



# Buyer Behavior

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*All models are wrong, but some are useful.*

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## Chapter 1 Becker-DeGroot-Marschak Mechanism

[Karni and Safra(1987)] showed that the BDM is not incentive compatible when the object being valued is a lottery. The BDM can elicit the certainty equivalents of given lotteries if and only if the respondent's preferences can be represented by expected utility functional.

## Chapter 2 Choice in Context

### 2.1 [Simonson(1989)]: Choice Based on Reasons: The Case of Attraction and Compromise Effects

Two effects about consumers' choices are introduced:

1. **Attraction Effect** (asymmetric dominance effect): When an asymmetrically dominated or relatively inferior alternative is added to a set, the attractiveness and choice probability of the dominating alternative increase.
2. **Compromise Effect**: An alternative would tend to gain market share when it becomes a compromise or middle option in the set.

This paper uses the framework that decision makers make the choice that is supported by the best overall reasons to analyze these attraction and compromise effects.

It's good that this paper aims to explain both the attraction and compromise effects through a single framework. However, the mechanism and explanation the paper proposes for these two effects is not fully validated by the experiments.

Decision-makers take into account others' evaluations and make choices based on their expectations of the evaluators' preferences. One reason for choosing middle alternatives may be the uncertainty surrounding these preferences. But what if the evaluators' preferences are clearly defined and extreme? I would propose an experiment where participants are told their decisions will be evaluated by evaluators with a common, extreme preference. According to the theory presented in the paper, participants would then be more likely to choose an extreme alternative that aligns with the evaluators' preferences, rather than opting for a middle option. This could help further test and refine the proposed mechanism and explanation.

### 2.2 [Simonson and Tversky(1992)]: Choice in Context: Tradeoff Contrast and Extremeness Aversion

This paper takes a context-based approach to explain tradeoff contrast and extremeness aversion, which also offers a new mechanism for understanding the attraction and compromise effects described in earlier work. By framing decision-making through the lens of reference dependence and loss aversion, it provides a powerful alternative to the traditional value maximization framework in classical economic theory, where such psycho-

logical influences are often overlooked.

This perspective is especially useful for firms in designing product lines and attributes, as it highlights how the context in which products are presented can significantly influence consumer preferences. However, while the theory is compelling, it would be even more impactful if we could quantify these context effects and the degree of loss aversion. Such quantification could broaden the practical applications.

In the future (or perhaps this is already done), it would be beneficial to develop formal models that integrate this framework into economic theory, enabling its use in quantitative analysis. A formalization of context effects and loss aversion within an economic model would bridge the gap between behavioral insights and actionable, data-driven decision-making.

## 2.3 [Evangelidis, Levav, and Simonson(2018)]: The Asymmetric Impact of Context on Advantaged Versus Disadvantaged Options

To explain this, the authors propose a hierarchical decision-making framework:

1. Firstly, decision makers examine whether one of the alternatives dominates all the others in the set. If there is no such alternative,
2. decision makers then search for the next easiest solution - an option that allows them to avoid considering the subjective value of an attribute and making detailed analyses of trade-offs. If they still cannot find such an option,
3. they determine which of the two attributes is most important to them and select the option that scores the highest on that attribute.

This paper examines the asymmetric impact of context effects, specifically showing that such effects are more likely to occur when a new option similar to the disadvantaged alternative (the weaker or lower-share option) is introduced into a binary choice set. This finding builds on previous literature, offering a fresh perspective on how context influences decision-making, particularly in relation to asymmetric dominance and extremeness aversion.

One of the key contributions of this paper is the proposal of a hierarchical decision-making process, which highlights the complexity behind consumer choices. Unlike prior research that tends to assume a simpler decision-making process of trade-offs, this approach emphasizes that individuals may use different strategies depending on the choice set. By recognizing this, the paper suggests that incorporating hierarchical models of decision-making or information acquisition provide new insights for future research, both in quantitative and behavioral studies.



From a practical standpoint, the paper's insights are valuable for firms designing product lines or attributes. However, while understanding the decision-making process is crucial, companies typically base their product designs on consumer preferences. Combining insights on consumer preferences with the decision-making process could significantly enhance the applicability of these findings in practice. Unfortunately, this paper does not explore the interaction between these two factors, leaving an important and interesting direction for future research.

