posthumously in 1931) anticipated many of the developments in mathematical decision theory later made by John von Neumann and Oskar Morgenstern, Leonard J. Savage, and others. The Ramsey Medalists are recognized for having made substantial further contributions to that theory and its application to important classes of real decision problems. The Medal is accompanied by a \$1,000 honorarium.

Criteria for the Ramsey Medal

The Ramsey Medal of the Decision Analysis Society (DAS) is awarded for distinguished contributions to the field of decision analysis. Distinguished contributions can be internal, such as theoretical or procedural advances in decision analysis, or external, such as developing or spreading decision analysis in new fields. Thus the specific criteria for evaluating potential Ramsey Medal recipients are a candidate's

- * Theoretical, methodological, and procedural contributions to decision analysis
- * Applications of decision analysis (including for new uses and into new fields)
- * Other contributions promoting decision analysis (e.g. educational and public relations)
- * Exceptional contributions to the Decision Analysis Society (e.g., service to society or journal)

A potential recipient need not meet all of the criteria, but contributions to each criterion are relevant.

For this award, decision analysis is defined as a prescriptive approach to provide insight for decision making based on axioms that are logically consistent

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with the axioms of von Neumann and Morgenstern and of Savage. Key constructs of decision analysis are /utility/ to quantify values and /probability/ to quantify the state of one's knowledge. There are overlapping aspects of decision analysis with other fields such as behavioral decision research, probabilistic risk analysis, and engineering and economic analyses. Behavioral decision research that addresses how people make decisions that has direct implications for how the practice of decision analysis might be improved is a contribution to decision analysis. Models of uncertain scenarios and possible consequences from risk analysis or engineering and economic modeling that are useful for decision analysis are contributions.

Where and When to Send Nominations

Nominations should be sent via email to the committee chair, Bob Winkler: rwinkler@duke.edu. The deadline for nominations is May 11, 2009. A nomination should include a one-page summary of the nominee's contributions with respect to the award criteria listed above and an electronic copy of the nominee's vita or a link to one.

From John Butler

It's time for the society to start getting ready for the 2009 INFORMS annual conference in San Diego. Part of this process is recognizing outstanding contributions to the field with the Publication Award, Practice Award and Student Publication Award. A brief description of each award and a link to more information is provided below. The deadline will be here soon so please take a moment to nominate yourself, a student or a worthy colleague.

DAS Publication Award

This award is given annually to the best decision analysis article or book published in the second preceding calendar year (i.e. calendar year 2007 for consideration in 2009). The award is accompanied by a plaque and a \$750 honorarium. The intent of the award is to recognize the best publication in "decision analysis, broadly defined." This includes, but is

not limited to, theoretical work on decision analysis methodology (including behavioral decision making and non-expected utility theory), descriptions of applications, and experimental studies.

The chair of the 2009 DAS Publication Award is Rakesh Sarin (rakesh.sarin@anderson.ucla.edu). More information about can be found here:

<http://www.informs.org/index.php?c=609&kat=DA%3A+Decision+Analysis+Publication+Award+Application+Process>

DAS Practice Award

The DAS Practice Award is given annually to the best decision analysis application, as judged by a panel of Society members. It includes a cash prize of \$750 and assistance in getting the work published in a suitable journal such as Decision Analysis or Interfaces if the winner so desires. The intent of this award is to recognize, promote, and publicize good decision analysis practice. Previous publication of the work does not preclude it from consideration for this award.

The chair of the 2009 DAS Practice Awards is Eric Bickel (ebickel@mail.utexas.edu). More information about can be found here:

<http://www.informs.org/index.php?c=611&kat=DA%3A+Practice+Award+Application+Process>



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Decision Analysis Student Paper Award

Submission deadline: June 15, 2009

The Student Paper Award is given annually to the best decision analysis paper by a student author, as judged by a panel of the Decision Analysis Society of INFORMS. Students who did not complete their Ph.D. prior to May 1, 2008 are eligible for this year's competition.

The award is accompanied by a plaque and a \$500 honorarium. The award will be presented and the winner will also be invited to present his or her paper at the DAS Awards Session at the INFORMS Annual Meeting to be held in San Diego, CA, October 11-14, 2009.

All students doing work in or related to decision analysis (e.g., decision methodologies, experimental studies, and applications) are encouraged to submit a paper. The work must be predominately that of the student, though faculty members or other mentors can be co-authors if appropriate. The paper should be 30 pages or less (double spaced and 12 point font) and in the standard format of Management Science or Operations Research.

If you are a faculty member who is supervising students, please inform them of this opportunity. If you are a student reading this, please encourage your classmates to submit a paper and to join the society. While we encourage applicants to join DAS, students do not need to be members to be eligible for the competition.

To be considered for this year's competition, please submit an electronic version of your paper (either MS Word file or PDF format) to the committee co-chairs at the address given below. The deadline for submission is June 15.

Erin Baker
e-mail: edbaker@ecs.umass.edu

Karen Jenni
kjenni@insightdecisions.com

Decision Professionals Network!**Introducing the Decision Professionals Network**

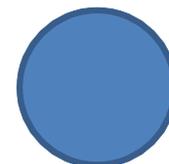
The Decision Professionals Network, an online professional community for practitioners of DA, is nearing a significant milestone: launch of the network and website.

Currently in start-up mode, DPN is an online network dedicated to the professional practice of DA and decision quality, with a particular emphasis on serving the needs of the practitioner. When fully launched, DPN will be an online resource for tools, models, cases, and best practices and members will have the ability to network online with other experienced corporate and consulting practitioners throughout the world. In addition, DPN will promote excellence in the profession and the recognition of the profession and the value it brings to important decisions in all walks of life.

DPN is expected to dovetail with mission of the DA Society of INFORMS and DAAG, whose conferences and forums will continue to provide a vehicle for in-person events.

DPN's early development, including an alpha website and series of focus groups, was sponsored by Strategic Decisions Group. As DPN enters its next stage, it will be largely self-managed by senior practitioners of DA and it will begin to solicit charter members. A charter member will have significant influence in the direction of the network and the Beta website.

To learn more, participate in discussions, and receive future announcements about DPN, please join the DPN group on LinkedIn (search LinkedIn groups for "Decision Professionals Network" or visit this link: <http://www.linkedin.com/groupRegistration?gid=1677967>). Joining the DPN group on LinkedIn is free; DPN is not yet accepting member fees but is seeking volunteers to advance the network. To reach a live person, please call Barbara Metzler at SDG: +1 650-475-4497 or bmetzler@sdg.com.



Decision Analysis Journal

L. Robin Keller
Editor-in-Chief

The Decision Analysis March 2009 issue...

A Decision Analysis Tool for Evaluating Fundraising Tiers

Kevin F. McCardle, Kumar Rajaram, and Christopher S. Tang

The authors constructed a utility function model of donors who need to decide their donation amount, in the face of different tier levels. The basic idea is that if a person originally plans on giving a specific amount, when the donor sees that the planned donation is near a cut-off for a higher recognition tier, the donor may choose to increase the planned donation to reach the cut-off level and achieve the extra prestige. Using data on donations to a private high school, McCardle et al. demonstrate their decision analysis tool for a charity to evaluate the effectiveness of the cut-off levels for different tiers.

Working with Policy Makers on their Choices: A Decision Analyst Reminisces

Rex Brown

The author describes a variety of cases at a national government level, with particular attention to clients' private, political and bureaucratic interests. For example, the help he provided has often had more to do with validating or advocating actions than with helping policy makers make up their own minds. He candidly discusses challenges and dilemmas for the consultant.

A Kullback-Leibler View of Linear and Log-Linear Pools

Ali E. Abbas

The author shows that, while linear and log-linear pools are widely used methods for aggregating belief, we should think carefully about the actual problem we are solving when proposing these pools as an aggregation methodology. Framing the aggregation problem as a decision problem with scoring rules, he shows how the asymmetry of the Kullback-Leibler

divergence measure enables the assignment of both linear and log-linear pools when used as a scoring function. Abbas then illustrates his approach with several examples.

