Explaining Consumers' Reactions to Assortment Size

Lissa Matyas

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ABSTRACT

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In this thesis we propose that the impact of assortment size on choice is moderated by goals (regulatory focus). We argue that if the choice is approached with a prevention focus, a consumer who lacks articulated preferences will concentrate on avoiding regret, and in needing to evaluate every option to correctly reject all but the one best alternative, will find it easier to process a small assortment. Conversely, a promotion-focused individual will stop at the choice that meets all of his/her requirements, so we predict a preference for a large assortment, as more options means more 'hits'.

Prior research has shown that product category can trigger a consumer's prevention or promotion focus. We further suggest that product category will influence the ideal assortment size. When buying a 'prevention product', comparing many options increases the difficulty of making correct rejections, and we predict a preference for a small assortment. When buying a 'promotion product', the priority is to have as many 'hits' as possible, so we expect a preference for a large assortment.

Understanding how goals are activated, given the purchasing decision, and how they moderate the assortment size / consumer response relationship will provide guidance to both manufacturers and retailers in terms of editing the assortment size to increase consumers' purchasing likelihood.

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DEDICATION

To Quentin

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Thanks to globalization, deregulation and more efficient supply-chain management, the Western world truly has become 'spoiled for choice' in all product categories on (actual or virtual) retail shelves today. In some cases, people welcome wide assortments (i.e., horizontal line extensions, defined as a group of products that have the same function and belong to the same quality tier and thus have the same price, Draganska and Jain 2003), whereas in other instances, too much choice can be overwhelming. But how can manufacturers and retailers predict consumers' ideal assortment size, thus improving the chance that the product will be purchased? In this thesis, we investigate the relationship between assortment size and consumer responses.

Ten years ago, 10,000 SKUs (stock-keeping units) in a retail outlet was considered high (Schwartz 2006). Today Wal-Mart typically stocks more than 100,000 types of items and may carry 60 sizes and brands of toothpaste (Greenhouse 2005). According to the Marketing Intelligence Service, 31,510 new consumer SKUs were introduced in the US in 2003, which is about the total number of SKUs stocked in an average supermarket (Draganska and Jain 2006). One of the supermarket categories with the lowest number of products is bath tissues, and still 128 separate SKUs can be found in a period of eight years (Israilevich 2003). In addition, only 7% of the new packaged products launched in America in 1996 really offered new or added benefits (The Economist 1998). Consumers have noticed, stating that although they believe supermarkets should carry a wide assortment, the typical supermarket carries too many items; Rather than offering expansive choice, some large selections are just considered replete with redundant choices, making the shopping task more difficult (Kahn 1998). At the same time, today's average consumer is spending only 21 minutes doing their

shopping, down 25% from five years ago, and buys an average of only 18 items (Narisetti 1997). Furthermore, product returns are becoming an increasing burden for retailers. In 2002, the value of products that US consumers returned annually to the nation's retailers exceeded $100 billion-or more than the GDP of two-thirds of the world's countries (Stock, Speh, and Shar 2002).

Interestingly, a 1993 Food Marketing Institute study found that reducing the number of SKUs in six test categories (cereal, toothpaste, salad dressing, toilet tissue, spaghetti sauce, and pet food) in three retail chains resulted in no significant loss in category sales (Broniarczyk, Hoyer, and McAlister 1998). In 1998, Proctor and Gamble announced that cutting several of their lines resulted in boosting market share, cutting costs of production and nearly doubling the reliability of manufacturing (The Economist 1998). Boatwright and Nunes (2001) report that for one online grocer, decreasing assortment by 20% to 80% across product categories increased revenues by an average of 11%. Such examples have lead both researchers and manufacturers to question the need for, and viability of, offering consumers such large numbers of different items in a merchandise category, referred to as 'assortment size' by Levy and Weitz (1995). Do consumers actually want such large assortments? Do they ultimately benefit from such large assortments?

In the next section, we begin by reviewing traditional theories that the provision of increased choice is of benefit to both consumers and retailers alike. Next, we briefly describe recent research that has found negative consequences to offering too much choice. We outline the possible moderators of assortment size on choice documented in prior research, and finally, we propose a goal-based explanation of assortment

preferences. By first manipulating consumers' regulatory focus, and later using product categories that trigger prevention or promotion goals, we show that goals play an important role when processing small versus large assortments, ultimately impacting the likelihood of making a purchase.

BACKGROUND

Benefits of Choice

Classic economic theories of free enterprise argue that large assortment size promotes competition among providers, which in turn lowers price and improves quality (Loewenstein 1999), presumably of benefit to consumers. The primary advantage of a large assortment is that it allows for a better match between an individual's personal preferences and the alternatives in the choice set (Baumol and Ide 1956; Chernev 2003a; Iyengar and Lepper 1999; Iyengar and Lepper 2000; Kahn 1998; Lancaster 1990; Payne, Bettman, and Johnson 1993; Simonson 1999). More products mean more flexibility (Boatwright and Nunes 2001; Kahn and Lehmann 1991; Koopmans 1964; Kreps 1979; Reibstein, Youngblood, and Fromkin 1975). Giving the decision maker a large assortment can also provide a sense of empowerment (Iyengar and Lepper 1999; Rotter 1966; Taylor 1989; Taylor and Brown 1988; Wathieu et al. 2002), by creating a perception of freedom of choice (Brehm 1972). In turn, the personal control and intrinsic motivation provided by a wide array of choices have been correlated with numerous physical and psychological benefits, including greater task enjoyment, enhanced task

performance, and increased life satisfaction (Iyengar, Huberman, and Jiang 2004). Even seemingly trivial or wholly illusory choices have been shown to have powerful motivating consequences (Langer and Rodin 1976; Dember, Galinsky, and Warm 1992; Langer 1975). Further, Reibstein, Youngblood, and Fromkin (1975) showed that increased post-decision dissonance is diminished by expanding the choice set, increasing satisfaction and consumption level. Finally, a large assortment allows consumers to satisfy their inherent variety-seeking tendencies (Berlyne 1960; Helson 1964; Kahn 1995, 1998; McAlister and Pessemier 1982; Ratner, Kahn, and Kahneman 1999; Simonson 1990; Walsh 1995) and seems better suited when choosing for several people or for multiple occasions (Simonson 1992). These arguments all indicate that consumers do value an expanded choice set.

In addition to benefiting consumers, the variety-seeking literature generally reasons that stocking large assortments is a competitive advantage for retailers as well. It builds loyalty (Klemperer 1995), protects for inaccurate forecasts of customers' taste, provides insurance against risk, and can allow for high market share in small markets (Lancaster 1979; Kahn 1998; Kekre and Srinivasan 1990). When shopping at a retailer that offers a large assortment, the selection at hand reduces consumers' uncertainty of whether the choice set adequately represents all potentially available options (Arnold, Oum, and Tigert 1983; Craig, Ghosh, and McLafferty 1984; Louviere and Gaeth 1987), making it is less likely that a potentially superior alternative is not represented in the choice set (Chernev 2003a). This means that stocking a smaller assortment is risky for any given retailer, as it may dissuade consumers from shopping in their establishment. Economists have also proposed that offering broader product lines can create barriers to

entry for other retailers (Berger, Dranganska, and Simonson 2006; Schmalensee 1978), allowing for higher prices to be charged (Benson 1990). Berger et al. (2006) also propose that the variety a brand offers can act as an important quality cue, particularly when detailed information is unavailable, or under low involvement (Kassarjian 1978), because it conveys expertise and commitment to the category.

Logic dictates that those people who value having infinite options will benefit, and those who do not can ignore the added options (Schwartz 2004b, 2004c).

Negative Consequences of Too Much Choice

Although it is clear that a large assortment has many benefits for both consumer and retailer, a number of researchers have questioned the effectiveness of the common retail strategy of competing by offering a wide assortment of items within a category.

On the firms' side, Dranganska and Jain (2003) found that product proliferation can be counterproductive in the sense that market share decreases after a certain line length; production costs increase at an increasing rate, resulting in diminishing returns.

From the consumers' perspective, recent research warns that the increased time and complexity of a purchase decision can backfire (Greenleaf and Lehmann 1995; Huffman and Kahn 1998; Jacoby, Speller, and Berning 1974; Kahn 1998; Malhotra 1982; Shugan 1980), potentially leading to a less compelling choice experience or to a less satisfactory outcome (Loewenstein 1999; Schwartz et al. 2002; Simonson and Tversky 1992; Tversky and Shafir 1992). Iyengar and Lepper (2000) report results to this effect. In their field experiment, participating shoppers were 10 times more likely to buy a jar of

jam when six varieties were on display as compared to 24. Also, when college students were given six topics to choose from for an extra-credit essay, they were more motivated to participate in the assignment and wrote better essays than when they were faced with 30 options of essay topics. In a third experiment, students asked to try a chocolate from a small array of six were more satisfied with their tasting than those faced with 30 chocolates, and were four times as likely to choose chocolate rather than cash as compensation for their participation. The authors explain that although having an extensive number of alternatives to choose from may be initially attractive to consumers, it may prove to be unexpectedly demotivating in the end (Iyengar and Lepper 2000).