## 2.4 [Evangelidis, Levav, and Simonson(2023)]: The Upscaling Effect: How the Decision Context Influences Tradeoffs between Desirability and Feasibility

This paper introduces a novel context effect, termed the upscaling effect, wherein the introduction of a symmetrically dominated decoy option increases the choice share of the high-desirability (HD) option rather than the high-feasibility (HF) option. The authors propose a two-stage decision-making process to explain this phenomenon, suggesting that consumers first identify the HD option as a promising alternative and then seek justifications to support this choice, particularly when a decoy is introduced.

1. Individuals first look for “the alternative that most naturally can be seen as dominant over the others.”

This paper proposes that a high-desirability (i.e., HD) option is more likely to be identified as a promising alternative compared to a high-feasibility (i.e., HF) alternative.

2. Secondly, consumers will seek to accumulate evidence that supports choice of the promising alternative.

Generally, if consumers can identify a reason that allows them to justify choosing the HD option, they will terminate the decision process by selecting the said option. If they cannot identify strong enough reasons supporting the choice of the HD option, consumers may subsequently look for reasons supporting the choice of the HF alternative or defer choice.

This theory builds on the choice based on reasons framework, similar to the approach used in prior research. It's a valuable perspective for understanding decision-making processes, but I wonder whether the reference dependence and loss aversion framework from another key paper could also explain this effect. For instance, a simple explanation could be that introducing a dominated decoy lowers individuals' reference points for both desirability and feasibility. Consequently, the loss aversion associated with the lower feasibility of the HD option diminishes, making the HD option more appealing and gaining a higher market share.

Beyond this alternative explanation, it would be interesting to examine the upscaling effect in non-binary choice sets, which could have more practical implications. Extending the study of this effect beyond binary sets may offer valuable insights into more complex real-world business applications.

## Chapter 3 Overthinking

### 3.1 [Wilson et al.(1993)]: Introspecting About Reasons Can Reduce Post-Choice Satisfaction

This paper presents a theory suggesting that people assign different weights to the attributes of alternatives when making choices, and introspecting about reasons can disrupt this process. The theory posits that when people analyze their reasons, they tend to focus on attributes that are easier to verbalize and that seem like plausible reasons, even if they aren't the most important factors in their initial evaluations. This shift in focus can lead to a suboptimal weighting of attributes, altering preferences. Over time, as the initial weighting scheme reasserts itself, individuals may regret their choices.

The theory is intriguing, but several points remain unclear. For instance, what are the specific attributes that become underweighted in the suboptimal weighting scheme? Additionally, this theory doesn't align well with other models of decision-making, such as those we recently studied, which rely on reason-based choice rules. In this theory, reasons are seen as potentially disruptive to decision-making, whereas other frameworks view them as integral to the process. Is there a theoretical approach that can reconcile these differing perspectives on the role of reasons in decision-making?

### 3.2 [Dijksterhuis et al.(2006)]: On Making the Right Choice: The Deliberation-Without-Attention Effect

There are some evidence suggests that unconscious thought can sometimes lead to good choices. Unconscious Thought Theory (UTT) is formulated in [Dijksterhuis and Nordgren(2006)], which gives the strengths and weaknesses of conscious thought and unconscious thought:

1. Conscious thought is rule-based and very precise.
2. Because of the low capacity of consciousness, conscious thought is less suitable for very complex issues.

(It has been shown that during unconscious thought (deliberation without attention), large amounts of information can be integrated into an evaluative summary judgment.)

This theory is compelling, yet it does not consider how decision-makers apply decision rules, particularly how they manage the limited capacity of conscious thought. Moreover, UTT separates decision-making from the information acquisition process. Are decision-makers relying on unconscious thought able to gather as much



information as those using conscious thought?

### **3.3 [Lee, Amir, and Ariely(2009)]: Stronger Emotional Response Yield Consistent Preferences**

Previous research has established the dual-system model, where both the emotional and cognitive systems contribute to decision-making. This paper hypothesizes that a greater reliance on the emotional system can result in more consistent preferences across individuals. In the experiments, the authors attempt to manipulate the use of the emotional system in various ways. However, I find the experimental controls somewhat lacking in reliability. The use of the term “emotional” does not seem entirely precise or convincing in relation to the methods employed in the experiments.

### **3.4 [Pham, Lee, and Stephen(2012)]: The Emotional Oracle Effect**

This paper explores the concept of the “Emotional Oracle Effect,” demonstrating that individuals who have a higher trust in their feelings are better able to predict the outcomes of future events compared to those with lower trust in their emotions. Across eight studies, participants predicted various outcomes, such as political elections, movie box-office results, stock market trends, and even the weather. The results indicate that trusting one’s feelings provides access to a “privileged window” of accumulated, often unconscious, knowledge, allowing for more accurate judgments. However, the effect was only present when individuals had sufficient background knowledge about the domain and dissipated when outcomes became inherently unpredictable. While the study highlights the value of emotional reliance in prediction tasks, it also raises questions about the limits of this effect, particularly in domains where rational, rule-based thinking is typically prioritized. Overall, the findings challenge traditional views that emotions hinder decision-making and suggest that feelings can, under certain conditions, be a reliable guide for future predictions.

