consumer decision making

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INTRODUCTION

The standard benchmark for models of consumer decision making against which all other models are typically compared is that of *homo economicus* (economic man). This elegant model suggests that consumers are rational actors who evaluate all relevant choice alternatives, assess the utility (value) that each can provide, and choose the one that they expect to provide the most utility. Different versions of this prescriptive model vary in their assumptions and in their descriptive fidelity (the extent to which they accurately describe how consumers actually think and behave), but on the whole, that view of consumer decision making is overly simple. For example, it assumes that consumers are sophisticated thinkers who process information effectively, efficiently, and without bias, and know their preferences.

Decades of descriptive research about consumer judgment and decision making shows that consumers systematically deviate from this model in important ways. Consumers' capacity to process information is limited, yet they commonly face a great deal of information and must therefore trade-off the accuracy of their decisions and the mental effort involved. Rather than choosing the optimal option (the one that they expect will maximize utility), many tend to select an option that is "good enough". Moreover, consumers often do *not* know their preferences. They construct rather than reveal their preferences when those are elicited, and these constructed preferences are sensitive to the decision context and the manner in which these preferences are elicited (Bettman, Luce, and Payne, 1998). In addition, consumers are influenced by meta-goals such as a desire to manage negative emotions like potential regret or conflict, or the extent to which their choice seems easy to justify. Complicating the picture further, rather than simply maximizing pleasure and minimizing pain, consumers sometimes pursue higher order goals such as bolstering their self-esteem, achieving a sense of mastery, or seeking deeper meaning.

In this chapter, we review some of the current knowledge on consumer decision making, highlighting a few ways in which consumers deviate from *homo economicus*. The review is *very* selective as we were restricted in how much we could write and cite, allowing us to cover and to acknowledge few of the papers that contributed to the body of knowledge that we describe. In the following sections we first discuss the impact of decision task and context on consumer preference, and then look at how the interplay of affect and cognition shapes consumer decision making. We also review factors influencing consumers' forecasts of future consumption experiences and discuss the relationship between utility maximization behavior and consumer well-being.

DECISION TASK AND CONTEXT

Decisions are easy when consumers know what they want. Unfortunately that is frequently not the case; there are many instances in which consumers have but a sense of what they prefer, and must construct their preferences "on the fly" when a judgment or a choice is called for. Because consumers are affected by a variety of perceptual and judgmental biases, and since they are also often unable or unwilling to invest much time, effort, or attention in constructing their preferences, these preferences can be sensitive to how they were elicited. Examples of significant preference elicitation characteristics discussed below include choice set size, attribute quantity, option similarity and justifiability, presentation format, and response mode.

Choice set size and attribute quantity. Consumers who face a complex judgment or decision frequently use heuristics, decision strategies that simplify the task and are hoped to lead to a decision that is close to the best possible one (see Bettman, Luce, and Payne, 1998). Some heuristics avoid trading off attributes against one another. Such strategies are named *noncompensatory*, as an advantage in one attribute cannot compensate for a disadvantage in others. A lexicographic strategy is a notable example: consumers select the option with the highest value on the attribute that they consider most important, ignoring information about other attributes (in case of ties, they also consider

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the second most important attribute, etc.). Elimination by aspects is another noncompensatory strategy: consumers screen the choice options, and at each round of screening they select the most important attribute and eliminate options that do not exceed a minimum level on that attribute; this process continues until a single option remains. Compensatory strategies, on the other hand, do trade-off among attributes: a high value on one attribute can thus compensate for a low value on another. An example of a compensatory strategy is weighted adding: consumers evaluate each attribute of an option and compute a weighted total score for the option; after obtaining the scores for all the options in the set, consumers can then identify the option with the highest rating. Note that the examples we describe are "pure" strategies, whereas in reality, consumers may use a mixture of strategies or simplified variants of the strategies for a given decision.

