



A New Look at Constructed Choice Processes

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Abstract

Normative models of choice assert axiomatically that preferences are consistent, coherent, and determined only by relevant alternatives. In contrast to this classical economic perspective, behavioral models derived from research in psychology and consumer behavior assert that preferences are not guided by an internal, stable utility function but are constructed during the choice process. The current paper is based on a session on constructed choice processes (CCP) at the 2004 Choice Symposium that focused on how the standard CCP model can be enriched by bringing theories and tools from modern research in social cognition to bear on choice phenomenon. The richer conceptual framework presented by new, currently unpublished empirical work provides a novel perspective on choice construction by integrating the roles of subjective construal, experiential information, attribution, goals, and satisfaction in understanding preference construction processes in choice.

Keywords: behavioral decision theory, choice, social cognition, normative models

Normative models of choice assume or even require that an individual's choice among prospects is consistent, coherent, and determined only by relevant alternatives. If one is willing to walk farther to eat sushi than to eat pizza, then one should also pay more to eat sushi than pizza (consistency). If one is willing to pay more for sushi than pizza, and more for pizza than falafel, then one should be willing to pay more for sushi than falafel (coherence). If sushi is not available, then the choice between pizza and falafel should not depend on whether the unavailable and irrelevant sushi option is included in the choice set. McFadden, a Nobel prize-winning economist and a contributor to prior Choice Symposia summarizes this normative stance: "The *standard model* in economics is that consumers behave *as if* information is processed to form perceptions and beliefs using strict Bayesian statistical principles (*perception-rationality*), preferences are primitive, consistent and immutable (*preference-rationality*), and the cognitive process is simply preference maximization, given market constraints (*process-rationality*)" (2000, p. 75).

The alternative to this standard economic view within the consumer research tradition is the notion of *constructed choice processes* (CCP, cf. Bettman et al., 1998). For behaviorally oriented consumer researchers, the constructed preference model has now become the new "standard model". For behavioral decision theory (BDT) researchers, demonstrating that

the normative principles of economic choice are systematically violated in actual choice is a convention in itself. For example, the phenomenon of *preference reversals* shows that in the domain of gambles, people will often choose gamble A over B, but pay more for B than A when the options are priced separately (Lichtenstein and Slovic, 1971; Tversky et al., 1988). Similarly, the phenomenon of *context effects on choice* shows that the introduction of an additional option, even one that is dominated or unavailable, can change the choice between an original pair of options (Huber et al., 1982; Simonson, 1989). Such findings have led to the suggestion that choice is less about choosing with regard to an underlying set of preferences than it is about constructing preferences at the time of choice.

Importantly, the economic models that are built upon choices as “revealed preferences” (e.g., Savage, 1954) are unique in their claim to normative status due to their axiomatic foundations, a point which makes them special targets for descriptive models of choice. Thus, one of the challenges to the constructed preferences position is the claim that the CPP approach is simply a reaction against a normative straw man, celebrating any deviation from axiomatic behavior without providing any alternative theoretical structure in its place. The session on constructed choice processes (CCP) at the 2004 Choice Symposium was motivated by two related questions. First, is the now-standard constructed choice or preference model adequately specified to replace the standard economic models of choice? One goal of the discussion session that led to the current review was to answer the criticism that “you can’t replace something with nothing”. Second, what can recent social cognition research in psychology and consumer behavior add to enrich the standard constructive model?

The “Standard” Constructed Choice Model

The notion of constructed or constructive choice processes is often introduced with regard to an old joke about three umpires discussing their philosophy of calling balls and strikes.

Umpire 1: I call them as they are.

Umpire 2: I call them as I see them.

Umpire 3: They ain’t nothing ‘til I call them.

The 1998 review by Bettman, Luce, and Payne represents the most complete statement of the CCP model. They distinguish two empirical traditions that gave rise to this model. The *perceptual* tradition exemplified by Kahneman and Tversky’s Prospect Theory (e.g., Kahneman and Tversky, 1979) emphasizes how value exists not in the objective stimulus presented but in the way that people represent that stimulus. The framing phenomenon is perhaps the prototypic example of the perceptual basis of constructed preferences. The *adaptive decision-making* tradition (Payne et al., 1993) focuses on the effort-accuracy tradeoff that decision-makers face and stresses the variety of decision-making strategies that consumers can use depending on the effort they are willing to exert.

