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Consumers often purchase multiple items from a product category on a single shopping trip. In doing so, they must frequently choose among items that are grouped in assortments, such as those offered by a particular store or brand. This article examines how the number of to-be-purchased items influences consumer choice among assortments. It is argued that when consumers are uncertain about their preferences, they are more likely to prefer an assortment for which the number of available options matches the desired purchase quantity. This prediction is based on the notion that a match between the size of an assortment and the number of to-be-purchased items enables consumers to simplify the selection process by eliminating the need to trade off the benefits and costs of individual choice alternatives—a strategy referred to as the “quantity-matching heuristic.” The theoretical predictions are supported by data from five empirical studies that offer converging evidence for the role of purchase-quantity goals in assortment choice and identify moderating factors and boundary conditions.

Keywords: assortment, purchase quantity, consumer choice, heuristics, retailing

The Role of Purchase Quantity in Assortment Choice: The Quantity-Matching Heuristic

Consumers often purchase multiple items from the same product category on a single shopping trip. Numerous researchers have underscored the importance of investigating consumers' purchase-quantity decisions (Chandon and Wansink 2002; Gupta 1988; Harlam and Lodish 1995; McAlister 1979; Simonson 1999; Wansink, Kent, and Hoch 1998). However, most prior research has focused on investigating factors that determine the number of items purchased from a given assortment. The issue of how purchase-quantity goals influence consumers' choice among assortments has received relatively little attention in the literature.

This article examines the impact of purchase quantity on consumer choice in a scenario in which individual items are

grouped in assortments, such as by store or by brand. In this context, this research investigates how purchase-quantity goals influence consumer choice among assortments. It is theorized that when consumers are uncertain about their preferences, a match between the size of an assortment and the number of to-be-purchased items enables them to simplify the selection process by eliminating the need to trade off the benefits and costs of individual choice alternatives.

Research presented in this article posits that an assortment will be more preferred when the number of available options matches the number of to-be-purchased items—a strategy referred to as the quantity-matching heuristic. To illustrate, consider a consumer who is choosing snacks for a group of people with unknown preferences and must decide between two assortments—one that offers five options and one that offers seven options. This research argues that the consumer is more likely to choose snacks from the seven-item assortment when purchasing for seven people than when purchasing for five people.

The quantity-matching hypothesis is tested in a series of five empirical studies that offer converging evidence for the

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role of purchase-quantity goals in assortment choice and identify moderating factors and boundary conditions. The following sections review the theory, experimental design, and corresponding data in greater detail.

THEORETICAL BACKGROUND

Most prior research addressing the concept of purchase quantity has focused on identifying factors that influence the number of items consumers purchase from a given product category. For example, recent research by Wansink, Kent, and Hoch (1998) has argued that quantity judgments can be influenced by factors such as multiunit prices, purchase-quantity limits, and suggested purchase quantities. Recent research has further shown that the perceived variety of items in a given assortment can serve as a consumption benchmark for buyers, such that greater variety increases consumption quantity (Kahn and Wansink 2004). These findings are consistent with extant research documenting that when choosing multiple items, consumers tend to seek variety within or across purchase occasions (McAlister 1982; Ratner, Kahn, and Kahneman 1999). This preference for variety has been attributed to three factors: (1) variety-seeking behavior, (2) the desire to maintain flexibility, and (3) trade-off avoidance (Simonson 1990).

The term "variety seeking" is typically used in reference to behavior that is displayed across multiple purchase occasions (Bucklin, Gupta, and Siddarth 1998). In this context, consumers' variety-seeking behavior has typically been attributed to satiation (McAlister 1982; Ratner, Kahn, and Kahneman 1999) and the desire for balanced consumption over time (Lattin 1987). Variety seeking across purchase occasions arises from product satiation that reflects a diminishing marginal rate of consumption return, such that the utility from an additional unit of a given product decreases as a function of the number of units consumed (Read and Loewenstein 1995).

Unlike variety seeking, consumers' preference for flexibility is attributed to their desire to keep their options open to accommodate uncertain future tastes (Kahn and Lehmann 1991; Kreps 1979; Reibstein, Youngblood, and Fromkin 1975; Simonson 1990; Walsh 1995). Consumers' desire to maintain flexibility is typically displayed in the context of a single purchase occasion, such that consumers attempt to reduce decision conflict by selecting a portfolio of alternatives (Bucklin, Gupta, and Siddarth 1998).¹ Consumers' preference for flexibility has been associated with a phenomenon commonly referred to as diversification bias. Simultaneous selections are perceived as yielding more variety than selections made sequentially (Read and Loewenstein 1995). Thus, it has been shown that across

purchase occasions, consumers tend to buy the same flavor, brand, and package size, whereas within a purchase occasion, they tend to buy different flavors, even though they buy the same brand and package size (Harlam and Lodish 1995). In the same vein, it has been documented that the number of items purchased on a particular shopping occasion can influence the selection of items that consumers purchase (Simonson and Winer 1992), such that consumers are more likely to display greater variety-seeking behavior and purchase items they do not usually buy when the number of items purchased in a category is large than when it is small.

In addition to being linked to preference for variety and a desire for flexibility, consumers' tendency to select different items can be attributed to their "desire to avoid decision conflict." The key argument here is that choosing a variety of items allows the consumer to simplify the buying decision by selecting a portfolio of options, thus avoiding the need to identify a single option that is most preferred (Read and Loewenstein 1995; Simonson 1990). Consumers' tendency to minimize the decision effort associated with trading off benefits and costs of considered alternatives and the resulting preference for variety are the focus of this research.

