Research Review

Decision Difficulty in the Age of Consumer Empowerment

Susan M. Broniarczyk,⁎, Jill G. Griffin

McCombs School of Business, The University of Texas at Austin, 2110 Speedway Stop B6700, Austin, TX 78712, USA

Schroeder Family School of Business Administration, University of Evansville, 1800 Lincoln Avenue, Evansville, IN 47722, USA

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Abstract

In this review, we examine the impact of two key factors of consumer empowerment—choice freedom and expansion of information—on the choice difficulty consumers experience in today’s decision environment. We posit that though these two consumer empowerment factors offer numerous potential benefits, they also can magnify such sources of decision difficulty as task complexity, tradeoff difficulty, and preference uncertainty. Next we review several key moderators, including consumer knowledge, mental representation, and maximization tendencies as well as information type and organization, that can exacerbate or mitigate the effect of these consumer empowerment factors on decision difficulty outcomes. Lastly, we examine the effectiveness of decision aids in assisting consumers navigate the complexity of today’s decision environment, and we identify areas for future investigation.

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Keywords: Decision difficulty; Consumer empowerment; Assortment; Customization; Word-of-mouth; Decision aids

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⁎ Corresponding author. Fax: +1 512 471 1034.
E-mail address: susan.broniarczyk@mccombs.utexas.edu (S.M. Broniarczyk).

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Introduction

Today’s decision environment offers consumers greater choice possibilities and information opportunities than ever before. With an explosion in online retailing and dramatic increase in big-box retailers, the current market environment empowers consumers, providing an unprecedented breadth and depth of consumer choice opportunities in a wide range of domains. The large assortments available today offer freedom of choice (Botti & Iyengar, 2004; Markus & Schwartz, 2010; Reibstein, Youngblood, & Fromkin, 1975) and opportunities to learn about product categories. Moreover, they increase the likelihood a consumer’s ideal product is available in the choice set (Baumol & Ide, 1956) while at the same time providing flexibility for uncertain preferences (Kahn & Lehmann, 1991; Kreps, 1979; Simonson, 1990) and possibilities to satisfy variety-seeking tendencies (Broniarczyk, 2008; McAlister, 1982). Choice freedom is not limited to traditional consumer domains but is also expanding to more consequential choice contexts such as health and finance (Botti & Iyengar, 2006). Consumers also increasingly have opportunities to customize products and services to precisely meet their needs and desires, providing a feeling of uniqueness, symbolic benefit, and pride of authorship (Franke, Schreier, & Kaiser, 2010) as well as hedonic or experiential benefits related to the process of customizing (Novak, Hoffman, & Yung, 2000).

Advances in technology and the use of the Internet also provide consumers new ways of finding, creating, and exchanging information for choice. Omnipresent information sources enable consumers to find detailed product information, reviews, and expert opinions to assist with sorting through the large assortment more effectively and efficiently (Goldenberg, Oestreicher-Singer, & Reichman, 2012). Social media opportunities allow consumers to create and share a wide range of user-generated content (UGC) relevant to consumer choices and to have diagnostic information regarding likely product experience (Simonson & Rosen, 2014). This expansion of information can assist consumers in identifying or even creating the best product (Chen, Wang, & Xie, 2011; Johnson et al., 2012), all from the confines of their home computer or on-the-go from their mobile smartphones.

The broader freedom of choice and expanded information capabilities combine to create an environment of consumer empowerment where consumers have both the opportunity and the tools needed for optimal decision-making. We unequivocally acknowledge that these benefits of consumer empowerment are indeed powerful. Yet, the same forces that empower consumers can also make things more difficult for them to choose, and it is important to systematically examine these potential drawbacks. In this article, our focus is on assessing how these two factors of consumer empowerment–freedom of choice and expansion of information capabilities—impact decision difficulty. After a brief summary of the fundamental sources of decision difficulty, we explore how these two empowerment factors contribute to difficulty sources, the resulting outcomes, and key moderators of this decision difficulty. We posit that although the fundamental sources influencing the way consumers experience difficulty in decisions remain, consumer empowerment can intensify the causes of difficulty and associated consequences in significant ways. We also examine the effectiveness of decision aids in assisting consumers navigate the complexity of today’s decision environment and identify areas for future investigation.
Sources of decision difficulty

Decision difficulty can arise from many factors related to the choice environment and the individual decision maker. To streamline our discussion of how consumer empowerment impacts decision difficulty, we focus on three primary sources of decision difficulty: task complexity, tradeoff difficulty, and preference uncertainty (for additional discussion see Anderson (2003) and Bettman, Johnson, and Payne (1991)).

Task complexity

The complexity of a decision task can be significantly influenced by factors increasing information load as well as factors contributing to information uncertainty. Bettman et al. (1991) suggest that a choice can be broken down into alternatives, attributes, and uncertainties, and that decisions become more difficult when the number of alternatives or attributes increases or when uncertainty regarding attribute values increases.

Information load

Limited in their capacity to store and process information (Miller, 1956), consumers become overloaded and experience greater difficulty when the decision task is more complex and cognitively demanding. Prior research has demonstrated that information load increases as a function of the number of attributes and alternatives (Jacob, Speller, & Kohn, 1974; Malhotra, 1982; Payne, 1976) but can also be augmented by other dimensions of the information such as the number of attribute levels and the uniformity of attribute dispersion among alternatives (Lurie, 2004). The greater the information load, the more cognitive resources required to process the information.

The format in which information is presented can contribute further to the cognitive demands required of consumers. For example, alternative-based presentation formats generally demand more cognitive resources than simpler attribute-based presentation (Huffman & Kahn, 1998; Russo & Dosher, 1983). Moreover, presentation of the information can affect how fluently it can be processed, independent from the actual decision content of attributes, attribute values, and choice set (Novemsky, Dhar, Schwarz, & Simonson, 2007). For instance, small or degraded fonts impair the readability of information and serve as a signal to activate a higher level of analytic reasoning (Alter, Oppenheimer, Epley, & Eyre, 2007). The processing disfluency in this case increases the cognitive burden on consumers.

Information uncertainty

Consumers experience uncertainty in choice when the quality of information available on attributes or alternatives is low, when there is missing or incomplete information, or when information sources are contradictory. Having less information available on important attributes decreases the overall quality of the choice information, making the task of identifying the best alternative more complex (Keller & Staelin, 1987). The difficulty of comparing options is compounded when information on attributes is missing (Bettman et al., 1991). Efforts of strategic marketers to differentiate their products with unique product descriptions or trivial attributes further limit consumers’ ability to directly compare product alternatives (Carpenter, Glazer, & Nakamoto, 1994). Additional uncertainty regarding attribute values arises when sources of information contradict one another (West & Broniarczyk, 1998). Such sources of information uncertainty increase task complexity and contribute to decision difficulty.

Tradeoff difficulty

Conflict

Operationalized as the degree of negative correlation between values on attributes (Bettman, Johnson, Luce, & Payne, 1993), conflict often requires consumers to sacrifice one goal for another. Examples of perceived negatively correlated attributes are price-quality, food taste-healthiness (Raghunathan, Naylor, & Hoyer, 2006), and the environmental friendliness-durability of a product (Luchs, Naylor, Irwin, & Raghunathan, 2010). Comparing and evaluating multiple options varying on different attributes can be cognitively taxing (Einhorn & Hogarth, 1981) as consumers deal with the burden of multiple tradeoffs (Bettman et al., 1991).

Emotional difficulty

Making tradeoffs in choice may not only be cognitively demanding but may also entail significant emotional difficulty. Prior to a difficult decision, consumers can experience anticipatory emotions such as fear, anxiety, and despair (Loewenstein, Weber, Hsee, & Welch, 2001), especially when considering the potential negative consequences and risks associated with trading off value-laden attributes (Luce, 1998; Luce, Payne, & Bettman, 1999). The emotional component of attributes can be distinct from their importance. For example, safety and handling are both important attributes in an automobile, but tradeoffs on the more emotionally laden attribute of safety generate more negative affect than do tradeoffs on handling (Luce, 1998). Emotional tradeoff difficulty also increases when reference points cause attribute values to be framed as losses (Luce et al., 1999). Furthermore, negative emotion resulting from a sense of loss may also occur at the overall alternative level as a result of decision deliberation. Consumers can become attached to the choice alternatives, experiencing post-choice discomfort when they must choose one and forego the others, and this option attachment is strengthened when consumers imagine or anticipate consumption during deliberation (Carmon, Wertebroch, & Zeelenberg, 2003). In sum, consumers can experience emotional difficulty prior to, during, or after choice.