Although the two traditions jointly created the CCP model, they differ in their underlying process models. As Lynch (2005) notes in his review of social cognition models in consumer

research, effort-accuracy tradeoff models invoke an explicitly conscious decision-maker, whereas social cognition models emphasize the role of non-conscious processes in evaluation and choice. The perceptual tradition of CCP does not commit to a specific process model, but its focus on low-level perceptual factors implicitly links it to non-conscious processes. In general, both CCP research traditions emphasize outcomes, and have developed separately from the social cognition research stream in consumer behavior, which emphasizes process (e.g., Alba et al., 1991; Lynch and Srull, 1982). For example, social cognition research on how context affects evaluative ratings (e.g., Chakravarti and Lynch, 1983) focused on the underlying information-processing stages at which context might affect stimulus representation. Many of the empirical examples presented at the 2004 Choice Symposium and discussed below bring together the study of choice with more process-oriented social cognition models.

Expanding the Standard Constructed Choice Model

A simplified characterization of a generic constructed choice model is illustrated by shaded boxes in Figure 1. The input to the model is the set of choice options represented subjectively and combined with information from memory: these make up the “contents” of the decision process. Together, the ongoing personal values of the individual decision maker (“self/values”) and the current motivational state of the decision maker (“active goals”) define the utility of the contents associated with each choice option. Thus, the individual and the environment (context) jointly define the values, preferences, and current goals that

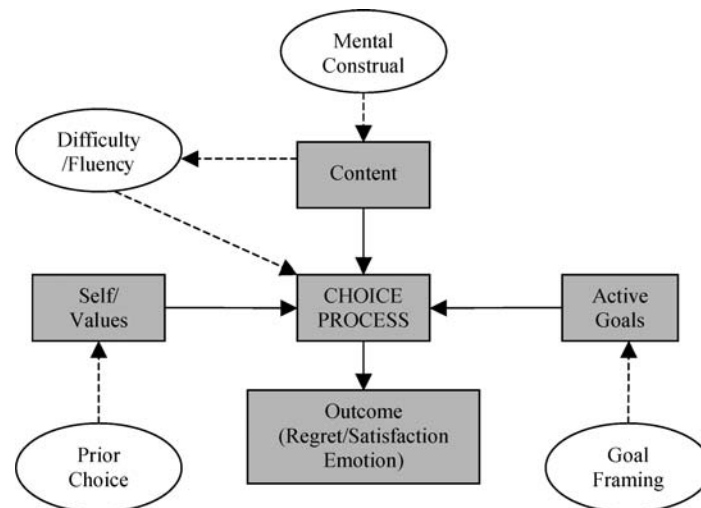


Figure 1. The Basic Constructive Choice Model and Recent Developments*. (The basic model is shown by the shaded boxes. New perspective added by work presented at the 2004 Choice Symposium is illustrated by the circles and dotted arrows).

drive the decision; the interpreted choice set plus information from memory provides information about the content and value of attribute bundles, and the individual maximizes some psychological function—through a process that strategically weighs effort costs and accuracy benefits—driven by values and goals. Outcome satisfaction or utility is determined by the value of the selected alternative, which may reflect after-the-fact rationalization and a priori value.

Circles in Figure 1 illustrate how the simplified CCP model (denoted by shaded boxes) can be enriched by additional process and outcome variables. These new variables moderate different stages of the constructive choice process and illustrate the great variety of contextual variables that can affect choice. Furthermore, many of these variables provide new insight into important processes that underlie preference construction. Each of those variables will be illustrated by a recent empirical research project presented at the Colorado Choice Symposium. The session on CPP did not focus on assessing the breadth of research in the field or on developing a consensus process model. Instead, the focus was on new, currently unpublished empirical work that provides a novel perspective on understanding choice processes. Broadly, each contribution involved bringing theories and tools from modern research in social cognition to bear on choice phenomenon. As noted, social cognition research implies that automatic, relatively effortless processing that occurs without awareness may be most critical to understanding decision-making. In the language popularized by Kahneman and Frederick (2002), the conscious, analytical tools of System 1 are in charge only under special circumstances; it is the unconscious and automatic tools of System 2 that are the default.