Combining the Opinions of Experts who Partition Events Differently

Robert F. Bordley

Many prior methods for combining information from experts assume that the experts divide up the possible outcomes of an event using the same set of partitions. Bordley presents his new method and applies it to an example of a problem with an automobile (drawing upon his role at General Motors Research Laboratories) when experts from different parts of an organization (such as engineering, sales, and the executive level) have different partitions for problems, such as {propulsion, frame, body} or {drivability, comfort}. Bob's article addresses an important practical problem - the fact that experts often think about problems using different partitions - which has been widely discussed in the psychological literature but not explicitly addressed in the extensive literature on aggregating probability assessments.

Decision Analysis is now a part of Articles in Advance (AIA), where accepted manuscripts appear prior to printing:

<http://da.journal.informs.org/papbyrecent.dtl>

Decision Analysis archive available through Highwire Press: <http://da.journal.informs.org/>

For Decision Analysis subscription information and rates: <http://da.pubs.informs.org/>

INFORMS Decision Analysis Society Members!

By special arrangement with the Decision Analysis Society Council, dues-paying regular members of the DAS receive a subscription to the journal as part of their 2009 membership dues. The DAS is a subdivision of INFORMS. For information on DAS, go to <http://decision-analysis.society.informs.org/>

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Decision Analysis is a quarterly journal dedicated to advancing the theory, application, and teaching of all aspects of decision analysis. The primary focus of the journal is to develop and study operational decision-making methods, drawing on all aspects of decision theory and decision analysis, with the ultimate objective of providing practical guidance for decision makers. As such, the journal aims to bridge the theory and practice of decision analysis, facilitating communication and the exchange of knowledge among decision analysts in academia, business, industry, and government. Decision Analysis is published in March, June, September, and December by the Institute for Operations Research and the Management Sciences (INFORMS) at 7240 Parkway Drive, Suite 310, Hanover, Maryland 21076. Please visit our website at <http://da.pubs.informs.org/>.

Why Publish in Decision Analysis?

Ahti Salo, with support from Jason R. W. Merrick and Thomas Langer

Since it was first launched in 2004, Decision Analysis has rapidly established itself as the leading journal that specializes in the publication of high-quality papers on the theory, application and teaching of all aspects of decision analysis.

Published by INFORMS with editorial leadership from members of its Decision Analysis Society, Decision Analysis benefits from the support of strong and widely regarded professional organizations. It is rightly associated with the hallmark of quality that is ascribed to INFORMS journals.

The Editorial Board of Decision Analysis consists of pre-eminent decision analysts who are committed to the journal and publish their cutting-edge research in it. At present, the Editorial Board has eight INFORMS Fellows and nine winners of the Ramsey P. Medal, the highest distinction of the INFORMS Decision Analysis Society. These award winners have already published well over 20 papers in Decision Analysis.

Decision Analysis prides itself in ensuring that submissions are refereed efficiently, competently and

consistently. As rule, the authors can expect that the Editorial Decision will be reached in less than four months. This is much sooner than with many other journals where the authors may have to wait over a year before obtaining feedback.

Having completed five years of publication, Decision Analysis is now being considered for inclusion in the Social Science Citation Index (SSCI). For prospective authors, this is yet another reason to submit their research to Decision Analysis, because their papers, if accepted, are likely to appear in the many databases that build on SSCI. It is also covered by the PsycINFO abstract database.

The excellent quality of Decision Analysis is also demonstrated by its papers receiving many citations from the scientific literature and even more broadly. For example, the 71 articles published in Decision Analysis during 2004-07 have received some 1070 citations in scholar.google.com (checked on December 1, 2008), resulting in an average of 15.1 citations per paper. This compares very favorably with many other journals, such as Journal of Multi-Criteria Decision Analysis (an average of 4.2 from 76 cites to 26 papers), Operations Research Letters (an average of 4.9 from 1868 to 380 papers), Decision Sciences (an average of 1.9 from 158 cites to 82 papers), Omega (an average of 0.3 from 56 cites to 207 papers), and OR Spectrum (an average of 1.3 from 161 cites to 121 papers).

INFORMS Considers Anti-Plagiarism Procedure

L. Robin Keller

The INFORMS Publications Committee is considering instituting an anti-plagiarism procedure for checking for plagiarism (including self-plagiarism) for papers submitted to INFORMS-published journals, including Decision Analysis. This is in response to some cases of plagiarism that have occurred with some INFORMS journals (not with Decision Analysis).

The online manuscript submission Manuscript Central website is currently in a testing phase for the use of "Cross Check," a new tool to identify suspected

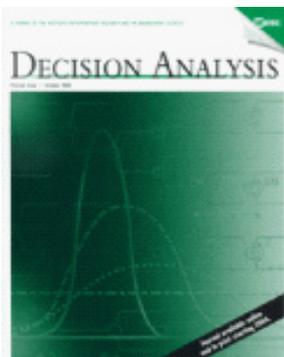
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plagiarism. This system would charge INFORMS a \$.75 fee to check a submitted manuscript. The policy is not yet set for which set of submissions (i.e., just papers sent to referees or all submissions) would be screened using this tool.

The main thing all authors need to know is that they may not copy from other published or non-published works. In particular, plagiarism checking software can identify places where full sentences or paragraphs have appeared in another paper. Please be sure all co-authors, including students or others new to writing research articles, understand that both the findings and the way findings are described in the text must be newly written.

INFORMS Decision Analysis Journal Review

In accordance with routine INFORMS policy and procedure, the INFORMS VP for Publications, Terry Harrison, has appointed a committee to review the Decision Analysis Journal and consider the reappointment of Robin Keller as Editor-in-Chief for a second three year term. Robin will present a report on the journal and the committee will conduct a survey as part of the review process. The committee will include Greg Parnell (United States Military Academy and Committee Chair); Manel Baucells, (IESE Business School, Barcelona); Robin Dillon-Merrill (Georgetown University); Jim Felli (Eli Lilly Company); Warren Powell (Princeton University and INFORMS Publications Committee representative); and Candita Gerzevitz (liaison from the INFORMS office). The final report is due on August 1, 2009. Please respond to our survey and feel free to provide any feedback on the journal to the committee chair (gregory.parnell@usma.edu) or any committee member.



More Journals

Management Science, Decision Analysis area

Last January, George Wu and David Bell stepped down as departmental editors for decision analysis of the journal *Management Science*, and we (**Teck-Ho and Peter Wakker**) became the new DEs. We plan to continue working the same way George and David did, with no change in scope or policy. We hope for many good submissions from the decision analysis society, so that we can disseminate the valuable ideas of this field as widely as possible. Here is the editorial of the journal for our field:

The Decision Analysis Department seeks papers that introduce new concepts and techniques for modeling decisions as well as behaviorally oriented papers that explain or evaluate decisions or judgments. Papers may develop original theory or methodology, address problems of implementation, present empirical studies of choice behavior or decision modeling, synthesize existing ideas, or describe innovative field applications. In all cases, the papers must be based on either sound economic or psychological principles. Decision settings may be deterministic or stochastic, competitive or non-competitive; static or dynamic. Applications may include understanding and improving managerial decisions in business or government. The editors are open to articles in areas including marketing, finance, economics, psychology, operations research, accounting, health care, and public policy. Interdisciplinary articles that cut across multiple areas are particularly welcomed.

The department has two department editors. Authors can choose the editor to submit to, although the editors may forward papers to each other.



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Asia-Pacific Journal of Operational Research

In December 2008 **Matthias Ehrgott** was appointed as the new area editor for "Decision Analysis and Decision Making Techniques" of the Asia-Pacific Journal of Operational Research (*Congratulations! Ed.*) (<http://www.worldscinet.com/apjor/apjor.shtml>).

