

Sequential Choice in Group Settings: Taking the Road Less Traveled and Less Enjoyed

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Many individual decisions take place in a group context wherein group members voice their choices sequentially. In this article we examine the impact of this dynamic decision process on individuals' choices and satisfaction with their outcomes. We propose that choices reflect a balancing of two classes of goals: goals that are strictly individual and goals that are triggered by the existence of the group. The latter sometimes results in choices that undermine personal satisfaction and increase regret. We find support for goal balancing in three studies in which we tracked consumers' orders of dishes and drinks. In the Lunch study we found that real groups (tables) choose more varied dishes than would be expected by random sampling of the population of all individual choices across all tables. The Beer study demonstrates that this group-level variety seeking is attributable to the interaction—implicit or explicit—among group members, and can be dissipated when the group is forced to “disband” and its members make strictly individual choices. Finally, the Wine study demonstrated that individual choices in a group context are also aimed at satisfying goals of information gathering and self-presentation in the form of uniqueness.

We begin with a true story of a brunch honoring a colleague who had recently accepted an academic position at a west coast university. To celebrate this joyous occasion, we chose a restaurant that was highly recommended but that most of us had never visited. While perusing the rich menu, one of the authors was contemplating two options: a French toast platter and a pancake platter. Both seemed attractive. However, when another member of the party requested the pancakes, the author in question decided to order the French toast. Why did the choice of one diner affect the choice of another? Indeed, do choices differ when made sequentially in a group context? In this article we study the goals and motives that may prompt individuals' choices in a sequence to differ from choices made in other decision settings.

Research in consumer behavior and social psychology has

produced ample evidence that the decisions and judgments of individuals in a group are dependent upon the decisions and judgments of other group members such that choice or opinion shifts are induced (for a review, see Levine and Moreland 1998). For instance, Asch's (1955) classic experiment on judgments of line lengths showed high levels of social conformity despite the existence of a correct response to the task. His findings were later qualified by Deutsch and Gerard (1955), who attributed shifts in judgment or choice to an adherence to norms (normative social influence) or acceptance of persuasive arguments (informational social influence). Thereafter, the notion of normative and informational social influence has served as the primary paradigm guiding research on choice and judgment shifts (see, e.g., Burnkrant and Cousineau 1975; Herr, Kardes, and Kim 1991; Kaplan and Miller 1987; Levine and Moreland 1998; Moscovici 1985; Myers and Lamm 1976). One emergent proposition is that the type of influence will depend upon the decision task. For instance, Kaplan and Miller (1987) suggest that normative influence should predominate for judgmental tasks such as dish selection in a restaurant, while informational influence should dictate judgment or choice for intellectual tasks, such as solving problems, that have a single correct solution.

The preponderance of evidence indicates that the prevailing outcome of group-influence situations is choice and opinion convergence (Festinger 1950; Levine and Moreland 1998). Mackie and Goethals (1987) ascribe this

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to an isomorphism between individual and group goals. They characterize the interaction between an individual and his group as “pervaded by an atmosphere of ambivalence” (p. 148; see also Thibaut and Kelley 1958). The ambivalence is a consequence of the recognition by both the group and the individual that they are interdependent for mutual goal satisfaction, and that this interdependence represents a conflict that necessitates compromise. Indeed, Mackie and Goethals (1987) believe that there is a meaningful distinction between individual goals and group goals. This distinction is pertinent to the group-influence literature because researchers have often focused on situations wherein the group is tasked with producing a single output from the totality of the individuals’ inputs. For instance, studies of jury decision making (see, e.g., Kaplan 1987) examine the process groups use to reach a single verdict from multiple opinions. Similar qualifications apply to research about group polarization (e.g., Isenberg 1986), groupthink (Janis 1982), and competition versus cooperation (e.g., Deaux 1996). In consumer research, Corfman and Lehmann (1993) support the notion of group and individual goals by showing that others’ welfare is taken into account when making a group decision. Other studies have analyzed the result of group influence on one individual’s decision in cases where an individual is exposed to judgments of others (Asch 1955), in purchases of luxuries and necessities (Bearden and Etzel 1982), and where word-of-mouth information is available (Herr et al. 1991).