Preference uncertainty

Difficulty resulting from conflict in tradeoffs or from emotional burdens in choice can be further amplified when preferences are ill-defined or unstable. Preference uncertainty can vary as a function of task, context, and individual differences (Coupey, Irwin, & Payne, 1998). Moreover, having well-defined and stable preferences does not always equate with having insight
into these preferences (Nisbett & Wilson, 1977). Without well-defined, stable preferences that can be retrieved during choice, consumers may need to construct preferences on the spot (Bettman, Luce, & Payne, 1998; Slovic, 1995). The need to construct preferences in the midst of identifying and evaluating alternatives adds significantly to the difficulty of making tradeoffs and further increases the burden of choice. In contrast, consumers who have already articulated an ideal combination of attributes experience less difficulty in choice (Chernev, 2003).

**Consumer empowerment factors**

Factors leading to consumer empowerment can magnify task complexity, tradeoff difficulty, and preference uncertainty, exacerbating rather than ameliorating decision difficulty in today’s consumer environment. In this section we elaborate on freedom of choice and expansion of information capabilities, highlighting ways that these consumer empowerment factors inadvertently complicate choice (See Table 1).

**Effect of freedom of choice on sources of decision difficulty**

The explosion of consumer choices in the marketplace spans all facets of consumer life from everyday decisions involving 40,000 items in a typical supermarket, 240 menu options at the Cheesecake Factory, and 800,000 apps on the Apple Store to more consequential decision involving the 45 Medicare D plans (Siegel & Etzkorn, 2013) and over 20 investment choices in the average 401(k) fund (Updegrave, 2011). Opportunities for customization have become almost commonplace in today’s consumer environment, and the freedom for choice in these custom environments is tremendous. Audi’s online car configurator, for example, allows consumers to choose among 12 model lines, 6 model styles, 4 trim lines, 19 engine styles, 45 custom exterior paint colors, not to mention steering wheels, mirrors, audio systems, and safety options, resulting in millions of possible combinations. Such vast customization opportunities are not limited to Internet environments. Starbucks, for example, claims that there are 87,000 ways it can serve a coffee. The vast assortment of products, opportunities to customize, and progressively consequential choices available to today’s consumers offer significant freedom of choice yet can contribute to the sources of decision difficulty.

**Impact on task complexity**

With such freedom of choice in today’s marketplace, consumers become overloaded by so much information to process on alternatives, attributes, retailers, and more. Prior research has demonstrated that consumers experience increasing decision difficulty when choosing among the greater numbers of grocery store items (Iyengar & Lepper, 2000), Medicare D plans (Bundorf & Szrek, 2010), and 401(k) funds (Morrin, Inman, Broniarczyk, Nenkov, & Reuter, 2012).

Decision difficulty can be compounded as consumers often exhibit a significant preference for large assortments in the initial decision stage when selecting a retailer or website, not recognizing the complexity large choice sets engender in the second phase of making a single product choice (Iyengar & Lepper, 2000; Kahn & Lehmann, 1991). The classic study by Iyengar and Lepper (2000) illustrated this choice tension, comparing sampling and choice from a small assortment of 6 jams versus a large assortment of 24 jams. Although more passing consumers were attracted to the sampling station when the assortment was large compared to small (60% vs. 40%), fewer consumers actually purchased from the large (3%) than small assortment (30%) due to greater difficulty in making a single choice. Instructing consumers to focus on the decision stage of choice (Chernev, 2006) or to consider the temporal

| Table 1                                                                 | Effect of Consumer Empowerment on Sources of Decision Difficulty *.
<table>
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<tbody>
<tr>
<td><strong>Choice Freedom</strong></td>
<td></td>
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<tr>
<td>Task Complexity</td>
<td>Extensive choice in various domains associated with higher information load</td>
</tr>
<tr>
<td>Tradeoff Difficulty</td>
<td>Difficulty compounded when consumers elect to choose from large assortment or increase size of self-generated option set</td>
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<td></td>
<td>Increased customization possibilities can increase information overload, especially with by-alternative presentation format</td>
</tr>
<tr>
<td>Preference Uncertainty</td>
<td>Consequential choices associated with elevated difficulty</td>
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<td>Small differences in option attractiveness magnify preference uncertainty and increase decision difficulty</td>
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<td></td>
<td>Inability to match attribute combination to desired benefit in customization increases preference uncertainty</td>
</tr>
<tr>
<td><strong>Information Expansion</strong></td>
<td></td>
</tr>
<tr>
<td>Task Complexity</td>
<td>Necessity to evaluate extensive information sources adds to complexity, particularly with high levels of skepticism</td>
</tr>
<tr>
<td>Tradeoff Difficulty</td>
<td>Information sources may disagree and diagnosticity is often incorrectly judged</td>
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<td>Greater influence of negative WOM may heighten emotional tradeoff difficulty</td>
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<td>Information rich media sources increase mental simulation of consumption experience, leading to option attachment and greater feelings of loss for non-chosen options</td>
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<tr>
<td>Preference Uncertainty</td>
<td>Although WOM is sought more when preferences are uncertain, it does not necessarily enhance ability to predict consumption experience</td>
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<td>Even recommendations consistent with preferences can decrease consumer choice confidence if choice justification differs from one’s own reason for choice</td>
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* Note: References omitted for ease of exposition. Please see text for details.
costs of choosing (Botti & Hsee, 2010) mitigated but did not reverse consumers’ preference for large assortments. Hence, consumers often overestimate the benefits relative to the costs of having the choice freedom associated with a large assortment, thinking it will lead to better outcomes and more positive affect when, in fact, it does the opposite (Botti & Hsee, 2010). Moreover, when consumers are given the opportunity to self-generate their own consideration sets, they also often fail to anticipate the ensuing complexity of choosing from an enlarged set (Griffin & Broniarczyk, 2010).

The freedom of choice consumers experience today extends beyond large assortments and increased consideration sets to customized and personalized options. The expansion of options in customization increases the cognitive load associated with processing attribute information; however, the predominant by-attribute format of customization generally eases consumer processing requirements (Valenzuela, Dhar, & Zettelmeyer, 2009).

**Impact on tradeoff difficulty**

Having more options in today’s expanded choice sets necessitates more tradeoffs, heightening conflict in decisions (Tversky & Shafir, 1992). Conflict further increases when an increase in the number of options is accompanied by an increase in additional product dimensions, as in the case of nonalignable options (Gourville & Soman, 2005). The opportunity to customize a product can further increase the saliency of conflict and highlight the tradeoffs that must be made among various attributes (Valenzuela et al., 2009). The need to make tradeoffs of some value (oftentimes price) for each attribute that is customized can increase the difficulty associated with tradeoffs. Moreover, possibilities for customization and personalization are often accompanied by a heightened sense of responsibility for the choice. With many customized offers not being returnable or exchangeable, there is a greater burden for consumers to “get it right” the first time in order to minimize regret (Tsiros & Mittal, 2000).

Today’s consumers are not just exposed to more options or opportunities to customize but are also provided more opportunities to make decisions in consequential choice situations. The preponderance of decision difficulty research has examined low consequence decisions such as shopping for grocery products, where the negative consequence only involves choosing the wrong brand. Recent research, though, has taken the important step of beginning to address the elevated decision difficulty involved in consequential financial (Morrin, Inman, Broniarczyk, Nenkov, & Reuter, 2012) and medical decisions (Botti & Iyengar, 2006; Botti, Orløi, & Iyengar, 2009; Kahn & Luce, 2003) that have substantial potential for negative consequences such as the inability to support oneself in retirement and the risk of life-threatening illness.

Botti et al. (2009) examined the archetype of a consequential no-win medical decision where even the “best” option is associated with a negative outcome. Specifically, they investigated the tragic choices of parents to withdraw life-sustaining treatment from their critically ill newborns, finding that parents who personally made the tragic choice exhibited greater negative affect than parents whose doctor made the decision for them. Moreover, the decision was emotionally painful even when the parents were confident they had selected the best of the avoidant-avoidant options. The freedom to make such consequential decisions comes with a high cost.