The difficulty of the choice problem faced by the consumer increases with more options and attributes (Bettman, Luce, and Payne 1998), due to the increase in demands on his/her information processing resources. This can lead to cognitive overload (Chernev 2006; Hauser and Wernerfelt 1990; Huffman and Kahn 1998; Jacoby, Speller and Berning 1974; Malhotra 1982; Scammon 1977; Shugan 1980) fatigue (Desmeules 2002; Mick, Broniarczyk, and Haidt 2004), and a feeling of being overwhelmed (Cristol and Sealy 2000; Huffman and Kahn 1998), dissatisfied with the outcome (Botti and Iyengar 2004), anxious (Loewenstein 1999) and depressed (Benartzi and Thaler 2002; Chernev 2003a; Iyengar and Jiang 2004; Iyengar and Lepper 2000; Schneider 1998; Schwartz 2000; Solomon, Holmes, and McCaul 1980). In such cases, consumers may decide to make the easiest choice, i.e., choose the default option (Hauser and Wernerfelt 1990; Luce 1998; Payne 1982; Shafir, Simonson, and Tversky 1993; Shafir and Tversky 1992; Simonson 1992), use simple decision rules (Bawa, Landwehr and Krishna 1989; Christensen-Szalanski 1978, 1980; Lehmann 1998; Hauser and Wernerfelt 1990; Kahn

1998; Payne 1982; Payne et al. 1988, 1993; Timmermans 1993; Wright 1975), search for more alternatives, simply defer the decision, or decide not to buy at all (Boatwright and Nunes 2001; Chernev 2003a; Dhar 1997; Greenleaf and Lehmann 1995; Gourville and Soman 2000; Huffman and Kahn 1998; Iyengar and Lepper 2000; Iyengar et al. 2003; Johnson et al. 1993; Malhotra 1982; Simonson 1999; Tversky and Shafir 1992).

In addition, confidence in having made the correct choices also decreases as the number of attractive options increases (Chernev 2006; Jacoby, Speller and Berning 1974; Wright 1975). As options expand, people's standards for what is an acceptable outcome rise (Diehl and Poynor 2005; Schwartz 2000). Diehl and Poynor (2005) report that consumers may overestimate the extent to which they are able to choose more advantageously from a larger set, and therefore have higher expectations for a selection made from a wide assortment. They suggest that one of the reasons for this is because the consumer does not search enough to actually encounter the ideal option. The existence of multiple alternatives also makes it easy to imagine alternatives that do not exist – that combine the attractive features of the ones that do exist, leading to unrealistic expectations (Diehl, Kornish, and Lynch 2003; Diehl and Poynor 2005).

Although a large selection leads to a higher probability that one will find a 'good' choice, it also leads to a higher probability that one will reject an even better alternative (Bülbül and Meyvis 2006). Lehmann (1998) even asserts that the belief that a large assortment increases the likelihood of getting a product that perfectly meets one's needs is not supported by game theory. Plus, having too many alternatives in a category diminishes the attractiveness of what people actually choose, as thinking about the attractions of some of the unchosen options detracts from the pleasure derived from the

chosen one (Carmon, Wertenbroch, and Zeelenberg 2002). This may have an even larger impact on the post-purchase evaluations (Iyengar and Lepper 2000; Wood, Swain, and Wadden 2003). Research in regret has shown that increased choice leads to increased responsibility, which consequently leads to increased experienced regret post-purchase (Frijda, Kuipers, and Ter Schure 1989; Roseman, Anoniou, and Jose 1996; Zeelenberg 1999; Zeelenberg, van Dijk, and Manstead 1998). Therefore not only does increasing the number of options make mistakes of either omission or commission more likely, but it also makes the psychological consequences of these mistakes more severe (Landman 1993). Overall, findings suggest that increasing the size of the choice set can potentially lead to a lower choice probability and weaker preferences for the selected alternative (Chernev 2006).

Results supporting choice versus those warning of the dangers of too much choice are not necessarily as contradictory as they first appear. Iyengar and Lepper (2000) draw attention to the fact that in the studies showing that assortment size improves intrinsic motivation and satisfaction, the conditions used in these experiments were characteristically small, typically between two and six alternatives, indicating that customers prefer choice among relatively limited alternatives to no choice at all. However, most of the extant research has not used large ranges of alternatives, has not presented ranges where the differences among options is relatively small, and does not try to describe the relationship between assortment size and satisfaction. Desmeules (2002) proposes that consumers' evaluations of the assortment size may reach an optimum point beyond which the number of choices may bring about stress, frustration, doubt, regret, and the triggering of avoidance mechanisms, representing an inverted-U relationship.

Therefore, although it is preferable to have some choice rather than no choice at all, it is possible to have too much choice, ultimately leading to dissatisfaction and regret.

Moderators of Assortment Size on Choice

Despite the significant impact that assortment size has on purchasing behavior, there has been limited research explicitly identifying those factors that determine the nature of this relationship. To date, few researchers have identified factors that determine when large product assortments will strengthen consumer preferences, as predicted by the traditional economics literature, and when large assortments will weaken preferences, as suggested by recent findings in the behavioral decision literature.

Mick, Broniarczyk, and Haidt (2004) propose a number of personal level factors such as need for cognition, maximizer / satisficer differences in decision-making, tolerance for ambiguity, materialistic values, and personality characteristics such as neuroticism as moderators of the effect of assortment size on choice. Schwartz (2004b) conjectures that the subjective experience that the choices afford further impacts satisfaction with the decision.

Bülbül and Meyvis (2006) specify anticipation of regret as a moderating factor, and Gourville and Soman (2005) propose that potential for regret will moderate the impact that assortment size will have on consumer behavior. While "anticipation of regret" refers to the confidence (or lack thereof) that one has that they chose the best alternative and will not lament foregoing another alternative after the fact, "potential for regret" refers more to the importance placed on the decision itself and how serious the

consequences will be if the decision taken does not turn out well. Similar to the latter concept, Iyengar, Huberman, and Jiang (2004) suggest that the costs associated with making the wrong choice, or even beliefs that they are truly wrong choices, could moderate the effect of assortment on choice.

Other moderators are the perceived complexity of the information presented (Gourville and Soman 2005; Huffman and Kahn (1998), and the ease of comparing options and making trade-offs (Gourville and Soman 2005). As such, Gourville and Soman (2005) propose that while comparisons on a single dimension with incremental tradeoffs (as is the case with an alignable assortment) minimize the conflict inherent in the decision, when tradeoffs must be made between variants, the conflict of the decision escalates. The authors assert that the conflict experienced for this assortment type (non-alignable) increases with the assortment size. Schwartz (2004b) postulates that this type of either/or decision generates regret for lost opportunity.

Alba and Hutchinson (2000) suggest expertise as a moderating factor of assortment size on choice. Alba and Hutchinson (1987) found significant differences between novices and experts in the size and composition of the set of alternatives they consider, and in the nature of the attributes that are used to evaluate those alternatives. However, with regard to search, overestimated expertise about a product domain may result in an abbreviated search process (Büyükkurt and Büyükkurt 1986; Johnson and Russo 1984), generating a decision on the basis of previously learned information, relying simply on a pre-processed choice rule (Bettman and Zins 1977), or engaging in only shallow processing of external information (Alba and Hutchinson 1987).

Kahn (1998) suggests that the number of options to offer is dependent on the nature of the competition and customer values in a particular industry (e.g., the heterogeneity of tastes in the particular market). She offers enjoyment and motivation of processing the assortment as moderators of assortment size on choice. Desmeules (2002) interprets this type of motivation as representing a state when people have dispositional attention capacity which may help produce variety-seeking behavior. Kahn and Lehman (1991) found that the amount of diversity that consumers desire in a choice set is a function of the acceptability of the items and the distinctiveness of those items. Kahn (1998) further states that consumers must engage in a great deal of learning before they can appreciate a large assortment, and marketers must learn these customer preferences well enough to be able to provide the appropriate customized option or options that will offer additional variety. Several other authors (Hauser and Wernerfelt 1990; Ratchford 1982; Roberts and Lattin 1991; Simonson, Huber and Payne 1988) concur that a consumer's prior beliefs and preferences about alternatives can be important moderating factors of the effect of assortment on choice.

Along these lines, Chernev (2003a, 2003b) puts forth that preference articulation moderates the impact of assortment on individuals' decision strategies, leading to a more selective, alternative-based, and confirmatory processing for individuals with an articulated preference who are choosing from large assortments, and more comprehensive, attribute-based, and comparative processing for those without an articulated ideal attribute combination.

