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DECISION ANALYSIS TODAY

Vol. 35, No. 3, December 2016

The newsletter of the INFORMS Decision Analysis Society

Inside:

President's Letter

Jason Merrick

Dear DAS Members,

It was great to see many of you at the INFORMS meeting in Nashville in November. We truly are members of a vibrant and industrious community. I would like to thank several members whose hard work has helped our continued progress as a society and a profession. First, I would like to thank Eric Bickel for his contributions as president over the last two years and for his continued work as past-president for the next two years. I would also like to thank Frank Koch and Jun Zhuang for their leadership on the DAS Council. Frank has also chaired the Practice Award, which thanks to his efforts is now a joint award with the Society of Decision Professionals. Jun will continue to serve a valuable role on the membership committee, ensuring that we continue to serve all our members to the best of our ability. The

program in Nashville truly reflected the breadth and depth of our society, with talks about excellent practice projects and thoughtful research. We should all thank Melissa Kenney and Andrea Cadenbach for organizing such a great set of DAS sessions. We also took time to remember the life and work of one of the founders of our field, Howard Raiffa, who recently passed away. I was only lucky enough to meet Howard once, but I use his books and papers heavily in my teaching and research, and our field can draw inspiration from the depth of his thinking, the clarity of his writing, and his focus on practical and meaningful problems.

Looking forward, we welcome Heather Rosoff and Matthias Seifert to the council and our new vice-president and president-elect, Karen Jenni. Karen is the first president who works as a full-time practitioner since Peter Morris and Ralph Keeney led the society in the 1980s. Melissa Kenney, Emanuele Borgonovo, Debarun Bhattacharjya, and Joe Hahn will continue to serve on the council and Yael Grushka-Cockayne continues as secretary-treasurer (essentially the person that does all the work to make the rest of the leadership look good). The full list of incoming and outgoing leadership and committee chairs can be found at the end of this note. Please contact them with any thoughts and ideas, or you can always contact me with your comments.

In 2017, we will have the second Advances in Decision Analysis conference in Austin, Texas from June 26-27. Casey Lichtendahl will be the general chair, and John Butler will serve as local chair. The conference will provide a platform for interdisciplinary discussions and will include talks by researchers in statistics, economics, psychology, and other decision-making related disciplines with a prescriptive focus. Jim Dyer will give the academic plenary, and Bill Klimack will provide an industry perspective. The conference is a wonderful opportunity to get together as a community and enjoy some interesting talks and a lively city. You can also see some excellent decision analysis talks organized by Matt Fitch at the INFORMS Analytics conference in Las Vegas in April, and we will have another great set of sessions organized by Andrea Cadenbach and Saurabh Bansal at the INFORMS Annual Meeting in Houston in October.

During my term as president, I would also like to use this column to highlight some of the interesting work that our members do. My plan is to highlight work at the intersection of practice and research, looking at decision analysis research that is impacting other fields or applications, fundamental research that can have an impact on practice, or great work in practice that can stimulate research ideas. I will start with the fascinating work of our own council member Melissa Kenney on climate change. Melissa works with a long list of leading climate researchers on the link between natural and social processes and how such an understanding can inform decision making. Their commentary in the journal *Nature Climate Change* in 2014 outlines the feedback loop between advances in climate science and decision making. Any decision analyst will recognize the decision analysis cycle that underlies the recommendations of this eminent group.

Melissa also co-chaired the Indicators Working Group of the National Climate Assessment and Development Advisory Committee. Her paper in the journal *Climactic Change* in 2016 describes the development of indicators that serve as "reference tools that can be used to regularly update status, rates of change, or trends of a phenomenon … to communicate, to inform decision-making, or to denote progress in achieving management objectives." The broad set of indicators covers the areas of greenhouse gas emissions, atmospheric composition, physical climate variability and change, agriculture and industry

sectors, resources of concern, and adaptation and mitigation. These indicators serve as evaluation measures for the fundamental objectives of a broad set of decision contexts related to climate change.

Melissa is bringing the tools of decision analysis to a critical area of research and looks to have a tremendous impact on policy and society going forward. I would highly recommend that you read some of her work at indicators.umd.edu; the editors of *Decision Analysis*, *Management Science*, and *Operations Research* should probably be asking for her papers so we can highlight the impact our field has in the world. This is truly some of the most interesting research using decision analysis that is going on today.

Jason Merrick

Virginia Commonwealth University

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Kenney, M. A., A. C. Janetos, G. C. Lough (2016) Building an integrated U.S. National Climate Indicators System. *Climactic Change* **135**(1)**:**85–96.

Officers and INFORMS Business	2016-2017	2015-2016
President	Jason Merrick	Eric Bickel
President-Elect/Vice President	Karen Jenni	Jason Merrick
Past-President	Eric Bickel	Jeff Keisler
Secretary-Treasurer	Yael Grushka-Cockayne	Yael Grushka-Cockayne
Council member (1st year)	Heather Rosoff	Melissa Kenney
Council member (1st year)	Matthias Seifert	Emanuele Borgonovo
Council member (2nd year)	Melissa Kenney	Debarun Bhattacharjya
Council member (2nd year)	Emanuele Borgonovo	Joe Hahn
Council member (3rd year)	Debarun Bhattacharjya	Frank Koch
Council member (3rd year)	Joe Hahn	Jun Zhuang
DA Society Representative, Subdivisions Council	Karen Jenni	Jason Merrick

Committees	2016-2017	2015-2016
Awards Committee (Standing)	Jason Merrick	Eric Bickel
Membership Committee (Standing)	Jun Zhuang & Mehmet Ayvaci	Joe Hahn & Jun Zhuang
Nominating Committee (Standing)	Karen Jenni	Jason Merrick
DAS Webinar Committee (Special)	Eric Bickel	Karen Jenni

Communications	2016-2017	2015-2016
DAS Today Editor(s)	Debarun Bhattacharjya & Cameron MacKenzie	Debarun Bhattacharjya & Cameron MacKenzie
DAS Website/Social Media	Jay Simon	Jay Simon

Awards	2016-2017	2015-2016
Ramsey Medal Committee	Eric Bickel	Jeff Keisler
Practice Award Committee	Greg Hamm	Frank Koch
Publication Awards Committee	Vicki Bier	Casey Lichtendahl
Student Paper Award Committee	Emanuele Borgonovo & Joe Hahn	Robert Hammond & Emanuele Borgonovo

Letter from the Editors

Debarun Bhattacharjya and Cameron MacKenzie

Dear reader,

Happy new year! We hope you had an enjoyable and relaxing holiday season and that you are now back to your routine, fresh and recharged.