**Impact on preference uncertainty**

The freedom of choice available today may be both a blessing and a curse to consumers in terms of preference uncertainty. Although the opportunity to find one’s ideal option has never been greater, finding the ideal assumes that one has perfect insight into his or her preferences. All things equal, having a larger choice set increases the likelihood of finding a preference match in the set. This means that the leading options are likely to be highly attractive with small differences in their overall attractiveness. When the leading options are all highly attractive, preference uncertainty is lessened (Dhar & Nowlis, 1999); however, small differences in the attractiveness between options magnifies preference uncertainty and increases decision difficulty (Dhar, 1997).

While customization provides consumers an opportunity to develop products precisely matching their preferences, the benefit is less clear for consumers with ill-defined preferences. Preference uncertainty may be exacerbated in customization when consumers are unsure how various attribute combinations interact to deliver benefits (Randall, Terwiesch, & Ulrich, 2007), and therefore are unable to identify the combination of attributes offering the best fit to preferences (Simonson, 2005).

In sum, we can see that the benefits of empowering consumers with greater freedom of choice are not without cost. Freedom of choice heightens task complexity, amplifies tradeoff difficulty and the emotional costs associated with making consequential decisions, and intensifies decision difficulty for consumers with uncertain preferences.

**Effect of expanded information possibilities on sources of decision difficulty**

From a wide range of UGC to broad opportunities to interact via social media, consumers now have expanded possibilities to create and exchange information. Vast opportunities to learn about products, from UGC such as the 36 million reviews on Yelp covering restaurants to hair salons to mechanics (Mahaney, 2013) or the 150 million reviews on Trip Advisor covering hotels, restaurants, and travel-related attractions, provide consumers increasing access to a wide array of information. Moreover, possibilities to exchange information from ever expanding social media outlets such as the 100 million Tumblr blogs, the 1.23 billion monthly active users on Facebook, and the 500 million tweets per day on Twitter (Snider, 2014) allow increasing interaction in the marketplace. In fact, just under half of global consumers report making purchases in home electronics, automobiles, and appliances based upon information gleaned from on-line product reviews and social media websites (Nielsen, 2012). Such extensive word-of-mouth (WOM) can raise the difficulty consumers experience by increasing task complexity and preference uncertainty. Moreover, it can heighten emotional tradeoff difficulty by
increasing the likelihood of loss framing and increasing option attachment.

Impact on task complexity

The WOM available to today’s empowered consumers in the form of UGC and expert reviews can intensify consumers’ cognitive burden by adding information sources to the information load equation of extensive product options. Sorting through the massive amount of sources and determining which sources to devote more intensive processing resources can be overwhelming. Ironically, though consumers utilize advice and information sources most when they face difficult decisions (Gino & Moore, 2007), they then face the additional decision task of having to evaluate the information sources, too (Gershoff, Broniarczyk, & West, 2001). Average opinion ratings may appear to consolidate review information in a particular choice context; however, this information is often positively skewed and non-diagnostic, with 80% of product ratings receiving either four or five stars on a five-point scale (Bazaarvoice & Fay, 2011). In response, consumers engage in more in-depth processing of individual review text content (Chevalier & Mayzlin, 2006).

Furthermore, information sources consulted to resolve attribute conflict may themselves disagree, exacerbating rather than reducing consumer uncertainty (West & Broniarczyk, 1998). When the average rating is high and meets or exceeds consumers’ product aspirations, consumers respond negatively to conflict among others’ opinions, as low outliers raise the possibility of a negative experience (West & Broniarczyk, 1998). Also, though WOM regarding products is abundant, the completeness and certainty of this WOM is the subject of considerable concern. First, WOM is subject to a self-selection bias (Brandes, Godes, & Mayzlin, 2013; Li & Hitt, 2008) with posters not being representative of the general population (Pew Research Center, 2013) and those with extreme experiences being most likely to post reviews faster (Brandes et al., 2013). Further, only half of Americans and a third of Europeans trust expert reviews (Lomas, 2013). Similarly high uncertainty exists regarding the veracity of UGC reviews, with fraud estimates as high as 30% (eMarketer, 2013).

Although some websites accord their top reviewers with status badges (e.g., Elite on Yelp, Top Reviewer on Amazon) to assist consumers in identifying reviewers with a higher likelihood of predictive quality, the validity of these status designations is suspect, as even Amazon’s most decorated reviewer was discredited within the community (Streitfeld, 2011). Consumers often attempt to discern the authenticity of an average rating by placing more emphasis on average ratings generated from a greater number of reviews (Narayan, Rao, & Saunders, 2011). However, an average rating based on a large number of reviewers is not necessarily a reliable signal, as reviewer ratings are not independent and social dynamics lead initial reviewer ratings to influence subsequent reviewer ratings (Moe & Trusov, 2011; Sridhar & Srinivasan, 2012). Thus, consumer skepticism regarding the truthfulness of information is pervasive, substantially contributing to decision difficulty.

To alleviate concerns over the reliability of information sources, consumers often seek advice from people perceived to be similar on relevant social or demographic characteristics (Brown & Reingen, 1987; Gino, Shang, & Croson, 2009; Price, Feick, & Higie, 1989), even displaying an egocentric bias and inferring that ambiguous information sources have similar tastes to their own (Naylor, Lambert, & Norton, 2011). Review sites also enable consumers to inspect a reviewer’s database of past reviews to assess their overall past agreement rate with the advisor. Yet, not only is this assessment effortful, but consumers have also been shown to often incorrectly judge the personal diagnosticity of reviewers, frequently choosing inferior information sources for providing recommendations (Gershoff et al., 2001) and overemphasizing agreement on extreme positive opinions (Gershoff, Mukherjee, & Mukhopadhyay, 2003).

On the positive side, expansion of information sources—for example, mobile devices enabling information search at the point of purchase—can allow consumers to fill in the gaps where information is missing or uncertain. However, this search may be effortful, and accessing product information on small mobile devices with miniature fonts heightens processing disfluency, contributing to decision difficulty.

Impact on tradeoff difficulty

Increasing information possibilities can intensify tradeoff difficulty as consumers are left to sort out discrepancies in the information, and the additional information may heighten emotional aspects of choice. Conflicting opinions between information sources may contribute to greater tradeoff difficulty as well as information uncertainty. Furthermore, the content of a single review itself may contain conflicting information, illuminating the pros and cons of a product option. Although often thought to be more truthful, reviews with conflicting information can make decisions more difficult. Specifically, when the overall review rating is extremely positive, reviews with conflicting pro and con information lower consumer judgments when the overall review rating is extremely positive, reviews with conflicting pro and con information lower consumer judgments. If decision-makers focus on favorable reviews, then attribute conflict may themselves disagree, exacerbating rather than reducing consumer uncertainty (West & Broniarczyk, 1998).

External information sources may elevate the emotional aspect of tradeoffs during the decision process, as negative WOM is more influential than positive WOM (Chen et al., 2011). Further, any attribute has the potential to be emotion-laden if framed as a loss, and the social comparison information inherent in UGC may serve as a reference point to heighten loss framing. If decision-makers focus on favorable reviews, then attribute reference points will be set high, raising the likelihood of emotional tradeoff difficulty.

High-definition product demonstration videos, in-depth product descriptions, expert reviews utilizing photo imaging, and UGC describing prior consumption experiences can further contribute to emotional tradeoff difficulty, as they create a prime environment for consumers to imagine or observe the product in use and mentally simulate their own consumption experience (Taylor & Schneider, 1989). Via this mental simulation, consumers generate prefactual ownership of options and option attachment, leading to post-choice feelings of loss for non-chosen options (Carmon et al., 2003).
Impact on preference uncertainty

In the face of uncertain preferences, consumers are more likely to turn to WOM (Narayan et al., 2011), utilizing review commentary regarding consumption experience in addition to ratings (He & Bond, 2013). This is especially true for products with high preference heterogeneity such as aesthetic or experiential products like movies and books (Gershoff & West, 1998). Although models incorporating others’ opinions can improve decision accuracy (Gershoff & West, 1998), WOM does not necessarily enhance consumers’ confidence in their ability to predict their own consumption experience (He & Bond, 2013). Moreover, consumer confidence may actually be negatively affected by WOM, even when it precisely recommends the consumer’s preferred option (Lamberton, Naylor, & Haws, 2013). Specifically, consumer confidence diminishes when observing others making the same choice but for different reasons, as one’s justification for the choice is called into question.