Time and Construal

We first consider the role of temporal construal theory (Liberman et al., 2002; Trope and Liberman, 2003) in choice. Temporal construal theory describes the changes in representation of an event or an object that occurs as the event moves from being distant in time to being closer. Events or options in the near future are represented in terms of low-level concrete attributes embedded in a context; those in the far future are represented in terms of high-level abstractions that are removed from their context. A request for a chapter that is due in 6 months leads to a representation in terms of a scholarly activity whereas a chapter that is due next week is represented in terms of the specific actions needed to complete it within a well-specified and complex context. More abstract, decontextualized representations lead to more optimistic expectations because the low-level details that make projects difficult—and the contextual factors that cause further difficulties—are absent from the representation.

Numerous studies have shown that confidence and optimism are higher for events in the far future, and also that such events are represented in a simpler, more summary fashion. Another central and well-documented aspect of temporal construal theory is that distant events are evaluated primarily in terms of their desirability (as a high-level value, and end state) and close events are evaluated primarily in terms of their feasibility (low-level details that are the means to the end). Both the abstractness and the feasibility aspects of time can influence choice.

One new empirical example presented student subjects with a choice between two experiments, occurring either immediately or in two months time (Liberman and Trope, 2004). The experimental participation involved a primary task and a smaller, filler task. Varying the filler task (a detail) had an impact only for immediate choices, not for choices in the future. A similar result was found for choices between pairs of clock-radios, for which the clock quality is a secondary detail and influenced immediate choices, but not choices for future delivery.

The distinction between high and low-level construals is also seen with direct processing measures. In particular, attributes are high-level but specific levels of alternatives are low-level. This leads to the prediction that compensatory processes that weigh specific levels of alternatives will be more pronounced for choices near in time. When participants are presented with a large attribute by alternative matrix, they are more likely to search by attribute for choices in the distant future and search by alternative for choices in the near future.

These demonstrations of temporal construal effects on choice only hint at the role of representation, for the theory more generally predicts that psychological distance should have the same effect. For example, other people are construed on a higher level than ourselves. These effects leave people open for manipulations to the extent that the definition of “near” is to some extent arbitrary and can be set by context and instructions. Clearly, the effect of time and distance on the level of representation is not conscious or analytical, or open to intuitive introspection, but perhaps people can train themselves to conduct a sensitivity test: would I make the same choice if it were available—or due—tomorrow?

Choice Difficulty

According to utility maximizing models, increasing the number of choice options should, if anything, increase satisfaction. However, limited cognitive capacity means that human judges may become less effective choosers when the choice set is large: this is the phenomenon of choice overload. The effort-accuracy perspective implies that when the cognitive effort involved in processing a large choice set becomes too great the adaptive decision-maker should adopt a more satisficing approach and look for locally maximal outcomes, rather than globally maximal outcomes. However, the *choice overload* framework developed by Iyengar and Lepper (2000) implies that choice difficulty has systematic effects that go beyond merely degrading the maximizing routine. Classic studies with real choices and real experiences have shown that although large choice sets receive more attention, they also increase the likelihood of choice deferral and non-choice. When faced with a choice among 6 or 30 chocolates, people liked the process of choosing in the 30 set, but the large set induced greater post-choice regret and greater anticipated choice avoidance in the future. This happens even if the 6-choice set contains the most popular options from the full set. Thus, choice overload can be seen as an example of the effects of adding irrelevant options to the content of the choice set.

An interesting setting for this research is the choice of retirement savings accounts—the large monetary value makes the choice important, and increases motivation to be accurate.