Below is the editorial statement. High quality papers are very welcome and can be submitted online via the journal homepage.

Operations Research offers a variety of quantitative techniques to support decision making processes with single or multiple decision makers and involving single or multiple criteria. This area of APJOR covers all aspects of Operations Research relating to decision analysis at all stages of decision making processes, from the problem formulation stage through modelling aspects and solution methods to implementation.

We invite high quality papers on all aspects of decision analysis and decision making techniques. Topics may range from fundamental theoretical aspects of decision science to methods for decision analysis and decision support and real world applications of decision making techniques.

Submitted papers should either focus on theoretical and methodological aspects or describe novel applications. All submissions will be judged on originality, technical quality, and presentation and papers published in APJOR should be of interest to a wide audience within the OR community. Theoretical and methodological papers will present new ideas, important new results, new methods and algorithms, or unification of existing knowledge. Application oriented papers may report on the use of new methods in practice or the application of existing techniques in new areas. It is expected that a publication in APJOR extends current knowledge and helps solve decision problems in new ways.

Submitted Announcements

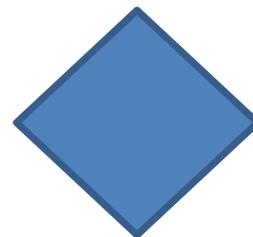
Professional News

Stephen Fields has a new position with the U.S. Food and Drug Administration (FDA). He is an Operations Research Analyst within the Office of Commissioner.

Call for Beta Testers

George Huhn, President of Data Machines, Inc. is looking for decision analysts who would be interested in participating in a beta test of the latest version of Optsee®. You can get more information about this at <http://www.datamachines.com/betatestintro.php>

Optsee® is a desktop software application that lets users perform probabilistic multi-criteria decision analyses using Monte Carlo simulations and then rank their alternatives against multiple constraints using built-in optimizers. There are no costs or obligations to participate in this beta test. We work closely with all our beta-testers providing on-line training and technical support as necessary. In addition to comments and bug reports, we are also interested in new feature suggestions. We are particularly interested in working with academics who have a data set that they would be interested in re-analyzing using Optsee®. Registration for the Optsee® beta test is limited.



Upcoming Conferences

INFORMS Western regional conference in Phoenix, Apr 24-25 (go to www.informs.org for conference information)

INFORMS Practice Conference
April 26-29, 2009, Phoenix
<http://meetings.informs.org/Practice09/>
Preview below

DAAG (Decision Analysis Affinity Group) Annual Meeting, May 18-19, 2009, Indianapolis, Indiana
www.daag.net
Preview below

Michael H. Rothkopf Memorial Conference
June 1-3, 2009, State College, PA
INFORMS-sponsored
<http://www.smeal.psu.edu/rothkopf-conference>

2009 North American Summer Meeting of the Econometric Society will be held June 4-7, 2009, at Boston University in Boston, MA. <http://econtheory.org/>

CORS/INFORMS International Conference
June 14-17, 2009, Toronto
<http://meetings.informs.org/Toronto09/>
DA cluster chair: Ali Abbas

Joint with CORS/INFORMS will be will be GDN 2009, the International Meeting on Group Decision and Negotiation

MCDM 20th International Conference
June 22-26 2009, Chengdu, China
www.mit.jyu.fi/MCDM/conf.html

The 9th bi-annual International Conference on Naturalistic Decision Making (NDM9)
Covent Garden, London, UK
23-26 June, 2009
<http://www.cs.mdx.ac.uk/research/idc/ndm9/>

EURO XXIII
July 5-8, 2009, Bonn, Germany
<http://www.euro-2009.de/>

SPUDM 22

22nd Research Conference on Subjective Probability, Utility and Decision-Making August 23 - 27, 2009. University of Trento at Rovereto, Italy.
<http://discof.unitn.it/spudm22/>

INFORMS National Conference
October 11-14, 2009, San Diego, CA
<http://meetings.informs.org/SanDiego09/>

Society for Medical Decision Making Annual Conference, Los Angeles, CA, October 18 - 21, 2009
http://www.smdm.org/smdm_annual_meetings.shtml

Society for Judgment and Decision Making Conference, Nov 21-23, 2009 "roughly" according to sjudm.org, Boston, MA.

Society for Risk Analysis Annual Meeting
December 6-9, 2009, Baltimore, MD,
http://www.sra.org/events_2009_meeting.php

Conference Previews

The annual DAAG meeting brings together a diverse group of decision analysis professionals, academics, consultants and enthusiasts from a wide range of industries and backgrounds to share new developments, discuss new applications and opportunities, and professionally network in a friendly and intellectually-charged environment. I'd like to encourage all members of the INFORMS DAS to consider attending this year. For more information, please contact Jim Felli (jcfelli@lilly.com) or Jay Andersen (jsa@lilly.com). Meeting specific information and a call for papers is available at the conference web site www.daag.net.

Don Keefer and Craig Kirkwood put together two DA Society sessions, with speakers listed below for the forthcoming INFORMS Western regional conference in Phoenix, Apr 24-25. Presentations by: Jay Simon and L. Robin Keller; Mark Keith, Hina Arora, James Corner, Patrick Mackin, Asim Roy, Gregory Schymik, and Jyrki Wallenius; Craig Kirkwood; Vicki Bier, Naraphorn Haphuriwat and Jaime Menoyo; Warren Hahn and Samuel Seaman; Daniel Brooks; Donald Keefer.

Book Announcements

Editor's note: Announcements for books that are specifically relevant to DAS members are welcome and should be sent to the editor. Announcements should be 100-300 words. More substantive book reviews should be discussed with the editor first.

Analytical Methods for Risk Management: A Systems Engineering Perspective by Paul R. Garvey

INFORMS/DAS member Paul R. Garvey recently completed a textbook titled "Analytical Methods for Risk Management: A Systems Engineering Perspective", published in October 2008 by Chapman & Hall/CRC Press: Taylor and Francis Group.

After an introduction to engineering risk management, the book covers the fundamental axioms and properties of probability as well as key aspects of decision analysis, such as preference theory and risk/utility functions. These topics are then woven together and shown how they apply to very practical problems in addressing the occurrence of unwanted, potential, events in engineering today's advanced systems.

The book includes numerous examples, cases, and end-of-chapter exercises for students in the risk, decision analysis, and engineering systems fields. For more info, visit the URLs below.

http://www.crcpress.com/shopping_cart/products/product_detail.asp?sku=C6374&isbn=9781584886372&parent_id=&pc=

Introduction to Decision Analysis, 3rd Edition by David C Skinner

368 pages, Probabilistic Publishing, 2009. is an updated and expanded version of Mr. Skinner's popular decision analysis textbook and practitioner's guide. The additional material and insight recorded in the 3rd Edition reflect Skinner's own growth as a decision analysis consultant and his experience as a Rice University faculty member and CEO of a large consulting firm. Skinner begins this edition with a moving narrative of an intensely personal application of decision analysis concerning a massive stroke

suffered by his young wife and her successful medical treatment and recovery.

Skinner's book was written for the decision analysis practitioner, but is also being used as a graduate level textbook by several major universities. He emphasizes the scalability of the decision analysis process and provides step-by-step guidance on applying the tool set to both business and personal situations. The 3rd Edition incorporates feedback from practitioners and several professors and includes expanded case studies, exercises, questions and answers, and a new chapter on portfolio analysis.