In sum, although today’s decision environment empowers consumers with increased information possibilities, consumers can experience significant difficulty due to the uncertainty surrounding this information’s veracity. Attempts to locate perceived reliable sources may not only be effortful but also result in mixed success. UGC and high-definition product demonstrations may foster multiple option attachments, leading to difficulty choosing a single product. In the next section, we provide an overview of the outcomes associated with decision difficulty and ways in which consumer empowerment impacts these outcomes.

Outcomes of decision difficulty

Decision difficulty influences information processing and choice strategies, as decision-makers attempt to avoid or simplify the complexities of choice. Moreover, having a myriad of choice options, possibilities to customize, as well as a tremendous amount and variety of information can inadvertently lower post-choice outcomes as well.

Avoiding choice

Selection difficulty is one of the key drivers of decision avoidance (see Anderson (2003) for a comprehensive review) and one of the most important reasons for delay in decisions (Greenleaf & Lehmann, 1995). Avoidant behaviors such as choosing a default or status quo option occur in greater measure when additional options increase conflict or tradeoff difficulty in choice (Luce, 1998; Redelmeier & Shafir, 1995; Tversky & Shafir, 1992). When faced with greater complexity in customization, for example, consumers may opt for a standard solution (Dellaert & Stremersch, 2005) or may rely increasingly on default options in selecting attributes (Levav, Heitmann, Herrmann, & Iyengar, 2010). Deferring choice or prolonging search is yet another strategy to delay or avoid a difficult or emotionally-laden decision (Dhar, 1997; Greenleaf & Lehmann, 1995; Luce, 1998; Tversky & Shafir, 1992).

Simplifying choice

Consumers may also cope with complex decisions by relying on simplified choice strategies that leave them subject to the influence of contextual or other situational variables. In response to the difficulty of choosing from enlarged choice sets, consumers have been shown to rely upon elimination strategies (Lussier & Olshavsky, 1979; Payne, 1976) or to pay more attention to characteristics that can be easily and quickly evaluated (Lenton & Francesconi, 2010). To aid justification and ease the difficulty of deciding among numerous similar options, consumers may select a dissimilar albeit inferior option (Redelmeier & Shafir, 1995), opt for a neutral option (Nowlis, Kahn, & Dhar, 2002), or merely select the option described by more attributes (Shafir, Simonson, & Tversky, 1993). Sela, Berger, and Liu (2009) found that the difficulty consumers experience when choosing from a large assortment consequently led them to be more likely to select justifiable utilitarian options over less justifiable hedonic indulgences (Kivetz & Simonson, 2002). Such simplifications can lead to suboptimal choices.

To avoid difficult tradeoffs, people may engage in more selective, attribute-based processing (Luce, Bettman, & Payne, 1997) or utilize simplified, non-compensatory decision rules (Dhar, 1996; Lussier & Olshavsky, 1979; Payne, 1976), all potentially resulting in less normatively accurate choice strategies and worse choice outcomes. Difficult decisions involving protected values (Baron & Spranca, 1997), ethical attributes (Ehrich & Irwin, 2005) or taboo tradeoffs (e.g., saving lives vs. saving money) (Tetlock, 2002) may lead consumers to avoid potentially conflicting information in choice (Ehrich & Irwin, 2005). The freedom today’s consumers have to make decisions in more consequential domains may encourage such avoidance.

Post-choice consequences

The added burdens of consumer empowerment can negatively impact objective and subjective choice outcomes as well. Extensive assortments undermine consumer confidence, increase regret, and diminish satisfaction with both the process and the choice (Iyengar & Lepper, 2000). Moreover, given the opportunity to generate their own choice set and fueled by the hope of finding a better option (Mogilner, Shiv, & Iyengar, 2013), people lead themselves down a slippery slope of search, where further search increases their expectations regarding the ideal product (Diehl & Pynor, 2010) yet diminishes satisfaction with the ultimate choice (Griffin & Broniarczyk, 2010).

Customization opportunities, in spite of inherent benefits for preference matching, can lead to customer confusion and lower choice confidence (Huffman & Kahn, 1998). Moreover, this difficulty can translate into a decreased evaluation of the process (Dellaert & Stremersch, 2005; Huffman & Kahn, 1998) and a lower evaluation of the customized option (Liberman & Förster, 2006; Novemsky et al., 2007; Valenzuela et al., 2009).

The ease with which someone can search for information post-choice increases the likelihood of setting oneself up for
regret. A consumer survey revealed that 41% of people expressed anxiety about a prior purchase and 20% reported conducting research after the purchase to corroborate their decisions (Spencer & Freeman, 2012). Negative WOM encountered in this post-consumption stage results in even greater dissatisfaction if a consumer has a poor product experience and the WOM content is attribute-based (vs. consumption-based), triggering negative product-related thoughts (Chan & Cui, 2011).

Finally, the resolution of difficult tradeoffs in choice can lead to ego depletion (Wang, Novemsky, Dhar, & Baumeister, 2010), depriving a consumer of executive resources needed for self-control (Vohs & Faber, 2007) and optimal decision-making (Podshtsova, Amir, Dhar, & Baumeister, 2009). For example, Shiv and Fedorikhin (1999) found that people are more likely to choose a decadent chocolate cake compared to a healthier fruit salad when under higher cognitive load. Morrin, Inman, Broniarczky, Nenkov, and Reuter (2012) showed that increasing the number of 401(k) funds heightens task complexity, depleting cognitive resources and resulting in simplified investment diversification strategies. In sum, although freedom of choice and expansion of information can empower consumers, these factors can also result in choice avoidance, oversimplification of choice, and negative post-choice consequences.

Moderators of decision difficulty

Next we review several key moderators that can exacerbate or mitigate the effect of these sources on decision difficulty outcomes. Moderators include consumer knowledge, information type and organization, mental representation, and maximization tendencies.

Consumer knowledge

Consumer knowledge—consisting of both expertise regarding product information and the degree of a consumer’s preference development—is integral to how consumers are affected by difficult decision environments. Consumer expertise is an important moderator in consumer information processing, with experts’ more fine-grained cognitive structures to differentiate products, greater ability to delineate the relevant product information, and reduced cognitive effort to perform task-related activities (Alba & Hutchinson, 1987) thereby lessening task complexity. When consumers are less knowledgeable, they place greater weight on advice (Yaniv, 2004) and utilize more simplifying heuristics when faced with difficult decisions (Chernev, 2008).

The distinct but related variable of preference development is another important moderator in choice. Awareness of one’s preferences is a prerequisite for many of the benefits of consumer empowerment, as consumers need well-defined preferences coupled with self-insight into these preferences in order to appreciate offers tailored to their tastes (Simonson, 2005). When consumers lack experience or familiarity with relevant attributes, they have difficulty matching attribute values to desired benefits, cannot articulate exactly what they want, and experience preference uncertainty.

Huffman and Kahn (1998) distinguished among three cumulative levels of consumer preference development where consumers possess: 1) attribute knowledge, 2) within-attribute preferences, and 3) across-attribute importance trade-offs. In two studies of mass customization, they found that participants who expressed their within-attribute preferences prior to the customization task perceived less complexity and were more satisfied than participants who were only exposed to the attribute information as well as participants who also went to the next level of expressing attribute importance tradeoffs. Although one would expect greater preference development to further simplify tradeoffs during the customization process, it appears that the preference development manipulation of articulating tradeoffs among numerous attributes was difficult and frustrating in and of itself. Similarly, Dellaert and Stremersch (2005) found when consumers are faced with more complexity in customization, their evaluations of both the customization process and the configured product diminsh, although less so for experts.

A meta-analysis of choice overload research found that consumer expertise or preference development was a significant moderator of whether consumers experienced detrimental effects when selecting from a choice set with a large (average = 34) compared to small (average = 5) number of alternatives outcomes (Scheibehenne, Greifeneder, & Todd, 2010). Specifically, consumers without prior preferences or expertise exhibited choice overload, reporting lower satisfaction with their selected product or being more likely to defer choosing altogether when faced with a large assortment. In contrast, the opposite “more-is-better” effect occurred for consumers with established prior preferences, as they exhibited greater satisfaction with their chosen product and decreased choice deferral when choosing from a large choice set (Chernev, Böckenholt, & Goodman, 2010).