For 401K accounts with employer contributions, choice deferral is akin to giving back money to an employer. It is better to randomly choose any option rather than defer choice. Using data from actual 401K choices, it is possible to see rate of choice versus deferral as the number of offered plans increases (Iyengar and Jiang, 2004). The main finding: for every 10 options, a 2% drop in participation rates. Further, for every 10 extra funds, the probability of choosing a low-risk and low-return fund (i.e., money market or bond fund) increases substantially. An experimental study on hypothetical choices supported the notion that risk becomes aversive and safety becomes increasingly attractive in larger choice sets. In this case, normatively irrelevant aspects of choice set content changes people's values in terms of risk-aversion. Further support for the idea that choice set size changes values comes from a study of speed dating, where men and women meet many different potential dates in a single evening and end up choosing a subset for further contact. When individuals had only 10 (versus 20) others to choose from, their choices more closely matched their rated preferences for personal traits.

Fluency and Choice

Choice overload may operate through the experience of a difficult choice. The perceived ease or difficulty of processing a stimulus is one example of what has been termed "experiential information" (Schwarz, 2004). In addition to processing the actual content of the information facing him or her, the decision maker will also process the meaning of his or her reaction to the target, that is, the experience of reading, thinking, and deciding. For example, the mere exposure effect—the phenomenon that people like a stimulus more if they have been repeatedly exposed to it—is now generally interpreted in terms of the fluency of experience (the perception of the stimulus has an easy "flow") combined with the misattribution of emotion (that feels good—I like the stimulus). A frequently viewed stimulus is very easy to process and the processing is experienced as *fluent*, and fluency is a pleasant experience that is often unconsciously or consciously attributed to liking. Fluency can be manipulated in many ways, including multiple viewings, a preliminary subliminal presentation, or by making the stimulus degraded in some way (reducing fluency).

The impact of experiential information depends on the salience of that experience and the individual's "naïve theories" that are activated. For example, when people are asked to remember 2 or 10 details about the Oklahoma City bombing, due to the difficulty of recalling details, those asked for 10 details believed it happened longer ago. The experience of difficult recall leads to the attribution that much time has passed. But when another question intervenes between the detail recall and the time estimate, the "experiential" information is no longer available for input to the time estimate, and there is no effect of the detail manipulation. A more surprising result from this research stream is that people are more likely to believe a statement to be true when the statement contains a rhyme—because rhyme increases processing fluency and processing fluency is misattributed as indicating stronger evidence.

This malleability undermines the intuitive link between thought content and judgment. Judgment and choice do not simply reflect the semantic content in mind, but also the

experiential and affective content and the particular attribution theories that link the semantic and experiential content. Thus simply modeling choice by content alone isn't enough, even when content includes the notion of subjective representation through context effects and the like.

The first applications of fluency principles to classic choice problems have only recently been completed (Novemsky et al., 2004). In one study, the readability of an entire choice set (among digital cameras distinguished on two dimensions) was diminished by using a difficult font. As a result, choice deferral increased by 50%. But when an explanation was provided for the difficult font, and hence the difficult reading experience, the effect of difficulty was sharply reduced. That is, when people could attribute the difficulty to a bad web site rather than to the difficulty of the decision itself, this reduced the applicability of the experiential information to the decision itself. Note that the explanation of web site difficulty was applicable to the entire choice set, not to any one attribute of the multi-attribute choice set.

A second set of studies asked people to imagine and rate the difficulty of providing 2 or 10 reasons for making a choice. When people were anticipating a difficult justification task, they were more prone to choose the middle option in a set, i.e., the compromise option. These fluency effects and the misattribution of the relevant experience demonstrate the interplay of System 1 (automatic) and System 2 (controlled, effortful logic) processes. The experience itself is an automatic byproduct of task processing, but the implication of the experience depends on its interpretation, which can be conscious and analytical.

