Society for Judgment and Decision Making

Newsletter

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Primitive Decision Aid

2005 Executive Board

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Presidential address: Preferences Beyond Parameters[1]

Eric J. Johnson

How do we decide what we want? What do we mean when we say someone has a preference for something? In behavioral decision research and behavioral economics, we answer these questions largely by referring to concepts borrowed from standard economics, which described the trade-off among attributes. In this talk, I will encourage us to do better, and to contemplate building more psychologically based concepts of preference. The standard multi-attribute model, like all metaphors, shed significant light on the study of preferences, but also obscures some important aspects of what we know about preference. Today, I will ask you to think about some properties that do not fit the standard metaphor, and are, in fact, obscured by it.

I will start by reviewing properties of such a standard model, discuss its applications, and the distinction in economics between revealed and stated preferences. I will then describe three classes of counter-examples which do not seem to be easily described by the standard model. I will then describe a more contemporary view of preferences, focusing on preferences as predictions about the future of pains and pleasures. Along these lines I will outline a framework that is consistent with these ideas which we term preference as memories. Finally I will close by examining how these ideas are central to applications in policy, and are central to the very idea of the definition of preference.

Preferences: The standard model

There are two major concepts I'd like to make sure that we all understand. The first idea is that of an indifference curve, typically described by graph with two axes, one for each attribute, and a series of lines depicting the trade-off between these attributes. Preference in these models is represented as a function of the levels of the alternatives on these attributes. Any alternatives on the same indifference curve should have the same probability of being chosen. These models implicitly or explicitly share three properties. The first is continuity: they are defined over all observed levels of the attributes. The second is resolvability: these are lines in space, and are infinitely thin. While mathematically tractable, this implies psychologically, that decision makers should know with infinite precision, the tradeoff between attributes. In other words, these models have no uncertainty in preference. Third, to be useful, models must assume these trade-offs are relatively stable, relatively unchanging over time, and measurement method.

Despite the many demonstrations suggesting that these assumptions do not hold, most of resulting theoretical models are simply adaptations of the standard model. In fact, I argue that the field has taken one of three approaches to incorporating departures: First, we have often simply added an index to the preference function, reflecting some aspect of the environment. Examples of this would be using a subscript as a function of elicitation procedure as in Contingent Weighting models of Tversky, Sattath and Slovic (1988), or the use of different reference points in the reference dependence models of Tversky and Kahneman (1991). A second modification is to add an additional argument to the preference function. Examples of this include the inclusion of relative advantages and disadvantages to explain context effects in the work of Tversky and Simonson (1993), or the broad array of models which add regret as a needed element to the utility function. I do not want, however, to diminish the contributions these models make, because they try to explain departures across different experiments, contexts, or elicitation methods. They are therefore much more useful than the third departure from the standard model, which is to simply provide added taxonomy or catalog of departures. While these lists of effects are important raw materials for the construction of theory, they beg for unified account.

One other important distinction that is often made by economists is relevant, that between stated and revealed preferences. A stated preference is what decision-makers tell you they will want. Revealed preference is what they actually choose. This distinction is a function of economists' belief that statements without incentives are not reliable, or are "cheap talk." A different perspective, as we shall see is that revealed preferences are those subject to extraneous influences that are unknown to the decision maker, and that indeed revealed preferences may not be real preferences.

Challenges
 During the sessions in this conference reviewing the history of the JDM society, I was very touched by the recording of Amos Tversky illustrating the classic distinction between failures of invariance in two representations (such as two frames), and invariance in two measurement procedures (such as pricing and choice). These, however, are just the beginning. In the last 20 years we have seen many other examples which suggest the need for a different conception of preference. I will talk about three classes of examples: priming, mere measurement, and defaults.

Priming
The mid-1990s three British psychologists (North, Hargreaves, & McKendrick, 1999) took over a display in a wine store in the British Midlands. Over a two-week period they did the things that experimental psychologist do when they study preferences: on this display they included two groups of wine, one French, the other German. These wines were approximately equivalent in quality, price, and sweetness. They carefully varied the positions of the wines on the display, and manipulated one seemingly innocuous variable, the type of background music played. This was either German or French music. Could this have an influence on purchase?

The result was a surprisingly strong effect. As can be seen in Figure 1, there was a strong preference for French wines when French music is played, with almost 3 times as much

French wine being selected. While German wines were less popular, their sales almost doubled if German music was played. The effect of music accounts for about 24% of the variance in wine choice from the display. Why does this occur? The authors attribute the increase in sales to the increased salience of the positive aspects of the French and German wines when the appropriate music was played.
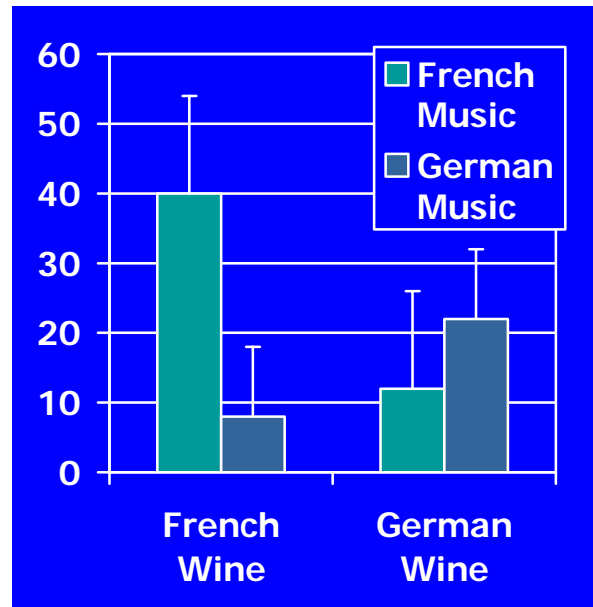
Figure 1 Sales of Wine by background music

Naomi Mandel and I (Mandel & Johnson, 2002) have explored a similar phenomenon we call "feature priming". In the studies people shopping on a hypothetical web site make choices after seeing one of two backgrounds, or the terms of e-commerce, wallpapers. These wallpapers, seen in Figure 2, were pretested for their association with product attributes. For example the cloud background increases mentions of comfort as an attribute, while the penny background more obviously suggests price as an attribute.

Our studies, some of which use large numbers of non-student subjects, show that the web page background has an effect on choice, increasing the share of either the more comfortable or less expensive alternative by about 15 percentage points. Interestingly, this effect happens for both people who are novices in the product class, but also for those that are more knowledgeable about these products, and occurs for both couches and cars, two very different kinds of products.

Figure 2: Backgrounds used by Mandel and Johnson

Mere Measurement

Every six months or so, market research companies perform a natural experiment. In order to forecast demand for products like computers and cars, they call a panel of potential buyers and ask them if they are intending to make a purchase in the next six months. Because of people who drop out of the panel, some of these respondents are actually being asked the question for the first time, while others have been asked the question at least once before. Is it possible that simply answering a question about what you intend to do could change what you actually do, especially for big-ticket items like computers and cars?

There is an increasingly large literature using both natural experiments and laboratory studies that demonstrates a sort of Heisenberg uncertainty principle for preferences. In studies with positive behaviors, like voting, buying computers or cars, people typically over predict their purchases, when compared to a control group which has not been asked. However as Jim Sherman (1980) has pointed out, there could be a "self erasing error" here. Could those who predict higher levels of purchase actually buy these products? In our study, comparisons of those who have been asked more than once, and a natural control group, who are answering the question for the first time show that answering the intention question has a large effect on purchases. For example, asking a question about the intent to buy computers increases purchases in a six month period from 2.4% to 3.2% of the sample. While small, in absolute percentage terms, this is quite a large relative increase, 33%. Such effects have been replicated in a dozen studies, now it seemed quite sizable and reliable.