Chernev (2003) examined the effect of preference development when choosing from large assortments, finding that consumers who had articulated an ideal point reported lower decision difficulty, higher decision confidence, and stronger preference for their chosen option than consumers who had not articulated an ideal point. Consumers with an articulated ideal point had the simple task of locating their preferred option, whereas consumers without an articulated ideal point faced the more taxing, dual task of first determining their ideal point and then determining which option best matched this ideal. Moreover, individuals with articulated preferences exhibited nearly exclusively alternative-based processing and were more selective, examining 40% fewer pieces of product information. Additionally, they were more likely to use confirmatory vs. disconfirmatory reasons for their choice. One consequence of consumers with developed preferences using selective processing is that they are less affected by context effects in the choice set (Simonson, 2005).

Information type and organization

Information type and organization can influence the way consumers experience difficulty in choice via the format of information presentation and the ease of option comparison as
well as their congruency with existing consumer knowledge structures and preferred processing styles.

**By-attribute vs. by-alternative format**

Prior research has examined differences in attribute vs. alternative-based processing with attribute-based processing shown to be cognitively easier than alternative-based processing (Huffman & Kahn, 1998; Russo & Dosher, 1983). The way in which information is presented influences the predominant type of processing, with more alternative-based information formats increasing alternative-based processing styles (Bettman & Kakkar, 1977) and subsequent organization in memory (Biehal & Chakravarti, 1982). To cope with the difficulty of by-alternative presentation formats, consumers have been shown to rely more heavily on lexicographic or other non-compensatory choice strategies, leading to more extreme choices. In contrast, by-attribute formats encourage the selection of compromise options and lead to higher satisfaction with the choice (Valenzuela et al., 2009).

The process of customizing a product typically involves making a series of within-attribute selections as opposed to choosing among a set of fully-configured alternatives. Such attribute-wise customization has been shown to decrease decision difficulty by reducing information and making tradeoffs less explicit (Huffman & Kahn, 1998; Valenzuela et al., 2009).

Attribute-wise customization procedures are not universally beneficial, however. In attribute-wise customization, consumers typically focus on a series of individual attributes sequentially instead of the complete product simultaneously. Compared to simultaneous presentation, sequential presentation raises consumer hopes and expectations, lowering choice commitment (Mogilner et al., 2013). Moreover, in customization, attribute-based presentation formats increase local processing, as consumers focus on the details instead of the larger picture (De Bellis, Griffin, Hildebrand, Hofstetter, & Herrmann, 2013). Additionally, making attribute tradeoffs explicit eliminates the positive effects of by-attribute customization on ease of choosing, satisfaction with the choice, and likelihood of purchase (Dellaert & Stremersch, 2005; Valenzuela et al., 2009).

**Visual vs. verbal format**

Recent research by Townsend and Kahn (2014) has shown that visual (vs. verbal) depictions of product information led to greater perceptions of variety and complexity for large product assortments. Drawing on the greater difficulty of by-alternative vs. by-attribute processing, the authors reasoned and supported that the gestalt processing resulting from visual depiction leads to higher perceptions of complexity than the piecemeal processing resulting from verbal depiction. In turn, the greater perceived complexity resulting from a visual (vs. verbal) format was shown to lead to greater choice deferral when choosing from large but not small choice sets. It is notable that consumers exhibited a preference for visual over verbal presentation format regardless of option set size, seemingly unaware that it would prove detrimental when choosing from large assortments.

**Attribute alignability**

The structural alignment of information on choice options is another information factor shown to impact cognitive processing. When choice options differ along a single, comparable dimension (i.e., fuel efficiency for a car), the difference is referred to as alignable; whereas differences along multiple, unique dimensions (sunroof vs. navigation system) are characterized as nonalignable. Nonalignable differences are more difficult to evaluate, as they require comparison on a global scale rather than on a common dimension (Zhang & Markman, 2001). Gourville and Soman (2005) extended the concept of alignability to brand assortments, showing that an increase in the size of a nonalignable brand assortment increased cognitive effort and anticipated regret, ultimately leading consumers to defect to a brand offering fewer choices. Brand managers should be cognizant that line extensions, while offering greater choices for consumers, can backfire if consumers are overly taxed to evaluate nonalignable product features. Consumers themselves can inadvertently add to the difficulty, as nonalignable options have been shown to increase search beyond an optimal point (Griffin & Broniarczyk, 2010).

**Information organization**

Information display format influences decision-making via the ease of implementing different decision processes (Schkade & Kleinmuntz, 1994), with consumers having an easier time when the decision task is congruent with the information format (Betman & Zins, 1979). Morales, Kahn, McAlister, and Broniarczyk (2005) showed that consumer satisfaction with a product assortment was dependent on the congruency between a consumer’s internal structure and a retailer’s external structure. For consumers possessing knowledge of the product category, congruency between attribute importance weights and the organization of the shelf display increased ease of use of the display, perceptions of category variety, and satisfaction with the chosen item. However, for consumers with low knowledge of the category, there was no effect of congruency between their weakly held product schemas and external shelf layout; instead, congruency between their specific shopping goal and the external organization increased satisfaction with the assortment. Additionally, cognitive load was eased by the use of external filters on a website that enabled consumers to see only items relevant to their shopping goal.

Consumer products can be informatively organized by either benefits (e.g., toothpaste breath freshening) or attributes (e.g., toothpaste flavor). Lamberton and Diehl (2013) found that perceived decision difficulty did not differ between benefit-based and attribute-based organizations, perhaps because consumers vary on whether their internal product information is organized on the basis of benefits or attributes.

Examining mutual funds, Morrin, Broniarczyk, and Inman (2012b) found that informative organization by asset class versus alphabetical organization was helpful to low knowledge investors, particularly as the size of fund assortment increased. In contrast, when products were organized by unexpected subcategories (i.e., incongruent), Poynter and Wood (2010) found that low (but not high) knowledge consumers experienced reduced learning of the product information and decreased satisfaction.
with choice. Consumers with less-developed preferences are also likely to use the product groupings in retailer and website product organization as a signal of importance (Fox, Ratner, & Lieb, 2005). Consequently, when making allocation decisions, consumers simplified their decision making by allocating equally across product groupings in investment (Morrin, Inman, Broniarzyk, Nenkov, & Reuter, 2012), charity, and wine decisions (Fox et al., 2005). Such product grouping effects thus simultaneously simplify the decision and leave the consumer susceptible to retailer influence (Johnson et al., 2012).

Mental representations

Consumers’ mental representations, including mental construal of the decision environment and metacognitive expectations regarding the decision, have been shown to influence how consumers respond to the decision difficulty sources of task complexity and tradeoff difficulty.

Mental construal

A high level construal consists of a general, abstract representation of the information, where features are decontextualized and the desirability of the outcome is emphasized. In contrast, a low level construal consists of a specific, concrete representation of the information which retains contextual features, and the feasibility of the outcome is emphasized. Notably, the default consumer mindset has been shown to correspond to a low rather than high level construal (Cho, Khan, & Dhar, 2013; Khan, Zhu, & Kalra, 2011), with greater psychological distance of an event in time, location, or social distance resulting in a higher mental construal of that event (Trope & Liberman, 2010).

Khan et al. (2011) found that a high (versus low) level construal reduced compensatory trade-offs among attributes by shifting attention away from low-level attribute comparisons and correspondingly reducing the time consumers took to make a decision. Moreover, Cho et al. (2013) examined consumer choice between comparable alternatives (e.g., choice between two DVD players) versus non-comparable alternatives (e.g., choice between a DVD player and event tickets) and found that decision difficulty varied according to the match between the construal representation and the decision problem. They showed that consumers with high (vs. low) level construals experienced lower difficulty and higher satisfaction when choosing between non-comparable than comparable options, as they were able to compare on the basis of high level criteria (e.g., entertainment value). Conversely, individuals with high construals needed to expend extra effort to switch to the concrete comparisons necessary for choosing between comparable alternatives, leading them to experience greater decision difficulty and lower decision satisfaction than individuals with low construals. Thus, decision difficulty was greatest when there was a mismatch between the abstractness necessary for decision tradeoffs and the abstractness engendered by the construal level.