We attempt to take this theory further in proposing that consumers' reactions to assortment size are not only affected by the presence or absence of an articulated ideal

attribute combination, but also are essentially moderated by goals. More specifically, we explore the interaction between assortment size and regulatory focus, suggesting that consumers' reference states will be determined by their goals. It is therefore important to explore not only the promotion focus, where, according to Chernev, one has an ideal reference point, but also the context of a prevention focus, where the consumer requires more of a reservation point. To do so, we must look beyond the process of making a choice and analyze how motivation comes into play. We therefore assert that motivation, namely regulatory focus, can moderate choice among small or large assortments.

Role of Regulatory Focus

Consumer research has shown that higher level goals often influence how consumers approach functional goals (Aaker and Lee 2001). Advertisers can use persuasion appeals that focus on positive outcomes (promotion goals) or negative outcomes (prevention goals). Unlike functional goals that may be more transient and disappear once they are satisfied, these higher level goals tend to be chronically accessible, either out of habit or due to dispositional or cultural inclination (Aaker and Lee 2001).

According to regulatory focus theory (Higgins 1997, 1998), all goal-directed behavior is regulated by two distinct motivational systems: promotion and prevention, each serving a distinct survival function. The human promotion system is concerned with obtaining nurturance and underlies higher level concerns with accomplishment and advancement. The promotion system's hedonic concerns relate to the pleasurable

presence of positive outcomes (i.e., gains) and the painful absence of positive outcomes (i.e., non-gains). In contrast, the human prevention system is concerned with obtaining security and underlies higher level concerns with safety and fulfillment of responsibilities. The prevention system's hedonic concerns relate to the pleasurable absence of negative outcomes (i.e., non-losses) and the painful presence of negative outcomes (i.e., losses) (Higgins et al. 2001).

Individuals in a promotion focus are motivated to eagerly ensure 'hits', and avoid errors of omission or 'misses' (missing an opportunity for improvement). In contrast, individuals in a prevention focus are motivated to ensure 'correct rejections', and vigilantly avoid errors of commission (making a wrong decision) (Crowe and Higgins 1997; Higgins 1997, 1998; Higgins et al. 2001; Liberman et al. 1999). Therefore, more risky, less conservative, less cautious strategies are expected in a promotion focus than in a prevention focus (Liberman et al. 2001).

Regulatory focus theory proposes that for the same desired end-state, the experience of success differs in a promotion versus a prevention focus (gain versus non-loss), and, similarly, the experience of failure differs in a promotion versus a prevention focus (non-gain versus loss). This is because the same desired end-state is represented as a maximal goal (i.e., an objective one hopes to achieve) in a promotion focus, whereas it is represented as a minimal goal (i.e., an objective that one must achieve) in a prevention focus (Idson, Liberman, and Higgins 2000).

Atkinson's (1964) personality model of achievement motivation indicated a basic distinction between self-regulation in relation to hope of success versus fear of failure. Wicker et al. (1994) extended this notion by suggesting that approaching a goal because

one anticipates positive affect subsequent to attaining it should be distinguished from approaching a goal because one anticipates negative affect from not attaining it. In cognitive psychology, Kahneman and Tversky's (1979) prospect theory distinguishes between mentally considering the possibility of experiencing pleasure (gains) versus the possibility of experiencing pain (losses) (Higgins 1997).

Measuring Regulatory Focus Strength

Individuals can differ in their chronic (enduring) promotion focus on hopes, aspirations, and accomplishments versus their chronic prevention focus on duties, obligations and safety (Idson et al. 2000; Liberman et al. 2001). Inspired by Fazio's research on attitude accessibility (Fazio 1986, 1995), Higgins, Shah, and Friedman (1997) measured individual differences in promotion focus strength and prevention focus strength via reaction times to ideal and ought attitudinal questions (Idson et al. 2000), assuming that the latency required to produce a given attitude is a reflection of its accessibility. Lee, Aaker, and Gardner (2000) investigated participants' self-construal as a factor influencing promotion and prevention strategies, and found that individuals with a dominant independent self-construal put more emphasis on promotion-focused information (i.e., weighed gain-framed information as more important), whereas participants with a dominant interdependent self-construal placed more emphasis on prevention-focused information (i.e., weighed loss-framed information as more important).

In addition to individual differences, previous research has found that regulatory focus can be induced situationally (Crowe and Higgins 1997; Liberman et al. 1999). Situational manipulations of promotion and prevention focus indicate that regulatory focus is affected by the framing of the task (Mourali, Böckenholt, and Laroche 2007). For example, task instructions can be framed to communicate either gain / non-gain (promotion focus) or non-loss / loss (prevention focus) information (Crowe and Higgins 1997). In addition to problem framing, priming individuals' ideals (hopes and aspirations) versus "oughts" (duties and responsibilities) also affects their regulatory orientation, with primed ideals leading to a promotion focus and primed "oughts" leading to a prevention focus (Liberman et al. 2001; Higgins et al. 1986). In this research, we propose that regulatory focus will moderate preferred assortment size.

HYPOTHESES

Since consumers in a promotion-focus have the goal of being exposed to the greatest number of 'hits' (opportunities to find a satisfactory choice), and will stop searching as soon as an option meets all of their requirements, as per Chernev's (2003a, 2003b) selective, alternative-based, and confirmatory processing, we hypothesize that consumers in a promotion focus will be comfortable with a larger assortment, since a large set of alternatives provides them with a better chance of avoiding errors of omission or 'misses' (missing an opportunity for improvement) (Crowe and Higgins 1997; Higgins 1997, 1998; Higgins et al., 2001; Liberman et al. 1999). However, since prevention-focused consumers hold the goal of making correct rejections using vigilance means, and

avoiding errors of commission (making a wrong decision), (Crowe and Higgins 1997; Higgins 1997, 1998; Higgins et al. 2001; Liberman et al. 1999), we predict that they find a large choice set too intimidating and draining to narrow down (Brenner, Rottenstreich and Sood 1999). Experiencing the need to evaluate every single option to correctly reject all but the one best, as per Chernev's (2003a, 2003b) comprehensive, attribute-based, and comparative processing, a large set would lead to cognitive overload.

H1: Consumers with a promotion focus will evaluate a large assortment more positively than consumers with a prevention focus.

We expect that consumers with a promotion focus, able to make a choice upon encountering the first selection that fits with their ideal attributes, will have a more enjoyable decision-making experience when choosing from a large assortment, because they will feel that their chance of finding the ideal option increases with an expanded number of options.

We anticipate the opposite effect for those with a prevention focus. Faced with a large assortment, we assume that prevention-focused consumers, compelled to sort through every option until having rejected all but the best alternative, will enjoy the decision-making process less than if they are given a smaller, more manageable set to choose from. This is because a smaller assortment will minimize the 'pain from choosing' (Bülbül and Meyvis 2006).

H2a: Consumers with a promotion focus will find the decision-making process more enjoyable when choosing from a large assortment than from a small assortment.

H2b: Consumers with a prevention focus will find the decision-making process less enjoyable when choosing from a large assortment than from a small assortment.

We further advance that those consumers with a promotion focus will be more enticed by the larger assortment, and thus find the chosen alternative more attractive than a choice made from a smaller selection. This is because the smaller selection would be less likely to contain the ideal option, and consumers with a promotion focus would wonder what they were missing had they had the opportunity to look through a greater number of choices.

Since prevention-focused consumers might dwell on the options given up from a large selection, worrying that they likely missed alternatives that could have been better, given that there were so many options, they would find an alternative chosen from a smaller assortment to be more attractive.

H3a: Consumers with a promotion focus will find their chosen alternative to be more attractive when choosing from a large assortment than from a small assortment.

H3b: Consumers with a prevention focus will find their chosen alternative to be more attractive when choosing from a small assortment than from a large assortment.

Under a promotion focus, consumers will adopt a maximal goal (an objective one hopes to achieve) (Idson et al. 2000). Since a large assortment increases the likelihood of finding an ideal attribute combination in one alternative, satisfying the objective one hopes to achieve, whereas a small assortment decreases the likelihood of finding this ideal alternative, we expect that promotion-focused consumers will be more satisfied when choosing from a large assortment than from a small assortment.

In contrast, consumers with a prevention focus will adopt a minimal goal (i.e., an objective that one must achieve) (Idson et al. 2000). Since a small assortment increases the ease of comparison among alternatives using vigilance means, or making the 'correct rejections' and increases the likelihood of avoiding errors of commission (Crowe and Higgins 1997; Higgins 1997, 1998; Higgins et al. 2001; Liberman et al. 1999), we expect that consumers with a prevention focus will be more satisfied when choosing from a small assortment than from a large assortment.