Defaults

There is now quite a cottage industry in studying defaults. That is what happens when one option is designated as what would happen if no active choice is made. Starting with the important paper on status quo effects by Samuelson and Zeckhauser (1988), there is a large number of questionnaire and field studies showing that defaults have sizable effects on what is chosen. For example, we have compared choices in auto insurance in New Jersey and Pennsylvania, two states which offered similar choices to customers, but with different defaults. Our analysis suggests that hundreds of millions of dollars of more

insurance are sold annually in Pennsylvania because the more expensive policy was the default. Other applications include studies on the Internet privacy policies, and a set of studies by Madrian and her colleagues (Choi, Laibson, Madrian, & Metric, 2001; Madrian & Shea, 2001) which show that the single most important financial decision made by most Americans, their 401(k) retirement plan, is influenced by the default. Dan Goldstein and I (Johnson & Goldstein, 2003) looked at another important domain. The decision to become an organ donor for similar effects, motivated by the observation that different European countries had in fact adopted different defaults.

We started with an online survey, asking people whether or not they wanted to be an organ donor, simply varying what the default in that state was to be a donor (termed presumed consent) or not to be a donor (termed explicit consent). We saw almost twice as many donors (80%) in the presumed consent condition, then in the explicit consent condition (42%). Interestingly, respondents who were simply forced to make a choice looked much like the presumed consent condition. We then contacted organ registries in a number of European countries which differed in their consent policy. Figure 3 shows the results: on the left-hand side the four bars are explicit consent countries, and show relatively low levels of willingness to be a donor. On the right hand side are countries with presumed consent, with much higher levels of effective agreement. This effect is so strong that statistical analysis is hardly necessary, but there seem to be some natural controls. For example, the Netherlands had a large-scale mass mailing asking people to be donors, but only 27.5% chose to be donors. In contrast Belgium, which had an opt-out policy, had an effective consent rate of 98%. Subsequent analyses of the actual rate of transplants, by us and others, show that there is actually a difference in the number of organs available for transplants, and subsequently lives saved as a function of default.
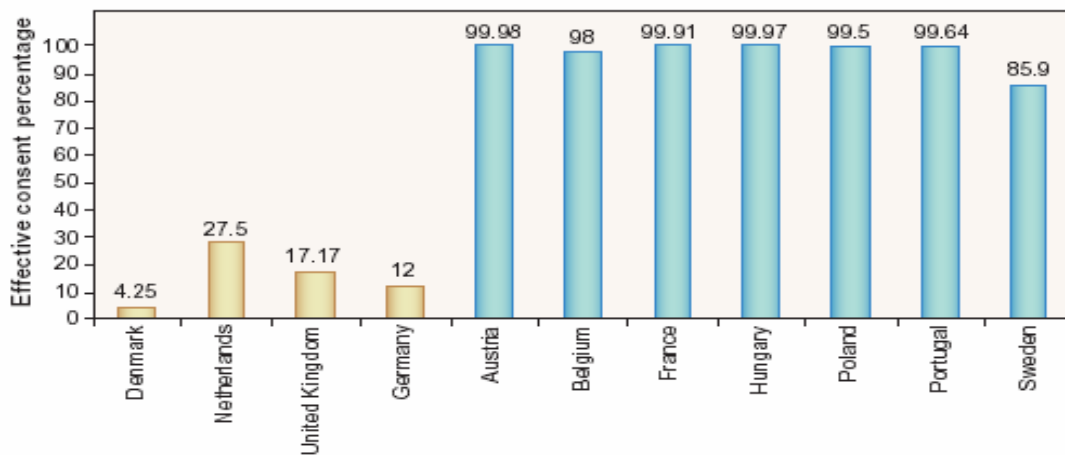
Effective consent rates, by country. Explicit consent (opt-in, gold) and presumed consent (opt-out, blue).

Figure 3 from Johnson and Goldstein (2003)

How would a preference as parameters in perspective be applied to these three examples? On one hand it's easy: to model the choice of wine, one might simply add a subscript which indicates whether preferences are being observed when French or German music is being played. To model the effect of defaults, one could simply add an argument, for

example, writing is common in models of anchoring: "If the default is not to donate, *Observed Preference* = β(*True Preference*) + (1-β) (*The Default*)." Yet such modifications are not all that satisfying. While they may predict well, these changes do not tell us why the effect occurs or when. And perhaps more importantly, they do not suggest whether the revealed preference truly results in better decisions. Finally, such parameter based models do not suggest interventions if we want to change the influence of these factors on choice.

Preferences as Predictions

As a starting point for discussing alternative models of preference, I would like to use the observation of Kahneman and his colleagues that choices reflect predictions. When we make a choice, we are predicting which alternative would bring us the most hedonic pleasure. Like most predictions, these stated preferences might be inaccurate, and, as demonstrated with increasing frequency, biased.
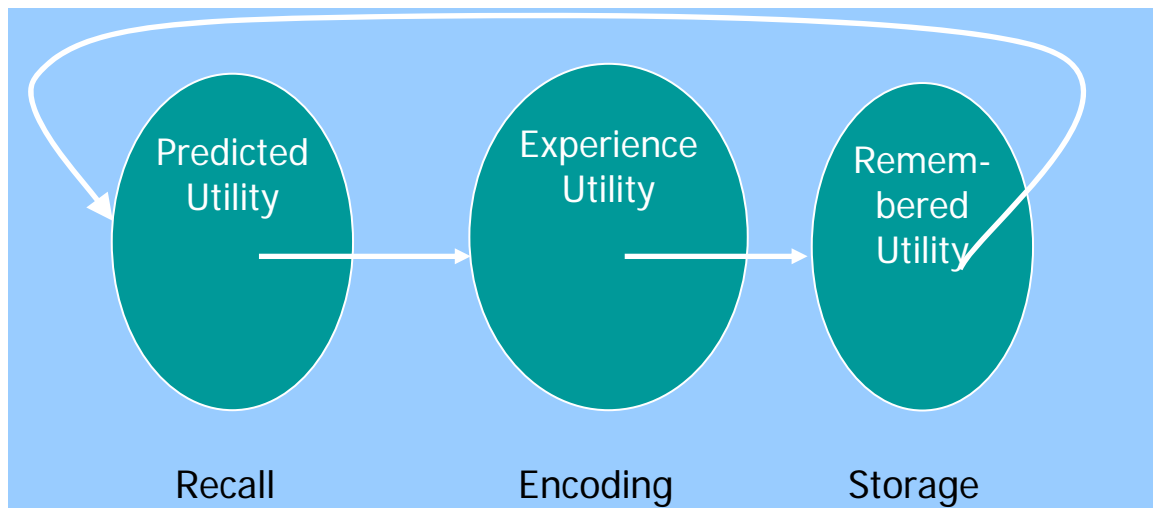
Figure 4 Relationship between Memory and Preferences

How do we make these predictions? One simple observation is that predictions are based on the retrieval of relevant instances from memory. This observation is similar to Kahneman and Miller's Norm Theory (1986), but emphasizes the need to understand the role of memory. Along with Elke Weber, we have been exploring this approach, which we call PAM: Preferences As Memories (Weber & Johnson, 2004). Our goal is to leverage insights from research on memory to better understand preference constructions. We suggest that this might be the next logical step. The last thirty years has seen the notion of preference move from one which discusses labile preferences to the more radical idea of constructed preferences. While this work has had impact, it has also had a potential failing: It does not tell us much about *how* preferences are constructed. The goal of the PAM program is to try to address that shortcoming by taking advantage of the simple idea that our knowledge of memory and in particular ideas of retrieval, accessibility and interference may provide helpful guidelines.

