

Decision Analysis Today



Volume 29, No. 3, December 2010

The newsletter of the INFORMS Decision Analysis Society

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From the President



Vicki Bier

I am delighted to be taking office as President of such a wonderful society. My first duty is the pleasant one of thanking Jim Smith and Craig Kirkwood for their service as President and Past-President of the Society (respectively), and to welcome Jeff Keisler as the incoming Vice-President/ President-Elect while Jim serves as Past-President for the next two years. Jim and Craig have left the society in good shape for the rest of

us, which will make Jeff's and my jobs much easier over the next few years. I would especially like to wish Craig the best in his recent retirement from Arizona State University, where he plans to remain active in research (and hopefully in service to the Decision Analysis Society!).

I am pleased to have such a wonderful leadership team as wonderful to support and advise me during my term as President! I am also appreciative that John Butler has agreed to serve another term as Secretary/Treasurer of the Decision Analysis Society. I know that he will keep the business of the society well organized. Thanks in advance to all of you!

The DAS Council, the governing body for the society, consists of six members who serve staggered three-year terms. In addition to providing general oversight for the society, the council members also lead many committees that accomplish much of the society's work. I want to thank Erin Baker and Jack Kloeber (who completed their terms on the council at the Austin meeting). Jim Felli and Martin Schilling will both continue on the council for one more year, while Casey Lichtendahl and Patrick Noonan will continue to serve for two more years. They are being joined by two newly elected council members, Seth Guikema and Canan Ulu. This gives us a good mix of council members with a lot of energy and good ideas. I know that they will serve the membership of the society just as well as Erin and Jack have over the last three years!

Conferences

One of the main functions of DAS is to organize high-quality sessions at conferences, in order to provide the members of the society (and other attendees) the opportunity to meet, share ideas, and learn new things. In particular, Jim Felli and Casey Lichtendahl put together an excellent track at the INFORMS annual meeting in Austin last month. Jim Felli has agreed to stay on as a track organizer for next year's annual meeting, which will be held on November 13-16, 2011, in Charlotte, North Carolina. Canan Ulu, one of our new council members, will step in as a second co-organizer.

With regard to the practice meeting (recently renamed the Conference on Business Analytics and Operations Research), David Leonhardi and Bill Klimack served as liaisons to DAS for the analytics conference held in Orlando in April 2010, where there was an entire daylong track on decision analysis, as well as an additional methodology tutorial. Bill Klimack is moving on to serve INFORMS as a whole as vice president for meetings, but David Leonhardi has agreed to stay on as liaison to DAS for the next analytics conference, to be held on April 10-12, 2011, in Chicago, Illinois. I have already been in touch with David and other track co-chairs involved in the analytics conference to suggest speakers on particular aspects of decision analysis (including "soft skills"), so am confident that decision analysis will have a strong presence at the analytics conference next spring.

In addition, DAS typically has a presence at INFORMS-related international meetings, and Patrick Noonan and Canan Ulu organized a sponsored cluster of four sessions on decision analysis at the international meeting in April last June. The IFORS triennial conference to be held on July 10-15, 2011, in Melbourne, Australia, does not have a formal invited stream on decision analysis, but Andrew Grant of the University of Sydney is organizing a session or two as part of the stream on multiple-criteria decision making. He is still looking for a few additional speakers, so please feel free to contact him if you might be interested in participating (and vacationing in Australia!).

Thanks to all of these past and future conference organizers! If you would like to participate in one of the

upcoming U.S. meetings (e.g., by organizing a session or giving a talk), please contact the above session organizers directly.

Publications and Information Resources

In addition to organizing sessions at conferences, the DAS also provides ample resources to allow our members to keep in touch with the latest developments in decision analysis. Jeff Keisler has done an outstanding job of designing and producing this wonderful newsletter over the last few years. Unfortunately, since he is taking on additional service roles as Vice President/President Elect, and then eventually as president, he will eventually need to transition production of the newsletter to a new editor or editors. He assures me that with systems in place and his commitment to a smooth transition, the rewards will outweigh the effort. If you are willing to consider being a co-editor for the newsletter (or wish to nominate someone for this position), please contact me or contact Jeff directly.

On other fronts, Jason Merrick has agreed to continue maintaining the DAS website (<http://www.informs.org/Community/DAS>), and plans to convene an "editorial board" for the website to provide additional perspectives and expand what the website can do. John Butler has agreed to continue managing the email-distribution list for the society (decision-analysis-society@list.informs.org), and Chris Dalton has agreed to continue maintaining and hosting the DAS forums.

<http://www.syncopation.com/forums/viewforum.php?f=7>
Thanks to all of you! I am also looking for people willing to help update "our" Wikipedia page (http://en.wikipedia.org/wiki/Decision_analysis) so that it more closely reflects how we see the discipline; please contact me if interested in helping with this.

Finally, Robin Keller has continued to do yeoman's duty in her role as Editor-in-Chief of Decision Analysis. She was reappointed for her second and final three-year term beginning in January 2010, so will serve until December 2012. Note that all members of DAS receive a free online subscription to Decision Analysis with a regular membership in DAS. Thus any articles you publish in Decision Analysis will reach all of our members.

Award Committees

DAS offers a number of important and prestigious awards to recognize outstanding work in decision analysis, and help promote the field. Serving on the award committees is an important form of service to the society. The winners of this year’s awards are described elsewhere in this newsletter; here, I would like to express my appreciation for the people who chaired the award committees. Bob Winkler chaired the Ramsey committee this year; Detlof von Winterfeldt will chair that committee next year. Rakesh Sarin chaired the Publication committee this year; Greg Parnell will chair next year. Eric Bickel chaired the Practice committee; Bob Bordley will chair the practice committee next year. Finally, Erin Baker and Karen Jenni co-chaired the Student Competition this past year; Lea Deleris and Jun Zhuang have agreed to co-chair the Student Competition next year.

Serving on these committees is an excellent opportunity to learn about recent developments in decision analysis. I would like to thank this year’s committee chairs for their service, and hope that they will pass along their best practices to the new committee chairs.

DAS and INFORMS Committees

On internal DAS business, Patrick Noonan has agreed to chair our membership committee. This is a standing committee charged with studying membership trends and needs. This is important to help us understand and address the recent modest downturn in our membership numbers.

In addition, on INFORMS business, our new Vice President/President-Elect will chair the nominations committee responsible for recruiting candidates to run for council next year, and will also replace me as the DAS representative for the Subdivisions Council of INFORMS. The Subdivision Council oversees the activities of INFORMS societies and sections; like other INFORMS societies, DAS has a representative on this committee to represent the society in these discussions. I’m sure Jeff will be as impressed as I have been with the INFORMS officers and staff.

Officers and INFORMS Business	2009-2010	2010-2011
President	Jim Smith	Vicki Bier
President-Elect/Vice President	Vicki Bier	Jeff Keisler
Past President	Craig Kirkwood	Jim Smith
Secretary/Treasurer	John Butler	John Butler
Council Members	Erin Baker	Jim Felli
	Jack Kloeber	Martin Schilling
	Jim Felli	Casey Lichtendahl
	Martin Schilling	Patrick Noonan
	Casey Lichtendahl	Seth Guikema
	Patrick Noonan	Canan Ulu
INFORMS Subdivisions Council	Vicki Bier	Jeff Keisler
Chair, Nominating Committee	Vicki Bier	Jeff Keisler
Meetings		
INFORMS Analytics Conference	Bill Klimack, David Leonhardi	David Leonhardi
International Meeting	Patrick Noonan, Canan Ulu	Andrew Grant
INFORMS Annual Meeting	Jim Felli	Jim Felli, Canan Ulu
Communications		
Newsletter Editor	Jeff Keisler	Jeff Keisler
DAS Website	Jason Merrick	Jason Merrick
DAS Discussion Forums	Chris Dalton	Chris Dalton
DAS Electronic Mailing List	John Butler	John Butler
Awards		
Ramsey Medal Committee	Bob Winkler	Jim Smith
Practice Award Committee	Erick Bickel	Bob Bordley
Publication Award Committee	Rakesh Sarin	Greg Parnell
Student Paper Award Committee	Erin Baker, Karen Jenni	Lea Deleris, Jun Zhuang

Conclusions

Having fulfilled my first task as president by recruiting next year's committee chairs, I am impressed by the willingness of our members to volunteer, and by the high quality of the volunteers we have available to make the society a success. I'm sure our collective efforts will ensure the continued success of our activities.