It was wonderful catching up with several of you at INFORMS. As per recent tradition with the post-INFORMS issue, we start with a brief photo summary. Many thanks to Jun Zhuang, who quite generously agreed to carry on as "official photographer" for the newsletter even after his tenure as DA Today Co-editor. Also, we would like to congratulate Karen Jenni, Heather Rosoff, and Matthias Seifert on being elected to their new DAS positions!

We are excited that Pat Leach has agreed to be the new editor and author of the DA Practice column. His first column examines different versions of the Trolley Problem, a classic ethical dilemma. We thank Larry Neal for his excellent work in writing the DA Practice column. Mavis Wang and Matthias Seifert in the DA Around the World column analyze the number of recent journal articles in decision analysis written by authors from Asia and Southeast Asia. In the Ask DAS column, Allison Reilly and Florian Federspiel interview Andrea Vermehren of the World Bank about her work in Madagascar on addressing extreme poverty. As usual, the newsletter contains abstracts from the most recent issue of *Decision Analysis*, announcements for upcoming conferences, and previews the Decision Analysis Affinity Group conference hosted by the Society for Decision Professionals.

We thank all the column editors for their excellent contributions; the newsletter functions primarily due to their efforts. We welcome any suggestions about the newsletter—please feel free to send us a note if you have any ideas and thoughts for future issues.

Happy reading,

Cameron and Debarun

Upcoming Conferences

February 23-February 27, 2017
The 6th International Conference on Operations Research and Enterprise Systems (ICORES)
Porto, Portugal
http://www.icores.org/Home.aspx

March 15-March 17, 2017
Decision Analysis Affinity Group
New Orleans, LA, USA
http://www.decisionprofessionals.com/news/DAAG-Conference-2017

April 2-April 4, 2017
INFORMS Conference on Business Analytics and Operations Research
Las Vegas, Nevada, USA
http://meetings2.informs.org/wordpress/analytics2017

May 5-May 8, 2017
The 28th Annual Production and Operations Management Conference (POMS)
Seattle, WA, USA
https://pomsmeetings.org/conf-2017/

May 20-23, 2017
Institute for Industrial and Systems Engineers (IISE) Annual Conference & Expo
Pittsburgh, PA, USA
http://www.iise.org/Annual/

June 26-June 27, 2017
Advances in Decision Analysis (ADA)
Austin, TX, USA
https://www.informs.org/Community/DAS/ADA-2017-Conference

July 17-July 21, 2017
The 21st Conference of the International Federation of Operational Research Societies (IFORS)
Quebec City, Canada
http://ifors2017.ca/

INFORMS Pictures

Frank P. Ramsey Medal Award

Prof. Vicki Bier (Industrial and Systems Engineering, University of Wisconsin-Madison) has been named as the 2016 Ramsey Medalist—congratulations Vicki! The 2016 selection committee was Jeff Keisler (chair), Karen Jenni, Don Kleinmuntz, Jim Smith, and Detlof von Winterfeldt.

Picture: Ramsey Medal Award winner: Vicki Bier (C) with DAS President Eric Bickel (L) and Jeff Keisler (R)

DA Publication Award

The winners of this year's DA Publication Award are Amit Kothiyal, Vitalie Spinu, and Peter P. Wakker, "Average Utility Maximization: A Preference Foundation" *Operations Research* **62**(1): 207-218. The award selection committee was Casey Lichtendahl (chair), Jim Smith, Kevin McCardle, Enrico Diecidue, Alec Morton, and Max Henrion.

Picture: DA Publication Award winner: Amith Kothiyal (C) with Casey Lichtendahl (L) and Eric Bickel (R)
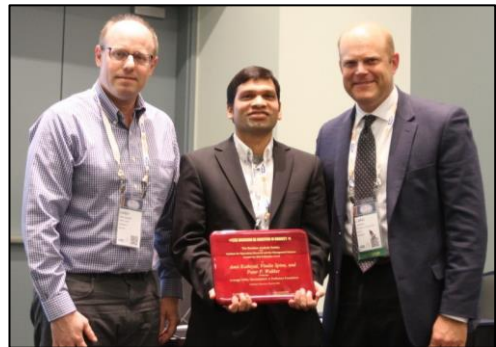
DAS Practice Award

The winner of this year's DAS Practice Award is Jack Kloeber, Joseph Byrum, Tracy Doubler, Greg Doonan, Craig Davis, and Peiran Zhao for their work on a Bayesian method for selecting elite varieties of soybean. Frank Koch and Greg Hamm co-chaired the selection committee.

Picture: DAS Practice Award winner Jack Kloeber (C) with Frank Koch (L) and Eric Bickel (R)

Student Paper Award

The winners of this year's student paper award are Qiushi Chen, Turgay Ayer, and Jagpreet Chhatwal, "Optimal Liver Cancer Surveillance in Hepatitis C-Infected Population." The award selection committee was Emanuele Borgonovo (co-chair), Robert Hammond (co-chair), Yael Grushka-Cockayne, Eric Johnson, Victor Jose, and Asa Palley.