Consider Figure 4 which depicts Kahneman's (Kahneman & Snell, 1992; Kahneman, Wakker, & Sarin, 1997) distinction between different types of utility, and offers a characterization of each of the states in terms of the primary memory operations that correspond to this activity, using the classic distinction between recall, encoding and storage. The important link in this diagram, of course, is that between remembered utility, which we characterize as the retention of past experience and subsequent predictions of utility. Obviously, predicting how much we will enjoy a rich dessert with an esoteric mango flavor might involve recalling past instances of having similar desserts.   This obviously depends upon how well we encoded, at the time of consuming that dessert that ingredient and its contribution to the overall flavor. Finally, our ability to retain that memory seems crucial: Was it long ago? Was it, perhaps in another country, part of another cuisine? Or perhaps we encountered that tropical flavor as part of a breakfast, and forget that we enjoyed it so much, because we are thinking about desserts after a rich French meal?

This example illustrates the key ideas behind preferences as memories.   To understand our choices, we need to think about these as predictions and understand how they are formed. A key idea is that these predictions are formed as a result of a series of queries to memory, and to understand choice, we need to understand these queries and their result.   To illustrate this, consider how PAM might explain the phenomena I used to introduce this talk: First, the effects of background music and web site wall paper could easily be characterized as priming: French music makes pleasant memories of France more accessible, and clouds appear to increase the accessibility of comfort concerns when choosing a couch. The music may also prompt us to query memory for pleasant memories of French (or German) wine. Mere measurement results from a longer term increase in accessibility, which is produced by the query itself

Query Theory
In current work on the endowment effect, we are trying to apply these ideas in what we call Query Theory, a model which posits that queries are made sequentially, and because of interference, the first query results in a richer representation.   While because of limited time, I will not describe these mechanisms in depth, but we are interested in the kind of output interference described by part-list cuing (Watkins & Tulving, 1978),or more recently explored extensively by the literature on retrieval induced forgetting (Anderson, Bjork, & Bjork, 1994; Anderson & Spellman, 1995; Levy & Anderson, 2002).

To apply this to the endowment effect, we make the assumption that people, roughly speaking, make two kinds of queries. The first we call Value Increasing questions, and these consist of good things about the mug, and (rarely), bad things about the money, usually how it could not buy much. The other class of queries is value decreasing queries, and these consist of thoughts about what else could be bought with the money, but economist term "shadow prices". The key insight of query theory is that the order of the questions differs as a function of whether you're a seller or chooser. Like many prior researchers, we think there are different weights in the two response modes, but we propose a specific mechanism: Sellers first focus on value increasing items trying to

evaluate how much they actually like the mug. Choose yours focused more on valued decreasing aspects, thinking about how else they might use the money. Both sellers and choosers ask both questions, but it is the combination of order, and path dependence that should create the difference in pricing.

We test this in a series of studies, but only have time today to talk briefly about two. Let me start with two general observations: first, these are real transactions, and we obey the rules of experimental economics. Mugs are actually bought and sold, and real money changes hands. We also test for understanding the task instructions which include a rather difficult to comprehend mechanism to ensure incentive compatibility, the Becker-DeGroot-Marschack procedure. We find, incidentally that those who do not understand procedure, are less likely to show an endowment effect: random response leads to diminished endowment.

In our studies, while we do not directly observe the queries, our goal is to observe their product, which we term aspects. Let me provide an overview of the paradigm: first participants are given instructions describing the incentive compatible mechanism,   and are given a chance to practice with the interface we use for collecting their thoughts while pricing, a procedure we call aspect listing. Aspect listing is a kind of a "type aloud" protocol: we asked people to enter the thoughts they are having, one per line, as they determine the price. These aspects, while a noisy and incomplete record of cognition, allow us to combine a kind of process tracing within the context of experimental economics. After this practice, respondents find that they either own or do not own the mug that is whether or not they are endowed. They are told they will actually get either a price at which they will either sell the like, or choose between the mug or money, complete an aspect listing task and think about this. They then must state the price at which they would be indifferent between the mug and an amount of money, and all transactions are actually conducted.

In the first study we simply look for differences in the kinds of aspects generated by sellers and choosers. Figure 4 shows the count of Value Increasing and Value Decreasing aspects for sellers and choosers. As you can see there's a significant interaction, so as we predicted the sellers produce more value increasing thoughts and choosers produce about the same number of value increasing in value decreasing thoughts. Not only do you sellers in chooser have different quantity of thoughts, but they also think about different things. Using a technique called Latent Semantic Analysis (Landauer & Dumais, 1997), we analyzed what words are closer related to the thoughts of sellers and choosers. This technique uses an analysis of large numbers of texts typical of those read by the average first-year college student, and finds what words tend to co-occur with other words, providing us a kind of automated protocol coding. Of course some words are common in both sellers and choosers aspect listings, but it's quite instructive to look at the associates that are unique. For sellers these tend to be about the good: words like beverage, drinking, and surprisingly to us, self-referential words like I mine and me. The unique word for choosers are words like money, savings, and because they are thinking about an obvious use of the money at 11:30 in the morning, lunch. This analysis provides some evidence that choosers and sellers are in fact considering different

aspects of the transaction. Other analysis, which we will not have time to talk about today, shows that there are different orders in these aspect listings calling sellers list of value increasing aspects first, while choosers tend for port value decreasing aspects sooner in their aspect protocols.

Figure 3 Number of aspects reported, sellers and choosers

One of the advantages of process analysis is that it often suggests interventions. Armed with a causal understanding, we should be able diminish or eliminate the endowment effect. Our accounts suggest that if we were to reverse the natural order of queries, we might in fact influence the prices that sellers and choosers assigned to a mug. In another study in this series we did exactly that. Instead of simply listing aspects neutrally, we asked some subjects to list the aspects in the reverse of what we think is the natural order. For example, sellers had to think first of value decreasing thoughts followed by value increasing thoughts. If our interference account is correct, this should influence the number of aspects that are listed, generating the opposite result that occurs in a natural listing. To the extent that we succeed, we should influence the values that participants report.