Integral Decision Analysis **(Análisis de Decisiones Integral)** by Roberto Ley-Borras

Last month a new DA book was released (in Spanish) by Consultoría en Decisiones in Mexico. The book is structured around an eight-step DA process; each step focused on adding clarity to the decision situation. The steps are:

1. Framing the decision situation
2. Defining and structuring objectives
3. Generating alternatives and strategies
4. Identifying uncertain events
5. Modeling elements and interactions
6. Computing the value of each strategy
7. Understanding the essential aspects and choosing a strategy
8. Making tactical decisions to implement the chosen strategy

Each step builds logically on the preceding ones: objectives must be pertinent to the selected frame, each alternative must contribute to the achievement of at least one of the selected objectives, uncertain events must be material to the alternatives being considered, and so on.

The book covers many of our tried and true DA techniques, including: hierarchy of objectives, network of objectives, relevance diagrams, probability assessment, strategy generating tables, sensitivity analysis, influence diagrams, multi-attribute consequences valuing and risk-attitude assessment, as well as a framing decision process and a procedure to check if enough clarity has been achieved to commit resources to a strategy or more work on a specific step is required. The book covers the integral decision analysis

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sis process showing how the techniques help develop each step, and it includes numerous examples.

The book, a 466 page paperback, is intended as a textbook for a solid first DA course as well as a decently self-contained guide for DA practitioners. The book has been well received and it will be adopted next Fall by graduate programs at several universities in Mexico.

Rob is a DAS member and has a Ph.D. in Engineering-Economic Systems from Stanford. A book description and detailed contents can be found at: http://decidir.org/libro_adi.htm

**Systems Decision Making for
Systems Engineering and Management
Gregory S. Parnell, Patrick J. Driscoll,
and Dale L. Henderson (editors)**

Former DAS President Greg Parnell recently edited and published a textbook (Parnell, G. S., Driscoll, P. J., and Henderson D. L., Editors, *Systems Decision Making for Systems Engineering and Management*, Wiley & Sons Inc., 2008). The book is published in the Wiley Systems Engineering Series. The purpose of the book is to provide a textbook for the first undergraduate or graduate course for systems engineers and engineering managers and to be a resource for professional engineers. The textbook has three parts: systems thinking, systems engineering, and systems decision making. Of interest to DAS members, the five chapters on systems decision making use multiple objective decision analysis as the mathematical foundation for the Systems Decision Process used to identify problems (stakeholder analysis and value-focused thinking emphasis), design solutions (creativity and alternative generation table), support decision making (multiple objective decision analysis using value-focused thinking), and implement solutions (performance assessment and control). A unique feature of the text is two systems decision examples that illustrate and integrate the material in the text. The book is used as the textbook for two courses with over 450 students per year at West Point and has been adopted by several universities for similar courses. In addition, Greg and co-editor Pat Driscoll use the book in their continuing education course in Systems Decision Making offered to engineers and managers.

Conference Snapshot

Portfolio Decision Analysis and Organizational Planning: Who Are We and What Can We Offer?

Report of a panel discussion from INFORMS, October 2008. By Alec Morton & Jeff Keisler

Last autumn, we organised a panel discussion on the above topic at the INFORMS meeting in Washington under the Decision Analysis stream. Our motivation was that there seemed (and seems) to be a great deal of Decision Analysis work around planning and managing portfolios of projects and activities ("Portfolio Decision Analysis" or PDA). Yet this focus places Decision Analysis directly in competition with other management disciplines and functions. We hoped that organising a panel discussion would be a good way of clarifying what constitutes the distinctive contribution of Portfolio Decision Analysis.

The discussion text we sent our panelists was as follows:

Decision Analysts are not the only analytic professionals who want and have a role in organizational resource planning. Finance professionals often drive capital budgeting. Information systems provide much of the data decisions require. Cheap computation and user-friendly software make math programming approaches ever more practical. As a group with a distinct identity, how do we position ourselves in this crowded marketplace? How do/should we relate to other providers of modeling and advice?

We invited four distinguished speakers to talk to this theme.

Martin Schilling (Decision Institute and London School of Economics) argued that descriptions of Decision Analysis are excessively focussed on the concept of "decision making", arguing that this is a concept which does not resonate with managers. He argued for an alternative definition of Decision Analysis, as a discipline which helps decision makers achieve their objectives by providing processes, models and tools, with processes referring to interactive social processes. He further ar-

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gued that Decision Analysis is in an intermediate area between operational and strategic management and but argued that Decision Analysis should seek to position itself inside strategic management, with coverage in strategic management textbooks.

Jack Kloeber (Kromite) took what might be called a “horizontal” slice of the subject, taking as his topic how decision analysis relates to other parts of the organisational functions and disciplines. Jack started by contrasting the view from INFORMS, which sees Decision Analysis and Portfolio Management as overlapping subdomains of Operations Research; with the view in most companies in which Operations Research/ Decision Analysis is a small (and possibly rather hard-to-understand) part of portfolio management. For Jack, the Decision Analysis part of portfolio management is concerned with insights and with prioritization, and also possibly with “optimization”. But to be effective, Decision Analysts have to work with Finance, with Resource Management, with Information Systems, with Project Management and with the Commercial business functions. But Jack also stressed that a critical part of making Decision Analysis effective was the partnership with senior management.

By contrast, Ahti Salo (Helsinki University of Technology) took a vertical slice of the organisation, distinguishing between one-of-a-kind strategic decisions at the top of a hierarchy of organisational decision, and day-to-day operational management decision making at the bottom. Portfolio management, concerned as it is with the selection of strategies for implementing actions and development plans, fits inbetween these two levels of decision making and has multiple interfaces upwards and downwards. Indeed, Ahti suggested that the diversity of the stakeholders involved and the range of projects constitute some of the defining challenges faced by PDA. In summing what PDA offers, Ahti commented that while operations researchers traditionally seek optimal solutions, PDA also contributes a shared analytical framework which is valuable in itself as it helps define objectives and units of analysis.

Finally, Jim Matheson (Smart Org and Stanford University) began by stressing the range of PDA applications in practice, and also the long history of PDA, dating back at least as far as the 1970s. Jim pre-

sented the history of PDA in terms of three waves. PDA in the first wave was delivered by management consultants, and in the second wave by internal experts. The third (and current) wave involves empowering frontline managers, and moving away from meeting-intensive and time-intensive processes. Jim distinguished strategic management which is by its nature unconstrained, with operational management, where math programming models have a role. He also discussed the iterative and creative nature of the decision analysis, and the importance of building shared understanding through the modelling process.

The panelists also shared details of applications in which they had been involved and there was lively discussion from the floor.

The session was not very successful in arriving at an answer to the question posed. However, it was very productive, in the sense that having initiated the session by posing one question, we left with several:

- should we think of PDA as being “strategic” or operating at the level below the truly strategic, and what does this mean?
- what is the role (if any) for technical optimisation models?
- should we think of the primary uses of PDA as being organisational or interorganisational?
- given that the benefits are the soft benefits of shared understanding, insight, and so on, how should we characterise these benefits?
- given that there is variation in process between consultants, and over time, how should we describe these variations in process?
- is there a practitioner/ academic split? does it matter?
- is there a US/ Europe split? does it matter?

and we encourage readers of this Newsletter with answers to these questions to get in touch with us.

A.Morton@lse.ac.uk

International DA

Martin Schilling, Column Editor

**Decision Analysis at the
University of Buenos Aires, Argentina**

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History & Approach

Decision Theory was established at the Economics Science Faculty (FCE) of the University of Buenos Aires (UBA) during the 1970s by a group of professors led by Pedro Pavesi. From the beginning, their lectures aimed to help students understand and manage the complexity of decision situations.

Pavesi's research work and publications were extensive and covered a variety of subjects as his interests evolved over time. He wrote extensively about decision-making, rationality and subjectivity. Furthermore, Latin America and especially Argentina being affected by a great deal of constant uncertainty, numerous investigations seek out for the development of methods to deal with such environments. Researchers at FCE worked together on the interaction between mathematics and statistics to build decision models, including papers on fuzzy numbers, Bayesian networks and decision criteria in the absence of probabilities.