H4a: Consumers with a promotion focus will be more satisfied with their decision when choosing from a large assortment than from a small assortment.

H4b: Consumers with a prevention focus will be more satisfied with their decision when choosing from a small assortment than from a large assortment.

Further, promotion-focused consumers faced with a large assortment will feel more confident that they were exposed to enough 'hits' to make a decision, and will

therefore be more likely to purchase the product, than if the assortment size had been more limited.

Conversely, prevention-focused consumers faced with a small assortment will feel more at ease with the limited scope of options, will be less overwhelmed, and will therefore be more likely to buy the chosen product than if they had been expected to choose from a large assortment.

H5a: Consumers with a promotion focus will have a higher purchase intention when choosing from a large assortment than from a small assortment.

H5b: Consumers with a prevention focus will have a higher purchase intention when choosing from a small assortment than from a large assortment.

A summary of the hypotheses is presented in table 1. In the following section, we explain the purpose, the design, and major findings from study 1.

Insert table 1 about here

STUDY 1

The main purpose of study 1 was to see the impact of regulatory focus on choice outcome and the choice experience when making decisions from various assortment sizes. In order to increase experimental control, study 1 was designed to be a laboratory

study, and used a thought-listing task that is reported to have manipulated regulatory focus successfully (Higgins et al. 1986, study 2).

Method

Pretest. In our selection of the stimuli set for study 1, we used two basic criteria: (1) use of product categories consumed to achieve both promotion and prevention goals and (2) use of non-dominant alternatives in the choice sets. To find products that fit these criteria, a pretest was conducted using a student sample of 67 undergraduates at a large North American university. We examined category associations, more specifically whether participants approach a decision with loss prevention or gain promotion goals in the purchase of 22 product categories, following the procedure and measures used by Jain, Agrawal, and Maheswaran (2006) and Mourali et al. (2007). Prevention and promotion goals were measured using a constant sum scale (see Mourali et al. 2007 for details). Participants in pretest 1 perceived chewable daily multi-vitamins, ready-made soup, toothpaste, and meal replacement drinks to be around the midpoint of the scale (being equally prevention and promotion oriented) at $p < .05$, suggesting that their domain (gain/loss) was ambiguous or neutral, as per Jain, Agrewal, and Maheswaran (2006). These products were selected as the stimulus for study 1. Next, we created the alternative sets for study 1, by varying the attributes presented in table 2. There were no dominant alternatives in the assortments presented in study 1.

Insert table 2 about here

Design. Study 1 was a 2 (regulatory focus) × 2 (assortment size) × 4 (product category) factorial design, with assortment size and regulatory focus as between-subjects factors and product category as the within-subjects factor. The study was run on four different dates in a laboratory, using paper and pencil questionnaires, and participants were randomly assigned to the study conditions. Using the regulatory focus manipulation conceived of by Higgins et al. (1986), participants were first asked to complete a thought-listing task in which they were either asked questions about their hopes and dreams (to invoke a promotion focus) or duties and responsibilities (to invoke a prevention focus). Next they were asked to choose one alternative from each of the four product sets. Participants chose from either a small assortment (4 alternatives) or a large assortment (24 alternatives) for each product set.

We decided to use four alternatives for the small assortment and 24 for the large assortment in study 1 based on findings of optimal small assortment size from Iyengar and Lepper (2000) and Zuckerman et al. (1978). Further, research on cognitive overload demonstrates that individuals can optimally process a maximum of up to six alternatives (Bettman 1979; Malhotra 1982; Wright 1975), and findings in cognitive psychology confirm that the processing capacity of short-term memory is approximately seven chunks of information (Miller 1956; Chernev 2003a). Iyengar and Lepper (2000) found an assortment of 24 to 30 choices to be "a reasonably large but not ecologically unusual number of options." In Iyengar and Lepper's (2000) chocolate experiment, participants who encountered 30 chocolates reported feeling that they had been given too many choices, whereas participants who encountered six chocolates reported feeling that the number of alternatives was about right.

Each set of alternatives was presented with attribute descriptions and a picture of the product. In the execution of the small assortment manipulation, we ensured that participants were exposed to all alternatives found in the largest set of 24 alternatives by rotating different subsets of the large assortment using a yoked design.

After making the choice, participants recorded predicted satisfaction with the selection which they had made, the difficulty of the choice task, and their frustration with the choice task on 7-point scales, with anchors (1 = not at all), and (7 = extremely). Participants' enjoyment of the decision task was measured by asking "how much did you enjoy making the (above) choice?" on a 7-point scale, with anchors (1 = not at all), and (7 = extremely). We also obtained their confidence with the choice by using two items: confidence and certainty, measured on 7-point scales, with anchors (1 = not at all), and (7 = extremely). Finally, we obtained participants' familiarity with the product category by asking whether they had tried the product in the past, using a dichotomous scale. The process was repeated for all product categories. The order of the product categories was randomized. In the final section, they completed other relevant individual level scales and answered demographic questions.

Results. The study was conducted with 180 undergraduate marketing students (48.9% female) who received extra course credit for their participation. Participants were randomly assigned to the experimental conditions. Of the participants, six were eliminated due to poor English comprehension based on self-reported measures. A total of 174 participants were included in the subsequent analyses. The results did not change when these participants were included in the analyses. There were no significant product

order effects (p >.20), therefore we present the pooled results here. Given our findings from pretest 1, we did not repeat product category promotion vs. prevention orientation (i.e., no difference between product categories). However, we used the 11-item Regulatory Focus Questionnaire to calculate promotion and prevention focus scores as in Higgins, Bond, Klein, and Strauman (1986). The regulatory focus manipulation was successful but weak (p<.10).

Results are presented in the order of the proposed hypotheses. The means and standard deviations for each condition for the dependent variables are provided in table 3.

Insert table 3 about here

Using a repeated measures ANOVA with regulatory focus and assortment size as the between-subjects factors, product category as the within-subjects factor, and preference for assortment size as the dependent variable (F(1, 170) = 2308.14, p<.01), there was no significant main effect of regulatory focus, but there was a significant main effect of assortment size (p <.01) across all product categories. This finding is not surprising, given the nature of our question. The interaction effect was not significant across all product categories (p = .14). When we repeated the analysis at the univariate level, again, main effect of assortment size was significant (at p <.05) for all product categories. In line with previous research, participants indicated that they would have liked to see more alternatives when they were in the limited assortment condition, and would have liked to see fewer alternatives when in the extensive assortment condition. We found support for our proposed interaction effect with meal replacement drinks at p < .10. For multivitamins, there was directional support for the proposed interaction effect (p

= .15). For these two product categories, we conducted *t*-tests for our proposed contrasts (figure 1). As would be expected from the pattern of means from figure 1, we found that regulatory focus had an impact on the preference for assortment only in the large assortment condition for both products, but not in the small assortment condition. Participants with prevention focus preferred less alternatives than what was presented (i.e., 24 alternatives), whereas participants with promotion focus found this extensive alternative set just right (multivitamins: $t(df = 86) = 1.74, p < .05$, one tailed; meal replacement drinks: $t(df = 86) = 1.93, p < .05$, one-tailed).

Insert figure 1A about here

We also conducted a repeated measures ANOVA using regulatory focus and assortment size as the between-subjects factors, product category as the within-subjects factor, and enjoyment of the choice task as the dependent variable ($F(1, 169) = 1773.14$, $p<.01$). Regulatory focus had a significant main effect on enjoyment of the choice task ($p <.05$) across all product categories. However, neither the main effect of assortment size nor the interaction effect were significant at $p<.05$ at the aggregate level. At the product category level, the interaction effect was not significant at $p<.05$.

Insert figure 1B about here

When a repeated measures ANOVA was conducted with regulatory focus and assortment size as the between-subjects factors, product category as the within-subjects

factor, and attractiveness of the chosen alternative as the dependent variable ($F(1, 170) = 2397.03, p<.01$), regulatory focus had a marginally significant main effect on attractiveness of the chosen alternative ($p <.05$) across all product categories. However, neither the main effect of assortment size nor the interaction effect were significant at $p<.05$ at the aggregate level (see table 3). In addition, our additional analyses at the product category level did not provide further support for our predictions.

In conducting a repeated measures ANOVA with regulatory focus and assortment size as the between-subjects factors, product category as the within-subjects factor, and satisfaction with the chosen alternative as the dependent variable ($F(1, 170) = 3825.23, p<.01$). Regulatory focus had a significant main effect on satisfaction ($p <.01$) across all product categories, however neither the main effect of assortment size nor the interaction effect were significant at $p<.05$ at the aggregate level (see table 3). At the product category level further analysis provided partial support for H4 with meal-replacement drinks. As predicted, when choosing from a large assortment, promotion focused participants reported a higher predicted satisfaction with their choice compared to prevention focused participants ($M_{promotion} = 4.90$, $M_{prevention} = 4.11$, $t(df = 86) = 2.31, p<.05$).