An examination of our opening anecdote reveals a pair of subtle, yet significant, differences between the celebratory brunch and traditional work on social influence. In contrast to research about single group decisions, the output of the decision-making process in our restaurant example corresponds exactly to the inputs provided by individual group members—the “group decision” is really just a sequence of the individuals’ choices. Second, as opposed to previous studies on the effect of group influence on a single person’s choice, our study does not use confederates or manipulate the nature of the group in order to test its effect on a single individual. Instead, we study a natural situation where multiple, interdependent individual decisions occur in an environment whose effect is contingent on the actual choices made by each group member. This is quite different from the previous approach because it allows us to investigate how the constraints introduced by the group influence the dynamics of the decision-making process. Mackie and Goethals’s (1987) notion of individual and group goals is static, and thus must be altered to suit our setup. We suggest that the two general goal classes or motivations most applicable in our case are individual-alone goals and individual-group goals. The former are goals of the individual that are independent of the presence of others (e.g., satisfying one’s own taste), while the latter are contingent on choices made by other group members or are only induced because of the existence of a group context (e.g., the desire to portray oneself as interesting and unique).

These two goal classes can have interesting implications

because the group context (or contingency) sometimes forces them into direct conflict, such that fulfilling different goals is achieved by choosing different alternatives. For instance, the dessert that a consumer likes best might portray him as less unique if a majority of the group has already ordered it. We conjecture that consumers resolve this conflict through a goal-balancing process in which they weigh the importance of each goal class, yielding a choice that reflects a trade-off and implicit acceptance or rejection of the constraints the goal classes impose. Thus, the consumer in our example might decide to underplay individual-only goals and pick the dessert that makes him seem unique. At the group level, goal balancing can yield two patterns of choice: group uniformity and group variety seeking. Group uniformity represents a tendency for individual choices to converge on a single alternative. Conversely, group variety seeking is a tendency for choices to diverge and include varied alternatives. In this article we investigate the group-level outcome that results from the goal balancing undertaken by the individual group member when making decisions in a sequence.

It is important to note that our aim in introducing the goal classes was to make the simple conceptual point that the importance of certain goals is often contingent on the decision environment. However, “goal class” is simply a generic name for a category of goals and is therefore too broad to generate specific hypotheses about the outcome of choice behavior. Mackie and Goethals (1987) articulate three specific goal types that they consider important for understanding the tension between individual and group goals. “Utilitarian goals” represent the need for “tangible outcomes” (p. 146). “Knowledge goals” presume that individuals in a group are interdependent in their quest to acquire information about the world. Finally, “identity goals” assume that individuals desire to understand themselves and their reality in order to form an ego identity and establish a positive sense of self. We adapt the definitions of these goal types to a consumer decision setting, and add a fourth goal type (minimizing regret and avoiding losses) that has traditionally been important in consumer research and is relevant to the group context under study. In the next section we detail some of the major goals that individual consumers attempt to satisfy when making choices in a group context. We will also speculate about the choice pattern that would result from considering each goal in isolation.

Goal Types

Satisfying One’s Taste (Individual-Alone Goal).

This goal relies on the basic economic premise that individuals, irrespective of the context, will choose those items that maximize satisfaction of their taste, where taste is defined as an internal need that is independent of any external factors. Fulfillment of this goal necessitates the selection of an identical alternative whether the individual decision maker is choosing in a group context or not. Note, however,

that individuals could still be influenced by the group when satisfying their own taste if informational social influence is active. Such situations would be characterized by choice uniformity if other group members were viewed both as possessing similar tastes and more information about the alternatives. In contrast, variety seeking would occur if others were viewed as possessing different tastes (see Fig. 1).