Figure 5 shows the results. Look at the prices which are on the top half of the figure, we see that the unguided condition, which using the natural order of queries, shows a standard endowment effect. However when the order of queries are reversed in the right hand side of the figure there is no endowment effect. The bottom half of the figure shows the differences between value increasing and value decreasing reasons. In the left half of the figure we see that in doubt people have approximately the same number of value increasing in value decreasing reasons, but those that were not endowed at a larger number of value decreasing reasons, and therefore a negative score on the difference measure. However on the right hand side of that graph we see that reversing the order makes these differences go away.
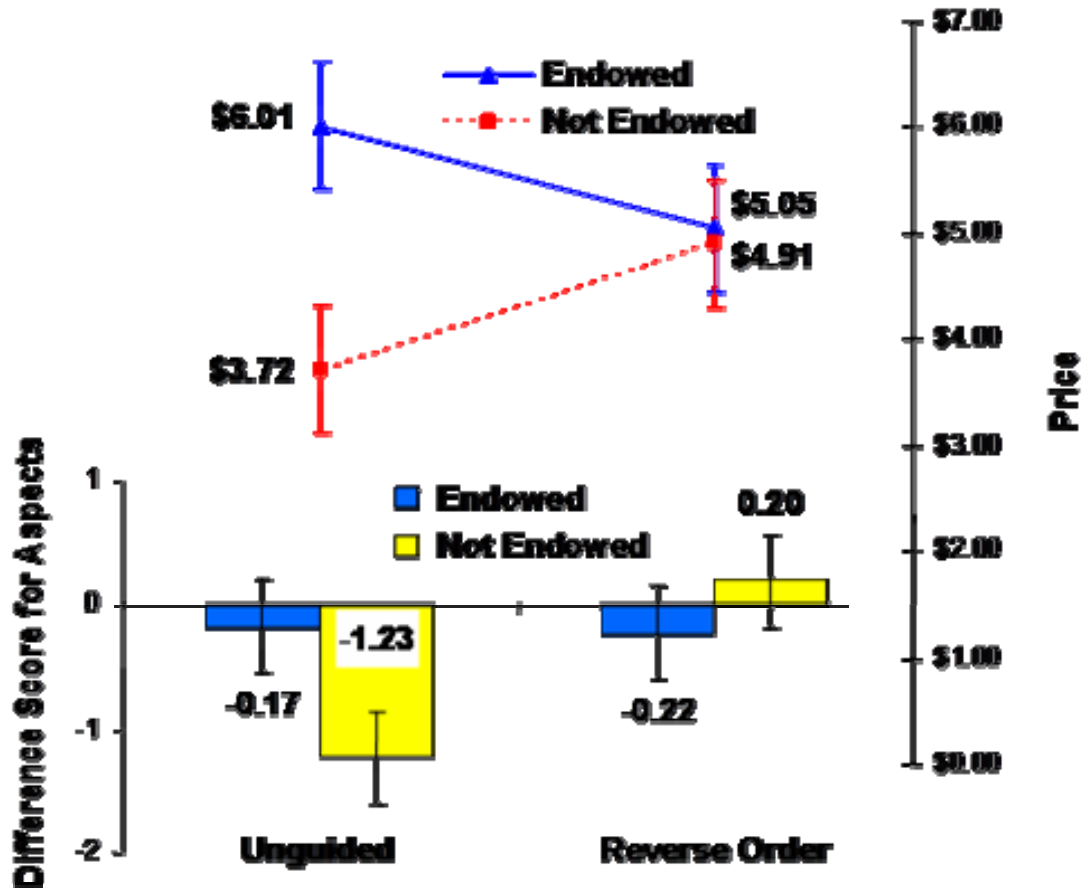
Figure 4 Prices and Aspect Listings by Endowment State and Aspect Listing

We have recently examined the kind of aspects that people listed in our organ donation work. Of course what is recalled will be related to whether or not people choose to be an organ donor. We ask a different and more subtle question: Do frames themselves cause people to consider different aspects of the choice to become an organ donor? We know the aspects that people gave into two kinds of categories: aspects that were about themselves and their family, and aspects that were about a potential recipient and the recipient's family. Do these concerns differ as a function of the status quo? As you can see in Figure 6, there was a significant difference. Participants in the opt-in condition thought equally about the recipient and themselves, but those who were to opt-out thought twice as much about the recipient than themselves. Clearly, people do have conflicting beliefs about organ donation. We like the thought of saving a life, but have concerns about what organ donation entails.
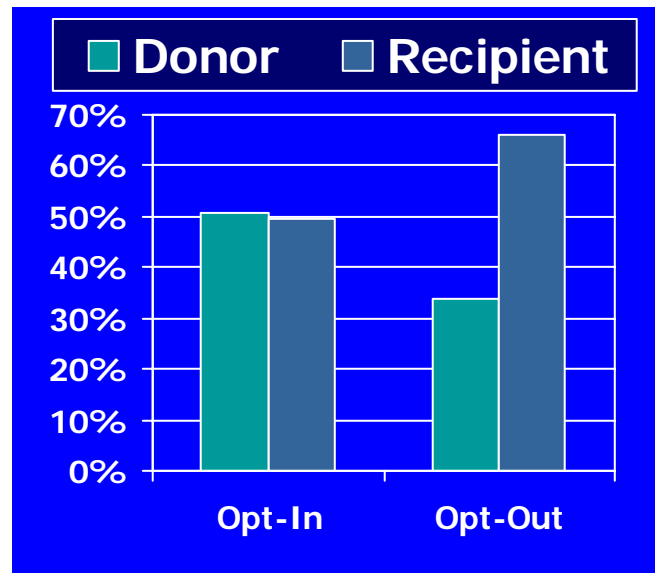
Figure 5 Focus of Aspects by Frame

A Surplus of Preferences

In both our work on endowment and organ donation, we find a multiplicity of aspects. Preferences seem to be constructed from these numerous and at times incoherent aspects. Most choices probably involve conflicting beliefs. Decision to have dessert involves aspects of delicious taste, and of future consequences for health and weight. Decisions to exercise our associate with both desire for a svelte body, and lost opportunities to relax. The observation that preferences are constructed really does not mean that we do not have preferences. Rather, it implies that we have too many. These preferences often conflict and the art of understanding preference construction will be understanding which conflicting aspects of the decision will be recalled. As Walt Whitman wrote in "Song of Myself"

Do I contradict myself?
Very well then I contradict myself,
(I am large, I contain multitudes.)

This raises some interesting and important issues in understanding preferences is input for public policy. The question becomes not how to measure preference, but when will predictions made by citizens about future events be accurate? If people mispredict their preferences, how could we make their predictions more accurate? The New York Times had a recent article about the possible construction of windmills off of Nantucket Island. Clearly imagine a sudden appearance of these windmills suggest they will be disturbing and an eyesore. But what will the reality of experiencing them be like? How after a few days, or after a few years? How often are the people who are asked on the beach? Will the windmills figuratively and literally fade into the background? These are the difficult questions that a constructive view of preferences raises for public policy.

While difficult, they are important. In fact a basic premise of liberal democracy is that people can predict their preferences. To quote John Stuart Mill

"What is there to decide whether a particular pleasure is worth purchasing at the cost of a particular pain, except the feelings and judgment of the experienced? " Chapter 2 J.S. Mill (1863) *Utilitarianism*, 1863.

The problem lies when the experienced are not perfectly good judges of their particular pains and pleasures. An important reason for understanding perfect construction is that choices are not always made in neutral environments. Since I make a living teaching in a business school teaching Marketing, we can suggest that there are many ways in which firms are involved in preference construction. However let me suggest a domain with even bigger stakes, the world of politics. Shortly after our research using Web wallpaper was published, I received an e-mail pointing out that politicians were increasingly using backdrops to frame speeches. It's unlikely that backdrops are driven by a theory of constructive preferences, but their use is commonplace. Understanding their effects seems essential.

Summary: Are Revealed Preferences Real Preferences?

I've argued that it is time to move beyond a standard representation of preferences, such as the parameter based models usually used in economics. Such models, like all abstractions, are necessarily incomplete, but incomplete in ways that actually can have negative impacts upon our understanding of preferences. Instead I called for the development of process models of preference construction. My hope is that such models will both help us understand when preference predictions are accurate, and perhaps even more importantly, how to improve their accuracy. I suggested that understanding how preferences are constructed must involve a role for memory, and that understanding what is recalled in generating a value judgment or choice is one promising route.

Recall that earlier I talked about the distinction between revealed and stated preferences. The framework I've proposed makes the distinction much less clear. If our preferences are determined by background music, wallpaper, or previous questions that we've been asked, is that revealed preference a function of the situation, or function of what we desire? One goal for process models of preference construction would be to understand when revealed preferences are real preferences.