While just continuing our usual activities will undoubtedly keep us busy, I am also interested in getting greater publicity for our work. If you have ideas for projects or publications you have been involved with that you think would be of interest to the press, please let me know!

I am also interested in increasing the number of our members that get nominated for prestigious awards. If you know of someone that you think would be appropriate for a particular award, please let me know—especially if you're willing to help with the nomination process! - VMB

Editor's comments

Happy Holidays DAS members and DA Today readers. This issue's holiday treats include an article by several of our leading practitioners about the Soft Skills workshop that has been sweeping DA Nation. Greg Parnell is guest columnist for the Practice column, and has delivered a very substantial article to make us all think about the true meaning of DA. Karen Jenni and her friends come bearing wisdom about dissertations.

For Greg's column on the DA body of knowledge and Karen's column about choosing a dissertation topic, I have created new threads on the DAS discussion board and encourage you to share your opinions. This is an experiment as we try to make DA Today more richly connected with the extensive DAS website.

Ali Abbas and friends tell a heartwarming tale of the gift of decision skills, a gift that keeps on giving. Alec Morton brings a bit of joy to the world.

There are also greetings from our colleagues at the Decision Education Foundation and the Society for Decision Professionals, and good tidings of DAS awards and members' professional accomplishments, with promises of many conferences for the new year.

With the new year, we have some comings and goings. Patrick Noonan is moving on from his position as the DA in Education column co-editor, while Robin Dillon-Merrill and Jason Merrick are taking a break from their Ask About the Experts column. My deep appreciation to all of you for all the valuable contributions you have made to DA Today. I am delighted that Jun Zhuang has agreed to become the editor for a new column on Research in DA, and we will hear more about this in the next issue.

Thanks to all our contributors and column editors, and warm wishes to our readers. – JMK

Upcoming conferences

Jan 12-14, 2011

49th Annual Edwards Bayesian Research Conference,
Cal State Fullerton

<http://psych.fullerton.edu/mbirbaum/bayes/>

April 10-12, 2011

INFORMS Practice Conference, Chicago, Illinois

<http://meetings2.informs.org/Analytics2011/>

15-17 April 2010

Interational Conference on Uncertainty and
Robustness in Planning and Decision Making

<http://www.inescc.pt/urpdm2010>

University of Coimbra, Portugal

April 19-20, 2011

Decision Analysis Affinity Group

Houston, Texas

<http://www.daag.net> (information forthcoming)

May 31-June 3, 2011

Naturalistic Decision Making NDM 2011
Orlando, FL (CFP deadline Jan 15)
<http://www.ce.ucf.edu/ndm2011/>

June 13-17, 2011

Multicriteria Decision Making 21, University of
Jyväskylä, Finland
<https://www.jyu.fi/en/congress/mcdm2011>

August 21-25, 2011

Subjective Probability, Utility and Decision Making
Conference 23rd Biennial meeting (SPUDM)
Kingston University London. Much more information at
<http://www.eadm.eu>

October 23-26, 2011

Society for Medical Decision Making
33rd Annual Meeting
"From Evidence to Decision Making: Role of
Behavioral Economics in Medicine"
Chicago, IL
<http://smdm.org/2011meeting/index.shtml>

November 4-7, 2011

Society for Judgment and Decision Making Annual
Conference, Seattle, Washington
<http://www.sjdm.org>

November 13, 2011 - November 16, 2011

INFORMS Annual Meeting 2011 Charlotte, North
Carolina
<http://meetings2.informs.org/charlotte2011/>

December 4-7, 2011

Society for Risk Analysis Annual Meeting
Charleston, South Carolina

Applying Decision Analysis to Real Problems

Manchester Business School, 10th to 13th April 2011

<http://research.mbs.ac.uk/decision-science/Newsandevents.aspx>

Manchester Business School will be holding a doctoral
school in Manchester to explore the processes of

applying decision analysis in practice. Attendees will be introduced to some theory, particularly behavioural and similar theories which are often absent from mathematical and algorithmic presentations of decision analysis; but the majority of the course will focus on practical exercises and case studies. Our aim will be to introduce participants to the range of skills that real application requires. The course is supported by COST Action IC0602. Further details and application forms at the above web address.

Ahti Salo is an editor for the following Special Issue and sends this call for papers:

Flexible Services and Manufacturing Journal
(Formerly: International Journal of Flexible
Manufacturing Systems) Special Issue on Project
Management and Scheduling.

The submission deadline is December 31, 2010.

Selected topics of interest for decision analysts (there are more at the link below) include

- Human behaviour and risk attitudes in project management and scheduling
- Risk and robust project scheduling
- Project portfolio planning and decision analysis in project management

More information is available at:

<http://www.nitsustentabilidade.org/institucional/noticias/articletype/articleview/articleid/111/call-for-papers-flexible-services-and-manufacturing-journal.aspx>



DAS Awards

Ramsey Medal

(Robert Winkler provided the text of the following comments he gave at the Award Presentation at INFORMS)



Ramsey Medalist Elizabeth Paté-Cornell
with chair Bob Winkler.

The Frank P. Ramsey Medal is the most prestigious honor that the Decision Analysis Society awards. It is awarded for distinguished contributions in decision analysis. I'd like to start by thanking the other members of this year's Ramsey Medal Committee: David Bell, Jim Dyer, Ron Howard, and Detlof von Winterfeldt.

This year's Ramsey medalist, Elisabeth Paté-Cornell, has made many significant contributions to our field. Her research involves engineering risk analysis, risk management, and decision analysis, and it has focused on the inclusion of both technical and organizational factors in probabilistic risk analysis models. These models have been applied to a wide variety of topics, ranging from the risk management of the NASA shuttle tiles to that of offshore oil platforms, medical systems such as anesthesia during surgery, terrorist attacks, and the assessment of intelligence information.

Elisabeth has received many honors and awards for her research. She was elected to the National Academy of Engineering in 1995 and to the French Académie des Technologies in 2003. She has received several "Best Paper" awards.

With the exception of three years at MIT after finishing her degree in what was then the EES Department at Stanford, Elisabeth has spent her academic career at Stanford. She had the task of overseeing the merger of the EES, OR, and Industrial Engineering and Engineering Management Departments into one department, the Department of Management Science and Engineering. She is currently the Burt and Deede McMurry Professor and Chair of the MSE Department.

In her spare time, when not working on research projects, winning a teaching award, or leading the MSE Department, Elisabeth has served as Chair of the Decision Analysis Society and President of the Society for Risk Analysis, and she is a Fellow of INFORMS and SRA. She has also been active on the Council of the National Academy of Engineering.

Elisabeth is the 23rd Ramsey Medalist. It's important to note that the 22 previous Ramsey medalists have all been male, and it's about time we finally got smart and chose a female. Elisabeth is very suitable as the first female, having been in that role many times, starting at a young age. Her first summer job in college was as a computer analyst in a foundry in the French Pyrenees, and she was quoted as follows in a Stanford news release: "The forge was a vision of hell. As the men worked, large pieces of red-hot metal moved about them. It was very dangerous. So dangerous that women were not allowed there. I wanted to get the story firsthand, so I got an exception. I must have been quite a sight in my hard hat and miniskirt." Elisabeth's talk today clearly relates to challenges like that. Her topic is "From here to maternity (and back): Risk and decision analysis in real life."