Building on the notion that choice is often driven by consumers' desire to avoid decision conflict, this research posits that such trade-off avoidance behavior applies not only to how many items are selected but also to which items are selected. In particular, this research examines scenarios in which individual items are grouped in assortments defined by a certain criterion, such as store, brand, or even shelf space. In this context, this research investigates how consumers' purchase-quantity goals influence their choice among assortments. It is proposed that when choice alternatives are grouped in assortments, a match between the size of the assortment and the number of to-be-purchased items offers a compelling decision rule, which is then used to select the matching assortment.

The decision process implied by the quantity-matching heuristic has counterintuitive implications about how the number of items purchased in a given category influences consumers' preferences for variety. Conventional wisdom suggests that consumers seek more variety as the number of items purchased from the same category increases (Ratner, Kahn, and Kahneman 1999; Simonson and Winer 1992; Walsh 1995; see also Ariely and Levav 2000; Read and Loewenstein 1995). The behavioral rationale for this finding is that larger quantities are associated with a longer consumption horizon, thus raising uncertainty about future consumption preferences; to deal with this uncertainty, consumers broaden the assortment of items at the time of purchase. This rationale leads to the prediction that when consumers are choosing among assortments, their likelihood to select a larger assortment will increase as the number of to-be-purchased items increases. For example, when choosing between an assortment of five items and an assortment of ten items, a consumer purchasing five items should be less likely to choose the smaller, five-item assortment than a consumer purchasing three items. In contrast, the quantity-matching heuristic implies that the preference for the five-item assortment is likely to be greater in the case of a five-item purchase than in the case of a three-item purchase.

¹Note that though both the desire for flexibility and variety seeking encourage consumers to choose different options, they have different antecedents: Variety seeking aims to avoid satiation, whereas preference for flexibility attempts to mitigate decision uncertainty and accommodate decision makers' future preferences. Furthermore, because variety seeking aims to minimize satiation, it implies the presence of articulated preferences and the availability of an established ideal point. In contrast, the desire for flexibility does not imply articulated preferences but rather is aimed at accommodating consumers' uncertainty about their own preferences.

From a conceptual standpoint, the quantity-matching heuristic simplifies the choice process by allowing the decision maker to avoid trade-offs associated with choosing a specific option, because a match between the number of decision alternatives and the number of to-be-purchased items eliminates the need to compare the alternatives and trade off their benefits and costs. Thus, instead of deciding which and how many products to purchase, consumers can simply select the matching assortment. Therefore, it is argued that when choosing among assortments, consumers are more likely to select an assortment when its size matches the number of to-be-purchased items. Experiment 1 tests this proposition.

EXPERIMENT 1

The goal of this experiment was to test empirically the proposition that the share of an assortment is greater when its size matches a consumer's purchase-quantity goal.

Method

One hundred forty respondents were asked to imagine that they were trying out new flavors of ice cream. They were told that there were three brands to choose from (referred to as A, B, and C), each offering a different number of flavors. In particular, Brand C was said to carry seven flavors: (1) Morning Glory, (2) Island Paradise, (3) Pulp Addiction, (4) Concession Obsession, (5) Rainforest Crunch, (6) Urban Jumble, and (7) Cool Britannia. Brand B was said to carry five flavors (Flavors 1–5), and Brand A was said to carry only three flavors (Flavors 1–3). The flavors used in this experiment were discontinued varieties of Ben & Jerry's ice cream. Discontinued flavors were used to minimize respondents' reliance on preexisting preferences.

Respondents were randomly assigned to one of three experimental conditions. Respondents in the three-item condition were asked to imagine that they were buying three cartons of ice cream—one per day for the following three days. Respondents in the five- and seven-item conditions were asked to imagine that they were buying five (seven) cartons of ice cream—one per day for the following five (seven) days. Respondents in all conditions were asked to indicate which of the three brands they would choose and then to indicate their choice of flavors.

Results

The quantity-matching heuristic predicts that respondents are more likely to choose an assortment when the number of options in the assortment matches their purchase-quantity goals. The data summarized in Table 1 show that an assortment's choice share was indeed a function of the intended purchase size. Of the respondents whose goal was to purchase only three items, 46.3% selected the three-option assortment, compared with 8.8% and 9.5% of those whose goal was to purchase five or seven items, respectively. A similar pattern emerged for the choice shares of the five-item and seven-item assortments.