The abstract representations of high level construals have also been shown to increase the perceived similarity or substitutability of options, reducing the difficulty (Xu, Jiang, & Dhar, 2013) and preference of choosing from large assortments (Goodman & Malkoc, 2012). Replicating the choice overload effect, Xu et al. (2013) found that the large number of attribute comparisons required in a large assortment led to greater difficulty for consumers with low level construals. However, consumers with high level construals had an easier time making such choices from large assortments, as they perceived options to be more similar, necessitating fewer tradeoffs. Relatedly, Goodman and Malkoc (2012) replicated the established finding that consumers preferred choosing from a large (versus small) assortments when the choice task was near in time or location because the low level concrete construal led options to appear more distinct; however, this preference for large assortments disappeared with greater psychological distance, as options appeared more similar under high level, abstract construal.

Taken together, the Xu et al. (2013) and Goodman and Malkoc (2012) results paint a bleak picture for consumers with low level mental construals in today’s decision environment, as they are most likely be attracted to large assortment yet also most likely to experience significant choice difficulty. Interestingly, Cho et al. (2013) demonstrated that choosing for others in a gift context (versus choosing for oneself) led to a more abstract construal which decreased decision difficulty when the gift choice was between non-comparable options.

Metacognitive expectations

Over the last decade, research on decision difficulty has expanded to show that consumers’ metacognitive experiences and a priori expectation of a decision’s difficulty affect decision difficulty independently of the decision content (Novemsky et al., 2007). Specifically, individuals hold lay metacognitive theories that decision difficulty is associated with decision importance (Sela & Berger, 2012) and seek compatibility between the effort they invest and the actual effort they anticipate and the actual effort they invest in the decision (Schrift, Netzer, & Kivetz, 2011). When the expectation that ‘decision difficulty = decision importance’ is violated, consumers engage in compensatory efforts. Additionally, individuals hold lay metacognitive theories that decision difficulty is associated with decision importance (Sela & Berger, 2012) and seek compatibility between the effort they invest and the actual effort they invest in the decision (Schrift, Netzer, & Kivetz, 2011). When the expectation that ‘decision difficulty = decision importance’ is violated, consumers engage in compensatory efforts to restore the balance following an effort-compatibility framework (Schrift et al., 2011). Schrift et al. (2011) found that when a decision was easier than expected, consumers artificially created conflict by distorting the decision alternatives in an effort to enact due decision diligence. In the contrasting situation, Sela and Berger (2012) showed that consumers may complicate trivial decisions. Here, when a minor decision felt unexpectedly difficult, consumers inferred that the decision must be important. Consequently, they fell victim to “decision quicksand,” non-normative behavior where consumers get caught up and expend excessive effort for unimportant decisions (Sela & Berger, 2012).

A metacognitive difficulty implication for the empowered consumer is that if a dominant option is easily generated in the course of an Internet search for an important decision, a consumer may intentionally complicate the decision to equate effort with decision importance. On the other hand, if a consumer anticipates an easy, quick search for a minor decision on the Internet, and a dominant option does not readily appear, then s/he may become caught up in the decision, overexpending effort. Additionally,
consumers rushing to make decisions from today’s extensive assortments may experience regret, as they apply a metacognitive lay theory of “a quick choice is a bad choice” (Inbar, Botti, & Hanko, 2011).

Maximization tendencies

Simon’s (1955) classic theory of bounded rationality detailed individual processing limitations that lead people to satisfice rather than maximize in a choice decision. When evaluating product options, a satisficer will select the first option that exceeds an acceptability threshold, selecting a “good enough” option (Schwartz et al., 2002). Maximizers, on the other hand, seek to find the “best” option and will engage in an extensive search to locate the optimal option. The individual difference measure of maximization tendency is comprised of three dimensions: 1) alternative search associated with the tendency to seek better options, 2) decision difficulty associated with choosing and making decisions, and 3) tendency to hold high standards (Nenkov, Morrin, Ward, Schwartz, & Hulland, 2008).

In a study of mutual fund choice among 10 options, Nenkov et al. (2008) found that maximization was positively correlated with the amount of time taken to make a decision, the amount of information read, the number of options considered, and a direct report of decision difficulty. Schwarz et al. (2002) reported that maximizers experience greater regret, are less satisfied with their consumer decisions, engage in more social comparison, and even exhibit greater incidence of depression.

Further, maximizers may end up feeling worse about their decisions despite doing objectively better than satisficers (Iyengar, Wells, & Schwartz, 2006). Iyengar et al. (2006) conducted a longitudinal job search study with over 500 graduating college seniors and compared how the process and outcomes differed for maximizers versus satisficers. Maximizers excelled in terms of the ultimate outcome, earning starting salaries 20% higher than those of satisficers. Yet maximizers, more fixated on unrealized options, exhibited greater reliance on external influences, experienced more negative affect throughout the job search process, and reported lower satisfaction with their final job outcome.

A maximizing vs. satisficing mindset may also be context-induced. Large (vs. small) choice sets have been shown to lead people to search a smaller percentage of the total options, behavior exemplifying satisficing (Diehl, 2005). Levav, Reinholtz, and Lin (2012) showed that the mindset induced by the size of an initial choice set can be sticky and affect sequential decisions. Specifically, five studies demonstrated that starting with small choice sets led to a maximizing mindset, with participants searching more options and investing greater decision time. The maximizing mindset induced by these initial small assortments endured even as consumers encountered larger assortments in subsequent choice sets, leading to greater search but less satisfaction with their eventual choice.

In a series of studies, Ma and Roese (2014) demonstrated that a maximizing mindset can be situationally activated by comparative tasks or by increasing the saliency of a goal to get the best, and this maximizing mindset can carry over into other domains. Consistent with prior research, this situationally induced maximization led people to expend more effort and search more but also ultimately diminished satisfaction and increased regret. Consumer empowerment, offering numerous means of comparison and opportunities to look for the best option, may provide a backdrop particularly likely to induce a maximizing mindset.

A maximizing mindset has primarily been examined in the context of choice for oneself. Polman (2012) found that choosing for oneself resulted in a prevention focus, leading people to contemplate that bad items were likely to be present among the many options. This led to less satisfaction with a large assortment and thereby replicated the choice overload result. On the other hand, decision makers choosing for another had a greater promotion focus, leading them to ponder that good items must be available with so many options and to feel more satisfied with the large choice set, consequently attenuating the choice overload effect.

In summary, our review of moderators reveals that consumers are more likely to experience decision difficulty in an empowered consumer environment when they possess low knowledge, less developed preferences, and maximizer tendencies. Moreover, decision environments where the information is presented in an alternative-based or visual format, where options are distinguished by nonalignable attributes, or where the product organization or decision problem is incongruent with consumers’ mental representations are likely to exacerbate consumer difficulty. Additionally, a mismatch between the abstractness of a consumer’s mental construal level and the required decision tradeoffs as well as violations of a consumer’s metacognitive expectations of decision difficulty can further contribute to experienced decision difficulty.

The benefits and complexities of decision aids

At the same time it contributes to decision difficulty, today’s decision environment also offers the potential to remedy some of the underlying sources of difficulty. An obvious solution to the high information load is for retailers to offer a selective, small assortment comprised of leading options such as Trader Joe’s product rationalization offering 4000 products versus the 40,000+ products offered at the typical grocer (Siegel & Eitzkorn, 2013). The prevailing response, though, has been for retailers to continue escalating product assortments in an effort to enhance preference matching. Thus, the remedy to answer the consumer call for decision simplicity is to offer aids to navigate the extensive decision environment (Botti & McGill, 2006; Johnson et al., 2012; Spenner & Freeman, 2012).

Morrin, Broniarczyk, and Inman (2012) showed that not all decision aids are equally effective. Specifically, decision aids that provided a simple overall star evaluative rating but not a detailed information matrix on each alternative increased decision satisfaction among low knowledge consumers by reducing perceived task difficulty. Thus, decision aid designers should take care that intended decision aids simplify rather than add to the information load. Decision aids available to facilitate the decision-making of the empowered consumer include
preference learning tools, product filtering and comparison tools, product recommendations, and default options. At the extreme, the current decision environment also offers greater opportunities to delegate the decision to another decision maker. Next we review these key decision aids and assess when they are beneficial in minimizing decision difficulty and when they complicate difficulty and/or lower decision quality (See Table 2).