Today, there are about 30 Decision Analysis lecturers at the UBA, organized in two cathedras led by Prof. Dr. Patricia Bonatti and Prof. Daniel Avenburg. About 1,300 students take their courses each semester.

Research

The different military governments and several economic crises Argentina went through seriously affected universities' research programs. However in the past few years, research has been re-gaining ground.

There are now a fair number of researchers working on a wide range of subjects. A group of professors from the UBA led by Prof. Avenburg are studying biases in medical decisions.

Prof. Dr. Bonatti did an extensive research on the occupation of the Falkland Islands, as an analysis of a decision situation belonging to the world of strategy. The main objective of this research was to verify the usefulness of a decision-analytic normative model, in a real decision situation with high levels of uncertainty, ambiguity and complexity.

Bonatti's research concluded that the application of DA methodologies in this kind of complex situation does not assure success. It is common to find decisions failing -- not due to a deficient model, but due to the mind of the decision maker and the subjectivity inherent to the decision making process.

In addition, the Economics Science Faculty started to organize "Decision Making Days". These events facilitate a space to analyze, debate and spread decision-making from different perspectives: the business point of view, psychological and educational aspects of decision making, as well as current issues were considered.

Applications

In recent years, several initiatives to create DA applications were carried out as a re-emerging economy created receptiveness and interesting opportunities to apply them.

In 2005 a group of professors from the UBA joined a few LSE PhD students and created the MARA project. This initiative allowed students and young professionals to experiment decision analysis methodologies on actual enterprises. Five different groups of researchers focused on the interaction between multi-attribute utility analysis and uncertainty modelling. The presentation of this project on the 2005 INFORMS meeting marked the beginning of the relationship between the UBA group and the international DA community.

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On 2006, a similar programme was carried out in Germany with the participation of Argentine students. Meanwhile the Argentine MARA team members continued their work establishing Fundación MARA (www.mara.org.ar). Additionally, inspired from this experience, some DA professors started a regular project called ExE (Entrenamiento por Ejecución – Training by Execution). Through its implementation about 100 students each semester manage to apply in the field the DA methodologies studied in class.

As part of this evolution, DA professors expanded their professional experience becoming Decision Advisors integrating DA methodologies to their ongoing companies as occurred in Binova Soluciones (www.binova.com.ar/da.html) or creating new firms as Tandem SD (www.tandemsd.com). Assistance to the financial team of a leading automobile constructor, a series of decision conferences to aid the designing of a network to fight undernourishment, and the designing of an index to measure the impact of TV shows on children education can be found among the many DA applications in Argentina.

Representative publications

- Pavesi, P., Bonatti, P. and Avenburg, D. (2004), “La Decisión”, Grupo editorial Norma.
- Bortman, R. and Avenburg, D. (2007), “¿De Cuántas Maneras?” Ed. Malke.
- Bonatti, P. (2007) “La ocupación de las Islas Malvinas. Análisis desde la teoría de la decisión”, Cuadernos de Argentina Reciente Nro. 4 Pérez, Rodolfo H., Lazzari, Luisa L., Machado, Emilio A. – (2004) “Teoría de la decisión en condiciones de incertidumbre” – Cuaderno Nro. 1 - Cuadernos del Centro de investigaciones en metodología borrosa aplicada a la gestión y economía (Cimbage) FCE,UBA
- Pavesi, P. “Lo normativo y lo descriptivo y su conflicto en las praxiologías: El caso de las teorías de la utilidad” (1994), Tesis doctoral, Instituto de Investigaciones Administrativas.
- Weissmann, E., Kura, M., Lupo, J. and Margiotta, S. (2006), “Objetivos múltiples en la toma de decisiones“. FCE, UBA.
- Duhalde, J.M. (2006), “Construcción de modelos a partir del enfoque socio-técnico”. FCE,UBA.

International Position Announcement

From Raimo Hämmäläinen (www.raimo.hut.fi)

We are part of the consortium described below and would encourage researchers interested in decision making, human interaction including intersubjectivity and systems intelligence to apply. Our newly established multidisciplinary “aivoAALTO” (brain-WAVE) research project opens positions in the field of systems-level human brain imaging and related research, with a strong focus on social interaction in natural settings, including economic decision making, cinema viewing, and methodological development. <http://www.aaltoyliopisto.info/en/news/funding-to-aalto-university-s-aivoaalto-research-project>

The project involves Helsinki University of Technology (TKK, www.tkk.fi), Helsinki School of Economics (HSE, www.hse.fi) and Helsinki University of Art and Design (TAIK, www.taik.fi). The partners include scientists from National Centres of Excellence and other research teams. The available positions are 1 PhD student in neuroeconomics and decision making; 1 PhD student in neurocinematics; 1 PhD student in brain-imaging-related signal analysis; 3 postdoctoral positions in human brain imaging and related research; 2 senior scientist positions in human brain imaging and related research.

We are flexibly looking for researchers with complementary skills to build up a really innovative and exciting research environment. Working language is English. Most applicants will work at the TKK campus. The positions are initially for three years, but may be extended to 5 years depending on funding. For further details please contact project leader prof. Riitta Hari hari@neuro.hut.fi, tel +358 9 451 2959, or docent Elina Pihko pihko@neuro.hut.fi +358 50 344 2713. Positions are available immediately. Applicants should submit, latest on 15 April 2009, a cover letter describing current research interests and future research goals related to the topic of aivoAALTO, a complete CV with publication record (top 10 publications indicated), and the names of potential references to prof. Riitta Hari hari@neuro.hut.fi, preferably in a single file.

Education in DA

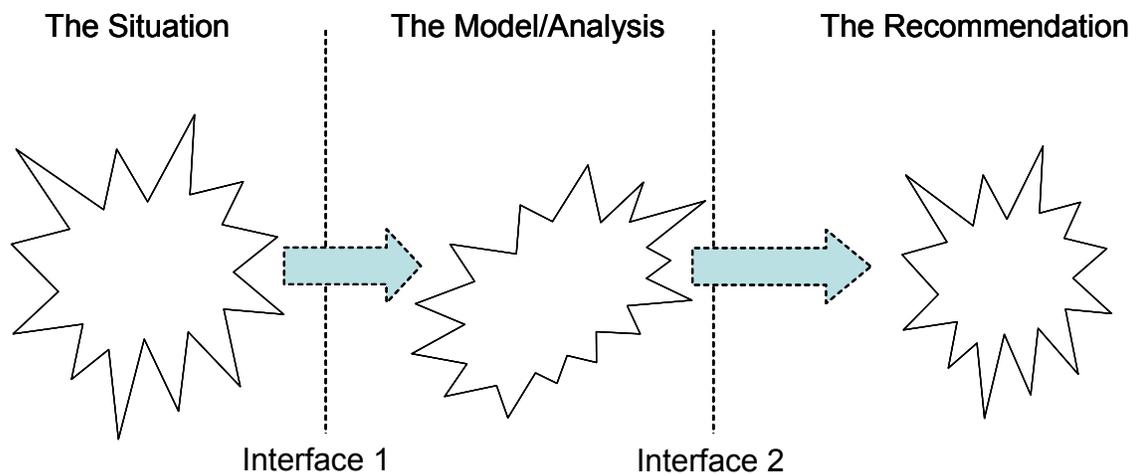
**Ali Abbas and Patrick Noonan,
Column Editors**

In teaching decision analysis, we often find ourselves confronting some of the same issues that have bedeviled educators across the various fields and applications of management science, modeling, and other approaches to problem solving with strong analytical components.

One common failure mode is to focus exclusively on the analysis itself – developing trees, determining best alternatives, applying sensitivity analysis, etc. – and thus spend most of our time in “model world.”

When students go out into the “real world,” they are faced with a number of other issues, starting with, “What is the central dilemma? How can analysis help? How can I formulate an appropriate model for this situation? In other words, real problem solving starts with an important transition, a “situation/model interface.”