## Chapter 4 Overconfidence

### 4.1 [Moore and Healy(2008)]: Theory of Confidence

Overconfidence is defined in three distinct way:

1. *Overestimation*: the overestimation of one's actual ability, performance, level of control, or chance of success.
2. *Overplacement / Better-than-average*: people believe themselves to be better than others, such as when a majority of people rate themselves better than the median.
3. *Overprecision*: excessive certainty regarding the accuracy of one's beliefs.

There are three most common problems identified in overconfidence:

1. The Confounding of Overestimation and Overprecision.
2. Underconfidence.
3. Inconsistency Between Overestimation and Overplacement.

This article proposes *a theory of confidence*: After experiencing a task, people often have imperfect information about their own performances but even worse information about the performances of others. As a result, people's post-task estimates of themselves are regressive, and their estimates of others are even more regressive. Consequently, when performance is exceptionally high, people will underestimate their own performances, underestimate others even more so, and thus believe that they are better than others. When performance is low, people will overestimate themselves, overestimate others even more so, and thus believe that they are worse than others.

#### Formal Model

People hold a subjective probability distribution (SPD) of their own score and an SPD of others' scores over the range of possible outcomes on any task.

1. *Overestimation* occurs when a person's SPD of his or her own score has a mean that is greater than the person's actual score on the task.
2. *Overplacement* occurs when a person's SPD of his or her own score has a mean that is greater than the mean of the SPD of others' scores and this belief is not justified by differences in actual scores between self and others.
3. *Overprecision* describes an SPD that is narrower (has lower variance) than reality suggests it ought to be.

Suppose there is a quiz taker  $i$  who has a belief about her likely score, which is denoted by a random variable  $X_i$ .  $X_i$  is assumed to be decomposed into two components:

$$X_i = S + L_i,$$

where  $S$  is the global average score on the quiz and  $L_i$  is the idiosyncratic performance on the quiz of the quiz taker.

The  $i$ 's prior beliefs about  $S$  and  $L_i$  are assumed to be  $\mathcal{N}(m_S, v_S)$  and  $\mathcal{N}(0, v_L)$ , respectively. Then, the prior belief about  $X_i$  is  $\mathcal{N}(m_S, v_S + v_L)$ .

We consider the four points in time:

1. *Prior stage*: before the quiz, when the individual has no useful information about anyone's performance.
2. *Interim stage*: after taking the quiz but before learning her own score or the score of anyone.

We think of  $i$  as having observed a signal of her score  $y_i$ , which is assumed to be a realization of a random variable  $Y_i = X_i + E_i$ , where  $E_i \sim \mathcal{N}(0, v_E)$ .

3. *Posterior stage*: after learning her own score, but not the scores of others.
4. *Resolution*: after learning the scores of others.

In the *interim stage*, the expected score of  $i$  given  $y_i$  is

$$\mathbb{E}[X_i | y_i] = \alpha m_S + (1 - \alpha)y_i, \text{ where } \alpha = \frac{v_L + v_E}{v_S + v_L + v_E}$$

**Overconfidence** Given  $y_i$  is unbiased, we have

$$\mathbb{E}_{Y_i|x_i}[\mathbb{E}[X_i | y_i]] = \alpha m_S + (1 - \alpha)x_i$$

where  $x_i$  is the true score  $x_i$ .

Therefore, if the quiz is easier than expected ( $x_i > m_S$ ), we have  $m_S < \mathbb{E}_{Y_i|x_i}[\mathbb{E}[X_i | y_i]] < x_i$ . That is, we observe underestimation. If the quiz is harder than expected ( $x_i < m_S$ ), we have  $m_S > \mathbb{E}_{Y_i|x_i}[\mathbb{E}[X_i | y_i]] > x_i$ . That is, we observe overestimation.

**Overplacement** Suppose that individual  $i$  is told her true score  $x_i$  and is asked report her expectation about individual  $j$ 's score.