**Preference learning tools**

Preference learning tools that aid consumers in understanding attributes, clarifying their attribute preferences, and ascertaining their across-attribute importance trade-offs (Huffman & Kahn, 1998) can build consumer knowledge and thereby reduce preference uncertainty. Retailer provision of a consumption vocabulary or product framework that provides a structure for consumers to identify the relevant product features, value these features, and determine the relationship between a product’s features and their own evaluation of the product has been shown to be helpful in preference development (West, Brown, & Hoch, 1996). A key aspect of bolstering preference certainty is for consumers to learn the link between the attributes of a product and the benefits they provide (Hoeffler, 2003).

Aspects of today’s decision environment including enabling mental simulation (Hoeffler, 2003), virtual communities for customer co-design, as well as community features like discussion, feedback, ratings, recommendation services, voting, and chat rooms (Piller, Schubert, Koch, & Möeslein, 2005) have been found to be beneficial in such preference learning.

Caution should be exercised such that preference explication tools are easy to use and can be quickly utilized, thus avoiding consumer frustration (Huffman & Kahn, 1998). Two preference learning methodologies that seek to minimize task difficulty are self-explicated conjoint analysis (Green, 1984) and partial-profile conjoint analysis where consumers rate product profiles with a smaller number of attributes, and missing information is computationally imputed (Bradlow, Hu, & Ho, 2004). Website morphing, whereby the website automatically matches website content and design features to consumer cognitive styles (e.g., visual vs. verbal; analytic vs. holistic), can also be beneficial for consumer processing (Hauser, Urban, Liberali, & Braun, 2009).

**Product filtering and comparison tools**

In the face of extensive options, consumers have been shown to utilize a two-stage consumer process of first filtering product options for inclusion in a consideration set and subsequently conducting an in-depth comparison of considered alternatives (Alba et al., 1997; Häubl & Trifts, 2000).

Given the importance of the congruency of product organization with consumers’ mental representations and decision tasks (Morales et al., 2005), many online websites enable consumers to self-organize the product option set using drop-down menus to sort on the basis of important attributes. Ironically though, research has found that these important filtering attributes are deemphasized in later choice, as the consumer categorizes retained options as similar on the filtered attribute, often leading to lower decision quality (Chakravarti, Janiszewski, & Ülkümen, 2006). Our prior discussion of mental construal suggests that having consumers filter on high level construals can reduce tradeoff difficulty, particularly for non-comparable options. Some managerial actions designed to shift consumers to high level construals as a way of mitigating choice difficulty include organizing products by benefits (Lamberton & Diehl, 2013) and focusing consumers on the big picture of “why” they buy the product (Xu et al., 2013).

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Benefits and Cautions of Decision Aids</th>
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<tr>
<td><strong>Benefits</strong></td>
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<tr>
<td>Preference Learning Tools</td>
<td>Aid consumers in understanding attributes, clarifying preferences, ascertaining across attribute importance trade-offs</td>
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<tr>
<td>Product Filtering Tools</td>
<td>Enable consumers to organize product option set consistent with their own mental representations and decision tasks</td>
</tr>
<tr>
<td>Comparison Tools</td>
<td>Reduce difficulty of comparing products, decreasing size and increasing quality of consideration set and choice</td>
</tr>
<tr>
<td>Recommendations</td>
<td>Reduce search effort, decrease size yet increase quality of consideration set, and improve purchase quality</td>
</tr>
<tr>
<td>Defaults</td>
<td>Aid consumers in efficiently filtering product option set by providing ordered list</td>
</tr>
<tr>
<td>Choice Delegation</td>
<td>Reduce cognitive effort by eliminating need to engage in deliberative processing</td>
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<tr>
<td></td>
<td>Systematically increase choice likelihood of particular options, often the default option</td>
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<tr>
<td></td>
<td>Eliminates need for decision-making and alleviates cognitive tradeoffs</td>
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* Note: References omitted for ease of exposition. Please see text for details.
Comparison matrices enable consumers to place screened product alternatives in an alternative X attribute matrix and sort on desired product attributes. These comparison aids have been shown to reduce the difficulty of comparing products, decreasing the size and increasing the quality of the consideration set as well as improving the quality of purchase decision (Häubl & Trifts, 2000). Notably though, comparison matrices did not lead to a higher degree of consumer confidence in their purchases (Häubl & Trifts, 2000).

Explicitly placing options into a comparison matrix, however, may increase option attachment and lead to a sense of loss for nonchosen options (Carmon et al., 2003). Research has shown that metaphysical acts of closure such as closing a website or covering a rejected alternative increase consumer perceptions that a decision is final, lowering the likelihood of comparison between chosen and foregone options, and thus increasing satisfaction with the chosen option (Gu, Botti, & Faro, 2013).

**Recommendations**

Recommendation agents have been shown to allow consumers to efficiently screen the set of alternatives by providing an ordered list of recommended alternatives. These recommendations may be based on consumer’s self-explicated attribute importance weights and minimum acceptable attribute levels (Häubl & Trifts, 2000), a consumer’s past purchase history (West et al., 1999), or collaborative filters that utilize a database of other similar consumers who have experienced the product to predict evaluation of the target consumer (Ariely, Lynch, & Aparicio, 2004). Recommendations have been found to shift consumers’ decision orientation from searching to choosing among alternatives that have already been inspected (Dellaert & Häubl, 2012). Overall, recommendation agents have been found to decrease consumer decision difficulty by reducing consumers’ search effort for product information, decreasing the size yet increasing the quality of the consideration set, and improving the quality of the purchase decision (Dellaert & Häubl, 2012; Häubl & Trifts, 2000).

However, recommendation agents are not a universal remedy for decision difficulty. First, as mentioned earlier with preference learning tools, if consumers must initially explicate their preferences, this task itself can lead to decision difficulty (Huffman & Kahn, 1998). Further, although ordering alternative sets in predicted order from best to worst normatively should lead to better product choices, Diehl (2005) demonstrated that low search costs and greater accuracy motivation led consumers to overlook the declining product order set, leading to worse choices and negating the benefit of the recommendation agent. Maximizers in particular may be compelled to continue deliberative searching beyond the initial superior recommendations.

Recommendations also have also been shown to increase decision difficulty if they run counter to a consumer’s a priori preferences (Goodman, Broniarczyk, Griffin, & McAlister, 2013). Specifically, when recommendation signage conflicted with a consumer’s well-developed preference in horizontally differentiated categories such as chocolates or teas, it resulted in increased consideration set size and consequently greater decision difficulty for consumers restricted to a single choice from a large assortment. Moreover, in product categories with a normatively best choice, if the recommendation was against a dominated alternative or endorsed a non-dominant alternative in a small assortment, consumers experienced increased decision difficulty, ultimately exhibiting reactance and increasing selection of the dominant option (Fitzsimons & Lehmann, 2004).

**Defaults**

Defaults are pre-determined attribute settings or pre-determined alternatives provided to prevent the need for consumers to engage in deliberative decision processing or to make difficult tradeoffs (Thaler & Sunstein, 2008). The mechanism underlying the influence of defaults has been shown to be the appeal of reduced cognitive effort, the default serving as an implicit recommendation or as a reference point which frames the other options as a gain or loss (Dinner, Johnson, Goldstein, & Liu, 2011). As previously discussed, selection of a default is an avoidant option more likely to be chosen when encountering a complex task (Levav et al., 2010; Redelmeier & Shafir, 1995), conflict (Tversky & Shafir, 1992), uncertain preferences (Dinner et al., 2011), and emotionally difficult decisions (Luce, 1998). Thus, the default systematically affects which option is chosen, oftentimes increasing choice of the default itself (Johnson & Goldstein, 2004).

In customization, manufacturers can aid consumers by offering default or standard configurations rather than requiring consumers to design from scratch (Dellaert & Stremersch, 2005; Park, Jun, & Maclnnis, 2000). Defaults can be based on the basic model option, the best-selling option, or a fully-loaded option. Alternately, they can be personalized based upon a consumer’s demographic or shopping profile. Defaults that require consumers to subtract down from a fully loaded model (versus adding up from a base model) lead consumers to select options with a higher total price, but this can backfire by reducing purchase likelihood when initial purchase intent is low (Park et al., 2000). Levav et al. (2010) has also shown that when consumers face high variety, more depleting attribute decisions earlier in the customization sequence (rather than later) increases the likelihood of consumers accepting subsequent manufacturer suggested defaults.