Likewise, at the other end of the process, they face the questions, “So what? What does the analysis mean? What are the practical action steps that should be taken?” These steps back from model world to real world represent a second transition, a “model/action interface.”



We have intentionally kept this picture very general, to avoid anchoring... because now we have a question for you, Decision Analysis Society practitioners and educators: What are your ideas for the best way to train others in the skills necessary to manage these two interfaces in real problems? That is, for now, set aside your ideas for teaching the actual modeling, and send us your recommendations to interface questions, such as:

- 1) Do you feel we are addressing the interfaces adequately in our teaching?
- 2) If you are teaching, what do you currently do in your classes to equip students with the ability to handle these interfaces?
- 3) If you are practicing, what skills do you feel you wish were taught in the classroom?
- 4) What are the skills you feel would be important to have relating to these interfaces in a DA curriculum?

We will collect the responses and present them in the next newsletter. All thoughts are welcome. In addition, if you would like to post any other ideas, feel free to e-mail us.

Guest Column: Ralph Keeney

Thoughts on the Relationship between Personal Decisions and Fatalities

By Ralph L. Keeney

Fuqua School of Business, Duke University

The editor of this newsletter, Jeff Keisler, asked if I might write an article on my paper "Personal Decisions Are the Leading Cause of Death" that was recently published in the November-December 2008 issue of *Operations Research* (Vol. 56, No. 6, pp. 1335-1347). He mentioned that he had read the article, as had his wife and 11-year-old daughter. As his family alone has made this one of my most-read articles, I felt that I couldn't reject his offer. He even made it easy by suggesting possible material: "you could let people who missed (the article) know about its existence, explain your motivation for writing it, describe the response it's gotten, or suggest how DAS members might leverage the visibility it's gotten".

On motivation, like most of us, I believe that the principles of decision analysis are important to learn and to follow, at least for important decisions, as they are the only purposeful way that we can have any influence on anything. But, how should this notion best be communicated to others and how should we perhaps convince them that improving their decision-making skills is very worthwhile?

From widely known information and professional interest, it was clear that many people could have avoided the particularly deaths that they had suffered by making some different personal decisions. For example, there are many personal decisions that contribute to being a smoker or being overweight and it is a personal decision to use a seatbelt or not.

With this as background, I framed the research using the following logic. We all know that the major medical causes of death in the United States are heart disease and cancer. This suggests the question of what causes these medical causes of death. Others have researched this and identified the so-called actual causes of death. The major actual causes are smoking and obesity, which each lead to over 400,000 fatalities per year. In framing my research, I pushed this reasoning further by asking what causes the actual

causes of death and then what causes those causes. Soon, I arrived at the following set of categories as those that influence fatalities. These are personal decisions, businesses decisions (e.g. to pollute), government decisions (e.g. establish what is legal), medical community decisions, public health decisions, and just unfortunate circumstances (given our current knowledge about causes and effects) such as when a 10-year-old dies because of leukemia. There is clearly overlap in these categories in terms of actions that could be taken to avoid fatalities, and my interest was on the influence of personal decisions.

My paper analyzed the 2000 US data of 2.4 million fatalities and concluded that 45% (1.07 million) of all fatalities that year could have been avoided if individuals had chosen readily available alternatives. I defined readily available alternatives to mean alternatives that required little cost or effort to choose. It does not mean that the choices of these alternatives would be easy because of reasons such as peer pressure, poverty, or addiction. Nor is there any reference to whether these decisions were made consistent with ones information and values (i.e. good decisions) or not.

For individuals in each of the age groups from 15-64, the percentage of fatalities that could have been avoided by choosing readily available alternatives was over 55%. Aside from the major analysis that related personal decisions to all the possible causes of fatalities, the paper includes a number of small analyses of those results. Slightly more than 1 million of the fatalities that could have been avoided with different personal decisions involved deaths to those individuals who made the decisions. In addition, the paper examines the analogous situations in 1900 and in 1950. In 1900, all the major causes of death were infectious diseases that one had little or no influence to avoid. My rough examination suggested that at most 5% of the deaths in 1900 could have been avoided by selecting readily available alternatives. By 1950, this percentage increased to something like 20 to 25%.

This situation provides a "good news" story. Most people are concerned about avoiding untimely premature deaths to themselves and to their family members. An implication from the analyses in the article

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is that we now have significant control over whether that happens or not, and that this is a much different from the situation even 50 years earlier.

Aside from the usual motivation for research and publishing, I had two other objectives for this paper. One was to possibly obtain some publicity for INFORMS and the journal Operations Research. The other was to develop one strong story to help answer the questions "Why is it useful to improve my decision-making skills?" and "Why should I take a decision making course?" The results in the paper support the answer to these questions that is "It may save your life or the life of someone that you care about," which is a little less abstract than "It's good for you" or "It's a worthwhile skill to have."

Laura Brinn, of the Marketing and Communication Department at the Fuqua School of Business, wrote an intriguing press release for the paper, and appropriately released it in December, that tied its results to the importance of following through on one's New Year's resolutions. Various media outlets picked it up, and publish an item on the paper. The major US article was in Newsweek. You can read the Newsweek article titled "America's Top Killer: Us" at <http://www.newsweek.com/id/177587>.

In general, this article is reasonably written, and I had a good discussion with the author while he was writing his article. However, as is usual, I did not get to see the article before it appeared. Certainly, the reference to me as a "behavioral economist" is not the label of "decision analysis" that I would have much preferred. Also, a line in the article concerning how one might avoid some of the fatalities is the following: "Keeney and a number of public health advocates say the answer may be more governmental guidance in everything from what kind of food we buy to whether we contribute to our retirement savings." This doesn't at all reflect what I believe as I am an advocate of personal responsibility and personal opportunity, not a believer in government "solutions". However, the Newsweek article elaborates a bit later on my "government solution" with "For Keeney, it's by adding "decision-making" to the standard curriculum in public schools so that more children grow up empowered to recognize in mine all of their options, rather than accept those presented by others." I certainly do agree with this statement.

DA Practice

Bill Klimack, Column Editor

Rocky Gay has done a great job of collating timely advice from established decision analysis practitioners. I'm sure our readers are seeing effects of the economy. Fortunately our profession allows us to grapple with the uncertainties that exist today. I know I speak for all DAS members in hoping that all our friends and colleagues successfully navigate these challenging times.

On a different topic for a moment, I wish to point out that certification of OR/MS professionals is a subject that is being discussed by INFORMS. Please note that an article on this effort appeared in the ORMS Today magazine. A copy may be viewed here: <http://www.lionhrtpub.com/orms/orms-2-09/frcred.html>. Recently the Credentialing Committee met with the Round Table, and will meet shortly with the Subdivisions Council. There will be a panel discussion on this topic at the spring conference on practice as well. So please make an effort to acquaint yourself with this issue and share your opinions. I am on the committee and would be happy to pass on your comments.

Besides the panel, there will be a number of great DA presentations at the spring conference on OR practice in Phoenix, April 26 – 28th. We will also hold the Soft Skills Workshop to help develop the interpersonal skills of ORMS professionals with an emphasis on DA professionals. Please take a moment to look over the program at <http://meetings.informs.org/Practice09/>. I hope to see you there.

Finally, consider authoring a column to share your thoughts and advice regarding DA practice. Please contact me at 410-900-6201 or bklimack@decision-strategies.com.

Bill

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The Economy's Impact on DA Practice by Rocky Gay

Our world is staggering from uncertainty and risk, due to the recent unexpected global economic collapse. As decision analysts who are comfortable with uncertainty and risk, we live for this! Today, businesses are almost universally challenged by this uncertainty, far more than they were nine months ago. These firms now realize the impact of uncertainty and few saw it coming. Executives face increased challenges in, for example, coping with lack of credit, reduced demand for products and services, reduced budgets, and imposed layoffs. How is this challenging economic environment impacting the leaders in decision analysis (DA), and what are they doing about it?