Finally, using a repeated measures ANOVA with regulatory focus and assortment size as the between-subjects factors, product category as the within-subjects factor, and purchase intention as the dependent variable ($F(1, 170) = 2216.41, p <.01$), there was a marginally significant effect for regulatory focus ($p < .10$), but no significant effect of assortment size on purchase intention ($p < .05$) across all product categories (see table 3

for means). We repeated our analysis at the univariate level for each product category, and did not find any support for the proposed interaction effect.

Discussion. Results of study 1 provide weak support, as summarized in table 1. However, the results do provide us with a better understanding of the relationship between assortment size and consumer responses, and how these responses are affected by the consumer's regulatory focus. Our results show partial support that participants in the promotion manipulation evaluated the large assortment more positively than consumers with a prevention focus. We also see partial support for the fact that consumers in a promotion focus find the decision-making process more enjoyable when choosing from a small assortment as compared to its large counterpart. Furthermore, we have obtained partial support that these consumers were more satisfied with their decision when having chosen from among the wider assortment.

Participants in the prevention manipulation showed different reactions to the assortment sizes than those in the promotion focus, however, these differences were not as large as we have expected. Part of the reason for the weak support for our hypotheses may be the relatively weak regulatory focus manipulation (listing of hopes and dreams versus duties and responsibilities). However, it is also plausible that the regulatory focus questionnaire used as the manipulation check measure is not a suitable measure of situational regulatory focus.

Participants in study 1 chose alternatives from different assortment sizes but they did not try the product or experience the consequences of their choices. In study 2, we address these issues.

STUDY 2

To enhance realism, we test our hypotheses in a field study in study 2, as opposed to the laboratory experiment used in study 1. We felt that it was important to measure reactions to assortment size in a naturalistic shopping environment where consumers are regularly required to choose from among both limited and extensive assortments of products. Furthermore, in order to obtain a more meaningful reaction to the product, we asked the consumer not only to choose from among the product assortments, but also to sample this choice. We also gave the participant a full-sized package of the product which they selected to take with them, to encourage them to take the decision more seriously and consider the experiment to be a 'buying' experience rather than a mere tasting booth.

Instead of manipulating the regulatory focus of the participant, as was done in study 1, the product presented to the consumer in study 2 was either a promotion or prevention oriented product (refer to the pretest for study 2 for an explanation of how we chose the products). In this way we were able to compare results of study 1, where the reaction to assortment size was based on whether the consumer approached the decision with either a promotion or a prevention focus, to the results of study 2, where the reactions observed were affected by whether the stimulus was a promotion or a prevention product.

Both Mourali et al. (2007) and Zhou and Pham (2004) have shown that different products can prompt different regulatory concerns: products can be associated with either

a prevention concern or a promotion concern. For example, product categories such as hand sanitizer, sunscreen or mouthwash trigger obligations and associated goals (prevention focus) and lead to a prevention focus, whereas product categories such as chocolate, wine or restaurants trigger ideals and associated goals (promotion focus) lead to a promotion focus. Using product category's effect on regulatory focus allowed us to build on the Iyengar and Lepper (2000) experiments, by comparing reaction to assortment size in a promotion product context versus a prevention product context.

Method

Pretest. In our selection of the stimuli set for study 2, we used five basic criteria: (1) use of two product categories, one that is consumed with a strong promotion goal in mind and the other that is consumed with a strong prevention goal in mind, (2) use of products that could be sampled and evaluated in a relatively short time, (3) use of two products with a comparable price range, (4) non-dominant alternatives in the choice sets, and (5) availability of product variety to allow creation of extensive assortments. To achieve the first goal, a pretest was conducted using a consumer sample of 68 shoppers at a suburban shopping mall of a large North American city. We examined whether participants have a prevention or promotion goal in the purchase of ten product categories, following the procedure and measures employed in the pretest for study 1. As such, prevention and promotion goals were measured using a constant sum scale (see Mourali et al. 2007 for details). Participants were asked to distribute 100 points between the two general goals for each product. Upon analysis of the pretest results, we selected antiseptic hand

sanitizer as the product that elicits a strong prevention goal ($M_{prevention}$ = 61.87%, $t(df = 66) = -2.73, p<.01$), and chocolate as the product that elicits a strong promotion goal ($M_{promotion}$ = 75.29%, $t(df = 67) = 6.67, p < .01$). Next, we created the assortment sizes for study 2, ensuring the exclusion of dominant alternatives. We also used the pretest to verify that consumers could distinguish a small assortment from a large one. Indeed, respondents found an assortment of six to be smaller than an assortment of 24 when searching for their preferred product ($M_{6\ options} = 4.06 < M_{24\ options} = 6.36$, where $t(df = 65) = -9.05, p<.01$). Given these results and previous research, we decided to use 6 and 24 for the assortment size manipulation.

Design. Based on the results of our pretest, we selected chocolate as the product category to trigger a promotion focus and antiseptic hand-sanitizer as the product category to trigger a prevention focus. Study 2 was a 2 (regulatory focus) × 2 (assortment size) between-subjects design, conducted at a suburban shopping mall of a large North American city.

Participants were recruited at the mall and screened for allergies to product ingredients. They were told that they would be asked to choose a product from available alternatives, and in exchange would receive the product they choose as an incentive for participation. Next, they were asked to make a choice from a display of products (either chocolate or hand sanitizer). Products were presented in trial format, and each sample had a product description on a sticker.

Participants first made a choice from either a limited or an extensive assortment of the product. Similar to study 1, the small assortment size (6 alternatives) consisted of

one of the four random subsets of the large assortment size (24 alternatives). These four random subsets were rotated hourly in the small assortment size condition to eliminate any alternative explanation that the configuration of the alternatives could influence our dependent variables. The hours of the display were also counterbalanced across days to minimize any day or time of day effects.

After they made the choice, but before having tried the product, participants were asked to complete questions relating to the choice task and to the alternative they chose (e.g., enjoyment of the choice task, attractiveness of the chosen alternative, similar to study 1). Different from study 1, participants had the opportunity to try a sample of their chosen alternative, and then completed scales measuring reactions to the product, as well as a number of scales related to individual level variables and demographics. After completing the questionnaire, participants received the alternative that they chose in regular size packages (100 gr. package for chocolate and 100 ml. package for hand sanitizer, both similar in price) as the incentive for their participation.

Sample. A total of 139 shoppers from a large mall of a major North American city participated in the study. The participants were screened for food allergies and English proficiency. After eliminating 14 incomplete questionnaires (e.g., participants who did not indicate their choice or had too many missing values throughout the questionnaire), there remained a total of 125 usable questionnaires in study 2.

The median age for the sample was 38 years of age, and 60.8% of the participants were female. The median income level was $70,000 per household, with an average of

three people living in each household, and the typical participant had at least some college level education.

Results. In study 2, we tested the same five hypotheses as those posited in study 1, but in a naturalistic consumer setting. We used the same dependent variables as measured in study 1. The results are organized in the order in which our hypotheses were proposed. Note that in the rest of our analyses in study 2, we use product category as our regulatory focus manipulation, consistent with our earlier discussion.

To eliminate the configuration of the small assortment size as an alternative explanation, we rotated our small assortments using a yoked design. Every alternative in the large assortment size was also presented in the small assortment size on a rotating basis. We first conducted a MANOVA with assortment size and product category as the independent variables, and the configuration of the assortment set as the covariate (*Wilk's Lambda* = .127, multivariate $F(7, 112) = 110.21$, $p < .001$). We found a significant main effect of regulatory focus (i.e., product category) at $p < .01$. The interaction effect of assortment size and regulatory focus was marginally significant at $p < .10$. Neither the assortment size nor the configuration of the assortment set had a significant impact on the dependent variables ($p < .10$). Therefore, for the remainder of the analyses we have pooled all small assortment set configurations. All of the means for the dependent variables are presented in table 4.

Insert table 4 about here

To test whether product category (prevention versus promotion product) is related to assortment size preference, we ran a univariate ANOVA with product category and assortment size as the independent factors, and preference for the assortment size as the dependent variable ($F(3, 120) = 6.786$, $p<.01$). Preference for the assortment size was measured as: "Compared to the selection that you just chosen from, how large a selection would you ideally prefer?" where lower scores indicate a preference for less choices than were presented to the participant, and higher scores indicate the participants would have preferred to have been given more choices. Although there was no significant interaction effect of assortment size and product category on preference for assortment size, there was a significant main effect of both assortment size ($p <.01$) and regulatory focus ($p <.05$). Product category is significantly related to size preference ($p<.05$). In line with our prediction (hypothesis 1), when presented with a large assortment, people choosing among hand sanitizers indicate preference for a smaller assortment ($M_{prevention} = 3.09$) compared to people choosing among chocolates ($M_{promotion} = 3.56$), however, this difference was not significant in study 2 ($t(df = 58) = -1.19, p = .12$). Figure 2A displays the means for the specific conditions. Despite the directional support, there was not statistical support for hypothesis 1.