Choice architecture involves understanding how consumers make decisions and designing choices that make it easier for consumers to choose what is “best” without seemingly restricting freedom of choice (Thaler & Sunstein, 2008). The primary mechanism of choice architecture is the use of strategic defaults to provide a means for “nudging” a consumer to behave in a desired manner. In a no-action default, a condition is imposed if an individual does not make a decision. Johnson and Goldstein (2003) demonstrated the dramatic effect of no-action defaults on organ donation, with countries having an opt-out policy exhibiting almost 100% donation rates compared to less than 20% donation rates for countries possessing opt-in policies. For investment decisions, Morrin, Broniarczyk, and Inman (2012) showed that offering a default life-cycle fund—a fund that automatically allocates dollars across asset classes based on target retirement—increased investment participation among low knowledge investors, particularly as the size of fund...
assortment increased. Such defaults, though, are the subject of considerable debate in public policy, as no default setting is truly neutral (Johnson et al., 2012), and defaults are especially likely to be utilized by those with less-developed preferences. Additionally, it is important to note that when consumers are skeptical of the defaults, believing they are being manipulated by the marketer, their persuasive knowledge is activated and they are less likely to follow (Brown & Krishna, 2004).

Choice delegation

At the extreme, a decision maker may elect not to make a difficult decision oneself but instead to delegate the decision to another. Decision delegation would seemingly alleviate the cognitive tradeoffs and emotional stress of making a decision oneself. Individuals, though, covet their choice freedom and autonomy and hence exhibit a strong preference to choose for themselves, regardless of the valence of the choice options (Botti & Iyengar, 2004) or difficulty differentiating between the choice set (Botti & McGill, 2006). Moreover, they often fail to recognize that delegating the decision would result in enhanced choice satisfaction (Botti & Iyengar, 2004).

Further, even though decision delegation requires less decision-making effort, Usta and Häubl (2011) demonstrated that delegating decisions to surrogates (e.g., travel agents, physicians) depleted consumers’ limited self-regulatory resources more than making the same decisions independently. Delegating a decision decreased consumers’ feelings of autonomy which led consumers to expend resources in order to cope with the resultant self-esteem threat and subsequently impaired self-control.

Even in the tragic medical choices of withdrawing infant life-support previously discussed, decision makers were conflict-ed, simultaneously wanting to make and relinquish the agonizing choice (Botti et al., 2009). The preference for choice autonomy was shown to come at a substantial cost of higher psychological pain induced by self-guilt and blame in this no-win decision (Botti et al., 2009). Thus, we can see that consumers have difficulty relinquishing control to another decision maker and therefore often fail to reap the potential benefits tendered by decision delegation. Marketer strategies to reaffirm a consumer’s self-esteem (Usta & Häubl, 2011) and keep the consumer informed throughout the process (Botti et al., 2009) may increase utilization of decision delegation.

In sum, preference learning tools, product filtering and comparison matrices, recommendations, defaults, and choice delegation offer promise to assist the empowered consumer in dealing with the freedom of choice and expansion of information in today’s challenging decision environment. However, one needs to be cognizant that decision aids have complex effects. They may inadvertently backfire and complicate decisions as well as leave consumers especially susceptible to marketer and public policy influence.

Future research

Our review highlights many factors contributing to and resulting from decision difficulty in an environment of consumer empowerment. Several opportunities for future research have emerged. Increasingly, demands on consumers require multitasking, and modern technologies enable it. Mick (2008) argued that the “24/7, high-speed, multitasking, hyperchoice lifestyle” (p. 19) contributes to ego-depletion and reduced self-control. As consumers make decisions in one realm while simultaneously attending to other tasks (i.e., making an online purchase while Skyping with a friend), they experience greater cognitive load and are more susceptible to irrelevant decision influences (Ophir, Nass, & Wagner, 2009). On the other hand, multitasking can be used during a choice task to obtain information relevant to the decision (i.e., texting a friend for advice while speaking with a salesperson). There is a need to understand more clearly how multitasking ameliorates or exacerbates decision difficulty.

Moreover, today’s consumers are under a lot of stress and time pressure, and further research is needed to understand how this impacts decision making. Researchers have made significant inroads in understanding time pressure, examining such things as the opportunity cost of time pressure (Payne, Bettman, & Luce, 1996), how time pressure increases non-compensatory processing and choice deferral (Dhar & Nowlis, 1999), the way maximizers perceive more time pressure (Chowdhury, Ratneshwar, & Mohanty, 2009), and how time pressure increases the tendency to act on habits (Wood & Neal, 2009). Related research has examined the way resource depletion impairs deliberate processing and executive control (Pocheptsova et al., 2009). It is important to further identify when stress and time pressure make decisions more difficult and when they lead to coping mechanisms that reduce difficulty.

With expanding information sources, people are drawn into search by the increasing availability, richness, and usability of enriched product details, HD video, personalized marketing, UGC, reviews, and a myriad of other information. Research should begin to investigate how these different types of information impact information load differentially. There is a need to understand factors beyond number of attributes, number of alternatives, etc. that drive information load. Similarly, future research should examine the way that personalized content, advertising, and other communications directed at consumers help or hurt in decisions. Such personalized information may reduce information overload by increasing relevance and reducing quantity of information, or it may augment overload by adding further to the confusion of the decision.

Moreover, since consumers often engage in excessive search and can experience negative outcomes as a result (Diehl, 2005; Griffin & Broniarczyk, 2010; Mogilner et al., 2013), further research is needed to understand what aspects of the information or the choice context draw them in, either by increasing the hedonic aspect of searching or by altering perceptions of the cost relative to the benefit of further search. Future research should identify ways to enable consumers to more accurately judge the objective and subjective impact of continued search.

Understanding the added burden that consumers have in evaluating new sources of information is an additional area warranting more research. For marketer provided information, establishing trust is a critical element. In a large-scale study of
web sites, Bart, Shankar, Sultan, and Urban (2005) found that the determinants of trust differed across site categories, with navigation ease rated as important for high information content sites such as sports sites, privacy and order fulfillment rated as important for high risk sites such as travel, and brand strength rated as important for high-involvement categories such as financial services.

The increase in user-generated content available for a decision also provides an opportunity as well as a responsibility for consumers, and it is important for marketers to better understand the role of trust here as well. More research is needed to examine the ways that consumers cope with this responsibility, the heuristics and biases they use to judge UGC, and the impact of this on decision difficulty. Moreover, research should identify ways to aid consumers in deciphering the truth in this vast wealth of information and how these attempts to establish trust in UGC are received by consumers.

Our review of consumer empowerment and its effects on decision difficulty focused primarily on factors prior to and during choice as well as the immediate consequences of the choice, but there is a need to better understand the forces at play in post-choice information search, post-choice evaluation, and WOM generated after a choice. The increased availability of information in today’s market environment makes post-choice search easier and less costly than ever before. Prior research has identified a confirmation bias in search for information (Festinger, 1957) where consumers strive to be validated more and the impact of this on decision difficulty. Moreover, research should identify ways to aid consumers in deciphering the truth in this vast wealth of information and how these attempts to establish trust in UGC are received by consumers.

Conclusion

Provision of choice is often touted as the hallmark of freedom and the advantage of a market economy. The immense proliferation of choice in the current consumer decision making environment offers near ideal conditions for preference matching, and the rapid expansion in the quantity and variety of information available to today’s consumers brings consumers ever closer to conditions of nearly perfect information. These dynamics combine to provide opportunities for optimal decision-making, yet the crux of our review is that consumer empowerment also entails a substantial cost in terms of decision difficulty. Freedom of choice and expansion of information can amplify task complexity, tradeoff difficulty, and preference uncertainty. Empowerment is especially likely to result in decision difficulty when consumer knowledge is low or preferences are uncertain, under specific information types, when the decision environment is inconsistent with consumers’ mental representations, or when there is a tendency to maximize. Decision aids offering assistance to consumers have many upsides, but caution must be exercised to avoid unintended detrimental consequences. Our review suggests further research is needed to better understand factors surrounding consumer empowerment and its impact on decision difficulty.

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References