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President's Column

Maya Bar-Hillel

After the JDM2004 conference, I wrote to ask all the presenters to send me their JDM bar charts. Over 50 of you did, and 48 of these mailings were usable. The question that was on my mind was, "Why-oh-why are we producing bar charts that we teach others to avoid? Why do we do things we know are wrong?" Here is a look at the data, *your* data.

First, 18 of the 48 people who sent me their bar charts had one where the Y-axis started at a point other than 0. I suspect 18/48 underestimates the true inclination to do this -- others may have done so had their numbers been different. Just one of those 18 showed that little squiggle on the Y-axis that draws your attention to the practice. I did not count among the 18 those who used a number which though different from 0 was still a natural base-line, such as 50% when looking at majority sizes, or those who used a scale from 1

to 7, say, and started at 1. Of course, everybody knows that this is a bad habit, and why it is bad. Presumably the bars are there to give you the data in visual form. But when you don't start at 0, the visual impression distorts the data. You can make 24.15 look almost three times larger than 21.55 if you just start your bars at the right place (the first chart is a real example).   An undistorted chart would look like the next one.
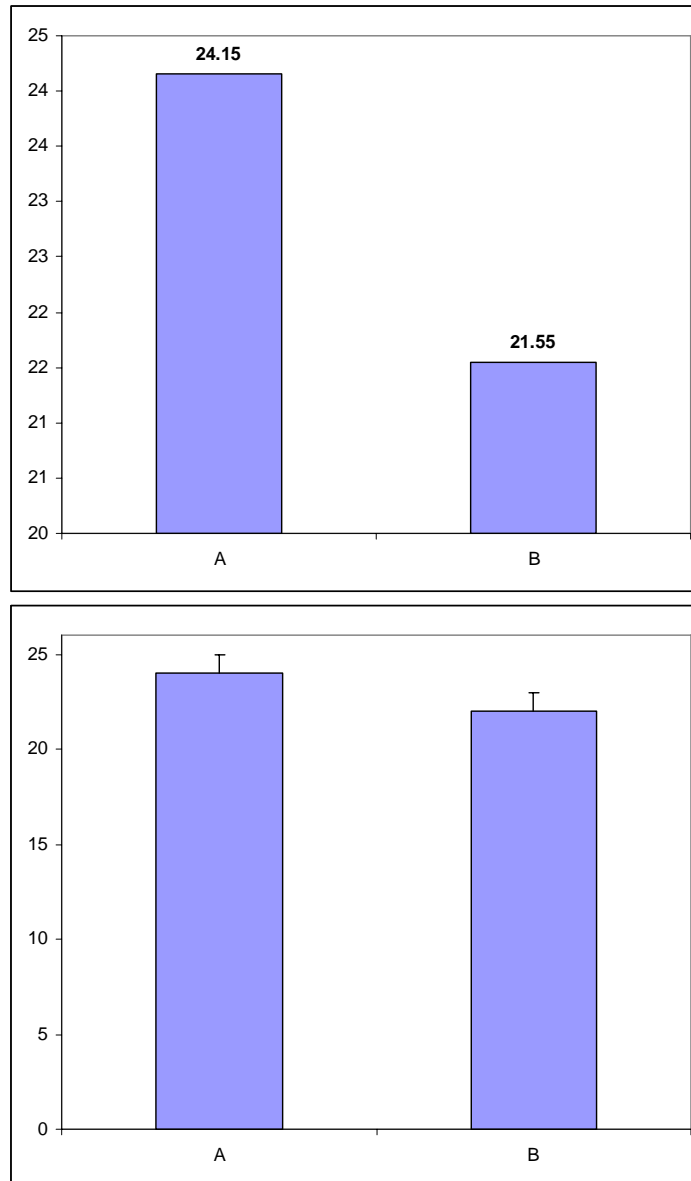
Surely JDMers don't do it to mislead deliberately. Maybe their software does it automatically. Override it! Maybe they just don't like the looks of the chart when it starts at 0. But face it – that is the honest look of the data. You could consider the option of replacing bars by lines, as in the example below. This is particularly effective when there are 2 types of bars in one graph, and the lines can join them by type. This display does not invite visual comparisons of height, but rather visual comparisons of trend. When the line joins just two points, you needn't worry whether the X-axis scale is ordinal. Again, the first chart is a bona fide chart shown in JDM2004.

The next point (which might be the first a presenter should consider): Do I need a chart at all – bar chart or any other? Sometimes using a visual aid is like going to all the bother of taking an elevator in order to go up 3 steps. 12 of 48 people showed a bar chart with only two bars. Nine of them put the numbers which the bars represented on top of the bars. What purpose was served by showing both the numbers *and* the bars that could not have been served by the numbers alone?
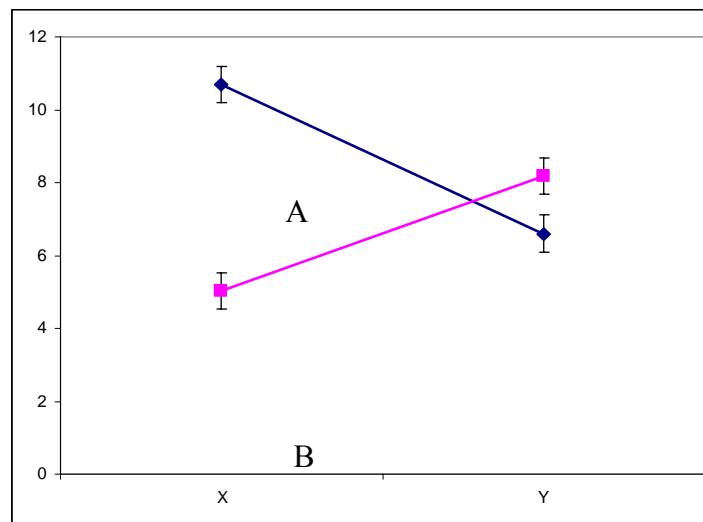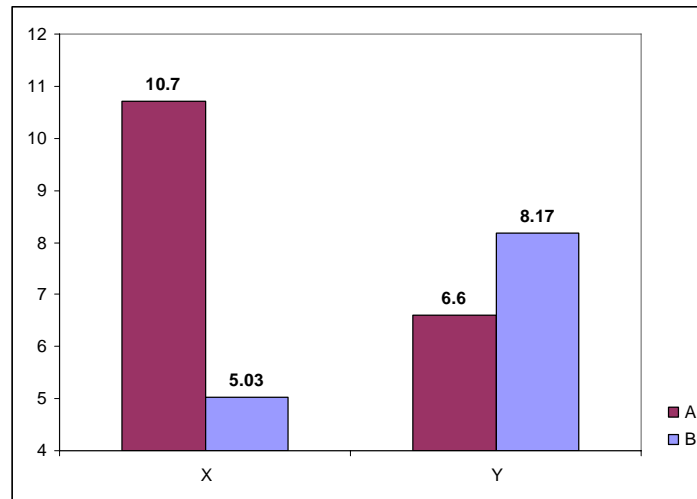
In total, nineteen people didn't think their bars were sufficient to display their data, and bolstered them by adding numbers. Of these, only 6 did not overdo the number of digits they showed. For all we know, some of the latter didn't arrive at those numbers by sensible rounding, but rather just happened to have nice round numbers. The most ironic bar charts are those that accompany distorted bars by exquisitely accurate numbers, up to two digits to the right of the decimal point, as in the examples shown here.