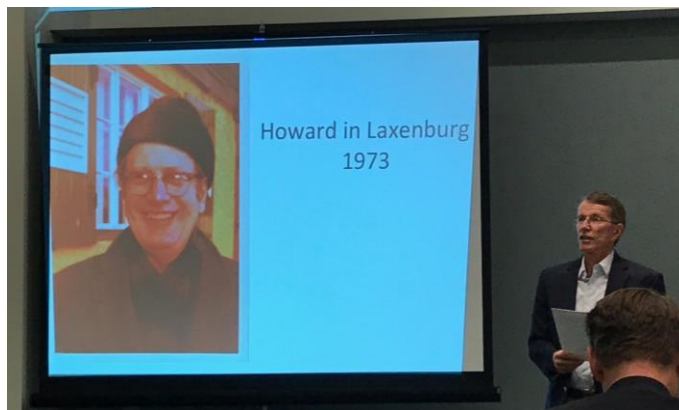Picture: Student Paper Award winner Qiushi Chen (C) with Eric Bickel (L) and Emanuele Borgonovo (R)
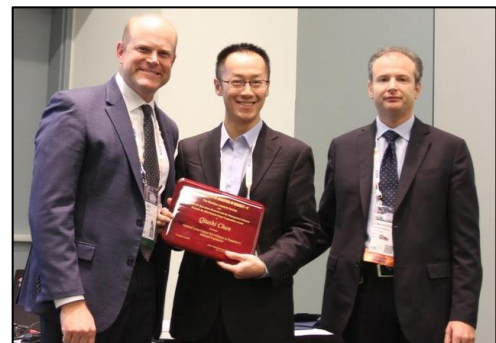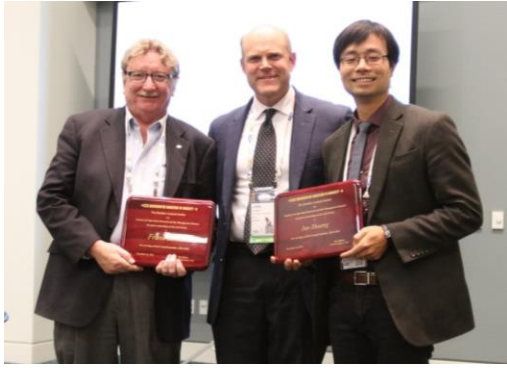
Frank Koch (L) and Jun Zhuang (R) are thanked by DAS President Eric Bickel for serving on the DAS Council.

DAS Secretary-Treasurer Yael Grushka-Cockayne speaks at the DAS business meeting.

Ralph Keeney remembers Howard Raiffa.

Ramsey Award winner Vicki Bier with many of her current and former graduate students.

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http://pubsonline.informs.org/toc/deca/13/4

The Metalog Distributions
Thomas W. Keelin

Abstract: The metalog distributions constitute a new system of continuous univariate probability distributions designed for flexibility, simplicity, and ease/speed of use in practice. The system is comprised of unbounded, semibounded, and bounded distributions, each of which offers nearly unlimited shape flexibility compared to previous systems of distributions. Explicit shape-flexibility comparisons are provided. Unlike other distributions that require nonlinear optimization for parameter estimation, the metalog quantile functions and probability density functions have simple closed-form expressions that are quantile parameterized linearly by cumulative-distribution-function data. Applications in fish biology and hydrology show how metalogs may aid data and distribution research by imposing fewer shape constraints than other commonly used distributions. Applications in decision analysis show how the metalog system can be specified with three assessed quantiles, how it facilities Monte Carlo simulation, and how applying it aided an actual decision that would have been made wrongly based on commonly used discrete methods.

For more: http://dx.doi.org/10.1287/deca.2016.0338

An Overview of Applications of Proper Scoring Rules
Arthur Carvalho

Abstract: We present a study on the evolution of publications about applications of proper scoring rules. Specifically, we consider articles reporting the use of proper scoring rules when either measuring the accuracy of forecasts or for inducing honest reporting of private information within a certain context. Our analysis of a data set containing 201 articles published between 1950 and 2015 suggests that there has been a tremendous increase in the number of published articles about proper scoring rules over the years. Moreover, the weather/climate, prediction markets, psychology, and energy domains are the four most popular application areas. After providing some insights on how proper scoring rules are applied in different domains, we analyze the publication outlets where the articles in our data set were published. In this regard, we find that an increasing number of articles are now being published in conference proceedings related to artificial intelligence, as opposed to traditional academic journals. We conclude this review by suggesting that the wisdom-of-crowds phenomenon might be a driving force behind the recent popularity of proper scoring rules.

For more: http://dx.doi.org/10.1287/deca.2016.0337

Can Novices Create Alternatives of the Same Quality as Experts?
Johannes Siebert

Abstract: The quality of alternatives is crucial for making good decisions. The process of generating high-quality alternatives can be enhanced by using decision makers' objectives as prompts. This paper examines empirically the impact and interrelation of experience and the prompting with objectives on decision makers' ability to create alternatives for an important decision. The study confirms with high significance that both experience and prompting with objectives enhance the quality of alternatives. We are able to show that all participants, irrespective of their experience, enhance the quality of their alternatives when they are prompted with objectives; i.e., the relationship between being prompted with objectives and the quality of alternatives is not moderated by experience. In contrast to gaining experience, prompting a participant with objectives can be utilized immediately without a long learning phase and is able to substitute for experience in certain decision contexts. Furthermore, we analyze how prompting with objectives affects the creation of alternatives. We find evidence that the relation between being prompted with objectives and the quality of alternatives is partially mediated by the number of objectives considered while creating alternatives.

For more: http://dx.doi.org/10.1287/deca.2016.0339

DECA Blog

Be sure to check out the *Decision Analysis* journal blog: **Decision Analysis Review** at
https://www.informs.org/IOL-Home/Blogs/DECA-Blogs/DECA-Review

http://pubsonline.informs.org/toc/deca/13/4

DA Around the World

Column Editors: Chen (Mavis) Wang and Matthias Seifert

In this column we introduce Decision Analysis communities around the world with the purpose of promoting their visibility and strengthening the ties between DA researchers and practitioners across borders. In the current issue we provide a brief summary of recent publications by authors based in the areas of Southeast and East Asia.