The significance of the observed data pattern is examined by testing the dispersion of choice shares of each of the three assortments as a function of the purchase-quantity goal. Statistical analysis of these data shows that the increase in the choice share of a given assortment as a func-

Table 1
QUANTITY-MATCHING HEURISTIC AS A FUNCTION OF
ASSORTMENT SIZE AND PURCHASE QUANTITY
(EXPERIMENT 1)

Purchase-Quantity Goal	Cell Size	Assortment Size		
		Three Options (%)	Five Options (%)	Seven Options (%)
Three items	41	46.3	14.6	39.0
Five items	57	8.8	40.4	50.9
Seven items	42	9.5	23.8	66.7

Notes: Numbers in each cell indicate the choice share of the particular assortment. The choice shares of assortments matching the desired purchase quantity appear in bold. The data pattern indicates that an assortment tends to be more preferred when its size matches a consumer's purchase-quantity goal.

tion of the match between its size and the purchase-quantity goal was significant for all three assortments. Thus, the choice share of the three-option assortment was significantly greater when its size matched the goal (46.3%) than when it did not match the goal (9.1%; $\chi^2(1) = 21.10$, $p < .001$). Similarly, the choice share of the five-option and seven-option assortments was significantly greater when their size matched the number of to-be-purchased items (40.4% versus 19.3%; $\chi^2(1) = 7.21$, $p < .005$, and 66.7% versus 45.9%; $\chi^2(1) = 4.95$, $p < .05$). These data are consistent with the research hypothesis.

Respondents' reliance on the quantity-matching heuristic can be further tested by examining the dispersion of the choice shares of items across experimental conditions. Thus, if respondents were indeed choosing an assortment because it matched their purchase-quantity goal, this strategy should also be reflected in their subsequent item selection, such that consumers would choose different items, one for each consumption occasion. In this context, the use of the quantity-matching heuristic should be associated with selections that comprise different items with few or no replicates.

An analysis of the dispersion of choice shares as a function of the purchase-quantity goal (three, five, or seven options) and the selected assortment tests this prediction. The data show that in each of the three goal conditions, the majority of respondents selected different options. In particular, 89.5% of the respondents who actually selected the three-item set when given the goal to select three items selected three different options, and only 10.5% selected a single item more than once. Similarly, of the respondents who were given the goal to select five items, 73.9% selected the five-item assortment and chose five different items; only 26.1% selected one item more than once. Finally, 57.1% of the respondents who selected the seven-item assortment when given the goal to select seven items selected seven different items; the remaining 42.9% selected at least one item more than once.

Comparing the likelihood of choosing a set composed entirely of different items among respondents whose assortment selection matched their goal with those whose assortment selection did not match their goal offers further sup-

port for the mechanism underlying the quantity-matching heuristic. The data analysis shows that respondents in the three-item goal condition who selected the three-item assortment were more likely to select different options from that assortment than those who selected the five-item and seven-item assortments (89.5% versus 50%; $\chi^2(1) = 5.66$, $p < .05$). Similarly, respondents in the five-item goal condition who selected the five-item assortment were more likely to select different options from that assortment than those who selected the seven-item assortment (73.9% versus 42.3%; $\chi^2(1) = 4.77$, $p < .05$).² These findings are consistent with the experimental predictions.

Discussion

This research argues that when choosing among assortments, consumers are more likely to select an assortment whose size fits their purchase-quantity goal. The data furnished by Experiment 1 are consistent with this proposition, demonstrating that respondents were more likely to choose an assortment when its size matched the number of to-be-purchased items. Moreover, the data show that respondents who chose matching assortments were more likely to select different options than respondents who did not choose an assortment matching their purchase-quantity goal, a finding that is consistent with the proposition that consumers rely on the quantity-matching heuristic to choose an assortment. These data lend empirical support to the prediction that consumers are more likely to select an assortment when its size matches the number of to-be-purchased items.

The experimental data show that across the three purchase-goal conditions, respondents displayed a tendency to select the larger assortment as their desired purchase quantity increased. As a result, the choice share of the largest, seven-item assortment increased with the increase of the desired purchase quantity (39% versus 50.9% versus 66.7%), a finding that is consistent with prior research and suggests that preference for variety is a function of consumers' purchase-quantity goals (e.g., Ratner, Kahn, and Kahneman 1999; Simonson and Winer 1992; Walsh 1995). The data furnished by this experiment show that consumers' preference for variety is further moderated by their reliance on the quantity-matching heuristic.

Experiment 1 examined a scenario in which consumers do not have well-defined preferences and are uncertain about which options best match their preferences. In this context, a match between the number of to-be-purchased items and the assortment size offers a compelling decision rule because it enables consumers to avoid making trade-offs among options with uncertain subjective values. In contrast, consumers with well-defined, option-specific preferences are likely to rely on these preferences and make a choice without explicitly considering the fit between their purchase-quantity goals and the number of items in the choice set. Therefore, the quantity-matching heuristic is likely to be a function of decision uncertainty, such that consumers are more likely to adopt the quantity-matching

heuristic when uncertainty about the relative performance of the available choice alternatives is high than when it is low. Experiment 2 tests this hypothesis.

EXPERIMENT 2

The goal of this experiment was to examine whether decision uncertainty influences consumers' reliance on the quantity-matching heuristic. The impact of decision uncertainty was tested by presenting respondents with customized choice sets in which options were either perceived as equally attractive (high decision uncertainty) or varied in attractiveness, such that one of the options was preferred to the others (low decision uncertainty). This manipulation is consistent with prior research documenting that the dominance relationships among the alternatives in the choice set can provide a sufficient reason for choice (Simonson 1989; Simonson and Tversky 1992; Tversky, Sattath, and Slovic 1988; see also Chakravarti and Janiszewski 2003). It is argued that when consumers are provided with a compelling decision rule, such as relative dominance, they should be less likely to rely on the quantity-matching heuristic than when such a decision rule is not available.