Consumers tend to believe that to reach a good decision it is desirable to examine many alternatives, and seek as much information as they can reasonably find about these choice alternatives. However, information about many attributes or choice sets consisting of many options can make decisions too difficult. To illustrate, Iyengar and Lepper (2000) found that more consumers were drawn to a sampling booth of gourmet jams when it displayed 24 different types of jams, compared to when only 6 types were displayed. However, when only 6 jams were displayed more purchases were made – 10 times more than when 24 jams were displayed. These researchers also found that consumers were more satisfied with their choices when they chose from smaller sets of options. In conclusion, it appears that although people often want more options and more information, these are not necessarily beneficial.

Option similarity and justifiability. Consumer decisions are influenced by the extent to which choice options seem similar to one another. For instance, consider consumers choosing between two shirts: *A* that is comfortable to wear but not very stylish, and *B* that is stylish but not so comfortable. Adding to the choice set another shirt, *C*, that is slightly less comfortable and stylish than *A*, but more comfortable than *B*, can increase the attractiveness and relative choice share of shirt *A*. This phenomenon, known as the *asymmetric dominance effect* (attraction effect), violates the economic principle of regularity: adding an alternative to a choice set should not increase the choice share of any option in the original set (Huber, Payne, and Puto, 1982). This effect occurs because presence of the dominated option (shirt *C*) increases the appeal of the dominating option (shirt *A* in our example) as contrast between the former and the latter options helps the trade-off between the different dimensions (style and comfort) appear more favorable to the dominating option (shirt *A*) versus the alternative (shirt *B*).

Consumers are influenced by the extent to which they feel that they can easily justify their decisions, a notion named *reason-based choice*. This notion predicts a variety of interesting phenomena, such as a preference for so-called compromise options (Simonson, 1989). To illustrate, consider our shirt example; if we add to the original choice set of shirts *A* and *B* a shirt *D* that is more comfortable but less stylish than *A* and *B*, both the attractiveness and choice probability of shirt *A* are likely to increase. This is because consumers tend to find choosing an intermediate option (shirt *A*) easier to justify than extreme options (shirt *B* and *D*). This phenomenon is known as the *compromise effect* or *extremeness aversion*.

Presentation format. Consumer decision making is often influenced by how information is organized and presented, as consumers tend to focus on the information that is explicitly displayed and use it in the form that it is displayed. For example, consumers can use price information better when product and price information is presented in a list sorted by unit price than when the same information is displayed in a traditional store setting, price tags on product shelves (Russo, 1977). That said, consumers do sometimes restructure information to make it more suitable for decision making when it seems too arduous to follow the given format.

Information can be displayed so as to establish different standards of comparison (referred to as *reference points*), which, in turn, influence consumer decision making. For example, if consumers are offered a full-featured product and asked to delete features that they do not want, they tend to choose significantly more features than if they are given a base model and asked to add the features they desire (Park, Jun, and MacInnis, 2000). This tendency has been attributed to two important notions in consumer decision making: reference dependence and loss aversion. According to reference dependence, consumers evaluate options by comparing them to reference points rather than evaluating them in absolute terms. In our example, the configuration that consumers first see serves as the reference point against which subsequent configurations are compared. The notion of loss aversion suggests that giving up an item, a feature, or a level of a feature, hurts more than acquiring the same thing feels good; in other words, losing something looms larger than gaining the same thing (Kahneman and Tversky, 1979). In our example, loss aversion drives consumers to add more features than they detract.

Loss aversion can also lead to a preference for the status quo. For instance, in countries where organ donation is the default decision (status quo) and people are given the option to opt out, consent rates tend to be very high, while in countries that generally seem comparable where the default decision is not to donate (an alternative status quo) and people can choose to opt in, consent rates are much lower (3–20 times lower according to Johnson and Goldstein, 2003).

Even arbitrary reference points can impact decision making. For example, Tversky and Kahneman (1974) used a roulette wheel to randomly generate a number, then asked participants in their experiment whether the number of African countries in the UN was higher or lower than that number, and then asked the participants to estimate the actual number of African UN member countries. Those who first saw a large (roulette derived) number estimated the number of African countries in the UN as significantly greater than those who saw a small (roulette derived) number.