I interviewed nine leaders in decision analysis who were generous with their time. They identified the changes occurring in their decision analysis work and how those changes affected their clients in the past six to nine months of the current global economic crisis. The interview subjects were: Prof. Ali Abbas, Assistant Professor, Department of Industrial and Enterprise Systems Engineering, University of Illinois; Dr. Dennis Buede, President, Innovative Decisions; Prof. David Leonhardi, The Boeing Company and Seattle University; Dr. Jim Matheson, Chairman and Chief Financial Officer, SmartOrg, Inc.; Dr. Michael Menke, President, Value Creation Associates; Dr. Greg Parnell, Professor of Systems Engineering, US Military Academy and a Senior Principal at Innovative Decisions Inc.; Mr. David Skinner, Chief Executive Officer, Decision Strategies and Lecturer, Rice University; Dr. Carl Spetzler, Chief Executive Officer, Strategic Decisions Group; and Dr. Jack Kloeber, Senior Partner, Kromite Inc. Together, they provide a representative sample of decision analysis leaders from a variety of industrial areas: energy, pharmaceutical, software, government/military, manufacturing, and academic consulting. Below is a summary of their comments and thoughtful insights concerning the changes in our economic environment in the past six months.

What changes have you seen in the type of work in the DA Community?

In the commercial DA landscape, David Skinner, CEO of Decision Strategies, stated, that “there is much more recognition of volatility and uncertainty, even in businesses thought to be relatively stable. Previously, there was a belief that there were safe havens and that you could hedge your bets out of risk. It could be we find out they were much more inter-related than we knew.” Dennis Buede, who works primarily with public sector clients, reinforced this comment by observing that “there is a lot more uncertainty in what work needs to be done in the next six months. Further, there is much more concern about budget cuts. People have to justify budgets and the value of DA is considerably higher.” Yet, in the pharmaceutical industry, Jack Kloeber pointed out that, “There has not been a huge impact. However, there are fewer loans [with] less venture capital and money available. Moreover, there is less work in venture capital for promising drugs. Still, most pharmaceutical companies have a cash basis and are prepared to ride out the storm.” While there is more uncertainty in the private sector, Greg Parnell, who works mostly with the military and government stated that “US-Russian relations have picked up, and decisions around the negotiating of a new arms control agreement have increased the workload. In addition, there is an increased need for work in the homeland security area.” Thus, there have been significant changes in decision analysis work in different sectors, although, not evenly across all sectors. Dave Leonhardi, who leads Boeing’s internal decision analysis operations and is a professor at Seattle University, summed up the key impacts of DA by stating that his “students are hungry for making better decisions.”

Has the Quantity of Work and Client Set Changed?

Jim Matheson, Chairman of the decision analysis software company, SmartOrg Inc., stated, “We have seen decisions to use the software slow down; however, interest has not. The actual buying process has become harder. Our client set has not changed; we market to large firms that must manage a large number of projects up to 1500 projects are managed by our software. The sales cycle has lengthened. There is a slower pipeline. The job that took three months to find, now takes six months. Consultants, who are

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busy working on the projects they originally sold, need to slice off work time to do marketing for future projects; otherwise it will be feast or famine. It is hard for both big and small firms.” In the pharmaceutical industry, Jack Kloeber observed that three major mergers drove a lot of DA activity. This DA work occurs both before and after the merger. However, once the mergers are completed, “We have fewer companies: there were six major players, now there are only three. Thus, there is 50 percent less work. Even though it is a bigger company they don’t need more work.” He does not see the industry growing in the next 3-5 years.

On the other hand, David Skinner, who has primarily energy sector clients, stated “For our business we have seen an influx of new clients, which are looking for answers and solutions that explicitly deal with the uncertainty out there. In the past, there was recognition of uncertainty, but now it is beyond what people thought. Now, it is more than NPV. Clients need to develop strategies. With these new clients, the projects are smaller, with a lot of demonstration projects because DA is new to them.” This increase in demand is exhibited differently in Boeing. Dave Leonhardi states, “I still have the same clients; however, they all got active at the same time, and work has expanded to involve different business units. The environmental forces around the industry have changed. The quantity of requests for DA has increased a lot. If you have to take 15-20 percent of x out of the environment, what do you do?” With public sector clients, Dennis Buede stated that there was “Not too much change in the type of work in the government industry; however, work-load has increased dramatically.” He is hiring and sees an increased demand around the same client set. On the other hand, Carl Spetzler says, he is “not hiring, but not having to lay-off. It’s tough out there. Opportunity growth areas are shrinking. When the market shrinks, consultants are pulled back.”

Michael Menke summed the current environment this way, “Internal demand is increasing and is different. External demand is decreasing, maybe because they are emphasizing different work and we have not adjusted to it. There are fewer big projects being initiated by big companies. Anything that can be postponed without a tremendous loss of value will be postponed. Some industries are await-

ing administration decisions, such as energy waiting for a governmental cap and trade policy decision and pharmaceuticals waiting to see what develops with respect to price controls. Projects that are ongoing and not being discontinued still have to make smaller decisions along the way. We may need to get more into the operational set of folks and those that support operators.”

What advice do you have for the Practitioner?

David Skinner begins by stating that, “The general state for DA is positive and up. You should get past the hunkering down, delaying and not spending on things. Once things start to subside we’ll see an upsurge. Your clients need to ask how they know if their strategies are robust enough to handle the volatilities of the market? Don’t let the science get in the way of helping your companies see the value and the absolute need for DA. What are the company’s biggest problems – volatility in price? Raw material costs? Focusing on the math and science does not play well with executives. DA is a creative way to deal with uncertainties and swings. Work on giving them a solution, rather than analysis. Make sure it is well framed.”

Dave Leonhardi reinforces this by stating, “DA has a problem with its brand. It is not until they go through the activity do clients understand the benefit of DA. DA analysts have to lean out the process. You must frame the problem in the front end.” Yet, how do we convey to potential clients the benefit of decision analysis in this high-pressure environment? Jim Matheson recommends remembering “three words: sell, sell, sell. Do sales early.” Further, he states, “Have faith in consulting. If your segment of customers is disappearing, then you are in trouble. A good job for consultants is to help companies re-group. Many companies do not have the skills to do strategic work and ignore strategy. This is the wedge for the consultant. Look for areas of opportunity-while they are doing operations. They need to insure strategy gets done. Again, you will need to spend a good amount of time selling and it will take longer to sell.” In addition, Michael Menke revealed that the “need for DA is still there and might even be in larger volume. However, the people who have the needs and those that have the budget are at different places than where the DA community is. We need to

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uncover new places via promotional situations and advertising.”

Opportunities in Decision Analysis

The significant change in the environment has opened opportunities for decision analysis. Jim Matheson states that, “DA Consulting is more strategic than operational. DA consulting helps companies innovate and reorganize. In a bad economy companies will often cut R&D and product development, which they should not do. People with portfolio skills will add to DA consulting benefit. Firms are looking where to invest. Innovation portfolios, and modeling more crudely on portfolios, can be very helpful to the client, and one does not lose anything by not going into the little details. One needs to size the portfolio to manage the risk. The customer is likely to think of risk in terms of project failing or over budget. The real risk is not succeeding when the market has changed. If the project succeeds and adjusts to the market, budget overruns will not matter, if the market is there.” David Skinner complements Jim Matheson’s ideas by stating the DA team should “Look for opportunities that add significant value. Before this period, a DA guy would look at new capital projects. Now, more opportunities exist to do mergers and acquisitions, influence legislation such as that addressing cap and trade for greenhouse gases. These are high impact opportunities. These decisions need more horsepower to solve them.” Michael Menke also finds “Intelligent budget cutting has to be an opportunity for us.” Carl Spetzler observed that one new bright spot is in the area of enterprise risk management. “It is growing and just discovered DA. Start looking at the Risk Insurance Management Society. What is opening up is the protection of the downside. Failure of the traditional risk managers in the financial sector has caused the discipline to reevaluate its practices. It is a market that takes some understanding before we can take concerted action.”