Method

One hundred ninety-two respondents were asked to imagine that they were buying ice cream. They were initially given a list of 24 ice-cream flavors and asked to select (1) their most preferred flavor, (2) their least preferred flavor, and (3) five flavors they perceived as equally attractive. Flavor names were discontinued Ben & Jerry's flavors, such as Chocolate Amaretto, Coconut Almond, White Russian, Rum Raisin, Totally Nuts, and Wavy Gravy.

After this preference-elicitation procedure, respondents were given two assortments to choose from—one that comprised three flavors and one that comprised five flavors. The flavors featured in each assortment were customized for individual respondents on the basis of their stated preferences. Respondents were randomly assigned to one of two decision-uncertainty conditions: Respondents in the high-uncertainty condition were given a choice between sets of three and five items that included flavors they identified as equally attractive. In contrast, respondents in the low-uncertainty condition were given a choice between sets of three and five items; for these respondents, both sets included their most preferred flavor, and the remaining items were options they rated as equally attractive.

In addition, respondents in each of the two decision-uncertainty conditions were randomly assigned to one of two purchase-quantity conditions. Purchase quantity was manipulated by varying the volume discounts offered by the retailer. Thus, in the three-item condition, respondents were told that the store was offering a buy-two-get-one-free promotion, whereas respondents in the five-item condition were told that the store was offering a buy-four-get-one-free promotion. This manipulation was consistent with prior purchase-quantity research (Wansink, Kent, and Hoch 1998). After the manipulation procedures, participants were asked to indicate from which of the two selections they would prefer to buy ice cream and then to identify the specific flavors they would buy.

²The five-item assortment was compared only with the seven-item assortment because it is not possible to choose five different items from a three-item assortment.

Results

The theory advanced in this research argues that consumers' reliance on the quantity-matching heuristic is moderated by decision uncertainty, such that the quantity-matching heuristic has a greater impact on choice when decision uncertainty is high than when it is low. This proposition was tested by comparing the choice shares of the two assortments as a function of the purchase-quantity goal (three items versus five items) and decision uncertainty (high versus low).

The data show that when respondents chose among equally attractive flavors (high uncertainty), 23.4% selected the three-item assortment when it matched their purchase-quantity goal (three items), compared with only 2% who selected the three-item assortment when it did not match their purchase-quantity goal (five items). In contrast, when choice sets included the most preferred flavor (low uncertainty), the two goal conditions yielded similar results: 8% selected the three-item assortment when it matched their purchase-quantity goal (three items), and 8.7% selected the three-item assortment when its size did not match their purchase-quantity goal (five items).

The data summarized in Table 2 were analyzed by testing a model in which the choice share of the two assortments was given as a function of the purchase-quantity goal (five versus three items) and decision uncertainty (high versus low). The analysis shows that the impact of the purchase-quantity goal on the choice share of each assortment varied significantly as a function of decision uncertainty ($\chi^2(1) = 4.58, p < .05$). This finding is consistent with the theoretical predictions.

Further analysis shows that respondents in the high-decision-uncertainty condition were more likely to choose a particular assortment when its size matched their purchase-quantity goal than when it did not ($\chi^2(1) = 6.33, p < .01$), whereas the corresponding effect in the low-decision-uncertainty condition was nonsignificant ($\chi^2(1) < 1, n.s.$). This finding lends additional support to the proposition that decision uncertainty moderates the impact of the quantity-matching heuristic on choice among assortments.

Table 2
QUANTITY-MATCHING HEURISTIC AS A FUNCTION OF
DECISION UNCERTAINTY (EXPERIMENT 2)

Decision Uncertainty	Purchase- Quantity Goal	Cell Size	Assortment Size	
			Three Options (%)	Five Options (%)
High	Three items	47	23.4	76.6
High	Five items	49	2.0	98.0
Low	Three items	50	8.0	92.0
Low	Five items	46	8.7	91.3

Notes: Numbers in each cell indicate the choice share of the particular assortment. The choice shares of assortments matching the desired purchase quantity appear in bold. The data pattern indicates that consumer reliance on the quantity-matching heuristic tends to be more pronounced when the decision uncertainty is high than when it is low.

Discussion

The data reported in this experiment lend support to the proposition that the impact of the quantity-matching heuristic on choice among assortments is a function of decision uncertainty, such that consumers are more likely to adopt the quantity-matching heuristic when decision uncertainty is high than when it is low. In addition to supporting the hypothesis that the quantity-matching heuristic is likely to be a function of decision uncertainty, this experiment extends the scope of the quantity-matching heuristic. Thus, Experiment 1 documented the quantity-matching heuristic in the context of an intertemporal choice in which the purchased items were to be consumed over time. In contrast, Experiment 2 documented the quantity-matching heuristic in a scenario in which the purchase quantity was set by a retailer's volume-based promotions. The converging nature of the experimental data testifies to the robustness of the quantity-matching heuristic.

This research argues that the quantity-matching heuristic enables the decision maker to avoid trade-offs associated with choosing a specific option. In particular, it is proposed that using the quantity-matching rule eliminates the need to decide among the available options and shifts the focus from deciding among alternatives to choosing among the available assortments. Building on prior research in the area of decision accountability (Lerner and Tetlock 1999; Shafir, Simonson, and Tversky 1993; Simonson 1989; Tetlock 1983), it can be further argued that because it is not contingent on particular attribute preferences, the use of the quantity-matching heuristic would also be easier to justify. Following this line of reasoning, it is predicted that the impact of the quantity-matching heuristic on choice of an assortment is a function of decision accountability, such that consumers are more likely to adopt the quantity-matching heuristic when they must explicitly justify their decisions. Experiment 3 tests this hypothesis.