Values and Choice

Another locus of construction indicated on Figure 2 is the individual's current values. It is not surprising or counter-normative that changing key values in the self (say, changing from valuing excitement to valuing safety) leads to altered choices. Past research in social cognition has shown that an initial task can prime certain representations (such as goals, traits or self-concepts) that lead to the pursuit of behavior consistent with the activated goal or self-identity (Bargh, 1997; LeBoeuf and Shafir, 2004). However, it is more challenging when the change happens due to the choice context and without the decision maker's control or intent. In particular, an initial choice, in addition to activating a mental construct about the self, can also help establish credentials for that identity by providing evidence for the activated self-concept. These credentials can then serve as a license for inconsistent choices by reducing negative self-attributions rather than guiding consistent preferences (Khan and Dhar, 2004). For example, after an initial choice between two charities, people are more, and not less, likely to choose a luxury/self-indulgent item in a second choice—as if being charitable subsequently provides a “license” for indulging by reducing the negativity associated with luxuries. However, when the initial charitable choice is made under duress (i.e., as service for a driving violation) the license no longer works, suggesting that the voluntary choice changes the individual's self-perception. This explanation is supported by evidence that people have a more positive view of themselves after choosing the charitable option. These findings show that choices are not only constructed, but also the values that

guide them can change in the elicitation process. Note that the results are actually opposite to what would be expected by a simple self-perception inference process - a charitable act is more consistent with *denying* luxuries to oneself.

An important question that needs to be reconciled by future research is when preferences assimilate to the active self and when they contrast. It is possible that unlike the traditional priming mechanisms that lead to consistent preferences, choice-based primes cause the subsequent choices to move away from the salient self-concept.

Another question that merits further inquiry is at what level the change in self-concept occurs. It is possible that similar to the self-affirmation literature (e.g., Steele, 1988), boosting an unrelated dimension of self is enough to generate a license for subsequent choices. For instance, one may feel licensed to not donate if they are made to feel sexy or intelligent. On the other hand, it is likely that the licensing effect occurs only when a more relevant self-concept is enhanced. For example, one may feel licensed to not donate only after receiving a boost in the self-concept relevant to being charitable, such as after feeling less self-indulgent. Resolving the above questions provides a useful agenda for future research.

Goals and Choice

Values, which are normally thought of as enduring and stable, give rise to goals that serve as motivational guides. Goals naturally change as an individual's needs change (e.g., hunger, thirst, or loneliness give rise to different focal goals), but recent work implies that meaning, interpretation, and attribution play an important role in whether goal pursuit leads to choice consistency or inconsistency (Fishbach and Dhar, 2004). In one demonstration, students read a scenario that asked about recent studying time either in terms of the *progress* made towards the goal of doing well or the *commitment* to the goal. Participants who were given the opportunity to congratulate themselves on their progress thus far were more likely to choose (hypothetically) to spend time with friends at a bar rather than to continue studying. That is, the focus on progress towards the goal (the progress frame rather than end-state frame) led to a goal-*inconsistent* choice.

Goal progress can also be inferred from social comparison. When people heading for an exercise session were presented with information about someone else who exercised *less* than they did, they were more likely to indicate interest in having a fatty snack after the workout. A similar effect was demonstrated using actual food choices and more carefully controlled information. Participants were asked to indicate their weight loss goal in terms of their current weight and ideal weight, both on a visual analog scale. However, the units on the scale were varied so that for some people their weight loss seemed insignificant whereas for others the loss loomed large. When people "saw" that they were "close" to their goal, they were more likely to choose a chocolate bar over an apple—again, a goal-inconsistent choice was fostered by perceived progress to the goal. These results challenge the psychological maxim that people are driven to be consistent. Instead, the link between goals and choice seems to depend on how the goal is interpreted, as progress (which offers an excuse for goal-inconsistent relaxation) or as commitment to the end-state (which maintains motivation for goal-consistent discipline).

Comparisons and Choice

The outcome of the choice process, as illustrated in Figure 2, is the experienced utility or satisfaction with the choice. It is well known that the evaluation of the outcome is dependent not only on the utility of the chosen and experienced option, but on the value of the foregone options as well. Furthermore, it is well established that decision makers take anticipated regret into account when making a choice (Simonson, 1992). However, what is less known is how such counterfactual effects (“I should have chosen the more expensive one”) are affected by the passage of time?

In a recent series of studies, Ritov (2004) investigated whether the choice procedure affects how much the foregone option influences satisfaction over time. In one study, participants received small gifts that were either actively chosen, won in a lottery, or received with no choice of options. Satisfaction with the gift was measured both immediately and after a week’s delay. Although the lottery condition registered an increase in satisfaction over time, the same prize received based on an active choice registered a decrease in satisfaction. This is consistent with the notion that the effect of the content of the choice on satisfaction decreases over time, whereas the process of choice becomes more important.