Dave Leonhardi broadens this perspective by stating, “Everybody is a customer. In the future, you will see opportunities everywhere. If you are good at DA, you will find value everywhere. Develop a network outside of your standard group of customers. There is a target rich environment where you live. You have to tap into local small business owners. In the next six months, you have to look at where you want

to go and tap these resources. DA likes to use tools, but the best success is to do DA on the fly.” David Leonhardi is moving into the area of sustainability. How sustainable do you want to be? You have to look for ways to apply DA. Carl Spetzler reinforces this point of view by stating that “DA has had very little market penetration of the major decisions being made today.”

Dave Leonhardi recommends “putting the concept of decision quality in front of some simple DA tools. Boeing has a one-to-two day problem solving workshop that works on a real-time problem.” Dave facilitates the meeting to get the right conversation. He states, “They are trying to save money and have to do it fast. Analytics are a big part of it, and you have insights in uncertainty. It is important to have the right people there. With the right people when you leave the workshop, they have articulated their values, their objectives, with their data and their alternatives.” Jack Kloeber buttresses this point of view by stating, “Small and large companies are not good about talking about uncertainties. There is a need for facilitators, as companies need help on talking about opportunities, rather than talking about risks and lowering them. They need education.”

In addition to these opportunities, Michael Menke mentions that we should “learn to work with project management. Decision making opens up new opportunities. How do we learn productively with project managers and enhance their value? We should work with engineering, procurement, and construction firms (EPCs) in a project management mode. There are a whole set of thoughts about decisions close to the project. Decisions are still relevant, but they are different decisions. We will adjust to how to present ourselves. Operational decisions require smaller amounts of money. We need to find ways to be efficient in modeling or product delivery. There are a lot of counterintuitive reactions. What you have to find is that there are semi-strategic decisions in operations (\$50-100 K decisions) that can be strategic, where DA can help. Are we well positioned? Have we been marketing to these? If we succeed here, when the appetite for new strategic decisions with old clients, then we have permanently enlarged the client set.”

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Professional Advice for Practitioners

Jim Matheson stated that, “Traditionally, in my fifty years in this business, consulting is the leading indicator of when an economy will get better. People are making investment decisions and will ask for consultants help up to a year prior to the economy making a turn for the better. When the economy is good, people have more money; it is easier to spend money, and they have more self-confidence, sometimes, and may not use consultants. In a bad economy, they can’t afford making mistakes and should use consulting. Companies need consultants when they want to emphasize innovation, product development, and repositioning in industry. Consultants are positioned primarily for strategy. Most company executives come through the operational side of the company and are not good at strategy. Their gut instincts are to cut costs. Consultants think more strategically and executives need this. They need to compare where their company is going with others. Mature companies execute well, but it is easier to drop strategy. The stock market looks at the short term, but the executives need to look longer.”

David Leonhardi provides more sage and applicable advice for the Decision Analysts. He states, “You have to have a specialty. You have to know something about something. You can’t be a generalist. You have to introduce decision quality concepts and apply them to any decision and think about them differently. The Decision Education Foundation does a good job articulating decision quality.” Greg Parnell echoes and expands this way of thinking by stating, “Know your domain, and keep building your tool kit, because new concepts are coming. You need good people skills – facilitating, assessing, and eliciting are critical to success. Read professional journals”. Carl Spetzler emphasized the need for a distinctive professional DA certification. Dennis Buede also emphasized people skills. He states, “People skills are as important as analytic skills. Further, new clients are tougher because people are reluctant to spend money, unless they get their value. One should try to build on past relationships. They are questioning which contractors are giving the most value.”

Ali Abbas provides five distinct principles as advice for practitioners:

1) Observing our ethical conduct.

This might go without saying, but it is important to highlight the importance of ethical conduct especially in these financial times. We are hearing a lot about "Ponzi schemes" these days. For example, just today there was an article in the Wall Street Journal about another financial management company who was having financial problems and put major incentives for managers to "hard sell" securities. They tied the amount of sales to bonuses. This led to a "supply driven" market that was used to cover up a Ponzi scheme in which new investments were used to pay off early investors. As an analyst you would want to make sure you are giving best advice, not one that merely helps you achieve your objectives. Ethics also applies to ethics in modeling. If you are going to tailor the analysis to come up with an alternative that is desired by incentives of managers and not what is best for their company.

2) Adhering to the norms.

Last month I was involved with a project for an electrical appliance company. The name would almost certainly be known by anyone who reads this article. Because of the current financial situation, they were interested in moving into a modular design framework, whereby new products would not necessarily be redesigned from scratch, but rather developments could be made to certain modules. As they suggested, this would reduce time to market, design time, inventory, direct material costs and would increase the likelihood of success of new products. In choosing between different modular sections however, the company insisted on a "weight and rate" method that lists the attributes mentioned and weights them based on their importance. Of course, there are several issues with this. For example, likelihood of success is not an attribute, it is an uncertainty. And all other attributes listed above can be converted into direct cost. This would avoid the "double counting" and the arbitrariness in the "weight" assignment. Moreover, this method of weight and rate value function only applies when there is no uncertainty. It did not take many meetings before the company realized the flaw in their proposed approach. It is important not

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to go with the flow in doing arbitrary analysis, and to have these types of conversations. The same applies to methods like benefit-cost-ratios, internal rates of return, and other non-normative methods such as the AHP and ANP that are, unfortunately, still used in many analyses. I learned a distinction from Ron Howard: that between an approximate method, such as a Taylor expansion, which leads to a better solution by putting more effort into the analysis (such as adding more terms), and a foundationally wrong method that is still foundationally wrong no matter how much effort you put into it.

3) Don't push a model where it does not belong.

It is tempting to use certain models because of their simplicity. But sometimes these models can break down when the assumptions upon which they were built are not present. Think of assumptions of probability independence and how the assessment would be simplified by assuming a product form. But is it really true that our information would not change when we know the outcome of another? If no, then we should not be using it. As Einstein said, the model should be "as simple as possible, but no simpler." This trade-off between simplicity and accuracy should be thought of carefully. The same applies to models of utility functions of course.

4) Framing.

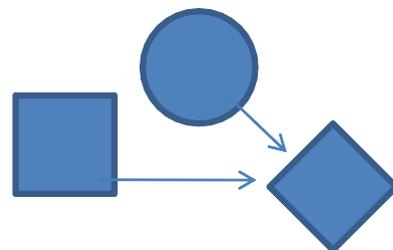
In times of financial distress, we could be under a lot of time pressure to start the analysis. It is important to remember to always challenge the frame and not just take as given the set of alternatives that are "thrust upon us." Many good decisions come from hybrids of existing alternatives. Also, remember to take into account other perspectives in choosing the frame.

5) Decision versus outcome.

This, of course, is a fundamental distinction in decision analysis. In times of distress, we may be more sensitive to getting bad outcomes than others, and we may choose alternatives that minimize the probability of bad outcomes. We must remember that our criterion is choosing the decision alternative with the highest expected utility and not necessarily the one that minimizes the probability of low outcomes.”

While the nation and world anguish with concern, today, decision analysts may be in an ideal environment to foster new clients by clearly articulating the need for decision analysis and the benefits of its application. In this column, we have been blessed with sage advice and insights from many of the significant leaders within our profession. These words of wisdom can help chart your next course through these turbulent economic times. Save this column. Smooth seas will eventually return. However, rough storms will also return and we should not have to relearn these previous lessons, when subsequent storms return.

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