EXPERIMENT 3

The goal of this experiment was to test empirically the proposition that consumers' reliance on the quantity-matching heuristic is a function of the need to justify their decisions, such that consumers are more likely to choose the assortment favored by the quantity-matching heuristic when they expect to provide justification for their decisions.

Method

One hundred seventy-four respondents were asked to imagine that they were working on a group project with several other students and needed to purchase snacks for their teammates. They were also told that they could choose between three vending machines—one that offered five snacks, one that offered seven snacks, and one that offered nine snacks.

Respondents were randomly assigned to one of the three experimental conditions. Respondents in the five-item condition were told that they were buying snacks for five teammates, respondents in the seven-item condition were told that they were buying snacks for seven teammates, and respondents in the nine-item condition were told that they were buying snacks for nine teammates.

Respondents were further assigned to one of the two accountability conditions. Those in the justification condition were told explicitly that at the end of the experiment, they would be asked to provide the rationale for their choices, whereas respondents in the no-justification condition were not given any particular justification instructions. This manipulation was derived from the need-for-justification paradigm introduced in prior research (Simonson 1989). After the manipulation procedures, participants were asked to indicate which of the three vending machines they would choose.

Results

It is argued that a consumer's reliance on the quantity-matching heuristic is a function of decision accountability, such that the quantity-matching heuristic is more likely to be adopted when consumers had to justify their decisions. This prediction was tested by comparing the dispersion of assortment choice shares across the experimental conditions. The data summarized in Table 3 show a pattern similar to that reported in Experiment 1. Respondents were more likely to choose an assortment when it matched the size of their purchase-quantity goals; this effect was significant across both justification conditions. Of the respondents in the no-justification condition whose goal was to purchase five items, 22.6% selected the five-option assortment, compared with 6.9% and 6.7% of respondents whose goal was to purchase seven or nine items. For respondents in the justification condition, the corresponding choice shares were 51.9% versus 7.1% and 3.4%. A similar pattern was observed for the choice shares of the seven-item and nine-item assortments.

The significance of the observed data was tested using a model in which the choice share of an assortment was given as a function of the purchase-quantity goal (three versus five versus seven) and the need for justification (high versus low). The data show that the impact of justification on the choice share of the goal-consistent assortment was significant ($\chi^2(1) = 6.15, p < .05$). In addition, the choice share of the matching assortment was higher for both respondents in the no-justification condition ($\chi^2(1) = 10.22, p < .005$) and those in the justification condition ($\chi^2(1) = 35.76, p < .001$). These findings are consistent with the experimental predictions.

Respondents' self-reported choice reasons offer further insight into the underlying decision processes. The methodology of coding respondents' reasons was similar to that used for coding thought protocols in prior research (Ericsson and Simon 1980; Wright 1974). Reasons were classified into three categories: compatibility, variety, and other. The compatibility category included references to the size of the assortment matching the purchase-quantity goal, resulting in a simpler and/or better decision. To illustrate, compatibility reasons included responses such as "easier to just take one of each," "I need five so I chose the one with five," "I can get one of each item and tell my friends that I got one of everything," and "because the number of snacks was the same as the number of my teammates." The variety category included responses such as "more selection," "largest variety," and "more is better." Finally, responses that could not be classified in either of the two categories were listed in the "other" category.

Of the respondents who selected an assortment that matched their purchase-quantity goal (e.g., five-item assortment given a five-item goal), 54% ($n = 50$) indicated compatibility as the primary reason for their decision, 36% indicated variety as the primary reason for choice,³ and the remaining 10% were coded as "other." In contrast, among respondents who selected a nonmatching assortment, 82.4% ($n = 34$) indicated variety as the primary reason for choice, and the remaining 17.6% were classified as "other." The corresponding analysis shows that the number of respondents who used compatibility as a reason was significantly greater among those who selected the matching assortment than among those who selected a nonmatching assortment ($\chi^2(1) = 12.38, p < .001$). These findings are consistent with the proposition that the increased likelihood of choosing an assortment that matches the number of to-be-purchased items is a function of respondents' reliance on the quantity-matching heuristic.

³Note that in the nine-item purchase-quantity condition, variety and quantity matching resulted in the same prediction because the nine-item assortment not only matched the purchase-quantity goal but also had the largest variety of the available assortments.

Table 3
QUANTITY-MATCHING HEURISTIC AS A FUNCTION OF THE NEED FOR JUSTIFICATION (EXPERIMENT 3)

Justification	Purchase-Quantity Goal	Cell Size	Assortment Size		
			Three Options (%)	Five Options (%)	Seven Options (%)
No	Three items	31	22.6	6.5	71.0
No	Five items	29	6.9	20.7	72.4
No	Seven items	30	6.7	6.7	86.7
Yes	Three items	27	51.9	3.7	44.4
Yes	Five items	28	7.1	32.1	60.7
Yes	Seven items	29	3.4	3.4	93.1

Notes: Numbers in each cell indicate the choice share of the particular assortment. The choice shares of assortments matching the desired purchase quantity appear in bold. The data pattern indicates that consumer reliance on the quantity-matching heuristic tends to be more pronounced when consumers expect to need to justify their decisions.