More recent research showed that arbitrary anchors can also influence assessments of a sequence of items. The subsequent valuations tend to be "coherent" with respect to perceived differences among the products, "the entire pattern of valuations can easily create an illusion of order, as if it is being generated by stable underlying preferences" (Ariely, Loewenstein, and Prelec, 2003, p. 73). For example, the willingness to pay for a single bottle of wine was shown to be heavily influenced by an arbitrary number, but bids for multiple units of the same wine followed a reasonable logic: if willingness to pay for one bottle was \$X, the willingness to pay for two bottles was a bit less than 200% of \$X, for three bottles it was a bit less than 150% of the bid for two bottles, and so on. This phenomenon was named *coherent arbitrariness*, as the first bid is arbitrary but subsequent bids follow a coherent pattern.

Consumers' judgment of an option can also be shaped by whether the option is presented and evaluated separately or jointly with other options; if a choice option is rated favorably in singular evaluation, consumers may prefer the option less if the option is evaluated jointly with other options; conversely, if the option is not rated very positively in singular presentation and evaluation, its rating may improve in joint judgment (Hsee and Leclerc, 1998).

Meta-cognitive experiences related to presentation format can also influence choice. As an example, when choice information is presented in a fuzzy, difficult-to-read font, the resulting perceptual difficulty (of reading) can be attributed to the choice set. Consumers may infer that choosing between the options is difficult, and this can increase the likelihood of choosing to put off a decision (choice deferral) (Novemsky *et al.*, 2007).

Response mode. Procedure invariance, another important principle in the classical economic decision-making paradigm, requires that equivalent preference elicitation procedures elicit the same preferences. A well-known violation of procedure invariance is the prominence effect (Tversky, Sattath, and Slovic, 1988): prominent (important) attributes are weighed more heavily when people choose among options than when they evaluate the same options in other ways, such as matching. Price matching, for example, asks for the price level at which the options will be equally attractive. To illustrate, when choosing between two programs to reduce traffic accident fatalities, one saving more lives but costing more than the other, people weigh saved lives (the more prominent attribute) more heavily than cost. They therefore tend to choose expensive programs saving more lives, reflecting high willingness to pay to save a life. But when asked a price matching question, such as at what price the program saving more lives is equivalent to the inexpensive program saving fewer lives (the price beyond which the less expensive program saving fewer lives is preferred), they indicate a price roughly proportional in cost per life saved, reflecting lower willingness to pay to save a life.

As another example, consumers' value assessment of the same item can vary greatly depending on how it is assessed. For instance, the highest sum consumers will pay to obtain an item is typically very different from the lowest sum for which they will part from the item. This is true even if potential differences between buyers and sellers (such as liquidity constraints and information asymmetries) are controlled for, and although both types of value assessments should reflect the value that the consumer associates with owning the item. This robust phenomenon (see Maddux et al., in press, for discussion on variation across cultures), named the *endowment effect* (Kahneman, Knetsch, and Thaler, 1990), is due to a combination of factors. One is loss aversion. Another is that buyers and sellers use different heuristics to assess value, each focusing on and thus assessing different aspects of the potential transaction. Buyers focus on the money they stand to forgo should the transaction take place, and thus consider such things as opportunity costs (e.g., other things they could purchase with the money). Sellers, on the other hand, focus on the item that they would forgo should the transaction take place (Carmon and Ariely, 2000).

As yet another example, hedonic dimensions are weighed less heavily in acquisition decisions (which of several options to obtain) than in forfeiture decisions (which of several options to forgo). To illustrate, consumers wishing to buy a chocolate bar and an equally priced notepad, but who can only afford one, are more likely to buy the chocolate when choosing which option to forgo (e.g., if they have both items in their shopping cart when they notice the budget constraint) than when choosing which to select (e.g., if they have neither item in the cart when they notice the budget constraint; Dhar and Wertenbroch, 2000).

Affect in Decision Making

Affect can have considerable impact on consumer decision making. Choices can be so affect-laden that trade-offs among them evoke strong unpleasant emotions. Some consumer decisions reflect reluctance to experience such emotions. For example, consumers sometimes choose to maintain a status quo so as to avoid the unsettling emotions involved with agonizing over which option they should choose instead (Luce, 1998).