We conducted a univariate ANOVA with product category and assortment size as the independent factors, and enjoyment of the decision as the dependent variable ($F(3, 119) = 4.18, p<.01$), our analysis revealed that participants who chose among promotion focus products (i.e., chocolates) enjoyed the choice task more than those who chose among prevention focus products (i.e., hand sanitizers) at $p<.01$. The main effect of the

assortment size and the interaction effect were not significant ($p < .05$). Therefore, study 2 did not support H2a or H2b.

Insert figure 2 about here

We then conducted a univariate ANOVA with product category and assortment size as the independent factors, and attractiveness of the chosen alternative as the dependent variable ($F(1, 121) = 1.58, p<.05$). Although the overall model was not significant, the interaction effect of assortment size and product category on attractiveness was significant ($p <.05$). We, therefore, used *t*-tests to test our hypothesized contrast. As predicted, when the product category was prevention oriented (i.e., hand sanitizer), participants found their chosen alternative more appealing when they chose from a small assortment size as opposed to a large assortment size ($M_{small} = 5.13$, $M_{large} = 4.24$, $t(df = 62) = 2.10$, $p<.05$). When the product category was promotion oriented (i.e., chocolate), participants found their chosen alternative more appealing when assortment size was large compared to when it was small, however, this difference was not significant at $p < .05$. Figure 2B displays the means for all the conditions. Our results from study 2 provide empirical support for H3a and only directional support for H3b.

Note that in study 2 the measurement of how attractive the participants found their chosen alternative before they sampled it was phrased differently from study 1, in order to better capture the intended meaning. Although overall, participants did complete the scale accurately in study 1, some provided verbal feedback to the effect that they did not know how to interpret the meaning of 'attractiveness' in the given context, when

asked "How attractive do you find the alternative that you have chosen?" They felt unable to judge anything more than the appearance of the product, and that the term 'attractive' was "too strong" to apply to packaged goods. We therefore changed the question to "How appealing do you find the overall appearance of the alternative that you have chosen?"

Using a univariate ANOVA with product category and assortment size as the independent factors, and satisfaction with the chosen alternative as the dependent variable, the model was not significant ($F(3, 121) = .078, p > .05$). Neither the interaction effect, nor the main effects were significant. Therefore neither H4a nor H4b were supported in study 2.

Finally, we conducted a univariate ANOVA with assortment size and product category as the independent factors, and purchase likelihood as the dependent variable ($F(5, 79) = 2.10, p < .10$). We found that the interaction effect of product category and assortment size on purchase likelihood is marginally significant ($p < .10$). We used *t*-tests to compare the means of small and large alternative sets for the promotion-oriented and prevention-oriented product categories. The pattern of the interaction is presented in figure 3. As predicted, people presented with a promotion focus product (i.e., chocolate) were more likely to purchase the product in the next six months when they made their choice from a large rather than small assortment (($M_{large} = 5.33$, $M_{small} = 4.21$; $t(df = 59) = 2.00, p < 0.05$). Therefore H5a was supported.

As predicted, people presented with a prevention product (hand sanitizer) were more likely to purchase in the next six months when they made their choice from a small

rather than large assortment, however, this difference was not significant at $p < .05$, providing directional support but no statistical support for H5b.

Our results from the ANOVA suggest that a main effect of product category is also significant ($p < .05$). Therefore, consumers were more likely to buy the product within the next six months when choosing among promotion products ($M_{chocolate} = 4.70$) than among prevention products ($M_{hand\ sanitizer} = 3.58$). An administrative error in the execution of the field study took place which affects our results regarding purchase likelihood. The survey used on the first day of data collection did not include the purchase likelihood measure. This error was corrected in the subsequent days of the field study. Due to this error, the purchase likelihood measure for half of the participants in the prevention product category (hand sanitizer) are missing. Small effect sizes and insufficient sample size with the prevention product category may explain the lack of a significant effect in support of H5b.

Insert figure 3 about here

Discussion. Study 2 went beyond the limitations of the laboratory setting of study 1 and assessed consumers' reactions to products in a naturalistic setting. The field experiment also built on prior research by measuring variables that have never before been included in past experiments in this area.

For example, to our knowledge this was the first study to measure perceived attractiveness of the product, both in respect to comparing a large assortment to a small assortment, and in comparing a promotion product to a prevention product. We were

pleased to find support for our prediction that prevention-focused consumers will find their chosen alternative more attractive when choosing from a small assortment than from a large assortment.

Whereas the parameters and limitations of the laboratory experiment in study 1 only allowed us to measure predicted satisfaction, in study 2 we were able to assess the reaction to the stimuli by measuring experienced satisfaction. To do so, after having tried their chosen product, participants were asked: "How satisfied are you with your choice?" While we did not find support for our hypothesis relating to experienced satisfaction in study 2, we feel that further investigation of experienced satisfaction, using more precise measures, could yield promising results. In future, it may also be of value to leave a time lag in order for participants to better assess their experienced satisfaction.

Despite the lack of findings for experienced satisfaction outright, we found that assortment size and regulatory focus interaction had a significant impact on future consumption. Our prediction that consumers with promotion goals have a greater intention of buying the sampled product when choosing from a large assortment than from a small one was supported. There was also directional support for the prevention oriented product.

While this was a strong result, several other hypotheses were not supported. Overall, results for the prevention product (hand sanitizer) were not strongly supportive. In hindsight, it is relatively more difficult to have a successful prevention focus manipulation than promotion focus manipulation. The participants were not particularly shopping for a prevention product and they may not have sufficiently experienced the feelings of anxiety or relief that are related to prevention-focused regulation (Pham and

Avnet 2004). Since there were no major repercussions involved with the prevention-focused decision except for future product failure (Raghunathan and Pham 1999), there were no immediate potential losses, and therefore participants may not have approach the choice of hand sanitizers with a prevention focus as much as they would have had they actually been in the market for such a product.

GENERAL DISCUSSION

While recent research has suggested that offering more choice is not always better, little work has been carried out in establishing when a large assortment is preferred and when consumers prefer to have a more narrow set of options. Furthermore, research that does explore moderators of assortment size on choice focuses primarily on process. The present research extends the analysis by addressing motivation (goals). Furthermore, previous research in this area has only conducted experiments involving promotion products. To observe how regulatory focus moderates consumers' reactions to assortment size, our second study compares purchase decisions made from amongst promotion products to decisions made from amongst prevention products.

We began with a student study in a laboratory setting and then conducted a field study to allow for a more naturalistic environment in which to observe consumers' reactions to choosing and sampling products from amongst small and large assortments. While the results for the second study were stronger than the first, neither was robust in terms of supporting our predictions completely.

The fact that study 2 showed full support for the prediction that prevention-focused consumers find their chosen alternative more attractive when choosing from a small assortment than from a large assortment validates the theory that product category is related to size preference. As well, the result in study 2 which indicates full support for the prediction that promotion-focused consumers have a higher purchase intent when choosing from a large assortment than from a small assortment actually contradicts Iyengar and Lepper's (2000) findings. Participants in their jam experiment were more likely to make a purchase when confronted with an assortment of six as opposed to 24 jams, and participants in their chocolate experiment were four times as likely to choose chocolate as compensation over cash when confronted with six as opposed to 30 alternatives. This contradiction indicates that there remains work ahead in explaining buying behavior in the context of large versus small product assortments.

Another limitation of the present research is the fact that it was difficult to eliminate the overweighing of promotion attributes compatible with a consumer's regulatory focus in the context of the prevention product (hand sanitizer), and to find prevention attributes to include in describing the promotion product (chocolate). In study 1, we were able to eliminate the overweighing of product attributes by balancing the attributes defined as 'promotion' with those defines as 'prevention'. In study 2, the attributes for chocolate were purely promotion focused (varieties of ingredients and therefore flavors). The problem encountered with hand sanitizer options was that the choice often came down to comparing one sample to the other based on promotion attributes such as fragrance, color / appearance or consistency / texture, as it is difficult to truly compare prevention attributes in this type of field study set-up. The reason for this is

because the participant can only judge the effectiveness of a prevention product if the event that the product was supposed to prevent does occur and it is therefore proven ineffectual. It was difficult to create an experimental environment in which a prevention product would successfully prevent a negative occurrence from happening, but which participants could immediately assess the outcome of.