To infer  $X_j = S + L_j$ , we study the inference for the overall average score on the quiz  $S$  because  $\mathbb{E}[X_j | x_i] = \mathbb{E}[S | x_i]$ . Using Bayes's law,  $i$ 's expectation of  $S$  given  $x_i$  is

$$\mathbb{E}[S | x_i] = \beta m_S + (1 - \beta)x_i, \text{ where } \beta = \frac{v_L}{v_S + v_L}$$

Therefore,  $i$  exhibits an overplacement ( $m_S < \mathbb{E}[X_j | x_i] < x_i$ ) if her own score is above the prior expected average (because the quiz was easier than expected), and exhibits an underplacement ( $m_S > \mathbb{E}[X_j | x_i] > x_i$ )

if her own score is below the prior expected average (because the quiz was harder than expected).

**Overprecision** Estimations made by people whose signals are less informative about their true scores ought to be more regressive and ought therefore to display greater underestimation on easy tasks, as well as more overestimation on difficult tasks.

## Chapter 5 Wisdom of Crowds

### 5.1 [Mannes, Soll, and Larrick(2014)]: The Wisdom of Select Crowds

Previous works show that neither relying on the average opinion nor a single expert is a robust strategy for accurate judgment. This paper demonstrates that averaging the opinions of a selected group of the most knowledgeable judges leads to more accurate and robust judgments. Moreover, this strategy appeals to those distrustful of relying on crowd-based methods.

This is an interesting paper, but while it provides evidence for a strategy that is more robust and accurate than the traditional wisdom of crowds, the conclusions are not particularly groundbreaking. The idea of selectively averaging opinions based on expertise can be easily derived from basic statistical principles and seems more like common sense than an innovative discovery. However, it is still good to have empirical evidence to strengthen this point.

### 5.2 [Simmons et al.(2011)]: Intuitive Biases in Choice versus Estimation

Previous research shows that bettors tend to exhibit an intuitive bias, leading them to believe that the superior team (i.e., the favorite) is more likely to win. This bias causes them to underweight point spreads, even when explicitly informed that the spreads are biased. Furthermore, this bias not only persists but strengthens over time, a phenomenon explained by attribution theory: bettors attribute winning predictions to their own skill and intuition, while attributing losses to bad luck. This paper demonstrates that a different elicitation method can eliminate this judgment bias.

This paper provides an interesting contribution by highlighting how behavioral biases can distort elicited judgments and the importance of employing the correct elicitation method. These findings can also offer valuable insights for economic research. In many mechanism design problems that aim to elicit truthful reports, behavioral biases play a crucial role but are often overlooked.

### 5.3 [Gaertig and Simmons(2021)]: The Psychology of Second Guesses:

#### Implications for the Wisdom of the Inner Crowd

Previous research has shown that a small improvement can be achieved by averaging two guesses from the same individual, known as the “wisdom of the inner crowd.” This paper demonstrates that the effectiveness of

this phenomenon depends on the processes individuals use to make their second guesses. For example, asking whether the first guess was “too high” or “too low” before the second guess tends to weaken the wisdom of the inner crowd effect in most cases.

This is an interesting paper, as it provides empirical evidence for a behavior that could be inferred from statistical principles. It is valuable to see experimental data confirming such intuitive ideas, emphasizing the importance of how the second guess is elicited to maintain the benefits of the wisdom of the inner crowd.



## Chapter 6 Emotions / Regret

### 6.1 [Frijda(2017)]: The Laws of Emotion

The law of emotions is illustrated by “the law of situational meaning”: emotions arise in response to the meaning structures of given situations. (In other words, meaning structures are lawfully connected to forms of action readiness.)

The law of situational meaning has a necessary complement in “the law of concern”: Emotions arise in response to events that are important to the individual’s goals, motives, or concerns. Moreover, the events to be appraised as real and the intensity of emotions corresponds to the degree to which they are perceived as real (Law of Apparent Reality).

The emotions obey “the law of change (Habituation / Comparative Feeling)”: emotions are elicited by the actual or expected change. This law follows 1. “The law of hedonic asymmetry”: the pleasure disappears with continuous satisfaction while the pain persists with continuous adverse conditions; 2. “The law of conservation of emotional momentum”: emotional events retain their power to elicit emotions indefinitely, unless counteracted by repetitive exposures that permit extinction or habituation, to the extent that these are possible.

The emotion response follows “the law of closure”: Emotions tend to be closed to judgments of relativity of impact and to the requirements of goals other than their own. At the same time, every emotional impulse elicits a secondary impulse that tends to modify it in view of its possible consequences, which is called “the law of care for consequence.” Human also tends to minimize negative emotional load when the situation can be viewed in alternative ways, which is called “the law of the lightest load.”