Rounding up numbers larger than 10 to the nearest integer is a very good idea even if you are giving just the numbers, not a chart. When slides are flashing at you while you are also busy listening, which set of numbers do you think conveys the information more effectively (again: the top row is real example)?

| **11.48** | **34.14** | **45.62** | **23.82** |

or

| **11** | **34** | **46** | **24** |

Sometimes what might look like a small difference in a bar chart represents a large effect size or a significally significant difference – and vice versa. There's a way of dealing with this without needing to distort the visual difference between the bars. Just add the error bars. Only 10 people who sent in their charts did that. Ten others didn't have to, because they were showing variables such as "Percent of respondents who ...", so we really don't know about them. But 28 of 38 people who could and should have shown error bars did not. When one does, even a two bar chart conveys 4 numbers.

All in all, there were only 13 people who sent me a chart that didn't suffer from one of the above mentioned shortcomings. This baker's dozen includes some who did other undesirable things, but which I haven't addressed here, such as forgetting to label their Y-axis altogether, using 3-D columns rather than 2-D bars, or scaling Y-axes somewhat differently across their own charts, making it harder or misleading to compare them.

It is small comfort to recall that the respondents for Tversky and Kahneman's first joint paper in 1971 were the folks from the Mathematical Psychology Division of the APA, who showed evidence of believing that the Law of Large Numbers -- which they could probably prove in their sleep -- was true for small numbers, too.

In the next JDM conference, I pledge a prize to the best bar chart of them all. Out of my own pocket. A nice big chocolate bar. Just hand me your bar chart (one per person, please) as a hardcopy, with your name on it.

For illuminating discussions of Do's and Don'ts in visual displays see, e.g.:

- Tufte, E.R. (1983) *The Visual Display of Quantitative Information.* Cheshire, CT, Graphics Press
- Wainer, H. (1984) How to display data badly. *The American Statistician, 38*, 37-47.

- Hear Wainer lecture on this topic:
  www.dartmouth.edu/~chance/ChanceLecture/AudioVideo.html

Ward Edwards (1927-2005)

In the beginning, there was Ward. With his 1954 paper in the Psychological Bulletin, Ward Edwards introduced decision making as a research topic for psychologists. He continued to make significant contributions to the field for more than fifty years, contributing some 200 publications to the literature, until the repercussions of a lengthy struggle with Parkinson's Disease took him from us on February 1, 2005.

A monumental misjudgment saw Ward fired from his first academic position, at Johns Hopkins. He then worked as a research psychologist for the Air Force for four years before moving on to the University of Michigan. He spent fifteen years there, then finally got around to calculating the utility of good weather, an issue he was to revisit in his 1998 "Hailfinder" paper in American Psychologist. Ward moved to the University of Southern California in 1973, where he directed the Social Science Research Institute until his retirement in 1995. Among the leaders of the next generation of JDM psychologists he influenced are Robyn Dawes, Dennis Fryback, David Krantz, Sarah Lichtenstein, Larry Phillips, Jay Russo, Paul Slovic, Robert Sorkin, Amos Tversky, and Detlof Von Winterfeldt. During his long academic career, Ward managed never to teach an undergraduate course; one of the few papers he didn't write was how to achieve that.

Ward owed a tremendous debt to the Reverend Thomas Bayes. His 1963 Psychological Paper (with Lindman and Savage) introduced Bayesian statistics to the psychological community, whose failure to embrace the approach confounded Ward throughout his career. But he was successful in founding and maintaining the annual Bayesian Conference for more than 40 years, a tradition now continued by Michael Birnbaum. That misnamed conference, which featured intense discussion during the sessions and around the bar at Ward's house, often included non-Bayesian presentations, an indicator of Ward's open-mindedness.

Edwards realized early that people often do not maximize SEU, and shifted from studying proficiency toward helping people make high-stakes decisions by accurately calculating utilities from the decision maker's elicited subjective values and probabilities. The transition led to a landmark 1986 book on decision analysis written with Von Winterfeldt. In his final years, he envisioned MAU as a descriptive model of individual policy decisions, working with Jie Weiss on the development of models for smoking and alcohol initiation. Ward was a superb collaborator with both junior and senior colleagues.

Although he certainly had strong opinions, he was a master of tact and could disagree without inducing feelings of inferiority.

Ward received many professional honors, including the Franklin V. Taylor Award from the Society of Engineering Psychologists (1978), the Frank P. Ramsay Medal from the Operations Research Society of American (1988), the James M. Cattell Fellowship from the American Psychological Society (1995), and the Distinguished Scientific Contributions Award in Applied Psychology from the American Psychological Association (1998). Perhaps his most prized acknowledgement was the Festschrift volume edited by Shanteau, Mellers, & Schum (1999).

Ward was a big man with great zest for life. Surpassing Will Rogers, who never met a man he didn't like, Ward never met a meal or a woman he didn't like. The punny side of his sense of humor can be seen in the Gilbert and Sullivan parodies posted on the SJDM website (www.sjdm.org/archive/edwards-skits.doc). He was also notorious for twisting the titles of papers innocently submitted to the Bayesian Conference.

Ward is survived by the beloved wife of his golden years, Sandra Fraser-Edwards, and by two children from a previous marriage. The cracking of this mighty heart leaves the JDM world much diminished.

David J. Weiss   James Shanteau
California State University, Los Angeles   Kansas State University

R. Duncan Luce wins National Medal of Science

Noted cognitive psychologist is third UCI researcher to earn nation's highest scientific honor

Irvine, Calif., Feb. 15, 2005 -- R. Duncan Luce, a UC Irvine behavioral scientist whose work has profoundly influenced the fields of psychology and economics, will receive the 2003 National Medal of Science, the highest scientific honor in the United States, the White House has announced.

Luce, 79, is one of eight U.S. scientists and engineers to receive this year's medal. President George W. Bush will honor them at a White House ceremony March 14, 2005.

"Professor Luce's fundamental contributions to mathematical psychology have guided the way the field examines decision making and sensory psychology," Chancellor Ralph J. Cicerone said. "UC Irvine is proud of Professor Luce's accomplishments, and I'm personally pleased that a 20-year faculty member is receiving this national honor."

Luce is the third UCI faculty member to receive the National Medal of Science. Evolutionary biologist Francisco J. Ayala and the late Nobel Prize-winning physicist Frederick D. Reines are past recipients.

"This is a great honor for which I am most grateful," Luce said. "Such an award is especially pleasing in two respects. First, it is a recognition of how far UCI has come in its relatively short existence, and, second, it is gratifying to receive national acknowledgement of theoretical research in the behavioral sciences. I'm thankful for the support -- familial, academic and federal -- that made it possible. I'm also grateful for my genes, which have enabled me to live a long life and enjoy this honor."

Luce first came to UCI in 1972, left in 1975 for Harvard University, then returned in 1988 to head the UCI Institute for Mathematical Behavioral Sciences. He guided that institute for 10 years. Today he is UCI Distinguished Research Professor Emeritus of Cognitive Sciences and Economics in the School of Social Sciences.

Widely considered a pioneer in mathematical behavioral sciences, Luce for more than 50 years has pursued a scientific understanding of human behavior. His work is a blend of mathematical theory and experiments, designed to provide understanding of features of individual behavior and orientation to the world. He does this by developing formal math models -- models, for example, that have contributed to shaping contemporary economics.

"Duncan Luce is one of the giants of the social and behavioral sciences -- an exemplary scholar, educator and human being," said Barbara Dosher, dean of the School of Social Sciences. "His work has fundamentally altered our understanding of how individuals and groups make decisions in psychology, economics and statistics, and has revolutionized the mathematical underpinnings of psychology and the social sciences. The National Medal of Science provides well-deserved recognition of his extraordinary influence as a creative intellectual force nationally and internationally."