For her significant contributions to decision analysis, it is my pleasure to present the 2010 Frank P. Ramsey Medal to M. Elisabeth Paté-Cornell.

DAS Publication Award

The committee (David Bell and Rakesh Sarin) chose the following paper as the winner.

George Wu and Alex Markle "An Empirical Test of Gain-Loss Separability in Prospect Theory," Management Science, vol. 54, no. 7, July 2008.

This paper shows in a clever way the violation of prospect theory. The empirical studies are extremely well done. The paper shows that prospect theory and more generally cumulative prospect theory fail because people do not add up the gains and losses portions of a gamble. There seems to be a growing interest in the field to come up with a model that accommodates the violation of the gain loss separability. So the paper has had an impact and was a timely contribution to behavioral decision theory.



Publication Award winner George Wu



DAS Student Paper Award

Congratulations to Sam Aflaki, who won the 2010 DAS Student Paper award this year for his paper titled "Managing Satisfaction in Relationships over time." The paper is co-authored by Ioana Popescu, his PhD advisor at INSEAD. Sam received his award and gave a short presentation of the work during the DAS Awards session in Austin. Congratulations also to the other finalists, who include David Caswell, Dennis Vrecko, Xiaojun Shan, Chen Wang, and Tianyang Wang. The six finalists were chosen from the 32 submissions we received. The judging committee consisted of Barry Cobb, Lea Deleris and Canan Ulu, and we thank them for their hard work!

Erin Baker and Karen Jenni, Co-chairs



Left to right: chair Karen Jenni, Student paper award winner Sam Aflaki, chair Erin Baker and, finalists Tianyang Wang, Chen Wang, and Xiaojun Shan.



DAS Practice Award

The finalists were (in order of presentation, which was random):

The Implementation of Decision Analysis at Chevron:
20 years of building a DA Culture

Frank Koch, Chevron Project Resources Co.
Larry Neal, Chevron Project Resources Co.
Brian Putt, Chevron Global Upstream & Gas

AIsoy 1: A Robot that Perceives, Feels and Makes
Decisions

David Rios Insua, Royal Academy of Sciences, Spain
Diego García, José M. Vidal, Carlos Pallardó, AIsoy
Robotics
Raúl Moreno, Rey Juan Carlos University, Spain

Neuroscience Trials Australia Uses Decision Analysis to
Select Acute Stroke Imaging Software Platform for
Extending the Time for Thrombolysis in Emergency
Neurological Deficits (EXTEND) Clinical Trial

Leonid Churilov, National Stroke Research Institute and
The University of Melbourne
Daniel Liu, National Stroke Research Institute and The
University of Melbourne
Henry Ma, National Stroke Research Institute and The
University of Melbourne
Yoshinari Nagakane, National Stroke Research Institute,
The University of Melbourne, and Kyoto Prefectural
University of Medicine
Soren Christensen, Royal Melbourne Hospital, The
University of Melbourne
Stephen M. Davis, Neuroscience Trials Australia
Geoffrey A. Donnan, Neuroscience Trials Australia



Finalist David Rios Insua with chair Eric Bickel



Finalist Leonid Churilov with Eric Bickel



Practice Award Winner Frank Koch with Eric Bickel

All three of the finalists were outstanding examples of decision analysis practice. The applications were very different and difficult to compare. The judges considered each submission carefully and discussed them thoroughly. The judges felt that the winning submission excelled in both its scope and impact. The testimonials regarding the benefits of decision analysis were truly exceptional and an excellent advertisement for the power of our profession. Finally, the presentation of the project results was outstanding. With this, it gives me great pleasure to announce that the winner of the 2010 Decision Analysis Practice Award is:

The Implementation of Decision Analysis at Chevron: 20 years of building a DA Culture, by

Frank Koch, Larry Neal, and Brian Putt.

The Chevron presentation included a video testimonial by George Kirkland, Chevron Vice Chairman. You must watch this video, which is simply the best advertisement for the power of decision analysis that I have ever seen. You can find the video here.

<http://www.youtube.com/chevron#p/u/12/JRCxZA6ay3M>

I would also like to thank our judges: Greg Parnell (US Military Academy and Innovative Decisions), Jeff Keisler (University of Massachusetts, Boston), and Freeman Marvin (Innovative Decisions).

Please join me in congratulating the finalists and the winner of the 2010 DAS Practice Award!

Eric Bickel

Chair, DAS 2010 DAS Practice Award

Professional news

J. Eric Bickel was awarded an NSF CAREER grant by the National Science Foundation's Service Enterprise System program. Eric's research will focus on the modeling and decision-relevance of probabilistic dependence. Application areas will include life sciences and climate policy.

Seth Guikema won the Chauncey Starr award from the Society for Risk Analysis. The Chauncey Starr Distinguished Young Risk Analyst Award, is awarded to a member age 40 years or younger for outstanding achievement in science or public policy relating to risk analysis and exceptional promise for continued contributions to risk analysis.

Joe Hahn was announced as one of this year's recipients of Pepperdine University's Howard A. White award for teaching excellence, in the pre-tenure category. The award, which is Pepperdine's highest recognition for teaching, spanning the university's undergraduate college and four graduate schools, is based on nominations from students, alumni, faculty and staff, and is announced each fall at the Annual Faculty Conference. Further info is included in this press release:

<http://www.pepperdine.edu/pr/releases/2010/october/ward-a-white-awards-2010.htm>

Erin Baker was elected President of ENRE, the Energy, Natural Resources and the Environment Section of INFORMS.

Bill Klimack was elected INFORMS VP-Meetings

George Wu was elected President of the Society of Judgment and Decision Making

The *Decision Analysis* December 2010 issue...

(available in Articles in Advance prior to print)

For more information about Articles in Advance please visit: <http://journals.informs.org/misc/ifora.dtl>

From the Editors...

L. Robin Keller, Ali Abbas, Manel Baucells, Vicki Bier, David Budescu, John C. Butler, Philippe Delquié, Jason R. W. Merrick, Ahti Salo, and George Wu

<http://da.journal.informs.org/cgi/content/abstract/7/4/1>

Darden's Luckiest Student: Lessons from a High-Stakes Risk Experiment

Samuel E. Bodily and Phillip E. Pfeifer

<http://da.journal.informs.org/cgi/content/abstract/deca.1100.0189v1>

The authors describe a captivating class exercise. In two different academic terms, students faced the possibility of being chosen as the only one to receive the opportunity to participate in a lottery consisting of equally-likely outcomes of zero and the cash equivalent to one semester of the Darden School tuition. Before knowing who was chosen, students were asked to declare the price at which they would choose a fixed dollar offer over the lottery. In addition to potentially providing motivation for students to study decision analysis, Bodily and Pfeifer (2010) used these class exercises to examine factors affecting the choice behavior of people facing lotteries involving high stakes.

Scoring Rules and Decision Analysis Education

J. Eric Bickel

<http://da.journal.informs.org/cgi/content/abstract/deca.1100.0184v1>

Bickel (2010) discusses different probability scoring rules. Then, the author shows how they can be used in a novel examination procedure where students assign a probability to each possible answer in a multiple choice exam.

Eliciting Patients' Revealed Preferences: An Inverse MDP Approach

Zeynep Erkin, Matthew D. Bailey, Lisa M. Maillart, Andrew J. Schaefer, and Mark S. Roberts

<http://da.journal.informs.org/cgi/content/abstract/deca.1100.0185v1>

Erkin et al. (2010) propose a new method to determine patients' preferences over health states based on observed decisions. The technique is demonstrated for a decision on the timing of a living-donor liver transplant.