Discussion

The data reported in this experiment lend support to the prediction that the impact of the quantity-matching heuristic on choice among assortments is a function of decision accountability, such that consumers' reliance on the quantity-matching heuristic is more pronounced when they had to justify their decisions. From a conceptual standpoint, this research argues that choice among assortments is a function of the match between the number of to-be-purchased items and assortment size. Thus, consumers who are uncertain about their preferences are likely to use the purchase-quantity match as a criterion for choice and, consequently, will purchase one of each item in the matching assortments. For example, when consumers purchase items for a group of five people, use of the quantity-matching heuristic to select the five-item assortment implies that they will purchase one of each item from that assortment.

The theoretical rationale for the purchase-quantity heuristic can be further tested by investigating the impact of variety seeking on consumer choice among assortments. In particular, the theory advanced in this research predicts that variety-seeking consumers will be more likely to rely on their purchase-quantity goals when choosing an assortment than those who intend to purchase identical items. Indeed, consumers who are not likely to purchase different items from the assortment should be less likely to use the set size as a criterion for choice and thus should also be less likely to rely on the quantity-matching heuristic. In this context, it is argued that the impact of the quantity-matching heuristic on choice among assortments is a function of consumers' preference for variety, such that the quantity-matching heuristic is more likely to be adopted by variety-seeking consumers. Experiment 4 tests this hypothesis.

EXPERIMENT 4

The goal of this experiment was to test the proposition that the quantity-matching heuristic is a function of variety seeking, such that the quantity-matching heuristic is more likely to be adopted by consumers seeking variety.

Method

One hundred thirty-three respondents were asked to imagine that they had to purchase chocolates as a gift for several friends. Respondents were given two sets to choose from, labeled "Store A" and "Store B." The first selection consisted of five chocolates described by a picture and verbal description (Milk Chocolate Truffle, Coconut Truffle, Mojito Truffle, Spring Raspberry Truffle, and French Vanilla Truffle). The second selection consisted of ten chocolates—five identical to those in the first selection and five others (Karibu Truffle, Dark Chocolate Truffle, Roasted Almond Truffle, Smooth Coconut Truffle, and Pabana Truffle). The names and pictures were of actual chocolates sold by Godiva, an upscale chocolate manufacturer. The use of chocolates as experimental stimuli was suggested by prior research (Chernev 2003b; Iyengar and Lepper 2000).

Respondents were randomly assigned to one of the two purchase-quantity conditions. Respondents in the three-item condition were told that they were buying chocolates for three of their friends, whereas respondents in the five-

item condition were told that they were buying chocolates for five of their friends. To measure respondents' preference for variety, respondents were asked to indicate whether they would prefer to buy different chocolates for each of their friends or the same chocolate for all of them. Respondents were also asked to identify the store from which they would buy their chocolates, as well as the particular chocolates they would select. Finally, they were asked to explain the rationale for their chocolate selection.

Results

It is argued that the impact of the quantity-matching heuristic on choice among assortments is contingent on consumers seeking to choose different options, such that respondents are more likely to adopt the quantity-matching heuristic when their preference for variety is high than when it is low. The test of this proposition involves comparing the choice shares of the two assortments as a function of the purchase-quantity goal (three items versus five items) and respondents' stated preference for variety (high versus low). Respondents were assigned to one of the two conditions on the basis of their preference for variety: 91 respondents who indicated that they would prefer to choose different chocolates were assigned to the high-variety condition, and the remaining 42 respondents, who indicated that they would prefer to choose the same chocolate, were assigned to the low-variety condition.

The data summarized in Table 4 show that in the five-item goal condition, 31.6% of the respondents who indicated that they would prefer to choose different chocolates (high-variety condition) selected the matching five-item assortment, compared with only 8.7% of those in the low-variety condition. In contrast, in the three-item goal condition, the five-item assortment was chosen by 2.9% of the respondents in the high-variety condition, compared with 10.5% in the low-variety condition. This pattern of results is consistent with the experimental predictions.

These data were analyzed by testing a model in which the choice share of the two assortments was given as a function of the purchase-quantity goal (five versus three items) and preference for variety (high versus low). The

Table 4
QUANTITY-MATCHING HEURISTIC AS A FUNCTION OF THE
NEED FOR VARIETY (EXPERIMENT 4)

Preference for Variety	Purchase- Quantity Goal	Cell Size	Assortment Size	
			Five Options (%)	Ten Options (%)
High	Three items	34	2.9	97.1
High	Five items	57	31.6	68.4
Low	Three items	19	10.5	89.5
Low	Five items	23	8.7	91.3

Notes: Numbers in each cell indicate the choice share of the particular assortment. The choice shares of assortments matching the desired purchase quantity appear in bold. The data pattern indicates that consumer reliance on the quantity-matching heuristic tends to be more pronounced when consumers' need for variety is high than when it is low.

analysis shows that the impact of the purchase-quantity goal on the choice share of each assortment varied significantly as a function of respondents' preference for variety ($\chi^2(1) = 3.88, p < .05$). In particular, respondents in the high-variety condition were more likely to choose an assortment when it matched their purchase-quantity goal (31.6% versus 2.9%; $\chi^2(1) = 6.67, p < .01$), whereas for respondents in the low-variety condition, the corresponding effect was nonsignificant (10.5% versus 8.7%; $\chi^2(1) < 1$, n.s.). These findings lend support to the experimental predictions.