**(Summary:** This article explains how emotions follow a set of “laws” that govern their emergence and regulation. The law of situational meaning suggests that emotions arise from how we interpret events, with different situations triggering different emotions. The law of concern states that emotions are only triggered by events that matter to our personal goals or concerns. The intensity of these emotions is determined by the law of apparent reality, meaning the more real an event feels, the stronger the emotional response. Emotions are more likely to be triggered by changes rather than ongoing states, which is captured by the law of change. According to the law of hedonic asymmetry, pleasure fades with continuous satisfaction, but pain can persist in difficult conditions. The law of emotional momentum explains that emotions do not fade over time unless repeatedly exposed to the same event. Emotions often focus intensely on the present, as described by the law of closure, but are moderated by the law of care for consequence, which adjusts emotional responses to avoid negative outcomes. Lastly, the

law of the lightest load and law of the greatest gain suggest that people tend to interpret situations in ways that minimize emotional distress or maximize emotional benefit. This is an interesting introduction to emotions and I have no comment on it.)

## 6.2 [Zeelenberg and Pieters(2007)]: A Theory of Regret Regulation 1.0

Regret is a negative, self-blaming emotion that arises when people realize or imagine that their situation could have been better had they made different choices. It is a comparison-based emotion influenced by how one evaluates past decisions and their consequences. People are motivated to regulate regret in order to maximize immediate outcomes and improve future decision-making. Individual differences in the tendency to experience regret are linked to how much one compares and strives to maximize outcomes. Regret can occur both in response to past decisions (retrospective regret) and anticipated future choices (prospective regret), particularly when decisions are difficult, important, and when outcomes of both chosen and unchosen options will soon be known. Regret can stem from actions and inactions, with more justifiable decisions generally reducing the intensity of regret. Although regret aversion—avoiding regret—and risk aversion are distinct, they both independently influence decisions. For instance, in situations where participants could choose between a risky or safe option, those expecting feedback on the safe option were more likely to choose it. However, I question whether risk aversion is truly independent of regret aversion, as uncertainty also exists in regret decisions (the “regret lottery”), so how can we be sure that risk aversion does not influence regret aversion as well?

## 6.3 [Zeelenberg and Pieters(2007)]: Regret Theory: An Alternative Theory of Rational Choice Under Uncertainty

In the most stylized form, the model can be summarized as

$$m_{ij}^k = c_{ij} + R(c_{ij} - c_{kj})$$

The model presented in the equation is a stylized way of formalizing regret aversion, and it provides an interesting perspective. However, from a mathematical standpoint, the model appears quite similar to the concept of reference dependence. This raises the question: can regret aversion be explained by reference dependence? Specifically, if both regret and reference dependence involve comparisons between actual outcomes and potential alternatives, is regret aversion simply a specific form of reference-dependent decision-making?

## Chapter 7 Uncertainty

### 7.1 [Fox and Tversky(1995)]: Ambiguity Aversion and Comparative Ignorance

The paper presents the *comparative ignorance* hypothesis, which suggests that ambiguity aversion arises when people compare events with different levels of familiarity or when they compare themselves to more knowledgeable individuals. This comparison causes the less familiar or more ambiguous event to appear less attractive, while the familiar event becomes more appealing. In essence, when making decisions involving uncertainty, ambiguity aversion is heightened through contrasts, and it diminishes when events are evaluated in isolation. This is an interesting paper, I don't have any comment on it.

### 7.2 [Gneezy, List, and Wu(2006)]: The uncertainty effect: When a risky prospect is valued less than its worst possible outcome

This paper introduces the uncertainty effect, which suggests that individuals sometimes value a risky prospect less than its worst possible outcome. In one of the experiments, participants showed a higher willingness to pay (WTP) for a \$50 gift certificate than for a lottery offering a 50% chance at a \$50 or \$100 gift certificate. The results challenge traditional decision-making models, which assume that the value of a risky prospect should lie between its best and worst outcomes. The study suggests that in certain choice situations, decision-makers discount lotteries due to uncertainty in ways that are not easily explained by standard models.

This research uses non-monetary rewards (such as gift certificates) instead of fiat currency for valuation, which introduces additional cognitive demands on participants. Since the internality axiom is more intuitive with cash-based prizes, how significant is the loss of acuity caused by the need to translate non-monetary rewards into pricing terms? Is there any research that explores the relationship between this loss of acuity and the uncertainty effect?

This uncertainty effect is also called the *Direct risk aversion*, which has been checked by [Simonsohn(2009)].