To identify the role of counterfactuals in the choice process, a second study distinguished between the attractiveness of the chosen option and the amount of conflict created by the choice set. After choosing one item out of eight, participants rated their immediate satisfaction and were contacted six to eight weeks later for a delayed rating. Notably, long-term satisfaction reflected the choice set dispersion (i.e., closeness of other alternatives and hence the conflict created by choosing) more than the initial attractiveness. A long-term retrospective study of satisfaction with college majors obtained in the distant past (1 to 20 years) showed similar results. People reporting a great deal of conflict in choosing among a set of attractive majors reported decreased satisfaction with time after choice. This did not hold true for those reporting little choice conflict. It may be that an experiential aspect of the choice process (how difficult or conflicted the choice “feels”) forms an increasing part of the evaluation experience over time, or that the comparisons with foregone alternatives continue to haunt the chooser over time.

Emotion and Choice

Time and comparisons are also the subjects of two other working papers relevant to the outcome of constructed preferences. Emotions, for example, can be both inputs to choice and outputs of the choice process. A choice may reflect the outcome of a simulation: “how will I feel if I choose option A?” Or it may reflect a memory of an emotion: “how have I felt when I chose option A?” Van Boven and Ashworth (2004) offer two propositions about the difference between anticipated and recollected emotion. Proposition 1: Future affect is weighed more heavily in current experience and choice than past affect because anticipatory feelings are more intense than recollective feelings. This proposition was confirmed in a laboratory study of affective response to unpleasant sounds and a survey of affective response

to menstruation. In each case, respondents rated their current affect as they thought about the same experience in the past or the future—emotional intensity was greater for anticipation than recollection. Proposition 2: Current affective states are judged as more intense than past affective states. This was confirmed by asking participants in a YWCA aerobics class if their response to exercise was more intense today or in the past, and by asking new lovers if their current feelings were more intense than for past relationships. A laboratory study of emotional responses to films confirmed that the tendency to judge current experience as more intense than past experience is due to misremembering past affect as being less intense than it actually was. One possible explanation is that an emotion from the past is coded as a cognitive description whereas a current and simulated emotion includes a strong experiential component.

New work on the role of comparisons in choice satisfaction focuses on the determinants of happiness and suggests that the study of those determinants be entitled “Hedonomics” (Hsee, 2004). Many of the findings in the field of Hedonomics challenge the fundamental notion that observed choices reveal preferences and preferences maximize utility—for people generally choose to maximize wealth, but it is much less clear that these choices maximize happiness. For example, happiness depends more on change in state than on absolute value of wealth. Furthermore, happiness changes substantially with social comparison. Psychologically, absolute values of wealth, income, or luxury are difficult to evaluate (how well am I doing? How happy am I with my income?), but it is easy to evaluate when one is relatively better or worse off than others. When global satisfaction was compared across six cities in China, for example, no correlation was observed between mean happiness and mean income. However, within each city, there was a correlation between wealth and happiness. Social comparison within a city allows the construction of happiness and satisfaction. Although it is difficult to weigh the role of quantitative factors such as income because they are intrinsically difficult to value without a comparison or reference point, qualitative factors that are either absent or present (such as being married) require less interpretation or comparison and have a more direct impact on satisfaction. Thus, although people predict that salary will have a bigger effect on satisfaction and happiness than marital status, the effect of marital status is much greater.

A Methodological Caution

Although there is a substantial literature on the lability of choice processes and a developing literature on the psychological principles that give rise to constructed choice effects, a new perspective provides a set of cautionary examples. According to the theory of “effect propensity” (Simonson et al., 2004), shifts in choice share due to such contextual changes as adding an extreme option or adding a dominated option can, under some general circumstances, be attributed to a general artifact of experimental design. The essential insight of this perspective is that one can conceptualize any dichotomous choice share result as reflecting three segments: confident preferences for A, confident preferences for B, and switchers who drive the effects of manipulations. If a substantial majority of switchers favor one option in the control condition, it is likely that any manipulation will

increase choice share of the other option simply because there is a random component to switchers' choices. (Note that the percentage of switchers is not simply determined by the overall split, and so the effect propensity effects are conceptually independent of classic ceiling effects). Simonson et al. (2004) support this set of assumptions by empirical demonstrations that a whole set of apparently unrelated manipulations have common effects on choice.