Affective state. Affect can significantly influence decision-making processes. Positive affect can sometimes lead to more efficient decision making, for example. Also, when in a positive mood, consumers can decide more quickly and search less for redundant information. When experiencing negative emotions, on the other hand, consumers may seek to make accurate choices to improve how they feel, and may thus engage in more systematic, effortful information processing (Isen, 2001).

How consumers feel as they decide can also color their evaluations. For example, when assessing an object, consumers partly infer their assessment from how the product experience "seems to feel." This is referred to as the "how-do-I-feel-about-it heuristic," or "affect-as-information" (Pham, 1998; Schwarz and Clore, 1988). Incidental emotions (having little to do with the evaluated product, such as gloominess on a cloudy day), can affect how consumers feel at that point in time and can thus contaminate their product assessments, as consumers partly infer their evaluations from how they feel when they assess the product. Thus, positive incidental emotions can lead to more favorable assessments and the opposite is true of negative incidental emotions. Such effects of incidental emotions can be reduced if their true source is made salient. For example, negative effects of gloominess during a cloudy day on product assessment can be reduced if consumers are first explicitly asked what the weather is like then.

Anticipated regret. Anticipated emotions can also influence consumer decision making. For example, when consumers try to predict how they would feel if they were to have made a poor decision, they are more likely to purchase a product that is currently on sale rather than wait for a better sale; they are also more likely to choose higher priced well-known brands (Simonson, 1992). Bar-Hillel and Neter 1996 describe another interesting example of the impact of anticipated affect: participants were first given a lottery ticket and then asked if they would exchange the ticket for another that had objectively better odds. Surprisingly, most participants did not want to trade due to the regret they expected to feel if their original ticket won. More generally, consumers' concerns about the regret that they might feel should their choice turn out badly drive them to seek "safe" choices (*see* EMOTION).

SELF-CONTROL

Consumers regularly face choice situations involving indulgent and utilitarian options. They often choose the short lived satisfaction that comes from indulging themselves at the expense of their longer term goals and interests, even when the negative consequences of their decisions are clear. Owing to the so-called "hot-cold empathy gap," consumers often fail to predict such transgressions when they are in a "cold state" – removed from the tempting situation, in physical distance, in time, or in their thoughts. Being in such a cold state, it is easy to mispredict one's ability to act virtuously in the face of temptation. Worse yet, lapses are often exacerbated by visceral states such as feeling significant deprivation, hunger, or lust (Loewenstein, 1996). For example, consumers who shop for food while they are hungry, tend to buy more than they would otherwise purchase, or will want to consume.

Wertenbroch (1998) distinguishes between vice and virtue goods. Vices (such as rich chocolate cake, or cigarettes) are typically preferred to virtues (such as fresh broccoli, or fat free versions of fatty foods) when consumers focus on the immediate consequences of consumption. To solve their self-control problems, consumers sometimes proactively ration their decisions. For example, they sometimes ration purchase quantity, limiting their stock of vice goods and thus consumption opportunities. Consumers of vice goods seeking to regulate their behavior may thus agree to pay higher unit price (for instance, avoid buying cigarette cartons despite the expected savings). Interestingly, some consumers become so future-oriented that they find it difficult to indulge (Kivetz and Simonson, 2002); to cope with this difficulty, they sometimes precommit to indulge (for example, choose luxury items rather than cash of equal or greater value, as a reward from a loyalty program).

Consumer decision making is shaped by spontaneous affect as well as by cognitive processes. When consumers' cognitive resources are constrained, they are more likely to choose options with higher immediate affective rewards (e.g., chocolate cake); conversely, when processing resources are less constrained, consumers are more likely to choose options with more favorable cognitions (e.g., fruit salad; Shiv and Fedorikhin, 1999). If options are presented vividly (e.g., real chocolate cake and fruit salad are physically placed in front of the consumer), even consumers with sufficient cognitive resources to elaborate on their decisions are likely to be swayed by affective considerations and choose to indulge (*see* IMPULSIVE AND COMPULSIVE BUYING).