Chernev (2004b) has shown that product attributes which are compatible with a consumer's regulatory focus tend to be overweighed in a choice decision. His findings indicate that promotion focused consumers are more prone to overweighing hedonic, performance-related and attractive attributes (considered compatible with a promotion focus), while prevention-focused consumers are more likely to overweigh utilitarian, reliability-related, and unattractive attributes (considered compatible with a prevention focus) in making their choices. Lack of variance on prevention focus attributes when describing hand-sanitizers may have resulted in relatively easier choices even with large assortment sizes.

With respect to other moderators, enjoyment likely played a moderating role. Whether choosing from a small or a large assortment, people clearly enjoyed both the decision and the results more when they chose amongst chocolates than amongst hand sanitizers. Overall, there was consistently a more positive reaction to the choices made from amongst the promotion products than from amongst prevention products when looking at main effects. It would be valuable to consider the moderating role of enjoyment in future studies.

Alignability was likely not a moderating factor in either of our studies, as the way in which we presented the alternatives was alignable and extremely straight-forward in

terms of ease of comparisons. However, this could have made for a harder test of our hypotheses as we presented the alternatives in a matrix for study 1 and with a very clear list of alignable attributes in study 2, making it easier for consumers to simplify their choices. An easier test may have been to present non-alignable alternatives requiring more complicated trade-offs to be made. Perhaps this was why we did not obtain stronger results.

Using more processing measures, such as observing time participants spent on the decision, and asking more questions relating to the decision process, could have given us a better idea of how these variables moderated our participants' reactions to assortment size in relation to their goals for the product categories.

We suggest that time discounting could be a significant factor to analyze in future research. Therefore looking at short-term desired end states (short-term gains) versus long-term desired end states (long-term gains) is a worthwhile extension of the present research as research may generate very different results depending on how long after the purchase the consumer's assessment is made.

Establishing whether the regulatory focus of the product presented to a consumer is in line with his/her own regulatory goals (regulatory fit) could also be an interesting future avenue of research. Along these lines, Higgins (1997, p. 23-24) stated that:

> The effectiveness of persuasive messages might be enhanced by considering different combinations of regulatory principles. To reduce the spread of AIDS, for instance, campaigns for condom use have naturally framed the persuasive messages in terms of safe sex and the dangers to be

> avoided, which involve a prevention focus and anticipating undesired end-states. But at the critical moment when condoms will or will not be used, the partners are more likely to be in a promotion focus and anticipating desired end-states. Thus, messages with a promotion focus on anticipated desired end-states might be more effective (e.g., condom use promotes a caring relationship).

Similarly, further research is warranted to consider situations where the two goals of prevention and promotion are simultaneously active (Aaker and Lee 2001) and how to subsequently determine the conditions under which both goals may concurrently guide the processing of large and small assortment sets.

Future research could make the field study even more naturalistic and robust, and less forced and self-conscious, by observing purchasing behavior without any interference from a researcher. This could be done by displaying a large assortment of a prevention product on a grocer's shelf in one aisle and a promotion product in another aisle, and a small assortment of a promotion product and a prevention product in separate aisles of a comparable retailer, and compare purchasing behavior directly from sales results. Rather than using questionnaires, scanner data could be analyzed and compared to observe which scenarios created more sales.

The pattern of results across experiments provides some insights about the processes underlying consumers' reactions to assortment size, given their regulatory goals. Despite the weak findings, this research indicates that there is merit in looking at the relationship between regulatory focus and assortment size, and how this will affect

purchase decisions. Clarifying the link between assortment size and regulatory focus is especially critical given the proliferation of choice on retailers' shelves paired with the growing body of research that shows that too much choice can backfire. The number of product variants offered in a category is a key marketing mix variable (Berger et al. 2006), affecting both consumer behavior and production costs (Draganska and Jain 2003). Determining whether consumers approach specific products with prevention or promotion goals in mind, product managers can determine when large product assortments will strengthen consumer preferences (as predicted by traditional theories), and when large assortment will weaken preferences (as suggested by recent findings), thus improving their decisions relating to new product introduction, product deletion, and positioning strategies (Kivetz, Netzer, and Srinivasan 2004; Mourali et al. 2007; Simonson and Tversky 1992).

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EXHIBIT 1

Stimuli used in study 2

TABLE 1

Summary of hypotheses

Hypotheses	Support Study 1	Support Study 2
H1: Consumers with a promotion focus will evaluate a large assortment more positively than consumers with a prevention focus.	partial	NS
H2a: Consumers with a promotion focus will find the decision-making process more enjoyable when choosing from a large assortment than from a small assortment.	partial	NS
H2b: Consumers with a prevention focus will find the decision-making process more enjoyable when choosing from a small assortment than from a large assortment.	NS	NS
H3a: Consumers with a promotion focus will find their chosen alternative to be more attractive when choosing from a large assortment than from a small assortment.	NS	NS
H3b: Consumers with a prevention focus will find their chosen alternative to be more attractive when choosing from a small assortment than from a large assortment.	NS	supported
H4a: Consumers with a promotion focus will be more satisfied with their decision when choosing from a large assortment than from a small assortment.	partial	NS
H4b: Consumers with a prevention focus will be more satisfied with their decision when choosing from a small assortment than from a large assortment	NS	NS
H5a: Consumers with a promotion focus will be more likely to buy the chosen product in the next six months when choosing from a large assortment than from a small assortment.	NS	supported
H5b: Consumers with a prevention focus will be more likely to buy the chosen product in the next six months when choosing from a small assortment than from a large assortment.	NS	NS

TABLE 2

Stimuli details for study 1

Stimuli	Brand	Attribute	Attribute Level
Chewable Daily	Nature's Path	Flavor	Blueberry; Raspberry; Cherry; or Tangerine
Multi-Vitamin		Benefit	Fortified with Magnesium; Zinc; or Iron
		Format	Chewable Tablet or Soft Chew Square
Readymade Soup	Campbell's Gardennay	Flavor	Market Vegetable; Creamy Potato Leek; Red Pepper and Black Bean; or Golden Autumn Carrot
		Benefit	No preservatives; Source of Vitamins; or Low in Sodium
		Format	Tetra-Pack Carton; or Glass Jar
Toothpaste	Tom's of Maine	Flavor	Strawberry, Cinnamon, Orange-Mango, or Grape
		Benefit	Anti-Plaque; Gingivitis Prevention, or Tartar Control
		Format	Gel or Paste
Meal Replacement	GNC	Flavor	Orange-Vanilla; Raspberry; Banana; or Peaches and Cream
Drink		Benefit	Low in Cholesterol; Low in Carbohydrates,; or Contains No Artificial Preservatives
		Format	Powder or Can

TABLE 3

Descriptive statistics (study 1)

Product category	**Regulatory focus**	**AS**	**Dependent variables**				
			AS Preference	Enjoyment	Attractiveness	Satisfaction	Purchase intention
Chewable daily multi-vitamin	Promotion	Small	5.14 (1.37)	3.40 (1.42)	4.23 (1.43)	4.39 (1.51)	5.18 (1.85)
		Large	3.83 (2.12)	3.49 (1.60)	4.02 (1.38)	4.40 (1.26)	5.09 (2.05)
	Prevention	Small	5.19 (1.69)	3.81 (1.49)	4.07 (1.54)	4.71 (1.35)	4.52 (2.27)
		Large	3.10 (1.79)	3.83 (1.77)	4.32 (1.66)	4.88 (1.27)	4.61 (2.21)
Ready-made soup	Promotion	Small	5.68 (1.39)	3.58 (1.45)	3.95 (1.68)	4.27 (1.56)	4.39 (2.07)
		Large	4.02 (2.12)	3.34 (1.43)	3.87 (1.39)	4.30 (1.50)	4.77 (2.10)
	Prevention	Small	5.55 (1.63)	3.87 (1.55)	4.29 (1.58)	4.81 (1.25)	4.61 (1.89)
		Large	3.76 (1.87)	4.02 (1.57)	4.54 (1.52)	4.66 (1.51)	4.32 (2.39)
Toothpaste	Promotion	Small	5.27 (1.56)	3.60 (1.37)	3.98 (1.70)	4.48 (1.45)	4.59 (2.18)
		Large	3.66 (2.18)	3.17 (1.36)	4.11 (1.40)	4.43 (1.31)	4.87 (2.13)
	Prevention	Small	5.48 (1.42)	3.79 (1.44)	4.50 (1.57)	4.62 (1.31)	4.79 (2.17)
		Large	3.51 (2.03)	4.07 (1.68)	4.07 (1.66)	4.51 (1.29)	4.87 (2.13)
Meal replacement drink	Promotion	Small	5.39 (1.69)	3.56 (1.52)	3.93 (1.65)	4.23 (1.54)	5.32 (1.86)
		Large	4.06 (2.15)	3.36 (1.70)	3.70 (1.72)	4.11 (1.70)	5.43 (2.10)
	Prevention	Small	5.55 (1.42)	4.43 (1.68)	4.10 (1.74)	4.60 (1.45)	4.36 (2.28)
		Large	3.24 (1.77)	3.92 (1.75)	4.15 (1.86)	4.90 (1.50)	5.22 (1.77)

Note: Each cell presents the M (SD). AS indicates assortment size.