### **7.3 [Mazar, Shampanier, and Ariely(2017)]: When Retailing and Las Vegas Meet: Probabilistic Free Price Promotions**

This research shows that, for planned purchases, a probabilistic free price promotion is preferred to a sure price promotion of equal expected monetary value. This preference is not driven by an attraction to a zero price, an aversion to transaction cost, or novelty, but rather primarily due to a diminishing sensitivity to the prices.

### **7.4 [Gaertig, Simmons, and Hall(2018)]: Why (and When) Are Uncertain Price Promotions More Effective Than Equivalent Sure Discounts?**

“Peanuts Effect” has found that risk-aversion decreases with decreasing monetary amounts, such that at very small stakes people are relatively more likely to be risk seeking than risk averse. Based on the “peanuts effect”, this paper shows that, probabilistic price promotions are more attractive than equivalent sure discounts only when those sure discounts seem trivial. Note that the same amount may be seen as large or small depending on how it is framed, and that framing can in turn influence risk preferences.

Mazar et al. (2017) found that for planned purchases, consumers generally prefer probabilistic free price promotions over certain price discounts of equal expected monetary value. They suggest that this preference arises primarily from diminishing sensitivity to price differences, meaning that smaller discounts are perceived as less impactful, leading consumers to prefer the uncertainty of a potentially larger reward.

However, Gaertig and Simmons (2022) show that probabilistic price promotions are more appealing than equivalent sure discounts only when the sure discounts seem trivial, but they argue that this effect is driven not by diminishing sensitivity or the overweighting of small probabilities, but by how the size of the sure discount is perceived. They demonstrate that framing can significantly influence consumers’ risk preferences, with smaller sure discounts making probabilistic promotions more attractive.

## Chapter 8 Anticipatory, Experienced, and Remembered Utility

1. Under what conditions do anticipatory, experienced, and remembered utility carry more weight in terms of the total utility that a consumer experiences around a specific single event (e.g. watching a movie)?

**Answer:** 1. Anticipated Utility carries more weight when the event is uncertain with high expectations and there is a time delay of the event. 2. Experienced Utility carries more weight when the event is longer and when the consumer has stronger sensory or emotional perceptions. 3. Remembered Utility carries more weight when the experience has intense peaks or a memorable ending.

2. Do you think that the field of consumer behavior has over emphasized the study of experienced utility compared to anticipatory and remembered utility? If so, why?

**Answer:** I am not familiar with the field of consumer behavior. However, based on my limited knowledge in behavioral economics and the papers I have read in this class, I do not think the experienced utility is overemphasized. Experienced utility is prioritized because it is the easiest to measure and exhibits the least variability among consumers. For these reasons, it holds greater importance and naturally receives more focus compared to anticipatory and remembered utilities.

3. If you were giving advice to a utility researcher about which type of utility they should study, what would it be and why? Let's assume that they can only pick one.

**Answer:** Experienced utility. As I mentioned before, it is the easiest to measure and exhibits the least variability among consumers, making it the most practical and reliable choice for identifying patterns in consumer behavior. It is the most likely to be accurately predicted, providing clear insights into real-time consumer responses.

4. Assume you are a travel agent helping someone plan a vacation. How would you design that vacation (from planning, to experiencing, to remembering it), to maximize the overall utility (anticipated, experienced, and remembered) that the traveler would have? Additionally, how would you design the vacation to maximize the likelihood that the traveler would book your travel agency services again in the future?

**Answer:**

- (a). To enhance anticipated utility, provide personalized recommendations based on the traveler's interests, preferences, and past experiences. Additionally, supplying a detailed itinerary with highlights of destinations, transport, and accommodations builds anticipation, as travelers feel informed and eager for the experience ahead.
- (b). For experienced utility, ensure high-quality service and introduce unexpected delights during the

trip, such as surprise upgrades or unique local experiences. These gestures create peak moments that increase immediate enjoyment and help sustain a high level of satisfaction throughout the vacation.

- (c). To strengthen remembered utility, provide meaningful souvenirs, so travelers can relive and cherish their memories. Additionally, encouraging them to share photos and stories on social media reinforces these positive recollections, allowing them to reflect on and share their experiences, which also attracts potential new clients.
- (d). To increase the likelihood of repeat bookings, offering rewards and exclusive offers for similar trips to the one consumers are satisfied with.

5. Now assume that you sell high-end personal use coffee machines. Again, how would you design the product and marketing campaign around that product to maximize the overall utility (anticipated, experienced, and remembered) that the customer would have? Why, if at all, would your strategy be different from that of the travel agent in the previous question?