Luce, a member of the American Academy of Arts and Sciences, the National Academy of Sciences and the American Philosophical Society has received numerous awards and honors, including the 2004 Norman Anderson Award of the Society of Experimental Psychologists, 2003 Frank P. Ramsey Medal of the Decision Analysis Society and the 2001 Gold Medal for Life Achievement in the Science of Psychology of the American Psychological Foundation.

The U.S. Congress established the National Medal of Science in 1959 to honor individuals whose pioneering scientific research has led to a better understanding of the world around us. The National Science Foundation administers the award.

2005 Decision Analysis Publication Award

Deadline for nominations: June 1, 2005

The Decision Analysis Publication Award is given annually to the best decision analysis journal article or book published in the second calendar year prior to the year in which the award is given. For consideration for this year's award, a work should have been published during CALENDAR YEAR 2003. The award is accompanied by a plaque and a $750 honorarium. The intent of the award is to recognize the best publication in "decision analysis, broadly defined." This includes, but is not necessarily limited to, theoretical work on decision analysis methodology (including behavioral decision making and non-expected utility theory), descriptions of applications, and experimental studies. Nominations are invited at this time. Please send them as soon as possible, but in any event to arrive no later than JUNE 1, 2005, to:

George Wu
University of Chicago
Graduate School of Business
5807 S. Woodlawn Avenue
Chicago, IL 60637
voice: 773.834.0519
fax: 773.702.0458
e-mail: wu@gsb.uchicago.edu

E-mail is strongly preferred. Please send the author's name(s) and the full journal citation or book title. Nominators should ensure that the Publication Award Committee has a copy of the publication, preferably in electronic form, prior to the submission deadline. SELF-NOMINATIONS ARE ACCEPTABLE AND ARE RECOMMENDED. Historically, most nominations for this award have been self-nominations, so don't rely on your admiring colleagues to nominate your work. However, others who wish to write in support of a publication (in a substantive way regarding impact of the work) are very welcome to do so. Testimonials by those who have benefited from a work published in 2003 will be very helpful to our decision process.

Nominated publications will be judged with respect to significance, relevance, originality, and readability. The award will be presented at the INFORMS Annual Meeting in New Orleans, November 13-16, 2005. This award is sponsored by the Decision Analysis Society of INFORMS. Membership in the Decision Analysis Society is not a condition for being a nominator or a nominee, so please feel free to forward this announcement to other colleagues.

Names of past winners of the Decision Analysis Publication Award are posted on the DAS Awards web page at http://www.informs.org/Prizes/DecisionAnalysisSocPrize.html

Call for Papers: Special Issue on Psychology and Decision Analysis

Decision Analysis, a journal of the Institute for Operations Research and the Management Sciences, is soliciting submissions for a special issue on psychological topics associated with decision analysis. Articles may draw from any relevant area of psychology including cognitive, social, and organizational, and may focus on any aspect of the decision analysis process. We welcome contributions that address implications of psychological theories for decision analysis; elicitation of beliefs, preferences, and risk attitudes; and aspects that have received only limited attention in past research, such as problem formulation, creative generation of alternatives, or post-decision implementation. Empirical evidence may be derived from either laboratory or field studies, so long as there is a clear connection between the research setting and the practice of decision analysis.

This special issue will be jointly edited by Professor George Wu of the University of Chicago, serving as guest editor, and Professor Don Kleinmuntz of the University of Illinois at Urbana-Champaign, currently co-editor-in-chief of the journal. The special issue is tentatively scheduled for publication in 2006. Manuscripts will be considered as they are submitted, but for full consideration should be submitted no later than August 31, 2005. Articles not accepted for the special issue may be considered for publication in subsequent issues of the journal.

How to Submit a Paper
Please submit your paper electronically by email attachment to co-editor Don Kleinmuntz (dnk@uiuc.edu). Include in your cover letter a statement that you wish your paper to be considered for the special issue. All submissions will be peer-reviewed. For information about the journal, including instructions to authors, please visit http://da.pubs.informs.org. We also encourage authors to review the journal's editorial objectives below and to ensure that submissions are suitable for the journal in both style and substance. If you have questions about whether your submission fits the objectives of the special issue, please feel free to contact either Don Kleinmuntz or George Wu (wu@gsb.uchicago.edu).

Editorial Objectives
Decision Analysis is 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 practitioners and researchers in academia, business, industry, and government. Articles will contribute to these goals in many ways, using a wide variety of methods and approaches. For example, articles might discuss new or existing algorithms, procedures, or processes for implementing decision analysis; develop new theory or empirical studies related to cognitive, organizational, or social issues that have implications for decision analysis; propose and test innovative uses of information technology to perform decision analysis;

or raise issues related to the application of decision analysis in real-world situations. Articles should generally remain faithful to the intellectual foundations of decision theory and decision analysis. However, the journal welcomes original contributions that genuinely challenge the field, for example by showing how concepts, ideas, and methods from other fields can improve the theory or practice of decision analysis. The journal also publishes articles that review and summarize important topics or advances of interest to decision analysts or that provide original historical, scholarly, or practical perspectives on the field. In addition, the journal encourages articles that support the teaching of best practices, such as state-of-the-art applications, case studies, and tutorial articles on decision-analysis methods.

Conferences

The Seventh International Conference, General Online Research will take place from March 22-23, 2005 at the University of Zurich, Switzerland. The conference is organized by the German Society for Online Research (DGOF e.V.) in collaboration with the department of Social and Business Psychology, Prof. Dr. Klaus Jonas and PD Dr. Ulf-Dietrich Reips, University of Zurich. For more information, visit http://www.gor.de/program.html

2nd Conference on Online Deliberation: Design, Research, and Practice, DIAC 2005
Website: www.online-deliberation.net
May 20-22, 2005, Stanford University, Stanford, CA
Abstract deadline: March 15, 2005

The Second Conference on Online Deliberation: Design, Research, and Practice / DIAC 2005, will be held at Stanford University from Friday through Sunday, May 20-22, 2005. This conference is a follow-up to "Developing and Using Online Tools for Deliberative Democracy", a two-day seminar which was held at Carnegie Mellon University in June, 2003. At the end of the CMU conference, participants agreed to have a follow-up meeting at Stanford. We would like to solidify the conference as a regular event, and to discuss the possibility of establishing a new society for online deliberation that will bring together researchers, designers, and practitioners whose work bears on this area. This conference is also the latest in a series of conferences on Directions and Implications of Advanced Computing (DIAC), presented in association with the Public Sphere Project (a CPSR Initiative).

ISIPTA '05
4th International Symposium on Imprecise Probabilities and Their Applications
July 20-23, 2005
Symposium: July 20-23 2005
Carnegie Mellon University, Pittsburgh, Pennsylvania, USA
For more information, visit http://www.sipta.org/isipta05

Biennial Conference on Subjective Probability, Utility and Decision Making
Stockholm, 22-24 August, 2005
For more information, visit http://research.psy.gu.se/spudm20/

Jobs

The University of Arizona – Research Associate (Postdoctoral) – Job No. 32368
Position summary: The Department of Management and Policy, University of Arizona, is seeking two post-doctoral research associates to conduct research in the areas of Judgment and Decision Making and Experimental Economics with faculty members in the Management and Policy Department. The position is a one-year appointment beginning July 1, 2005.

Duties and responsibilities: Assist faculty members in research on Predicting and Prescribing Human Decision Making under Uncertain and Complex Scenarios supported by a grant from the US Air Force.