We sought recent papers in the INFORMS journals including *Management Science*, *Operations Research*, and *Decision Analysis*, as well as two other major outlets for decision analysis studies, *European Journal of Operational Research* (*EJOR*) and *Journal of Multi-Criteria Decision Analysis* (*JMCDA*). The focus of the search was on papers with at least one author whose first affiliation was located in Southeast or East Asia. We tried to cover as many relevant publications as possible although our manual exploration could have missed some important work. In particular, we found 11 *Management Science* papers on decision analysis or judgment and decision making, 3 *Operations Research* papers on decision analysis, and 11 papers in *Decision Analysis* authored/co-authored by Southeast and East Asian researchers from January 2006 to May 2016. The search also returned 90 *EJOR* papers in the field of decision support (excluding papers that specialized on finance, project management, and other remotely related fields), and 17 *JMCDA* papers from January 2011 to May 2016.

The following word cloud is generated by the titles of papers published by Southeast and East Asian researchers in *Management Science*, *Operations Research*, and *Decision Analysis*. It illustrates the popularity of topics such as multiattribute utility and risk attitude, as well as the breadth of emerging studies on stochastic dominance, target-oriented decisions, aspirational preferences, and games.

We locate those papers published in the three INFORMS journals on three separate maps of Asia. The main hubs in Southeast and East Asia for decision analysis researchers are Singapore, Hong Kong, China (mainland), Thailand, and Taiwan. To provide more information for the readers of *DA Today* and show the diversity of research interests, we add authors and key words of each publication to the map. Names of authors who are based in Asia are shown in italics.

DA papers in Management Science by Southeast/East Asian authors (2006-2016)

China (mainland)
Post, *Fang* & Kopa (2015)
stochastic dominance | risk aversion

MS
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- 2
- 3
- 4
- 5
- 6

Hong Kong
Hilary & Menzly (2006)
overconfidence | cognitive biases
Muthukrishnan, Wathieu & Jing (2009)
ambiguity | multiattribute choice
Jia, Khan & Litt (2015)
risk perception | self control | weighting bias

Taiwan
Tzeng, *Huang* & *Shih* (2013)
stochastic dominance | risk aversion

Thailand
Dimmock & *Kouwenberg* (2016)
Ambiguity aversion | reference dependence

Singapore
Tsetlin & Winkler (2009)
multiattribute utility | risk aversion
Tang, *Bearden* & *Tsetlin* (2009)
deadline | ultimatum game
Brown, De Giorgi & *Sim* (2012)
risk measure | aspirational levels
Tsetlin & Winkler (2012)
multiattribute utility | one-switch property
Jain, Mukherjee, *Bearden* & *Gaba* (2013)
probabilistic forecast | overconfidence | time unpacking
Dimmock & Kouwenberg (2016)
ambiguity aversion | reference dependence

DA papers in Operations Research by Southeast/East Asian authors (2006-2016)

China (mainland)
Abbas & *Sun* (2015)
multiattribute utility | utility copula |
preferential independence

OR
- 1
- 2
- 3
- 4
- 5
- 6

Hong Kong
He, Dyer & Butler (2013)
time preference | habit formation |
satiation

Singapore
Tsetlin & Winkler (2007)
multiattribute utility | target-oriented utility
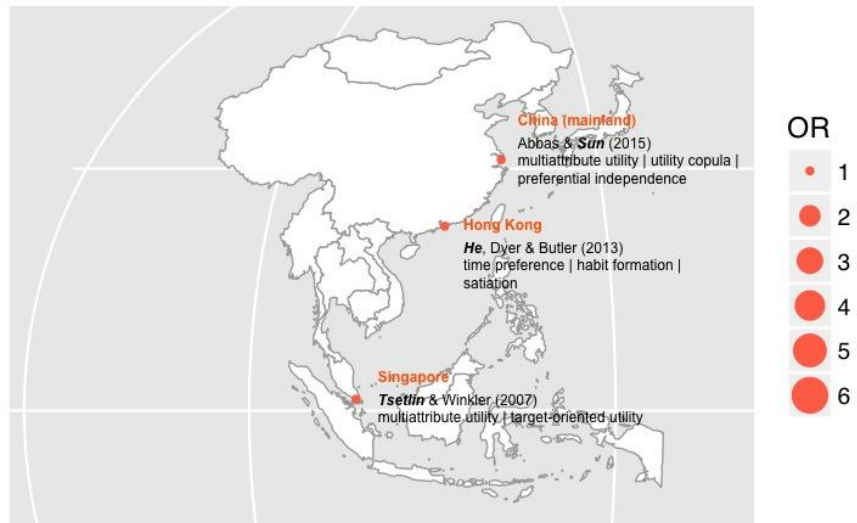
Papers in Decision Analysis by Southeast/East Asian authors (2006-2016)
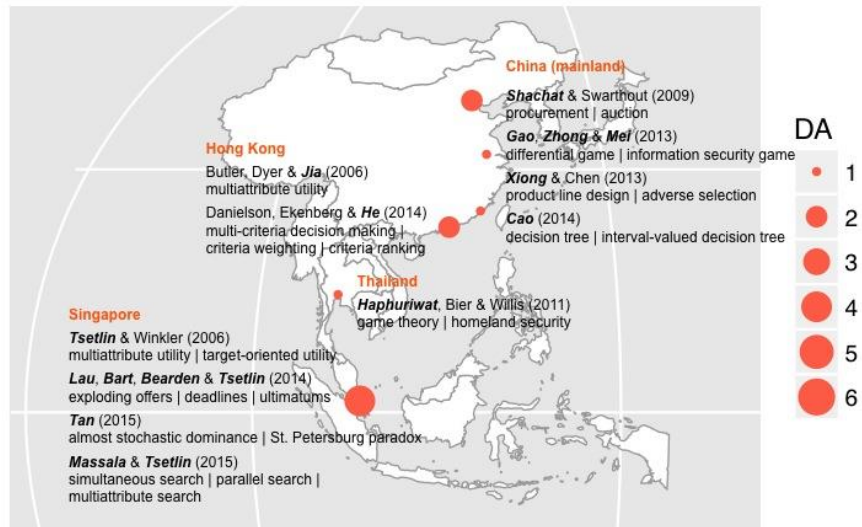
Compared with INFORMS publications, researchers from a larger number of Southeast and East Asian countries and regions are active contributors to the decision support area of *EJOR* and *JMCDA*. The following bar chart shows the country breakdown of *EJOR* and *JMCDA* papers in the past five years (2011-2016). We can see that besides Singapore, Hong Kong, China (mainland), Thailand, and Taiwan, a significant portion of papers are from authors in Japan, Malaysia, South Korea, and the Philippines.