Further analysis shows that in the five-item condition, the likelihood of selecting the matching five-item assortment was significantly higher for respondents in the high-variety condition than for those in the low-variety condition ($\chi^2(1) = 3.96, p < .05$). This finding is consistent with the experimental predictions, lending further support to the proposition that reliance on the quantity-matching heuristic is moderated by consumers' variety-seeking behavior.

Discussion

It is argued that the impact of the quantity-matching heuristic on choice is a function of consumers' preference for variety, such that consumers with a stronger preference for variety are more likely to adopt the quantity-matching heuristic. The experimental data are consistent with this prediction, demonstrating that the choice share of the assortment matching the purchase-quantity goal is indeed greater for respondents seeking to select different options.

From a conceptual standpoint, this research argues that the quantity-matching heuristic enables consumers to avoid making trade-offs among the alternatives by choosing an assortment in which the number of options matches the purchase-quantity goal. This proposition is consistent with the notion that when faced with difficult decisions, consumers often avoid making trade-offs and are likely to use alternative strategies to make a choice (Bettman, Luce, and Payne 1998; Simonson and Tversky 1992). This proposition further implies that consumers' reliance on the quantity-matching heuristic is likely to be a function of the degree to which decision trade-offs are salient to them, such that the quantity-matching heuristic is more likely to be adopted when they are aware of the cognitive costs associated with choosing an item from the selected assortment. Experiment 5 tests this prediction empirically.

EXPERIMENT 5

The goal of this experiment was to test the proposition that the impact of the quantity-matching heuristic on choice among assortments is a function of consumers' awareness of the difficulty of the subsequent product-choice task.

Method

One hundred sixty-one respondents were asked to imagine that they needed to buy a small box of Godiva chocolates for their instructors as a class gift. Respondents were given a choice between two assortments—one that contained 5 options and one that contained 30 options. As in Experiment 4, each option was described by its name (e.g., Hazelnut Truffle) and a picture. Choice alternatives were

organized in rows of 5 options, such that the first assortment (Store A) was represented by a single row of chocolates and the second assortment (Store B) was represented by six rows. All options in the smaller selection were also available in the larger selection, and none of the assortments contained replicates.

Respondents were randomly assigned to one of the two purchase-quantity conditions. Respondents in the three-item condition were told that they were buying chocolates for three of their instructors, whereas respondents in the five-item condition were told that the chocolates were for five of their instructors. Respondents in each of the two purchase-quantity conditions were further assigned to one of the two decision-focus scenarios.

Respondents' awareness of the decision difficulty associated with choosing a specific item from the assortment was manipulated by varying decision focus. This manipulation builds on the findings reported in prior research showing that the difficulty of choosing among items in a given assortment is more salient to consumers when their decision is focused on selecting an option from a particular assortment than when the focus is on choosing among assortments (Chernev 2006a, b; see also Kahn and Lehmann 1991; Sood, Rottenstreich, and Brenner 2004). Consistent with these findings, respondents in the assortment-focus scenario were told that they would be asked to justify their choice of an assortment, whereas those in the product-focus scenario were told that they would be asked to account for their choice of chocolates.

After the experimental instructions, respondents were asked to identify the store from which they would buy their chocolates and which chocolates they would buy. Next, respondents were asked to provide the rationale for their decisions: Respondents in the assortment-focus condition were asked to explain the rationale for their choice of an assortment, whereas respondents in the product-focus condition were asked to provide the rationale for their choice of particular chocolates.

Results

It is argued that the impact of the quantity-matching heuristic on choice among assortments is a function of consumers' decision focus, such that consumers are more likely to adopt the quantity-matching heuristic when the salience of the item-selection task is high than when it is low. A test of this hypothesis involves examining the dispersion of choice shares of the two assortments across the two purchase-quantity conditions (three-item versus five-item condition) as a function of the nature of the justification task (assortment-selection justification versus item-selection justification).

The choice share data summarized in Table 5 show that the impact of the quantity-matching heuristic on choice among assortments was greater when respondents were asked to justify their choice of chocolates (item-justification condition) than when they were asked to justify their store choice (assortment-justification condition). In the five-item goal condition, 48.6% of the respondents selected the smaller assortment when asked to justify their choice of chocolates, compared with 2.3% of the respon-

Table 5
QUANTITY-MATCHING HEURISTIC AS A FUNCTION OF
CONSUMERS' DECISION FOCUS (EXPERIMENT 5)

Decision Focus	Purchase-Quantity Goal	Cell Size	Assortment Size	
			Five Options (%)	Thirty Options (%)
Item	Three items	44	22.7	77.3
Item	Five items	37	48.6	51.4
Assortment	Three items	36	8.3	91.7
Assortment	Five items	44	2.3	97.7

Notes: Numbers in each cell indicate the choice share of the particular assortment. The choice shares of assortments matching the desired purchase quantity appear in bold. The data pattern indicates that consumer reliance on the quantity-matching heuristic tends to be more pronounced when the salience of the subsequent product-choice task is high (item-focus condition) than when it is low (assortment-focus condition).

dents asked to justify their assortment choice. In contrast, in the three-item goal condition, only 22.7% selected the smaller assortment when asked to justify their product choice, compared with 8.3% of those asked to justify their choice of an assortment.