MISFORECASTING CONSUMPTION EXPERIENCES

Another reason consumers often fail to select those options that seem best for them is that they often mispredict their satisfaction with their choices. In this section, we discuss examples of prediction errors that can lead to suboptimal decisions.

Consumers' decisions often rely on intuitive predictions about future consumption experiences. Forecasts of how satisfied consumers will be with the consequences of their choices can unfortunately be quite poor. To illustrate this, Kahneman and Snell (1992) asked participants in an experiment to consume a serving of plain yogurt every day for eight days. The participants incorrectly predicted increasing dislike of yogurt, whereas most came to like it more (or dislike it less). Note that this experience of eating yogurt is quite familiar, suggesting that consumers may fair more poorly when it comes to experiences with which they are less familiar.

Another reason that consumers tend to mispredict which decisions will be most satisfying for them has to do with a distinction between how a consumption episode is experienced as it happens and how it is summarized and remembered in retrospect. When consumers retrospectively summarize a consumption episode, they tend to focus only on a few key characteristics, such as the rate at which the experience became more or less pleasant over time, the intensity of the most extreme sensation, and the sensation at the final moment of the experience (Ariely and Carmon, 2000). Summary evaluations tend to represent only few aspects of the actual experience, and can thus be poor representations of the actual episode. Nevertheless, they are the best predictor of future decisions.

Incorrect but self-fulfilling expectations. Consumers' assessment of consumption experiences are influenced by their expectations, as the latter serve as a standard against which the actual experience is compared. Some expectations are based on widely held but incorrect beliefs, such as the notion that lower prices reflect lower quality (in this example the reality is that the empirical correlation between price and quality is negligible). Interestingly, in some instances, expectations that are incorrect can nevertheless be self-fulfilling.

For example, consumers who paid a discounted price for an energy drink that was said to increase mental acuity, derived less benefit from consuming the product (they were able to solve fewer puzzles) versus those who purchased the same product at its regular price (Shiv, Carmon, and Ariely, 2005). Similarly, Lee, Frederick, and Ariely (2006) asked patrons of a pub to evaluate the "MIT Brew" which was made of regular beer to which a few drops of balsamic vinegar was added. When the ingredients were revealed before participants sampled the brew, few liked it. However, when participants received the information immediately after they had sampled the brew, they rated the beer highly and were more likely to choose the special brew over regular beer. In other words, only when they (incorrectly) expected the beer to taste badly did it in fact taste that way.

Impact bias. Impact bias occurs when consumers "overestimate the intensity and duration of their emotional reactions to future events" (Wilson and Gilbert, 2005, p. 131). Focalism, the tendency to fixate on certain attributes or events but ignore (or under weigh) others, is one of the causes of the impact bias. For example, Schkade and Kahneman (1998) found that although people's self-reported life satisfaction was similar whether they lived in the Midwest or in California, when asked to rate a similar person living at the other location, they thought Californians would be more satisfied than Midwesterners. This was explained by people's assessments focusing too heavily on the salient qualities of California (climate and cultural opportunities), and largely ignoring other important determinants of happiness. As another example, consumers tend to recall atypical instances (e.g., the worst experience at a restaurant) and may rely on those rare instances in forecasting how they will react to future consumption events.

A related cause of impact bias is a tendency to neglect or underweigh adaptation to changes in circumstances. In a provocative example, Brickman, Coates, and Janoff-Bulman (1978) describe data suggesting that lottery winners are no happier than the average person, and people who became paralyzed in an accident are no less happy than the average person, a year after the dramatic change to their lives. While this example is controversial and may well overstate people's ability to adapt, due to difficulties in measuring and comparing happiness across people, the general point that, people tend to underestimate their ability to adapt, is widely accepted.

Projection bias. Consumer decisions are also influenced by a projection bias, the inability to sufficiently consider how their preferences may change when circumstances become different (Gilbert, Gill, and Wilson, 2002). For example, when in a "hot" state such as hunger or thirst, consumers tend to overweigh the impact of temporary visceral factors on projections of needs and wants (Loewenstein, 1996). For example, when sexually aroused, men are significantly more willing to engage in unsafe and morally questionable sexual behaviors than they would otherwise consider. (Ariely and Loewenstein, 2006).