DA related papers in EJOR and JMCDA
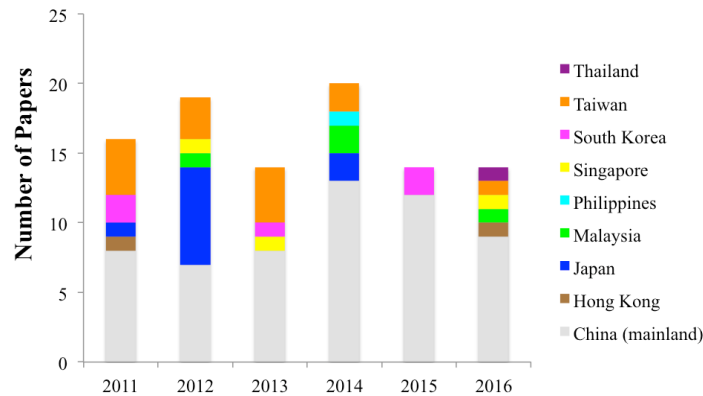
Moreover, the topics in *EJOR* and *JMCDA* differ a lot from the INFORMS publications. For example, the most popular topic among Asian authors who publish in *EJOR* and *JMCDA* is data envelopment analysis. Recent *EJOR* and *JMCDA* papers also cover a broader range of decision related studies than INFORMS, such as group decision making, goal programming, evolutionary algorithms, and network, although both of them share interests in multiattribute decision making and game theory.

**Number of papers by topics
(EJOR and JMCDA, 2011-2016)**
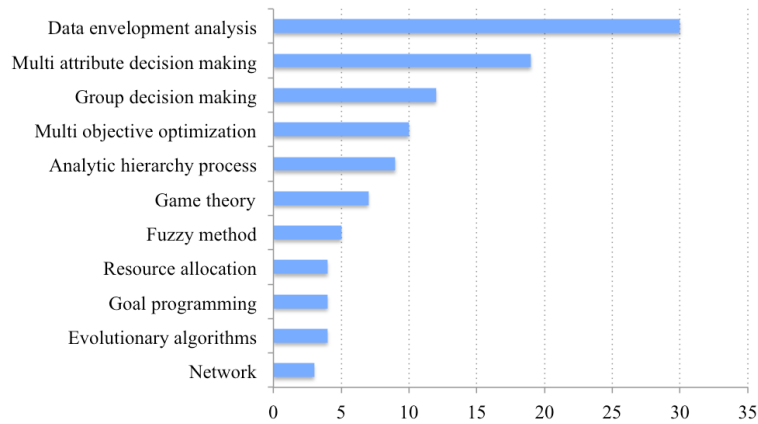
The following heat map shows with whom the Asian decision analysis researchers collaborate. Here we only use the *EJOR* and *JMCDA* data for illustration. Asian authors hold worldwide collaborative relationships, and they work together with researchers from the U.S., the UK, Canada, Australia, and many other counties. Most collaborations occur between authors from China and the U.S., and China and the UK. On the other hand, researchers from China (mainland), Singapore, and Hong Kong account for most of the collaborations within Asia.
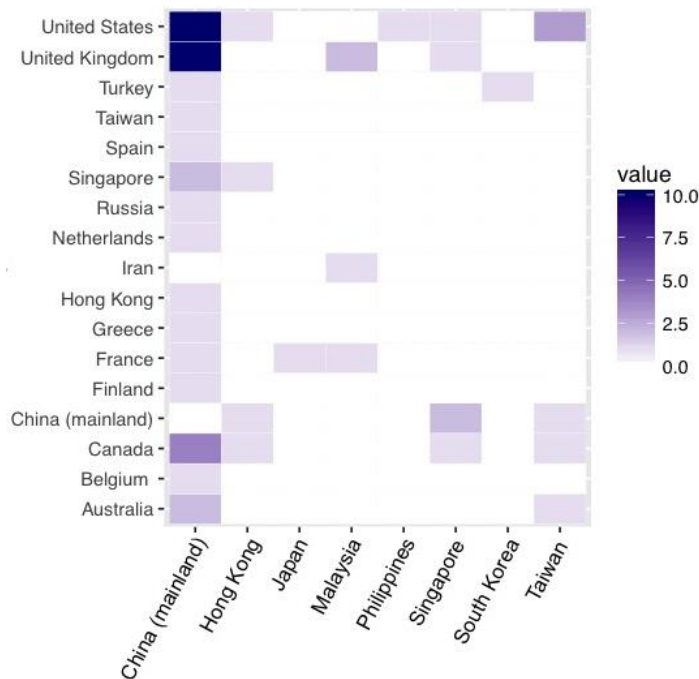
In summary, we have seen thriving interests and achievements by decision researchers in Southeast and East Asia in the past decade. We expect the variety, breadth, and depth of research to grow constantly in

the coming years, and hope to promote decision analysis theories and methodologies to create enduring values for decision makers in this area.

DA Practice

Column Editor: Pat Leach

A New Take on the Trolley Problem

Many people are familiar with the Trolley Problem, but for those who are not, here it is. A trolley car is heading down the track toward five people who are trapped on the track and cannot get out of the way. The car will kill them if it hits them. You are standing next to a switching lever that will divert the car onto another stretch of track. There is only one person on this stretch of track, but he is also trapped and could not get out of the way before the car hit him. So diverting the trolley car will result in this person being killed, but will save the other five. Do you pull the lever and divert the car?

Most people wince, but ultimately decide that yes, they would pull the lever. In the great ledger of life, saving five innocent people seems to outweigh sending one innocent to his death.

But then there is another version of the problem that is also put to people. In this version, the trolley car is still bearing down on the five trapped people, but rather than standing next to the switching lever, you are on an overpass that goes over the track. Standing next to you is a very large person – large enough so that if you push this person off the overpass and onto the track below, the trolley car will kill him, but his mass will stop the car before it gets to the other five people. Do you push the big guy off the overpass?