Cost Effectiveness of On-site Chlorine Generation for Chlorine Truck Attack Prevention

Anthony M. Barrett

<http://da.journal.informs.org/cgi/content/abstract/deca.1100.0186v1>

Barrett (2010) examines chlorine gas trucking and sees how cost effective it would be to generate chlorine on-site to get the trucks off the road and prevent them from being targeted in attacks intended to cause releases of chlorine.

Paradoxes in Learning and the Marginal Value of Information

Peter I. Frazier and Warren B. Powell

<http://da.journal.informs.org/cgi/content/abstract/deca.1100.0190v1>

Frazier and Powell (2010) examine the Bayesian ranking and selection problem, where an information collection budget is allocated as efficiently as possible to choose the best among several alternatives.

Decision Analysis is now included in the [Social Sciences Citation Index](#).

Decision Analysis is 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://www.informs.org/Journal/DA>

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 **2011** membership dues.

The DAS is a subdivision of INFORMS.

For information on DAS, go to <http://decision-analysis.society.informs.org/>.

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 300, Hanover, Maryland 21076. Please visit our website at <http://www.informs.org/Journal/DA>



DA Around the World

By Alec Morton



The festive season is above all a time for family, both an opportunity to catch up with family members we have not seen over the course of the year, and a reminder of how important family is. In this spirit, I would like to offer a short homily and an invitation.

The DA family is spread very widely. Looking at the INFORMS Directory, as well as in the US, there are DAS members from France, Norway, Canada, India, Turkey, Japan, South Korea, the UK, Germany, China, the Netherlands, Israel, the Lebanon, Portugal, Brazil, Singapore, Saudi Arabia... And just as those of us with in-laws are aware, it is possible to be members of more than one family: in our professional life we may be risk analysts, cost benefit analysts, financial analysts, economists, operations researchers, psychologists, applied mathematicians, social scientists... as well as being decision analysts. Normally, there is no one single thing which families have in common - sometime there is shared talent for music or drawing, sometimes there is a distinctive manner, or personality trait. Not everyone shares everything, nor do they have to. And so it is with DAS.

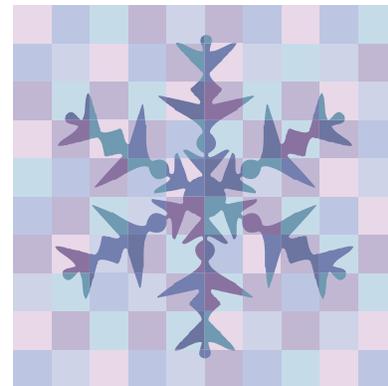
What I hope to do with this column is to give readers of the Newsletter a sense of the breadth and scope of the DA family. There is DA going on everywhere - why not write in and tell us what is happening in your country, or in your community? If you belong to another family as well as the Decision Analysis family - even if you regard decision analysts as rather distant

relations - why not write and tell us about that other family (often, in-laws are actually very pleasant people). And if (heaven forbid) there are things which you just can't stand about the DAS family, why not write and let us know about how other families do things better?

One of the things many of us realise over the festive season is just how bad we are at keeping in touch with our families throughout the year. If you want to stay in touch with your professional family in 2011, now is your opportunity! If you have just the germ of an idea for something you might want to contribute to this Newsletter column, please get in touch with me, at a.morton@lse.ac.uk, to discuss.

Wishing everyone all the best for the holidays and the New Year,

Alec



DA Practice

Bill Klimack (Kromite LLC), Column Editor

Planning is well under way for the 2011 INFORMS Conference on OR Practice, which has been renamed the INFORMS Conference on Business Analytics and Operations Research. Decision Analysis is well represented, with DAS member David Leonhardi, Boeing Commercial Airplane Group, serving as the conference chairman. There will be a decision analysis track, and the DA-inspired Soft Skills Workshop (SSW) will again be presented. The SSW will be supplemented with a track focusing on interpersonal skills required for decision analysts and OR professionals. This conference traditionally receives the highest ratings of all INFORMS offerings. The event will be held April 10-12, 2011 in Chicago. See www.informs.org/Attend-a-Conference/Analytics-Conference.

The renaming of the Conference is in support of the INFORMS Board of Directors decision to embrace support of the analytics field. I'll leave the details of this effort to other INFORMS communications, but in general the view is that many have, in recent years, begun to describe themselves as analytics professionals. The nature of their work draws on methods of our field. Yet many are unaware of the source of their tools, and are unaware of operations research. By actively working to communicate with and support these individuals, INFORMS will offer professional growth opportunities.

For those working in healthcare-related fields, INFORMS is organizing a conference on the topic in Montreal, June 20-22, 2011. See www.informs.org/Attend-a-Conference/Thematic-Conferences for more information.

The Decision Analysis Affinity Group 2011 meeting is chaired by David Skinner, Decision Strategies, Inc., and Marilyn Metcalf, GlaxoSmithKline. The meeting will be held in Houston April 19-20, 2011. Details should be available soon at www.daag.net. The Society for Decision Professionals (SDP) plans to meet at DAAG instead of holding a separate meeting.

The SDP hosts monthly "learning exchanges" that are open to the public. See www.decisionprofessionals.com for upcoming events. Archived events, which include use of game theory in conjunction with DA, DA at Chevron, and single and multiple objective DA comparison, are available here: www.decisionprofessionals.com/news_events.html.

This issue's guest columnist has had a distinguished career as a DA and OR professional as a US Air Force officer, as a professor, and as a consultant. He is also an INFORMS Fellow and is a past president of the Decision Analysis Society. Greg Parnell is an author of many DA journal papers and contributed to and authored several books. I have found his "decision analysis in one chart" intriguing and asked him to share it with us.

Thanks to Greg for sharing his thoughts and insights. Please send your comments, suggestions, and, especially, offers to be a guest columnist to me at bklimack@kromite.com. You can help improve the practice of decision analysis! – BK

What is our Decision Analysis Body of Knowledge?

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United States Military Academy at West Point

and

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Purpose

Most technical professional societies are collections of individuals with some common interests but with different jobs, problem domains, knowledge, and experiences. Many of us decided to join the Decision Analysis Society for a variety of professional and personal reasons. As an educator, I have taught undergraduate students, graduate students, and professional short courses. From both learning and educational perspectives, it is useful to ask: what is our decision analysis body of knowledge? In this short article, I would like propose a decision analysis body of knowledge. I realize that this is a daunting task that some would say is impossible and could challenge those who advocate a limited view of decision analysis as well as those who advocate a more expansive view. This sounds like fun already!

Figure 1 provides one view of the body of knowledge of decision analysis, the key concepts, and the common techniques used by practicing decision analysts. My first objective is for readers (members new to decision analysis and especially our large student population) to use this chart to assess their knowledge of decision analysis and then use the references to expand their understanding of the concepts and techniques in this important and useful field. My second objective is to provide a tool for professors and instructors who are developing decision analysis courses. My third objective is to spur discussion and debate on the decision analysis body of knowledge. My fourth objective is to learn from the useful comments of my colleagues that I expect to be forthcoming!

Field of Decision Analysis

Decision analysis is an operations research technique for analyzing complex decisions with multiple (and usually conflicting) objectives and uncertainty. One of the founders of the field, Ronald Howard, first coined the name in 1964. Decision analysis uses the axioms of probability and utility theory and the philosophy of systems analysis (Howard, 1966). The first decision analysis book (Raiffa, 1968), used probability and a single objective, net present value. The first multiple objective decision analysis book was published in 1976 (Keeney & Raiffa). Decision analysts are Bayesians since we believe that probability is a personal assessment of our belief in the outcome of an event based on our state of information and we use Bayes law to update our subjective beliefs as we learn new information. In addition to the mathematical foundations of decision theory, decision analysts have adopted lessons from behavioral decision theory research (von Winterfeldt & Edwards, 1986) about the heuristics and biases people use to reason with uncertain information and make decisions. Decision analysts have used behavioral decision theory research to develop effective probability, value, and utility elicitation protocols (Watson & Buede, 1987, Clemen, 1996, Kirkwood, 1997, Goodwin & Wright, 2004).