**Answer:** Coffee machines are durable goods. The product design and marketing campaign should focus primarily on anticipated and experienced utility, with a strategic but less central focus on remembered utility due to the product's durable nature. To enhance anticipated utility, we can highlight the high-end features and the benefits of the product through visuals. For experienced utility, we can emphasize durable design and reliable performance to enhance satisfaction over time.

6. How would you effectively measure each of the three components of utility? **Answer:** For anticipated utility, we can ask participants to self-report. For experienced utility, we can ask participants to give moment-by-moment self reports, or use physiological and behavioral measures. For remembered utility, we can ask participants to give retrospective surveys.
7. I know I said we're not dealing with affective forecasting, but here we go. How do you think the intensity of anticipatory utility influence their forecast of what experienced utility would look like? Should people under-forecast an experience's experienced utility to not create downward counterfactuals? **Answer:** Intense anticipatory utility often inflates expectations for experienced utility by focusing on imagined peak moments and amplifying emotional intensity. This can lead to forecasting errors, as people may overestimate the duration of their pleasure or discomfort during the actual experience. Yes, under-forecasting experienced utility can be a useful strategy for enhancing satisfaction and minimizing disappointment.
8. Are there cases where people might choose an experience to maximize different aspects of utility? As in, might people choose an experience that has low experienced utility, but, for whatever reason, high anticipatory and/or remembered utility?

**Answer:** Running a Marathon.



## 8.1 [Loewenstein and Elster(1992)]: Choice over time

**Structure of Emotions** ‘Primary emotions’ arise in our immediate encounters with the external world, directly related to current experiences.

‘Nonprimary experiences’ affect emotions through two effects:

1. *Consumption effect* (backward and forward): we can derive utility from the past or future experiences. (The hedonic sign of the nonprimary experience is preserved in the consumption effect.)
2. *Contrast effect*: nonprimary experiences provides contrasts and conditions to make primary experiences more or less gratifying. (The hedonic sign of the nonprimary experience is reversed in the consumption effect.)

The consumption effect and the contrast effect of an event require the event to be presence in consciousness and the event is similar to the current experiences. Memory has object events that are certainties, while anticipation focuses on events that are inherently uncertain, which come with savoring and dread.

## 8.2 [Galak and Redden(2018)]: The Properties and Antecedents of Hedonic Decline

The antecedents to hedonic decline can be summarized by three kinds of factors:

1. **Physiological Feedback Factors**: Physiological states like glucose levels and hormones such as leptin and testosterone affect consumption enjoyment. For instance, food enjoyment can decline as satiety is reached due to rising glucose levels or stomach distension, which signals reduced need for further intake.
2. **Perceptual Changes Factors**: Changes in sensory perceptions, such as sensory-specific satiety (the diminishing pleasure from repeated exposure to the same flavor), cause stimuli to be perceived as less enjoyable. Variety, stimulus type, and attention also play roles in moderating decline. For example, consuming a stimulus at a high frequency accelerates hedonic decline, while introducing variety slows it.
3. **Self-Reflection Factors**: Reflecting on past consumption experiences can make one feel satiated more quickly. Self-reflective factors such as perceived past variety and monitoring the quantity consumed can reduce the experienced utility by increasing the perceived exposure to a stimulus.

## 8.3 [Morewedge(2015)]: Utility: Anticipated, Experienced, and Remembered

Morewedge characterizes utility into three primary components: *Anticipated Utility*, *Experience Utility*, and *Remembered Utility*.

1. **Anticipated Utility** is the expected pleasure or pain from a future experience, shaping decisions and often overestimated. Research shows that anticipated utility can lead to "forecasting errors," where actual experiences differ from predictions.
2. **Experience Utility** refers to the pleasure or pain felt during the actual moment of an experience, or "instant utility," measured by direct sensory or emotional responses. Context and individual differences significantly influence this utility.
3. **Remembered Utility** is the retrospective evaluation of an experience, often dominated by the "peak-end rule," focusing on the most intense moments and endings. Remembered utility can bias future choices, as individuals may rely on potentially inaccurate recollections of past experiences.

Together, these components highlight how misalignment between anticipated, experienced, and remembered utilities can lead to suboptimal decision-making.

## Chapter 9 Field Experimentation

### 9.1 [Jung, Perfecto, and Nelson(2016)]: Anchoring in Payment: Evaluating a Judgmental Heuristic in Field Experimental Settings

This paper investigates the anchoring effect in field experiments, particularly through the “pay what you want” (PWYW). It finds that the distributional gap between anchors (how they rank within the range of payments) is a stronger predictor of anchoring effects than the absolute numerical difference. Additionally, low anchors have a more pronounced effect on lowering payments compared to the influence of high anchors on raising them. (However, it may not be due to the anchoring effect).