Not surprisingly, far fewer people are willing to take such an active role in this person's death. Even though the body count is exactly the same as in the first version of the problem, most people who are willing to pull a lever are too squeamish to shove someone over the edge. (One exception: psychopaths. To them, the two situations are identical.)

I was recently given an entirely new perspective on the trolley problem. I had the good fortune to deliver a keynote address at a conference, and in the course of the rest of the agenda, I saw a number of interesting presentations. One of these was another keynote talk given by Dr. Mahzarin R. Banaji of Harvard University, co-author of *Blindspot: Hidden Biases of Good People*. Dr. Banaji discussed the trolley problem and pointed out that philosophers are of two minds when it comes to whether or not one should push the large person off the overpass (or even pull the lever). One side argues that whatever provides the greatest good for the greatest number of people should be the path taken. Thus, push the man over the edge (or pull the lever). The opposite point of view says, "That person (either the large individual on the overpass or the solitary person on the side track) has rights, just like you and I have rights. And one of those is the right not to be sacrificed so that others may live. It does not matter whether there are five people on the track or fifty—their predicament does not negate the rights of that one person." If this is

your philosophy, not only should you not push the man off the overpass, you should not pull the lever in the first version of the problem, either.

Viewed in this light, the trolley problem comes down to individual rights versus the greater good (as many difficult social issues do). As we all know, individuals—as well as national cultures—hold a variety of positions along this spectrum. Some are individualistic and emphasize rights; others are more communal and place a higher value on the common good.

Then the presentation got even more interesting. Dr. Banaji said that this same problem has been put to a number of people but with a twist. Instead of five humans on the track and one large human on the overpass, there are five chimpanzees on the track and a large chimp on the overpass. Putting aside for the moment whether it is wise to try to push a large chimpanzee under any circumstances, far more people were willing to push the chimp off the overpass than were willing to push a human. After all, chimps may be intelligent and human-like, but ultimately, they are not human, and we do not relate to them as strongly as we do other humans. Apparently, the lesser the degree to which we identify with the individual in question, the less weight the individual's rights carry in our minds relative to the greater good (and conversely, the greater the degree to which we identify with the individual, the more likely we are to place significant weight on his or her individual rights).

But what happens when it is not a non-human animal, but rather, a human with whom we do not readily identify? Someone of, say, a very different culture or background to ours? There is substantial evidence to indicate that we will indeed subconsciously subordinate this person's individual rights to "the greater good" more readily than we would subordinate our own rights, or the rights of those whom we consider to be part of our "tribe."

This is deeply disturbing. Whether we are talking about legal rights or basic human rights, rights should not be dependent on one's ethnicity, culture, or religion. And yet when presented with situations in which an individual's rights must be weighed against the "greatest good for the greatest number," our judgments are biased by how similar or dissimilar the individual is to ourselves.

People who have worked as expatriates in developing countries may have witnessed a variation on this phenomenon. I spent ten years overseas, and although no one ever put it in these terms, the Nationals (citizens of the host country) were often expected to work under conditions at which the Expats would have balked. People explain this with a "supply and demand" argument. Good jobs are scarce in developing countries, so it does not take as sweet a deal to attract a National as it does to attract an Expat—and in fairness, that is true. But an atmosphere of separate classes of employees—with different sets of rights—can and often does evolve.

This is yet another example of innate instincts we must fight if we claim to have a truly just society or if we claim to run truly fair businesses. It is bad enough that we tend to trust and give the benefit of the doubt to people who share our ethnic background and our value systems and to be suspicious of those who do not share our ethnicity and perspectives. But when we are ready to sacrifice their rights in situations in which we would adamantly defend the rights of those with whom we feel a stronger kinship, that is a serious problem.

Society for Decision Professionals

SDP Learning Exchange

The Society of Decision Professionals (SDP) and the Decision Analysis Society (DAS) have continued their collaboration this quarter by co-sponsoring a successful Learning Exchange Webinar in December 2016. The presentation featured Brian Putt, Retired DA from Chevron and moderated by Frank Koch, Koch Decision Consulting. The presentation titled "*Value of Imperfect Information in Excel without Decision Trees using SIPmath Simulation*" illustrated how using simulation with SIPmath rather than the more traditional decision tree approach creates greater insights. If you missed this presentation, the replay of this webinar and all previous webinars are posted in the library section of the SDP website at www.decisionprofessionals.com. The SDP live webinars are free and open to SDP members and non-members alike. We hope you can join us for our monthly presentations!

2017 DAAG Meeting
March 15 – 17 in New Orleans, USA

The Society of Decision Professionals cordially invites you to attend the 23rd Decision Analysis Affinity Group (DAAG) conference that will be held March 15 -17 in New Orleans. Registration is now open at http://www.decisionprofessionals.com/event/daag2017/home.php

- This year's conference theme is ***Building Better Organizations: Culture, Choices, Change***. Improved understanding and appreciation of cultural influences and constraints, the ability to develop and expeditiously act on acceptable creative choices, and the wherewithal to actively affect and adapt to change can have dramatic consequences on organizational decision quality. For DAAG 2017, session chairs and speakers were asked to keep these ideas in mind as they prepared their content for the conference. Our intent is that this year's presentations and expositions will directly lead to or facilitate attendees' success in helping their organizations improve talent development and retention, increase operational efficiency, improve business agility, improve resource allocation, heighten adaptability, and better align business strategies.

- **Workshops:** We are pleased to announce that three SDP workshops will offered on March 15, the day before the start of the sessions.

- ➢ **Ralph Keeney,** Duke University**,** will offer a workshop in *Value-Focused Decision-Making*. Ralph's workshop holds value for all decision professionals in all stages of their career. Ralph will

masterfully focus his workshop on enabling attendees to identify values, take control of their choices, be more proactive as decision makers, remove constraints, and develop a consistent guide for their choices.