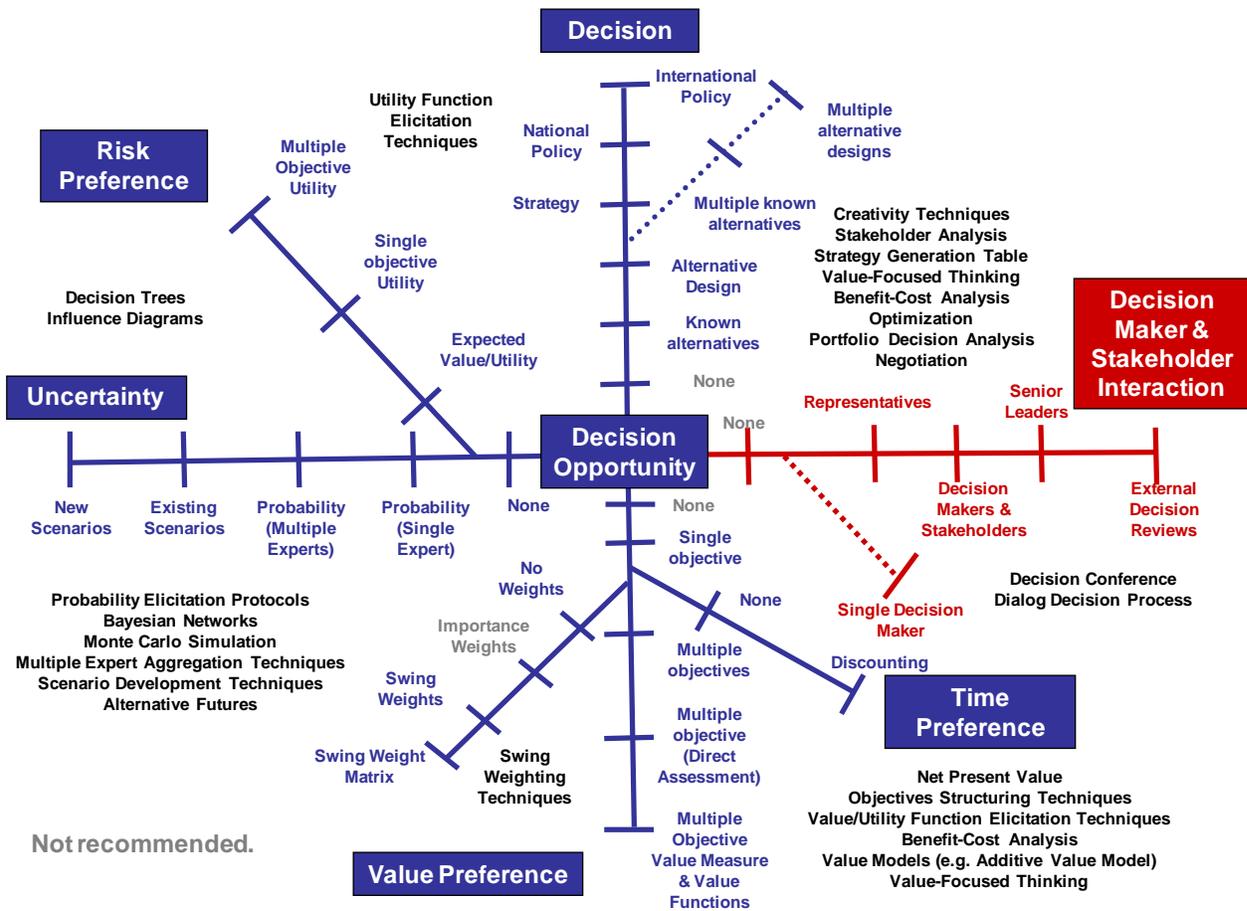


Figure 1. Decision Analysis Framework.

Scope of Decision Analysis

Figure 1 provides one possible decision analysis framework to describe the major concepts and techniques¹. The framework begins in the middle by identifying a decision opportunity. I use opportunity instead of problem to emphasize that at any time we can develop a decision opportunity and not only when we are faced with a decision problem. The framework is composed of dimensions, branches, and levels. The four dimensions are the decision (single and multiple alternative branches); the decision maker and stakeholder interaction (single and multiple decision maker branches), the value and time preference (two value preference and a time preference branch); and the uncertainty and risk preference (uncertainty and risk preference branches). The levels on each branch represent increasing complexity as we move away from the origin. The gray levels are not recommended. The black text lists some of the most common techniques for each dimension. In limiting the chart to one page, I have had to be selective about the techniques that I have included. The references as the end of this article and the Journal of Multi Criteria Decision Analysis²,

¹ The figure is a refinement from Parnell, G. S., Decision Analysis in One Chart, Decision Line, Newsletter of the Decision Sciences Institute, May, 2009

² Journal of Multi Criteria Decision Analysis website, <http://www.wiley.com/WileyCDA/WileyTitle/productCd-MCDA.html>, accessed December 15, 2010

Decision Analysis Journal³, and other operations research journals are excellent sources of additional decision analysis concepts and techniques.

The Decision Dimension

The decision dimension captures three important distinctions: the type of alternatives, the number of alternatives, and the decision level of the alternatives. The type of alternative can be an existing alternative (e.g., an existing home at a specific address) or an alternative that must be designed (a new home to be designed and constructed at some location to be determined). The second distinction is the number of alternatives. For example, most of us buy one home but we purchase a portfolio of financial investments (including our home). The third distinction is the decision level of the alternatives. The complexity of the decision changes as the level changes from organizational decisions (what products or services to provide) to organizational strategy (what mission to perform) to national policy (what strategy to achieve national objectives) to international policy (what policy to achieve international objectives). Usually, decision complexity increases as the decision level increases. In addition, at any decision level, the complexity increases as the number of decisions and the potential for new alternative designs increases.

Four useful techniques to develop alternatives are stakeholder analysis, creativity techniques, the strategy generation table, and Value-Focused Thinking. The stakeholder analysis techniques (Parnell, Driscoll and Henderson, 2011) used to define the problem can also be used to search for alternatives (e.g. interviews and questionnaires) or design new alternatives (e.g. focus groups). Clemen and Reilly (2004) describe barriers to creativity and several useful creativity techniques. Howard (1988) uses a strategy generation table to identify decision elements, identify decision options for each element, and develop strategies as integrated set of decision options for each decision element that span the decision space. Keeney's (1992) Value-Focused Thinking recommends the use of values (see Value Preference Section) to develop better alternatives. Keller and Ho (1988) describe additional alternative generation techniques.

Two useful techniques for portfolio decision analysis are benefit-cost analysis and optimization. Phillips (2007) uses multiple objective decision analysis to model the benefit and the benefit-cost ratio to determine the order of buy for resource allocation. Kirkwood (1997) combines multiple objective decision analysis for benefits with optimization to develop optimal resource allocation plans subject to a wide variety of cost and programmatic constraints. Many additional portfolio decision analysis techniques have been used that include consideration of uncertainty and risk (Salo, Keisler and Morton, Forthcoming).