### 9.2 [Brucks and Levav(2022)]: Virtual communication curbs creative idea generation

This study demonstrates that virtual communication can hinder creative idea generation compared to face-to-face interactions, as the virtual environment narrows participants’ visual focus to the screen, limiting cognitive scope and thus reducing divergent thinking. However, the study also found that virtual communication did not negatively impact, and sometimes even enhanced, the effectiveness of idea selection.

For larger teams, where face-to-face communication may be challenging due to coordination issues, could a well-designed virtual communication setup (e.g., breakout discussions, turn-taking mechanisms, anonymous voting) facilitate more effective communication, potentially leading to higher quality of ideas, thereby surpassing the effectiveness of in-person communication in certain scenarios?

### 9.3 [Duke and Amir(2023)]: The importance of selling formats: When integrating purchase and quantity decisions increases sales

This study examines how different selling formats influence consumer purchase decisions. By integrating the purchase and quantity choices into a single step—the “quantity-integrated format”—rather than separating them as in the “quantity-sequential format,” purchase rates can significantly increase. Both field and lab experiments show that the integrated format boosts the likelihood of purchase, particularly for higher-priced items. This approach encourages consumers to focus on immediate buying decisions, reducing drop-off points in the purchase

process and leading to increased sales for retailers.

## **9.4 [Gershon and Jiang(2024)]: Referral Contagion: Downstream Benefits of Customer Referrals**

This paper demonstrates that referred customers are significantly more likely to refer others. Through large-scale field data and experiments, the study finds that referred customers perceive referrals as more socially appropriate, which boosts their referral behavior. A simple reminder of their referral origin further increases referral rates, suggesting that firms can enhance the effectiveness of referral programs by emphasizing social norms. This is an interesting paper that combines psychological theory and quantitative methods.

## Chapter 10 Attitude

Three kinds of measures of attitudes:

1. Very Negative to Very Positive (can be combined with confidence level).
2. Neutral to Extreme.
3. Ambivalence (e.g. someone has both extremely negative ideas and extremely positive ideas).

### 10.1 [Bechler, Tormala, and Rucker(2021)]: The Attitude–Behavior Relationship Revisited

Bechler et al. (2021) challenge the traditional linear view of the attitude-behavior relationship by presenting evidence for a cubic pattern, where behavior shifts most sharply as attitudes move from negative to positive. While innovative, the research relies heavily on self-reported data and online samples, raising concerns about biases such as extremeness avoidance and limited sensitivity at attitude extremes. The findings may oversimplify real-world behaviors and require further exploration of biases and broader contextual factors to strengthen their applicability.

### 10.2 [Goldenberg et al.(2023)]: Homophily and acrophily as drivers of political segregation

Goldenberg et al. (2023) introduce the concept of acrophily—preference for affiliating with individuals who hold more extreme versions of one’s political views—as a significant driver of political segregation alongside homophily. The research demonstrates that both liberals and conservatives exhibit acrophily in their social connections, which contributes to increased political polarization. The paper reveals that individuals perceive more extreme views as prototypical of their political group, which explains their attraction to these views.

### 10.3 [Rucker et al.(2024)]: The Allure of Consensus: People (Over)Seek Consensus in Selecting Group Persuasion Strategies

Rucker et al. (2024) reveal that people strongly prefer consensus strategies in group persuasion, even when these are suboptimal, due to heuristics like perceived safety, social validation, and group harmony. This preference

persists across contexts, but incentivized scenarios (Experiment 8) show that analytical thinking can override this bias. While this insight is meaningful, its application may be limited in highly incentivized or sophisticated groups where deeper strategic thinking is already prevalent.

#### **10.4 [Siev and Petty(2024)]: Ambivalent attitudes promote support for extreme political actions**

Siev and Petty (2024) investigate how ambivalent attitudes—feeling conflicted about political beliefs—can paradoxically increase support for extreme political actions. Across six studies involving over 13,000 participants, they show that while ambivalence typically reduces moderate actions like voting, it can heighten support for extreme behaviors. This occurs because ambivalence creates psychological discomfort, prompting individuals to seek relief through actions that signal commitment and decisiveness. The effect is stronger when individuals have polarized attitudes, as the perceived stakes are higher. Importantly, when people view their ambivalence as justified, they are more likely to embrace extreme actions, using them as a coping strategy to manage the discomfort and project confidence in their beliefs.



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