➢ **Bruce Judd** and **Carl Spetzler** from SDG will offer a workshop on *Building Organizational Decision Quality*. This workshop is designed for decision professionals seeking to learn about the principles and best practices for building organizational decision quality. Bruce and Carl will expertly use a combination of survey information, presentations, focused break-out groups, and pertinent case studies to enable attendees to advance their quest for improved decision quality in their own organizations.

➢ **Ellen Coopersmith,** Decision Frameworks, will offer a workshop on the Value of Information. This workshop is targeted to decision professionals that seek to simultaneously minimize their expenditures and maximize the effects of their information gathering activities, such as pilot projects, experiments, and data purchases.

• **End note address:** In addition to more traditional keynote addresses, Bryan Everly, chief technology officer for NextGear Capital, will be delivering an endnote address. Bryan will attend all DAAG sessions and actively network with attendees throughout the conference, then deliver a closing address in which he will share his key conference learnings and insights, discuss the role of decision analysis relative to his expertise in information technology and management, and pose challenges for the DAAG community to attack in the coming year.

For more information on DAAG 2017, session topics, fun activities and how to register, visit the Society of Decision Professionals' website at **http://www.decisionprofessionals.com/event/daag2017/home.php**

We hope to see you at DAAG New Orleans!

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Ask DAS

Column Editors: Florian Federspiel and Allison Reilly

Ask DAS: How Behavioral Decision Research Makes Poverty Alleviation Policies More Effective – The Case of Cash Transfer Programs at the World Bank

For this edition of Ask DAS, we had the chance to speak with Andrea Vermehren, Lead Social Protection Specialist at the World Bank's Social Protection, Labor & Jobs Global Practice, about work she and her colleagues conduct in Madagascar with the aim of ending extreme poverty—one of the World Bank's twin goals. Based on its 2015 World Development Report on Mind, Society, and Behavior and with the founding of its Global Insights Initiative, the World Bank recently began to systematically include behavioral insights into the design as well as implementation of programs in a number of different sectors. Andrea Vermehren and her colleagues from the Social Protection group have started to do this in the context of targeted cash transfer programs aimed at establishing a social safety net, which would cushion people from economic shocks and provide the extreme poor with the basic means in Madagascar. We talked to her about her experience and views related to these developments. Below is an excerpt from our conversation. It has been shortened and edited for clarity.

A core goal of the World Bank is to eradicate extreme poverty. Madagascar is amongst the poorest countries in the world. Could you briefly tell us about the Bank's broader efforts in the country and how they contribute to poverty alleviation?

With 77.5% of the population living in conditions of extreme poverty (below $1.90 a day) and 90.3% overall in poverty (less than $3.10 per capita per day), Madagascar is one of the poorest countries in the world where a great majority of the population lives in rural areas and works in agriculture. In the recent years following the political turmoil of 2009, many donors and aid organizations pulled out of the country. The World Bank did remain throughout the years providing emergency funding for basic infrastructure, health and nutrition, education and agriculture, but only reengaged at a broader level with the change of government in 2013. Broadly speaking, the poverty alleviation strategy has since then focused on developing the social sector (health/nutrition, education, social protection), and now places greater emphasis on developing the agricultural sector. Governance is another strategic area the Bank engages in, with the aim of improving efficiencies and countering the issue of possible corruption. Lastly, private sector development is increasingly on the agenda, with Madagascar having much potential in this area given for instance its broad range of natural resources.

Your work concentrates on managing and establishing Social Safety Nets for the poor, part of which is done through targeted programs such as Conditional Cash Transfers. Could you explain to us how cash transfer programs work?

While in the past the Bank focused mainly on supporting basic infrastructure, such as health centers and schools, over the past years we have geared our engagement towards establishing social safety nets. Social safety nets mainly aim to protect the poor and vulnerable population from economic shocks (economic, health, climate shocks, etc.), prevent them from losing their livelihoods and human capital, and promote their productive inclusion. One of the main instruments used globally for this purpose are various cash transfer programs. When focusing on human development, cash transfers are usually linked to, for instance, children going to school, receiving vaccinations, and/or parents participating in nutrition programs. There are also a variety of cash for work programs, which provide families with short term work opportunities, and can be used to rehabilitate degraded landscapes and improve soil and water resources.

We have supported the Government of Madagascar to develop a cash for work program as more of a productive safety net approach—focused on the rehabilitation of productive assets of the land. That is, the families are engaged over three years in work focused on for instance reforestation, or cleanup of irrigation channels, to improve productivity at both the community and the household level. Overall, about 40,000 households receive support through conditional cash transfer programs, whereas about 32,000 households are enrolled in the slightly costlier cash for work programs. Given the recent drought in the south of Madagascar, a crisis response program was approved by the Bank to provide emergency cash transfers and nutrition services in the South of the country with monthly payments to families to improve their food security and support their livelihood recovery from the losses that have affected families' well-being.

What are some of the most common or biggest problems when it comes to successfully designing, implementing as well as evaluating cash transfer programs?

The biggest hurdle initially was to convince both outside donors as well as the Madagascan government that the mechanism of cash transfers work even in an extremely poor country. Many governments do not believe in what they may see as simply handing out cash to people—and if so, believe it should be related to work or other "conditions." Sending children to school and other similar aims of the conditional cash transfers are also somewhat controversial—even within the donor community. Next up, in terms of implementation, one big problem always consists of selecting who receives support and who does not, given that there is not enough funding to provide support to all poor. If, as in the case of Madagascar, you have extreme poverty at 70% and 80% people living under $1.90 a day, how do you pick the poorest?

Whereas some prefer a first come, first serve mechanism, we decided that there needs to be a transparent selection process. Part of this process is geographic targeting and community pre-selection, part of it is based on questionnaires applied to pre-selected families to account for the differences that exist even among the poor. Beyond the challenge of identifying the most relevant target group, the next challenge relates to the actual payments. With the government using private sector providers, for instance, mobile banking or microfinance institutions, and the market for these not being well developed in Madagascar, fees tend to be very high, accessibility is not yet ideal, and the reliability of payments is sometimes a problem given the often poor Internet connectivity. Security issues caused by gangs are becoming another

concern when someone is running around with a big bag of money.