Decision Maker and Stakeholder Interaction

The decision maker and stakeholder interaction dimension captures two important distinctions: the number of decision makers and the level of interaction with decision makers and stakeholders. The first distinction is the number of decision makers: single or multiple. While there are certainly examples of single decision makers (e.g., your purchase of a car or home when you are single), most problems involve multiple decision makers (e.g., your purchase of a car or home after you are married and most business and public decisions). The second distinction is the level of interaction with decision makers and stakeholders which can vary from interaction with representatives to decision makers (authorized to make resource decisions) to senior decision makers (C level officers of a corporation or government agency directors) to external review groups (corporate boards or national review groups). The most complexity involves multiple decision makers with senior executives and external reviews.

³ Decision Analysis Journal website, <http://www.informs.org/site/DA/>, accessed December 15, 2010

This dimension is colored red since ineffective stakeholder and decision maker interaction is the primary source of failure of decision analysis studies to support decision makers. Two proven techniques for decision maker interaction are decision conferences and the dialog decision process. Decision conferences (Phillips, 2007) are leadership and stakeholder conferences that develop requisite multiple objective decision models to enable a shared understanding, consensus decisions, and implementation commitment. Multiple decision conferences can be used to support hierarchical decision making. The dialog decision process (Spetzler, 2007) is a structured process for periodic interaction at major decision milestones with decision makers using decision analysis techniques. The process provides high confidence you are solving the right problem and enables the use of more complex decision analysis models of values and uncertainty for alternative evaluation.

Value and Time Preference

The value and time preference dimension includes three distinctions: time preference, value/utility modeling, and preference weighting. Time preference is usually modeled using a discount rate (Clemen and Reilly, 2001). Value preference begins with the identification of objectives and value measures (Keeney, 1992). Value modeling can be done with direct assessment or using value functions that model the returns to scale on the value measure (Kirkwood, 1997). Preference weights are assigned to value measures in most value models (e.g. the additive value model, the most common model). Weights depend on the importance of the value measure and the impact of range of variation of the value measure scale. Therefore, decision analysts use swing weights (the swing refers to the variation of the weight as the value measure swings from the lowest value level to highest value level on the scale) and not importance weights. The swing weight matrix (Parnell, Driscoll, and Henderson, 2011) explicitly defines the importance and variation in the decision context to aid in assessment and communication of weights.

Common value and time preference techniques include net present value, objectives structuring techniques, value function elicitation techniques, benefit-cost analysis, value models and Value-Focused Thinking (Keeney 1992). Net present value is the standard technique for modeling single objectives using a discount rate (Clemen and Reilly, 2001). Objectives structuring techniques, value function elicitation techniques, value models, and swing weighting are described in Keeney and Raiffa (1976), Keeney (1992), Kirkwood (1997), Clemen and Reilly (2001), Belton V. and Stewart T, (2002), Parnell, Driscoll and Henderson (2011).

Uncertainty and Risk Preference

The fourth, and final dimension, is uncertainty and risk preference. The two major distinctions are uncertainty and risk. Some decision analysis problems may not require uncertainty to be considered. When we need to consider uncertainty, as we have noted, decision analysts use subjective probability to assess their beliefs about uncertainty if they can define a mutually exclusive and collectively exhaustive outcome space. It is simpler to assess probabilities for single experts for each uncertain event but many complex problems involve multiple experts. For long range planning problems is not easy to define the future outcome space of the events. For these problems, we sometimes use existing scenarios or we develop new scenarios to define the strategic planning space (Kirkwood, 1997 and Parnell et al., 1999). The second distinction is risk preference. As we noted in the value preference dimension, value functions measure returns to scale. We can calculate the expected value of alternatives given the uncertain variables in the problem. Utility functions measure both returns to scale and risk preference (Kirkwood, 1997). Utility functions can have single or multiple objectives and are assessed using lotteries. Single objective utility functions are described as risk adverse (concave for increasing functions), risk neutral (linear), and risk seeking (convex for increasing functions). The exponential utility function is a common single dimensional utility function.

People have heuristics and biases in dealing with uncertainty (Kahneman, D., Slovic, P., & Tversky, 1982, Edwards, Miles, and von Winterfeldt, 1986). The important uncertainty techniques include probability elicitation protocols, Bayesian networks, multiple expert aggregation techniques, Monte Carlo simulation, and scenario development techniques including alternative futures. Probability elicitation protocols are described in many of the references including Kirkwood (1997). Bayesian networks (Pearl, 1988) are networks are used to model n dimensional probability distributions and obtain inferences before and after observing events. Multiple expert aggregation techniques are described in the literature. Monte Carlo simulation can be used in conjunction with single objective (Clemen and Reilly, 2001) or multiple objective decision analysis models (Parnell, Driscoll, and Henderson, 2011). Scenario development techniques are described by Kirkwood (1997) and Gordon and Wright (2004), and used in large decision analysis studies (Parnell et al., 1999).

The important utility techniques include utility function elicitation techniques, decision trees, and influence diagrams. Utility function elicitation techniques are included in most decision analysis books (e.g., Keeney and Raiffa, 1976, Kirkwood, 1997, Clemen and Reilly, 2001, Belton and Stewart 2002, and Gordon and Wright, 2004). Decision trees are an extension of probability trees and used by Raiffa (1968). Decision trees are very flexible – they can be used to solve single and multiple objective decision analysis problems using value or utility. Influence diagrams (Howard and Matheson, 1983) are equivalent to decision trees but have modeling and communication benefits since the diagram suppresses the details of the branches of the trees.

Decision Analysis Software

In the past 20 years, decision analysis software has been developed to solve decision analysis problems of low, medium, and high complexity. OR/MS Today publishes a very useful biennial survey of decision analysis software (Buckshaw, 2010). The software tools include decision tree, influence diagram, Monte Carlo simulation, Bayesian network, and multiple objective decision analysis tools.

Decision Analysis Applications

In the past 40 years, there are been a wide variety of decision analysis applications. Many application articles are not published due to proprietary information, classified information, and lack of incentives of practitioners to publish. Good surveys can be found in Corner and Kirkwood (1991); Keefer, Kirkwood, and Corner (2004); and Parnell (2007). Decision analysis applications, including the use of decision analysis with other operations research techniques, are published in a wide variety of international journals.

Conclusion

My objective of this article is show the decision analysis body of knowledge to you in one chart. Figure 1 has provides my view of the four decision analysis dimensions, the key concepts, and some of the common techniques being used by decision analysts to provide value to their clients. In addition, I have included references to some of the major books and literature in the field.

Let the debate begin.

(If you would like to debate, go to the DAS forum linked here and share your views!)

<http://www.syncopation.com/forums/viewtopic.php?f=6&t=353>

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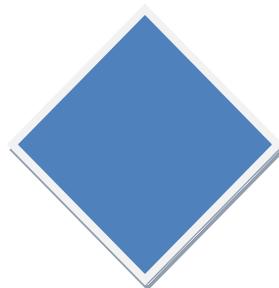
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Society of Decision Professionals

By Mady Gorell

The Society of Decision Professionals (SDP), www.decisionprofessionals.com, a professional society focused on supporting decision professionals to achieve visibility, reputation, and excellence, has grown to 175 members and eight sponsoring organizations since its formation nine months ago. Members are from the public and private sector, and include individuals from the US, Canada, South America, Mexico, Europe, the Middle East, and Southeast Asia. The sponsoring organizations playing a key role in the Society's direction, effectiveness, and standards are Chevron, Unilever, SmartOrg, Kromite, Palisade, Strategic Decisions Group, Syncopation, and Decision Frameworks.

In a little under a year the SDP has put a strong governing board and infrastructure of member councils for ongoing growth in 2011. It has also hosted three on-line learning exchange programs, and begun work on building out its knowledge-sharing and content management portal schedule for launch sometime in 2011.