Minimum qualifications:
Ph.D. in a relevant field of study (submitted by day of hire).
Research experience in Judgment and Decision Making or Experimental Economics.

Application instructions:
To apply, please submit a cover letter, curriculum vitae, two letters of recommendation, and copies of relevant publications/working papers.

Please apply online at www.uacareertrack.com (search for the posting according to job number). The letter of interest and vitae can be attached electronically. The rest of the documents can be sent to:
Prof. Terry Connolly or Prof. Amnon Rapoport
Department of Management and Policy
The University of Arizona
PO Box 210108
Tucson, AZ 85721-0108
Email: amnon@u.arizona.edu

Please reference job number 32368 on your application materials.Review of materials will begin 4/1/05 and continue until positions are filled. Don't hesitate to contact us with any question.

Tamar Kugler
Assistant Professor, Dept. of Management and Policy
University of Arizona, Tucson, AZ 85721
Phone: 520-626-7788; Fax: 520-621-4171
Email: tkugler@eller.arizona.edu

Postdoctoral Fellowship – Columbia University Center for the Decision Sciences
Columbia University's Center for the Decision Sciences anticipates hiring a computer-savvy postdoctoral Associate Director for a period of one to two years, with a starting date of August 2005. The Associate Director will carry out research, coordinate a year-long speaker series, administer the Center and run the CDS Online Virtual Laboratory server.

The Center for the Decision Sciences at Columbia University is directed by Professors Eric Johnson, David Krantz, and Elke Weber and includes researchers from psychology, marketing, management, medicine, law and beyond. Please visit the website for more information: http://cebiz.org/cds

This position is open to candidates with excellent computer skills and training in cognitive psychology or related disciplines who have recently earned their Ph.D., or who are expecting their degree in 2005 on a topic relevant to the psychology of decision making.

The candidate should be comfortable running a Linux Web server as well as coding HTML and dynamic scripting languages such as PHP and JavaScript. Experience with SQL, databases, SAS and lightweight UNIX systems administration and security is very much recommended but not essential.

One of the current Center foci is a large Preferences as Memory project, which looks at the role of psychological memory processes on the formation of preferences, inferences, and choice. Experience and interest in the psychology of memory would be a large asset.

To apply, please send a CV, two letters of recommendation, up to 3 reprints, and a cover letter describing research interests. In your letter, please describe computer skills, (memory) research expertise, and experience carrying out experimental research. Review of applications will continue until the position is filled.

Send applications and questions to Dan Goldstein dgg2101@columbia.deu
Columbia University is an Affirmative Action, Equal Opportunity Employer.
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Daniel Goldstein, Ph.D. Associate Director
Columbia University, Center for the Decision Sciences
420 W. 118th #805A MC3355, New York, NY 10027
P:(212)854-4237 F:(212) 854-8925
www.dangoldstein.com/dsn

Postdoctoral Fellowship - Center for Decision Research
 The University of Chicago Graduate School of Business, Center for Decision Research anticipates hiring a Postdoctoral Fellow for a period of one to two years, with a starting date of August 2005. The Postdoctoral Fellow will serve as the lab manager of the Graduate School of Business's Decision Research Laboratory, and will coordinate laboratory research projects for the faculty and PhD students. We anticipate that the lab manager will be a half-time position. Depending on qualifications and interests, the position may also offer teaching responsibilities. Salary will be competitive.

The Center for Decision Research at University of Chicago includes a group of researchers interested in the study of judgment and decision making, social psychology, marketing, organizational behavior, and behavioral and experimental economics

(Nicholas Epley, Ayelet Fishbach, Linda Ginzel, Uri Gzeezy, Reid Hastie, Chistopher Hsee, Joshua Klayman, Aparna Labroo, Ann McGill, Tanya Menon, Ginger Pennington, Suresh Ramanathan, Richard Thaler, Bernd Wittenbrink, and George Wu). The group runs weekly workshop and brownbag seminars. More information on the group and our activities is available at: www.chicagocdr.org.

This position is open to candidates who have recently earned their Ph.D., or who are expecting their degree in 2005, in any area of psychology, organizational behavior, or marketing. Familiarity with methods of experimentation is important. In particular, experience in conducting computer, web-based, and interpersonal interaction-based experiments is desirable.

Applicants should submit a curriculum vitae, two letters of recommendation, and a cover letter describing their research interests. Applicants may also wish to detail experience relevant to the lab manager duties. Selection will be based largely on the applicant's ability to work collaboratively on research with one or more of the Center for Decision Research faculty members. The applicant should indicate one or two faculty members with whom they would be most interested in working (see www.chicagocdr.org for a list of the faculty and links to their homepages).

Review of applications will commence on March 8, 2005 and will continue until the position is filled.

Applications should be sent to
Professor George Wu
Graduate School of Business
University of Chicago
5807 S. Woodlawn Avenue
Chicago, IL 60637
wu@gsb.uchicago.edu
(773) 834-0519

We encourage applicants to apply via electronic mail. Questions concerning the position can be addressed by electronic mail to George Wu at wu@gsb.uchicago.edu

The University of Chicago is an Affirmative Action, Equal Opportunity Employer.

Award
Oswald-Kuelpe-Award for the Experimental Study of Higher Mental Processes
Announcement and Application Instructions

Honoring the great tradition of the Wuerzburg School of Psychology and its founder Oswald Kuelpe, the University of Wuerzburg announces its newly created Oswald-Kuelpe-Award, which will be conferred biennially in a special ceremony. The purpose of the award is to recognize exceptional scientific contributions to the experimental study of higher mental processes.

For the first time, the Oswald-Kuelpe-Award will be presented in Wuerzburg on November 4, 2005 by the president of the university and the chair of the psychology department. It includes a cash prize of 4.000,- Euro and the winner's expenses for traveling and accommodation.

Eligible are scientists of all nationalities and without any age restrictions. The only criterion is the candidates' proven excellence in experimental research on higher mental processes. This may pertain to different areas of psychology.

Applications and nominations must be received by 1 June, 2005. They should include
- a letter addressing the candidate's merits with respect to the criterion of the award;
- a current curriculum vitae and bibliography;
- the names of two distinguished colleagues who are willing to write letters of recommendation.

Materials should be sent to the chair of the psychology department:
Prof. Fritz Strack
LS Psychologie II
Roentgenring 10
97070 Wuerzburg
Germany
strack@psychologie.uni-wuerzburg.de

Recent Publications of Society Members

Decision Science Blog
Decision Science News is a blog that may be of interest to people researching decision making in fields including Psychology, Economics, Business, Medicine, and Law. We do posts that profile and link to recent articles and working papers. Everyone on the JDM society list is hereby welcome to contribute things they'd like to promote. In addition, we post jobs, conferences, profiles, and news items of relevance to the decision sciences community. Please direct comments or questions to me (and not the whole JDM list, thanks!)
http://www.dangoldstein.com/dsn/

Daniel Goldstein, Ph.D. Associate Director
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420 W. 118th #805A MC3355, New York, NY 10027
P:(212)854-4237 F:(212) 854-8925

The Act of Choosing: A Context-Matching Theory, and Its Practical Implications
By Russell Foote Rhyne
See http://www.iuniverse.com/bookstore/book_detail.asp?isbn=0-595-29039-6

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Journal Note: SJDM Members are entitled to discounts on the following journals: *Organizational Behavior and Human Decision Processes*, *Journal of Behavioral Decision Making*, and *Risk, Decision and Policy*. Contact the publishers for details. Links to journal websites may be found on the SJDM website (www.sjdm.org) under related links.