Provided these initial hurdles in convincing donors and governments, choosing the proper target group and physically delivering it, are there any issues in terms of the effectiveness of the actual instrument of cash transfers?

The good news is that we do not have any problems in Madagascar with people complying with the co-responsibilities of ensuring that their children regularly attend school. School attendance is at 97% for those families that we monitor for instance. What however can be an issue is that people are very happy to receive the money but they do not automatically change their behaviors. For instance, a family may go out and buy more of what they were buying before, such as rice. While they may use the cash to buy shoes for their kids and pencils for schools, they likely will buy more of the same rice they have been buying before. So what we found in terms of nutrition is that providing money that results in buying more rice does not lead to any improvements in the nutrition of children.

Provided these difficulties with regards to the most effective use of the money – this is precisely where using behavioral insights may be most helpful.

Exactly. When you work with cash transfers you do not tell people what to do with the money. If you would like for people to purchase certain things, you may as well hand out those items directly. In the cash transfer community, we are very liberal when it comes to the use of the money. However, when you look at the world-wide evidence, the progress made in terms of education (i.e., school attendance) through conditional cash transfers is clear. Yet in other areas such as nutrition, the effectiveness of these programs is less well supported. This is because, for example, simply buying more rice will not improve nutrition outcomes for children. This is precisely where the behavioral interventions come in. We, of course, cannot tell people to go out and buy some sweet potatoes, vegetables, and eggs/protein to achieve a balanced nutrition intake. We can however use behavioral interventions and certain nudges to remind and alert people of what they know already would be better purchases for the well-being of their families—without forcing them into compliance.

That said, the World Bank has recently moved towards a systematic integration of behavioral insights into effective policy making. How has this change affected your work?

Before, we were very much occupied with just delivering, making sure that the cash gets to the right families and that families comply with their co-responsibilities. The incorporation of behavioral insights has led us to consider the families' aspirations, ways of working with and using the money within the family, and other dynamics. In that sense, when we notice patterns or processes that we believe are hurdles to the well-being of the family, we rely on behavioral interventions to change this. For example, we have noticed that families tend to spend the money very quickly once they receive it. This of course is natural, as they are poor and should spend the money to attend to the family's immediate needs. However, over time they should equally focus on saving as a means to invest in productive assets, to pay for annual school fees or to attend to sudden health needs. Whereas some do this naturally, others do not. This is an area where we have been working quite intensively to achieve higher incomes over time—developing mechanisms based on behavioral science for people being more likely to save and invest.

The World Bank relies on its own insights unit, GINI, as well as various outside parties to develop behavioral interventions and nudges. What have been the most impactful or useful insights so far for you?

One interesting insight in the arena of cash transfer programs has been that the timing of "nudges" is very important. Using behavioral nudges with families just before they receive the money has proven to be a good moment for us to work with them. Without telling them what to do, we try to provide them with some space and time to figure out what they would like to do with the money. We know from the behavioral sciences, often referred to as the issue of scarcity, that planning and long-term thinking proves more difficult for those that are poor. We therefore plan for most of the interventions to take place at the time just prior to the payment. We do however further stress to continuously reengage with people, bringing them back in, and follow up on their initially worked out plans to remind them of their plans and commitments to themselves.

Two interesting interventions that we have used recently are based on the concepts of self-affirmation, in the sense of perceiving the ability to act in response to their needs and environment, as well as plan making, related to setting goals and determining the necessary actions. Self-affirmation is promoted, for example, through a drawing exercise, which works quite well despite the fact that the beneficiaries are overwhelmingly illiterate. Here, we see that women make a strong connection between their spending choices and the direct impact on their children. This reinforces their identities as guardians and reminds them that they have the power to affect their own and their children's lives. In terms of plan making, we use similar activities to determine their goals, as well as make concrete plans on how to achieve them. For us, these activates are an entry point for a longer engagement with these families focused on behavior change.

Achieving self-affirmation and plan making through a drawing activity

What do you believe are possible problems or hurdles when it comes to implementing behavioral science in policy making in your work, e.g. effective cash transfer program design and implementation? Are there limits?

Some people criticize the use of behavioral nudges, thinking that this is just another way of telling people what to do with the money. This is not the case however. Sure, we will show people options, for instance through card games. It is more of a playful event, where you may have some cards that show pictures of business women/productive activities, or mothers playing with their children (to promote early childhood development). There are of course some basic ideas of what people ought to do for the well-being of their families, but they are free to choose and discuss. In the end it is their decision, and the program only seeks to provide the beneficiaries with the time, space, and money to do what they want to do.

In terms of limitations, we often find that the interventions need to be adjusted to the living situation of the families. For example, when using pictures showing mothers engaging with their child, we once used photos taken in another country. Immediately the attention was focused on what the woman in the photo was wearing, distracting from the intended meaning of the card. It is thus very important to test out how certain interventions work at the local level, considering and testing for possible cultural differences affecting their efficacy. Some interventions may have worked well during an initial pilot test but fail when rolled out and tested at a large scale. Another issue relates to the use of less ("light touch") versus more involved interventions. While certain very involved interventions may be more effective, their much higher costs may outweigh the benefit, or may overstretch the implementing partner's institutional capacity. We always must compare the effectiveness of certain interventions considering their comparative costs. Practical considerations and local realities in that sense significantly affect the choice and effectiveness of certain interventions.

Going forward, what is your prediction on the use of behavioral science in policy making and how it will affect your work?

We are currently scaling up the use of behavioral science in our sector of social protection across several countries in Africa. We are also about to submit a proposal for rolling out cash transfers employing behavioral insights with a larger number of participating countries. There is a lot of interest from governments and other partners given the increasing realization that just paying cash may not be sufficient to change living conditions and behaviors, and that using behavioral interventions can be a very effective way—and a cost-effective way—of enhancing the efficiency of these programs. I believe that at least in the Africa region we are increasingly going to use these nudges and behavioral interventions to increase the impact of the safety net programs.

For us these are very interesting times. We are only beginning to employ these insights—many of which have not been tested at large scale in practice. It is interesting to see what works in this context—and in doing so bridging our two worlds of practice and academia, with both equally profiting from this exchange.

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