For example, the researchers studied choices between a safe option (sure thing or high quality expensive good) and a more attractive option (high expected value but risky gamble or a lower quality inexpensive good) using a remarkably diverse set of manipulations in a between-subjects design: anticipating regret, separate ratings versus choices, providing reasons for choice, creating high involvement through personalization, accountability and personal evaluation, simultaneous memory load, and conformity to others' choices. In this example, most participants in the control condition preferred the low-price lower-quality option. All manipulations shift share towards the high-quality "safe" choice. Classic conceptions of discriminant validity and theoretical parsimony both imply that common results of diverse manipulations may be best explained by the simplest conceptual scheme. A challenge provided by these results is to reconcile the extent to which the results of typical choice manipulations are due to the relevant conceptual theory, and the extent to which the findings can be attributed to effect propensity following from the initial distribution of switchers.

Future Directions and Unanswered Questions

The patterns of results described as effect propensity also invite questions about effect propensity that are analogous to the guiding questions of the constructed choice approach. Is the effect of all the manipulations to change processing from a completely lexicographic focus on the most important dimension to a more balanced use of both dimensions? What does it mean to say that some people have confident preferences? If confidence is affected by context, how can the propensity construct explain context effects without being circular?

These questions underline the importance of tying the choice share results found in typical behavioral decision making studies to the cognitive processes that have been identified in the collection of papers presented here. A richer conceptual framework including the role of construal, experiential information, attribution, goals, and satisfaction will not only serve to answer such questions in the consumer decision literature but will also enrich the basic psychological theories from which it draws.

Even enriched theories of construction still leave some very large questions unanswered. Most fundamentally, what are the primitives or first principles that should be used to describe choice processes? One reason why the economic model continues to be so popular for quantitative applications is because it offers an axiomatic basis for choice grounded in first principles. For many purposes, the answer "it depends on the context" is insufficient and unsatisfying. Where will the axioms of a constructive choice theory come from? Watch out for the next installment from the Invitational Choice Symposium.