The SDP Learning Exchanges are archived at: http://www.decisionprofessionals.com/news_events.html You can access the PDF slides and audio files of these events. Recent learning exchanges include:

Implementation of Decision Analysis: 20 Years of Building Chevron's DA Culture, by Larry Neal and Brian Putt, Chevron

Aligning Decisions with our Values, by Somik Raha, PhD

East Coast DA Meets West Coast DA in Pharma Portfolio Decision Analysis, by Jack M. Kloeber Jr., PhD, Bill Klimack, PhD, and C. Kwon Kim, PhD, and

Game Theory Yields New Insights to Decision Analysis in the Energy Industry, by Frank Koch, DA Practice Leader, Chevron:

The vision of SDP is to have Decision Professionals become the trusted advisors of choice for Decision-Makers facing important and complex decisions. SDP will collaborate with the INFORMS Decision Analysis Society in taking the latest developments in the field of Decision Analysis to practical application, thereby ensuring the sustainable long-term development of the field of Decision Analysis as a whole.

For more information on SDP, including the professional career ladder, registration and membership, news, governance and SDP's professional code, please go to the Society's website www.regonline.com/sdp and register. For further information or questions, contact Mady Gorrell, MA at mady@decisionprofessionals.com.



Ask DAS

Karen Jenni, Column Editor

In this issue, we tackle the often thorny question of **choosing a dissertation topic**. There is no lack of general advice out there, but in my time that advice consisted mainly of variants of “pick something that interests you,” or from students in other departments, “work on whatever your advisor is doing.” Both pieces of advice have merit, but are incomplete. In my case, a lot of things interested me, so “interest” didn’t narrow things down much -- let’s see if we can add to that.

Role of the advisor and the committee

Often, the selection of an advisor and a dissertation topic are closely connected. Your advisor and his or her current and former students are excellent sources of information on possible topics, and on the ins and outs of choosing a viable topic in your particular department. Advisors and departments differ. They differ in how much leeway students have in selecting research areas, in how much guidance they will give you in selecting a specific dissertation topic, and in how much assistance they will give you during the process. In some programs, your funding is tied to one of your advisor’s specific research projects, and it is typically the case that your dissertation will flow from that work. In other programs, students are supported separately from specific projects, and they have considerably more leeway in selecting a research area. In both situations, your advisor’s interests and expertise should play an important role in choosing a topic (or your interest in a topic may influence your choice of advisor). It is best to have a dissertation topic that connects directly to areas that your advisor and/or your other committee members

have some experience and expertise in, not simply a topic they think is interesting. You will need support from your advisor, so it is best if topic is one he or she is motivated to pursue along with you.

However, choosing a dissertation topic that your advisor is interested in, or has funding for, or otherwise promotes, but which you yourself do not find interesting is generally not a recipe for success. As discussed below, you will be the one immersed in the topic and doing the hard work of advancing your chosen area of research, and to do that well you should care about what you are doing. Ideally, you will find an area and a dissertation topic that interests both you and your advisor.

Think about the big picture and the long term

Consider what you want to do after the dissertation (and there will be an “after!”), and how different dissertations will help (or hinder) you in those pursuits. If you know what kind of job you want to pursue, you may wish to tailor your topic and title to fit that career path. For example, if you are interested in an academic career, it is critical that your research be publishable, and be publishable in an appropriate time period to facilitate your job search. Other factors may vary in importance depending on the type of college or department you are aiming for: some schools prefer research that is more theoretical or foundational than applied; some (perhaps all) prefer research that is of interest to potential funders. If you have particular departments or academic areas in mind, you should choose a topic that is related to the basic areas of research within those areas, and which can be “marketed” to those groups when the time comes.

Those interested in a career outside of academics may be better off with a topic that has strong implications for practice, or even focuses on a particular application area, than a topic that is purely theoretical. If you are uncertain about what kind of job you might want, think about whether a particular dissertation topic opens or closes off any potential pathways, and whether that matters to you. For example, if you do a dissertation focused on statistical decision theory, you may find it challenging to pursue a career in marketing or business development, but you may or may not care about that. It can be beneficial to think about different ways you can market your work to maximize your flexibility later on: a dissertation that uses and extends decision analysis concepts in an area of more traditional academic interest, or application of those concepts to a specific area that you are interested in and where the approaches are novel, for example.

Finally, to repeat some advice from the last column... Ralph Keeney uses the selection of a dissertation topic as one of his examples of creating decision opportunities in Value-Focused Thinking, under the heading “When you have no idea about what to do.” So you are not the first one to confront this challenge!

Think about the small picture and the medium term

“Pick something that interests you” really is good advice -- you will be working on your dissertation for a fairly long period of time and in great depth, and ultimately you will know more about that particular topic than anyone, so be sure it is something you believe you can sustain your interest in for several years. If you find a topic that you have a lot of passion for, great, but passion by itself does not make a successful dissertation: for example, if no one in your

department works in the area, it may be a very difficult path to pursue. The key is to find something that interests you “enough” -- you should be convinced that it is something you can think about, research, and talk about for an extended period of time -- and is also of interest to your advisor, supported by your department, and advances your long-term goals. This site <http://matt.might.net/articles/phd-school-in-pictures/> provides a humorous and interesting illustration of the “place” of a PhD in the realm of “knowledge,” and my favorite frame shows what your world looks like after your dissertation (it is extremely small and very focused). Whatever topic you choose, you will arrive at this perspective eventually, so do your best to make sure it’s something you won’t mind looking at that closely.

Understand existing and ongoing work and be flexible

Remember, a dissertation involves pushing the envelope and conducting research in new areas. It is not always possible to predict at the beginning where you will end up: the research may lead you in directions you did not expect. So the advice above about picking a topic that you can sustain interest in for a long time also means picking a topic that can sustain your interest through its twists and turns. I do not know anyone who says their dissertation turned out exactly how they thought it would when they started.

At the same time, your research will necessarily build on work that has been done previously, and you need to explore that work thoroughly in order to extend it or move beyond it in interesting and useful ways. A common mistake is for students to fail to understand the literature and how it relates to their work, leading to a lot of wasted time and effort. Go to conferences and seminars and try to

stay up to date on related work that is currently being done. Another mistake is the mirror image – some students become paralyzed by reviewing literature and looking for related work, and fail to recognize when they have come upon that useful and interesting extension. Your advisor can help you navigate these issues: I remember clearly when my advisor told me to stop reading and start writing, but I had difficulty recognizing that place on my own.

The “Ask DAS” column is intended to target the interests, needs, and questions of student members of the Decision Analysis Society. If you have a question about the field that you think might be interesting to other DA students, please send it to me (kjenni@insightdecisions.com) and I will try to find some folks to provide, if not answers, at least some perspectives.

Thanks to Eric Bickel, Mark Fitzgerald, Robin Keller, and Jason Merrick for their perspectives on this topic, and to my own advisor, who knows who he is, for guiding me through the process many years ago.

If you would like to discuss this topic further, go to the DAS discussion forum at the following link.

<http://www.syncopation.com/forums/viewtopic.php?f=6&t=352>

Decision Education Foundation

From Betty Skov

*Decision Education Foundation Plans Direct-to-Kids
Online Program*

Since its founding in 2001, the Decision Analysis Foundation (DEF) has focused primarily on “teaching

the teachers,” with summer public workshops for educators and onsite teacher trainings at partner schools and youth-centered organizations. Earlier this year, the foundation announced a major initiative—the creation of an online curriculum designed for direct delivery to young adolescents. For DEF, the online project is key for scaling its efforts to reach greater numbers of youth with the basics of quality decision making, providing a means to deliver content that can be accessed in a variety of instructional settings, including schools, homes, after-school programs, and youth organizations.