TABLE 4

Descriptive statistics (study 2)

Product category	AS	AS preference	Enjoyment	Attractiveness	Satisfaction	Purchase intention
Chocolate	Small	4.59 (1.33)	5.53 (1.24)	4.41 (2.02)	5.44 (1.80)	4.21 (2.45)
(promotion focus)	Large	3.56 (1.53)	5.23 (1.77)	4.85 (1.83)	5.59 (1.58)	5.33 (1.80)
Hand sanitizer	Small	3.83 (1.21)	4.37 (1.25)	5.13 (1.65)	5.42 (1.48)	3.82 (1.89)
(prevention focus)	Large	3.09 (1.49)	4.52 (1.84)	4.24 (1.73)	5.52(1.18)	3.38 (2.50)

Note: Each cell presents the M (SD). AS indicates assortment size.

FIGURE 1

Assortment size by regulatory focus interaction on assortment preference (study 1)

Figure 1A

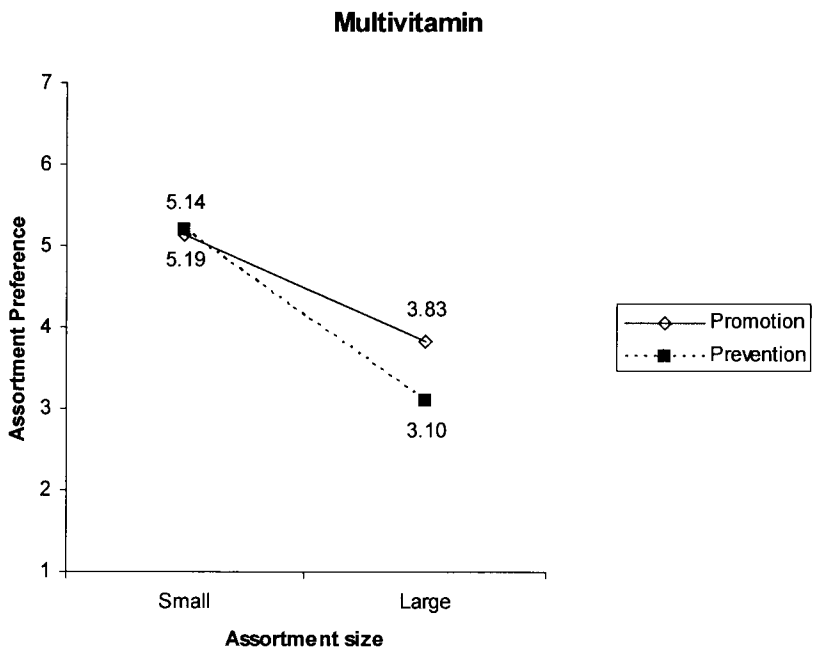

Figure 1B

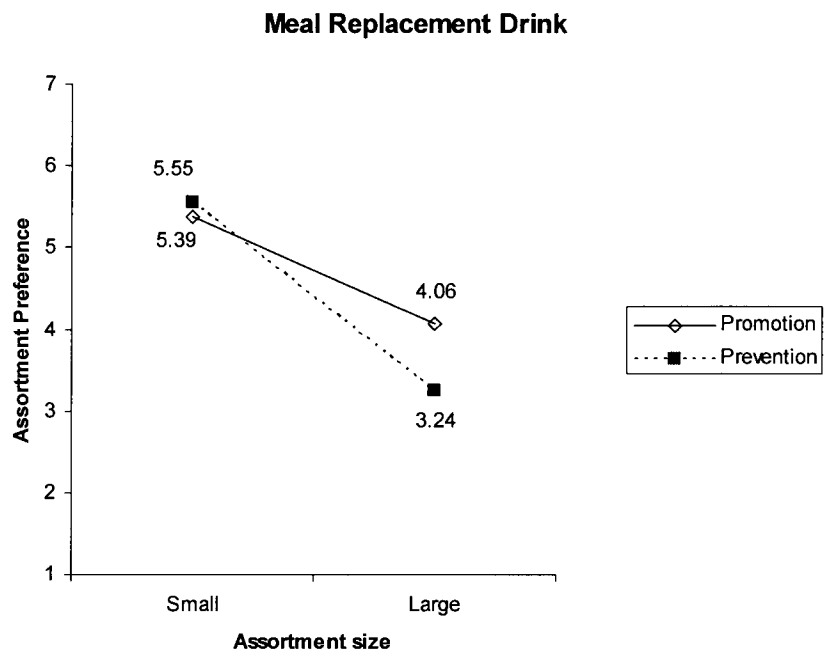

FIGURE 2

Assortment size by product category interaction (study 2)

Figure 2A

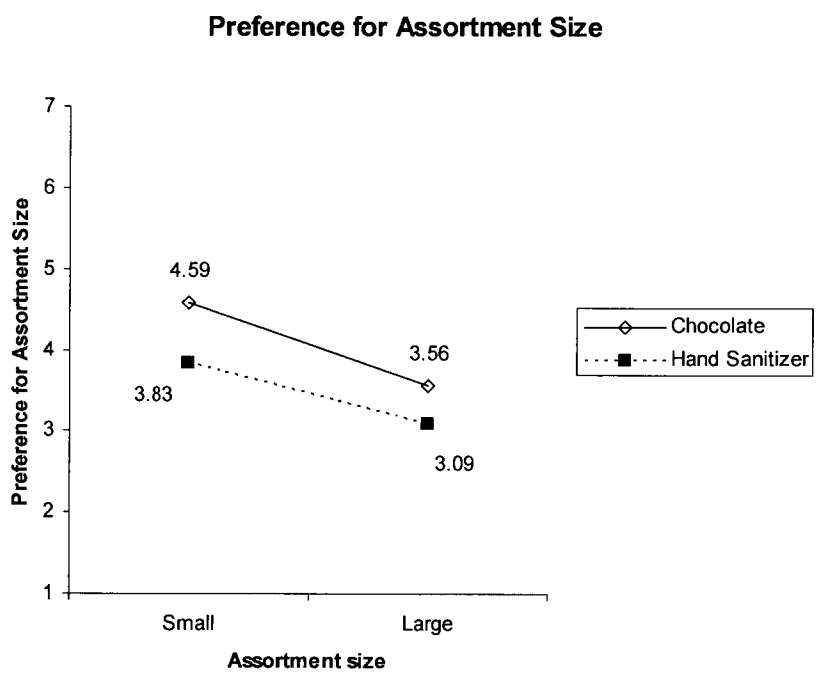

Figure 2B

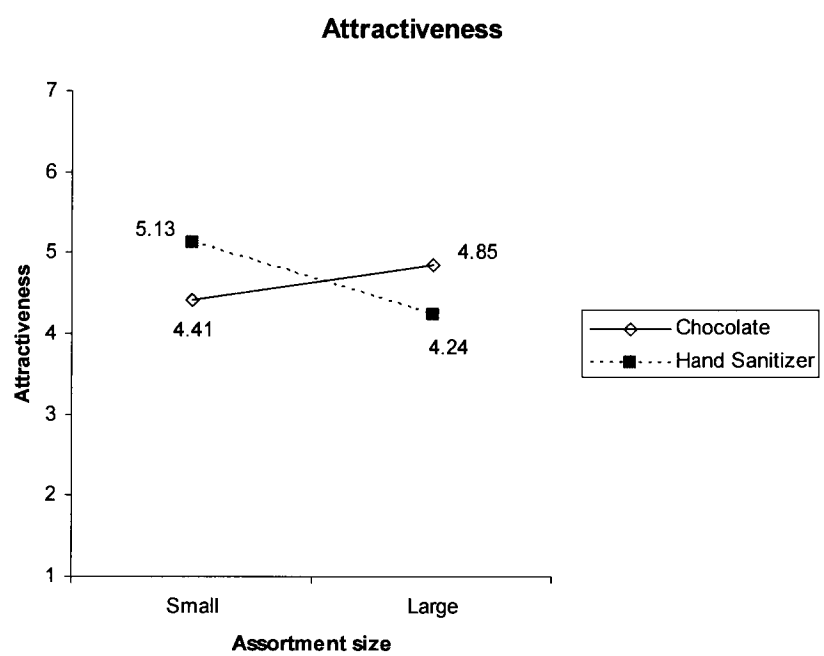

FIGURE 3

Assortment size by product category interaction on purchase likelihood (study 2)

Figure 3