The data were analyzed by testing a model in which the choice share of the two assortments was given as a function of the purchase-quantity goal (five versus three items) and decision focus (assortment versus item). The analysis shows that the impact of the purchase-quantity goal on choice among assortments varied significantly as a function of decision focus ($\chi^2(1) = 3.95, p < .05$), a finding that is consistent with the experimental predictions.

Discussion

It is argued that the impact of the quantity-matching heuristic on choice among assortments is a function of the decision focus, such that respondents are more likely to adopt the quantity-matching heuristic when the salience of the item-selection task is high than when it is low. The experimental data furnished by Experiment 5 support this prediction, demonstrating that consumers who were aware of the difficulty of the subsequent decision task of choosing an option from the available assortment were more likely to rely on the quantity-match heuristic than those who were not explicitly made aware of the subsequent decision task. This finding lends support to the argument that a match between the assortment size and the number of to-be-purchased items enables consumers to avoid trade-offs associated with choosing a specific option.

GENERAL DISCUSSION

This research reports an original decision heuristic that consumers use to choose among assortments. In particular, it demonstrates that consumers are more likely to choose an assortment in which the number of available options matches their purchase-quantity goal. This finding is attributed to the quantity-matching heuristic, which posits that a match between the assortment size and the number of to-be-purchased items enables consumers to avoid trade-offs

associated with choosing a specific option while providing them with a readily available reason to choose the matching assortment.

The research propositions advanced in this article are supported by data from five experiments that document the use of the quantity-matching heuristic in different decision contexts. In particular, the quantity-matching heuristic is documented in the case of purchases intended for consumption over time (Experiment 1) and in cases when the purchase quantity was set by a retailer's volume-based promotions (Experiment 2). The data further show that the quantity-matching heuristic is a function of decision uncertainty, such that consumers are more likely to rely on the quantity-matching heuristic when decision uncertainty is high than when it is low (Experiment 2). This quantity-matching heuristic is further shown to be a function of decision accountability, such that its impact on choice is more pronounced when consumers expect to need to justify their decisions (Experiment 3).

The impact of the quantity-matching heuristic on choice among assortments is shown to be a function of consumers' preference for variety, such that consumers who seek variety are more likely to adopt the quantity-matching heuristic (Experiment 4). This research also documents that the quantity-matching heuristic is influenced by the degree to which the cognitive costs associated with making a choice from the available assortments are evident to consumers, such that consumers are more likely to adopt the quantity-matching heuristic when they are aware of the cognitive costs associated with choosing individual options from an already-selected assortment (Experiment 5). The combined data from these experiments offer converging evidence for the quantity-matching heuristic and identify its moderating factors and boundary conditions.

The quantity-matching heuristic advanced in this research offers a counterintuitive view on how purchase-quantity goals influence consumers' preferences for variety. Conventional wisdom suggests that as the number of items purchased from the same category increases, consumers will seek more variety and, consequently, are likely to prefer larger to smaller assortments. In contrast, this research demonstrates that the preference for smaller assortments can actually increase with an increase in the number of purchased items, provided that the size of the set matches the desired purchase quantity.

The research presented in this article contributes to the literature examining consumer choice from and among assortments. Most prior assortment research has examined the role of assortment size in choice in a scenario in which a consumer's goal is to select a single item from the available assortment (Botti and Iyengar 2004; Brenner, Rottenstreich, and Sood 1999; Chernev 2003, 2005; Gourville and Soman 2005; Hoch, Bradlow, and Wansink 1999; Iyengar and Lepper 2000; Schwartz et al. 2002). In contrast, the research presented in this article contributes to the field by demonstrating how consumers choose multiple items from the available assortments and, in particular, how the desired purchase quantity can influence their choice of an assortment.

In addition to its theoretical contribution, this research offers several practical implications. In particular, it suggests that in product categories in which consumers are

likely to buy multiple items, matching the number of options in a given assortment to the number of the to-be-purchased items can increase the choice likelihood of options from the matching assortment. With the advances in marketing intelligence and the increased efficiency of customizing product offerings, understanding the quantity-matching heuristic gives marketers an opportunity to differentiate their offerings by creating assortments that match consumers' purchase-quantity goals. Thus, when the number of items to be purchased by a particular consumer in a given category can be readily estimated, companies can benefit from creating customized assortments of the size that matches consumers' desired purchase quantity.

The findings reported in this article also imply that volume discounts and incentives (e.g., two for \$X, two-for-one), promotional communications (e.g., buy six), and quantity restrictions (e.g., limit three per customer) that are likely to influence purchase quantity can affect consumer choice among the available assortments. To illustrate, a promotion suggesting a particular purchase quantity is likely to increase the choice share of assortments that match in size the number of to-be-purchased items identified in the promotion. For example, a buy-two-get-one-free offer can result in a higher choice share of a brand that offers three varieties than brands that offer two or four varieties.

The findings reported in this article can be further applied to promoting multipacks that offer variants (e.g., flavor, color, taste) of a given product. This research implies that a variety pack that suggests a usage behavior linked to a particular purchase quantity (e.g., "try a different flavor each day for the next five days") is likely to facilitate the articulation of a particular purchase-quantity goal, which in turn will increase its purchase likelihood. Investigating the practical implications of consumers' reliance on the quantity-matching heuristic is a promising venue for further research.

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