Ironic Effects of Trying to Choose Well

Consumers' attempt to choose the very best alternative has interesting consequences for their satisfaction. Studies by Wilson *et al.* (1993) suggest that careful consideration of choices can cause consumers to pay more attention to less important criteria, and therefore choose less satisfying options. Ironically, maximization (seeking the best option) can not only result in normatively better decision outcomes (e.g., better paying jobs) but also in more negative subjective evaluations of the outcomes (e.g., lower job satisfaction). The lower satisfaction of maximizers is said to be due to heavier reliance on criteria that seem objectively important rather than criteria that feel important to them, and greater fixation on unrealized options (Iyengar, Wells, and Schwartz, 2006). Furthermore, those who maximize tend to be more affected by upward social comparisons (naturally dissatisfying comparisons to others who are in a better position), and experience more depression and regret.

Sometimes consumers experience buyers' regret, unsettling displeasure with having made a choice. Ironically, this is common with choices over which consumers extensively elaborated (made an effort to determine the very best option). This happens because elaboration can induce feelings of attachment to the choice options, a sense of prefactual possession of those options. When consumers eventually choose, they effectively lose the prefactual ownership of nonchosen options, which evokes negative feelings associated with loss and increases the appeal of forgone options compared to their appeal before the choice was made (Carmon, Wertenbroch, and Zeelenberg, 2003).

Similarly, over time, satisfaction with the chosen outcome can decrease for those consumers who considered alternatives before they chose. Ironically, satisfaction with a randomly assigned option, as well as satisfaction of consumers who did not consider alternatives, tends to remain comparatively stable (Ritov, 2006). On a related note, when consumers make hyperopic choices (choices emphasizing long- rather than short-term benefits) of virtue over vice, they may experience increasing regret over time because time attenuates emotions of indulgence guilt, but accentuates wistful feelings of missing out on hedonic pleasures, leading to intensified regret (Kivetz and Keinan, 2006) (*see* CONSUMER WELL-BEING).

Summary

Many thoughtful researchers still defend the view that consumer decisions should be considered rational. In contrast, there is a large and growing body of evidence suggesting that consumers are not the *homo economicus* that the classical economic paradigm portrays. Consumers are limited by finite mental capacity; in many situations they have only a sense of what they prefer and must therefore construct their preferences on the fly, and those preferences tend to be contingent on the characteristics of the decision task and context. Consumers' decisions are often swayed by the affect they experience and anticipate and by their predictions regarding future consumption experiences that are often inaccurate. Consumers' attempt to seek utility-maximizing outcomes, ironically, may harm rather than improve their well-being. Although these insights do not yet make up a coherent theory of consumer decision making, they do suggest that *Homo sapiens*' rationality is predictably fallible.

Consumers' decision biases and errors, such as those we review here, can lead to suboptimal decisions. That said, consumers' decisions are often "good enough." In part this is because the heuristics that consumers use are often reasonably effective, and partly since many decisions, including ones in which consumers invest much energy are largely inconsequential, either because the decision is between good alternatives or because the decision is of little real importance. However, in some situations errors can have serious consequences (such as failing to save enough for retirement). The notion of Libertarian Paternalism (Thaler and Sunstein, 2008) proposes that " ... knowledge of how people think be used to design choice environments that make it easier for people to choose what is best for themselves, their families and their society." For example, a simple change to employees' default decision so that they regularly contribute money to their retirement savings account unless they choose to opt out (instead of the default being not to save unless they choose to opt in) could greatly help combat failure to save enough for retirement. The paternalistic flavor is controversial, though its proponents point out that it does *not* affect the freedom to choose.

In conclusion, the debate over whether and to what extent consumer decisions can be considered rational has spurred a large body of research yielding many insights into how consumers decide. Beyond that, however, approaches such as that of Libertarian Paternalism, using research on customer decision making to help consumers, seem more productive. We hope that future research will not only work toward developing a complete theory of consumer decision making but also shed more light on how this knowledge can be used to help consumers become better decision makers.

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