Another project in the works at DEF is the design and distribution of a series of student/parent workshops for families facing the college decision process. For many young people, this is a decision unprecedented in complexity and importance. It’s also a decision widely known for creating anxiety within students and their families. The DEF approach departs from the usual standard for college decision counseling programs—instead of focusing on gathering information on colleges, the series will focus on how to arrive at the highest quality decision about where to apply, and once acceptances come in, which college to choose. In October, DEF presented a daylong College Decision pilot session at the Bhartiya Cultural Center in Chalfont, Pennsylvania.

For more information on DEF and its programs, visit the foundation’s website at

<http://www.decisioneducation.org>.



DA in Education

Peer-To-Peer Decision Training

By Ali Abbas, Scarlett Herring, Matthew Robbins, Karen Simms, Chris Spetzler

Have you heard about coaching teen mentors to teach decision skills to troubled teens? Well, that is exactly what a group from the University of Illinois (U of I) is doing in collaboration with the Decision Education Foundation (DEF). The program is led by Ali Abbas, associate professor of Industrial and Systems Engineering at the U of I. Together, they have teamed up with the Peer Ambassadors (PAs) and the Juvenile Detention Center (JDC) of Champaign County, IL, to develop a curriculum to teach JDC teens not only what a decision is, but how to align their decisions with their values and identify possibilities and alternatives for each decision they face. The goal is to engage both the PAs and the JDC residents in decision making using socially relevant methods.

The Peer Ambassadors Program, led by Karen Simms, is a youth leadership and social intervention initiative program designed to empower and educate African American youth in Champaign County, IL. Funded by the Champaign County Mental Health Board, the PA program's primary mission is to develop young leaders who are able and willing to mentor their peers who are at-risk for school failure or have had some involvement in the juvenile justice or mental health systems.

Known throughout the county, in Illinois, and in some parts of the nation as the PAs, the participants are peer educators, leaders, advocates and peer counselors. In addition, the PAs host community dialogues, family outings, health and wellness events, and educational meetings that are open to other youth and concerned adults.

The ongoing effort has involved weekly training sessions between the U of I. During the sessions,

decision making fundamentals were taught to a core group of PAs so that they could in turn instruct the youth at the Champaign County JDC. About five PAs attended the weekly meetings, which were used not only to train the PAs but also to get feedback and refine the material.

Members of the U of I group included Ali Abbas, Elizabeth Bozek, Scarlett Herring, and Matthew Robbins. Chris Spetzler from DEF also participated in some of the earlier sessions.



Figure 1: Karen Simms, Elizabeth Bozek, Scarlett Herring, Matthew Robbins, the Peer Ambassadors, and Ali Abbas.

Feedback obtained during the training sessions, and interactions with the PAs helped make the material more socially relevant to the JDC residents. For instance, Figure 2 shows examples describing the distinction between thought vs a decision in a context that is more relevant to the JDC residents. More information about the cases used and the material developed will be a topic of a future *ORMS Today* article.

The need for an icebreaker that grabs the attention of the target audience at the JDC became essential with the first training session at the U of I. The PAs were very enthusiastic and motivated when left to facilitate and role play at their own pace, but when they delivered presentations using power point, they immediately lost eye contact with the audience, and went into a monotonous voice. It was explained to them that if students are not actively engaged at the beginning of the presentation, it is unlikely that

Guest Column: Soft Skills

Soft Skills Workshop: Real-World Skills for Analysts

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Introduction

As practicing decision analysts, we know from experience that the lack of mastering interpersonal skills can be a significant barrier to the adoption of decision analysis (DA) within organizations. In order to help improve the interpersonal skills of analysts, we developed the Soft Skills Workshop to gather best practices and provide realistic training.

Our team conducted the Workshop for the past three years prior to the annual INFORMS Conference on OR Practice. The Workshop has received positive reviews from participants as a valuable developmental experience.

Structure of the Workshop

The Soft Skills Workshop is a one-day, hands-on seminar for new and experienced analysts. The Workshop teaches the critical people skills needed to complete a successful analysis project. There are no pre-requisites needed to attend.

The instructor team organizes the lessons around six categories of people who analysts must interact with during the course of a typical project: clients, other team members, stakeholders, subject matter experts, working groups, and senior decision makers. The lessons are linked together by a case study and a set of practical exercises.

Teaming with Clients. Creating and managing a relationship with the client is the first set of soft skills for the analyst. The Workshop introduces the participants to the sources of organizational complexity that clients face, different client-consultant models and the advantages of each type. Participants learn to apply the Structured Dialogue Process to bring clarity to the client interaction. They learn when formal or informal contracts or guidelines are appropriate to define the project objectives, scope, and expected outcomes.

Working with Project Teams. Many complex analysis projects require a multi-disciplinary approach with team members from a variety of professional backgrounds. People who work in different disciplines bring unique perspectives, but often have trouble building a shared understanding of the problem and solution approaches. Workshop participants learn the skills needed for building trust, meaning, and common purpose in a project team. They learn the principles of good group process and proven techniques for planning effective meetings and managing interpersonal conflict.

Problem Framing with Stakeholders. The third set of soft skills involves collaborating with the people, inside or outside of the organization, who have the ability to influence the project or are impacted by its outcome. These key stakeholders may provide access to different sources of information, but often bring conflicting objectives. Analysts need to know how to identify potential stakeholders, conduct a stakeholder analysis, use it to help frame the problem, identify key decision points, and develop viable alternatives for analysis.

Interviewing Subject Matter Experts. In this lesson, participants learn the skills of eliciting subjective assessments from SMEs. They learn how to set up and properly conduct interviews, the basics of data gathering used in probabilistic analysis, and how to counteract cognitive and motivational biases.

Data Gathering from Groups. These skills cover how to elicit and combine value and risk preference judgments from groups of decision makers, stakeholders or subject matter experts. Participants learn the techniques of analytical collaboration and the different group assessment approaches, including the nominal group technique, consensus groups and the Delphi process. They learn three swing weight elicitation techniques and four techniques for combining individual judgments into a group position.

Communicating Results to Executives. An analysis project can be a technical success, but if the recommendation is not implemented, it might as well never have been made. The last set of soft skills involves how to best communicate results to decision makers in an organization. Participants learn how to make effective use of graphs, charts and tables. They are exposed to a wide variety of graphical visualization techniques. Finally, they learn the importance of understanding the decision maker's objectives, providing focused decision insight and telling a compelling story.

The Workshop Process

Workshop participants are given a course notebook and begin by joining one of six table teams where they will work together during the day. The course notebook contains the lesson materials, a case study, and practical exercises. This past year's case study concerned whether or not INFORMS should sponsor certification of OR skills.

Each table team is assigned a facilitator/coach. The facilitators introduce the case study and explain how the table teams and exercises will work.

Each lesson follows a similar format that includes the lesson objectives, specific soft skills and selected references. Most lessons are followed by a hand-on practical exercise involving the case study.

Since the workshop is focused on improving soft skills, we do not ask the participants to actually build a computer model. Instead, we provide the simulated results of an analysis to each table team. However, each team must brief a decision maker on the results of the analysis.

Next Steps

The Workshop has evolved over the past three years as we have received valuable feedback from participants and colleagues. We have learned over time what skills seem to be most needed, which workshop techniques are succeeding, and how we can help extend and reinforce the development of soft skills with analysts when they return to their workplace. We continue to evolve the content so that the Workshop is always a fresh experience for returning participants.

The next Soft Skills Workshop will be held in Chicago on Sunday, April 10, 2011, prior to the 2011 INFORMS Business Analytics and Operations Research Conference. The next conference will also include a one-day track for Soft Skills for Analysts. For the first time, conference attendees can select sessions from a full track on soft skills as part of the regular conference program.

The Soft Skills instructor team is looking forward to next year. We hope to see many new and returning faces, and to continue to spread awareness of soft skills as a core competency for decision analysts and professionals.



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