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References

- Alba, Joseph. W., J. Wesley Hutchinson, and John G. Lynch, Jr. (1991). "Memory and Decision Making." In H.H. Kassarjian and T. S. Robertson (eds.), *Handbook of Consumer Behavior*, Englewood Cliffs, NJ: Prentice-Hall, 1–49.
- Bargh, John A. (1997). "The Automaticity of Everyday Life." In Robert S. Wyer, Jr. (ed.), *The Automaticity of Everyday Life: Advances in Social Cognition*, Vol. 10, Mahwah, NJ: Erlbaum.
- Bettman, James R., Mary Frances Luce, and John W. Payne (1998). "Constructive Consumer Choice Processes," *Journal of Consumer Research* 25(December), 187–217.
- Chakravarti, Dipankar and John G. Lynch. (1983). "A Framework for Exploring Context Effects in Consumer Judgment and Choice." In R. Bagozzi and A. Tybout (eds.), *Advances in Consumer Research* (Vol. 10). Ann Arbor, MI: Association for Consumer Research.
- Fishbach, Ayelet and Ravi Dhar. (2004). "The Liberating Effect of Perceived Goal Progress on Choice." working paper, University of Chicago Graduate School of Business.
- Hsee, Christopher. (2004). "Hedonomics," working paper, University of Chicago Graduate School of Business.
- Huber, Joel, John W. Payne and Christopher Puto. (1982). "Adding Asymmetrically Dominated Alternatives: Violations of Regularity and the Similarity Hypothesis," *Journal of Consumer Research* 9, 90–98.
- Iyengar, Sheena S. and Wei Jiang. (2004). "How Choices are Demotivating: Examining the Effects of Adding Options on Decision Makers' Risk Preferences," working paper, Columbia University Graduate School of Business.
- Sheena S. Iyengar and Mark R. Lepper. (2000). "When Choice is Demotivating: Can One Desire Too Much of a Good Thing?" *Journal of Personality and Social Psychology* 79(6), 995–1006.
- Kahneman, Daniel and Shane Frederick. (2002). "Representativeness Revisited: Attribute Substitution in Intuitive Judgment." In Gilovich, T., Griffin, D., and Kahneman, D. (eds.), *Heuristics and Biases: The Psychology of Intuitive Judgment*.
- Kahneman, Daniel and Amos Tversky. (1979). "Prospect Theory: An Analysis of Decision under Risk," *Econometrica* 47, 263–291.
- Khan, Uzma and Ravi Dhar. (2004). "The Licensing Effect in Consumer Choice," working paper, Yale University School of Management.
- LeBoeuf, Robin and Eldar Shafir. (2004). "Alternating Selves and Conflicting Choices: Identity Salience and Preference Inconsistency," working paper, University of Florida.
- Liberman, Nira, Michael. C. Sagristano and Yaacov Trope. (2002). "The Effect of Temporal Perspective on Level of Construal," *Journal of Experimental Social Psychology* 38, 524–534.
- Liberman, Nira and Yaacov Trope. (2004). "Temporal Construal and Choice Processes," working paper, Tel Aviv University.
- Lichtenstein, Sarah and Paul Slovic. (1971). "Reversals of Preference Between Bids and Choices in Gambling Decisions," *Journal of Experimental Psychology* 89, 46–55.
- Lynch, John. G. Jr. (2005). "Accessible but Nondiagnostic Memories about Memory and Consumer Decision Making." In A. Griffin and C. C. Otnes (eds.), *16th Paul D. Converse Symposium*. Chicago: American Marketing Association.
- Lynch, John, G. and Thomas Srull. (1982). "Memory and Attentional Factors in Consumer Choice: Concepts and Research Methods," *Journal of Consumer Research* 9(June), 18–37.
- McFadden, Daniel. (1999). "Rationality for Economists?" *Journal of Risk and Uncertainty* 19(1), 73–105.

- Novemsky, Nathan, Ravi Dhar, Norbert Schwarz, and Itamar Simonson. (2004). "The Effect of Preference Fluency on Consumer Decision Making," working paper, Yale University Graduate School of Business.
- Payne, John, James Bettman, and Eric Johnson. (1993). *The Adaptive Decision Maker*. NY: Cambridge University Press.
- Ritov, Ilana. (2004). "The Effect of Time and Counterfactuals on the Evaluation of Decision Outcomes," working paper, Hebrew University of Jerusalem.
- Schwarz, Norbert. (2004). "Meta-Cognitive Experiences in Consumer Judgment and Decision-Making," *Journal of Consumer Research* (in press).
- Savage, Leonard J. (1954). *The Foundations of Statistics*, 1972 edition, New York: Dover.
- Simonson, Itamar (1989). "Choice Based on Reasons: The Case of Attraction and Compromise Effects," *Journal of Consumer Research* 16, 158-74.
- Simonson, Itamar (1992). "The Influence of Anticipating Regret and Responsibility on Purchase Decisions," *Journal of Consumer Research* 19, 105-119.
- Simonson, Itamar, Thomas Kramer, and Maia Young. (2004). "Effect Propensity: The Distribution of Switchers' Choices in the Reference State as a Determinant of the Direction of Effects on Choice," *Organizational Behavior and Human Decision Process* 95, 156-174.
- Steele, Claude M. "The Psychology of Self-Affirmation: Sustaining the Integrity of the Self." In L. Berkowitz (ed.), *Advances in Experimental Social Psychology* 21, 261-302.
- Trope, Yaacov and Nira Liberman. (2003). "Temporal Construal," *Psychological Review* 110, 403-421.
- Tversky, Amos, Shmuel Sattath and Paul Slovic (1988). "Contingent Weighting in Judgement and Choice," *Psychological Review* 95, 371-384.
- Van Boven, Leaf, and Laurence Ashworth (2004). "Affective Intensity from the Anticipation versus Recollection of Hedonic Events," working paper, University of Colorado.