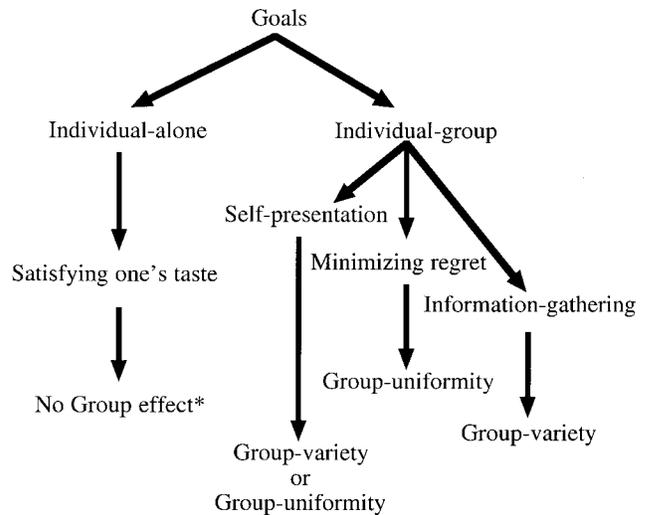
Minimizing Regret and Avoiding Losses (Individual-Group Goal). Loss aversion (Kahneman and Tversky 1979) predicts that consumers will experience more disutility from observing another diner in the group enjoying a better dish compared to the corresponding utility that they would derive from observing another diner who had selected a worse dish. They might then feel compelled to order the same dish in order to minimize the potential for disutility and regret. Assuming a fixed distribution of tastes, loss aversion and regret minimization suggest that individuals in a group context will have a greater tendency for group uniformity relative to the overall set of alternatives selected by the same individuals choosing alone.

Information Gathering (Individual-Group Goal). Consumer choices may also be an endeavor to acquire information about preferences regarding similar or identical future experiences (Scitovsky 1976). In an often-cited example of variety-seeking behavior, Simonson (1990) found that students picking candy bars for consumption in the next three lectures, opted for more varied choices than students picking a single candy bar in the beginning of each of three successive lectures. This result is commonly attributed to individuals' desire to learn their preferences (Hauser and Wernerfelt 1990; McAlister and Pessemier 1982) or hedge the risk of future changes in taste (Simonson 1990).

In a group setting, individuals could similarly seek to diversify their choices in order to gain more information through interaction with other group members. The benefit of sharing information can occur naturally in situations where members can share their choices, but also where no sharing takes place and information is transmitted only through verbal opinions or facial expressions during or after consumption. Sharing might also create incentives toward variety seeking under "attribute satiation" models, where each dish is like an attribute in McAlister's (1982) dynamic attribute satiation model. With diminishing marginal sensitivity to each bite of a given entrée, sharing of entrées may produce more utility than consuming all of one's most preferred option. We posit that the group's presence can induce collective variety seeking even when there is no sharing, and all the studies reported herein focus on such contexts.

Self-Presentation (Individual-Group Goal). It is well known that individuals consume products in an effort to convey an image to themselves and others (Belk 1988). Choices made in group settings provide an ideal venue for conveying such signals. An abundance of social psychological work has shown that such situations are characterized

FIGURE 1
AN ILLUSTRATION OF GOAL CLASSES, GOALS, AND THEIR PREDICTIONS



NOTE.—In cases where informational social influence is present during the decision process, an outcome of group uniformity or variety seeking can result.

by uniformity (Asch 1955; Deutsch and Gerard 1955; Hinsz and Davis 1984; Kaplan 1987). However, Snyder and Fromkin (1980) suggest that people will make choices that are unique in order to present themselves in a positive light. Research by Ratner and Kahn (1999) corroborates this point. They find that in some cases individuals seek variety because they expect to be viewed more favorably as a result. In related work, Hsee (1999) shows that consumers choose a low level of variety for products whose origin is hard to observe (such as the label of a T-shirt), but choose a high level of variety when the differences are easy to observe (such as the color of a T-shirt). These findings suggest that, depending on the image an individual wants to convey, the identity goal can either lead to group uniformity or variety seeking. When unique choices can be used as positive self-presentation cues, variety seeking at the group level will ensue. Similarly, personality traits that relate to self-presentation may also determine the tendency to seek variety in groups. For instance, individuals who are high on the trait of need for uniqueness (Snyder and Fromkin 1977) will be more likely to select options that have yet to be chosen, thus yielding greater group level variety.

In sum, we have outlined four types of goals that individuals face when selecting alternatives in a group setting: satisfying one's taste, avoiding losses and minimizing regret, information gathering, and self-presentation. The objective of this work is to examine goal balancing and its outcome in consumer choices in a group context. We propose goal balancing only as a general framework that can help us understand the trade-offs implicit in these decisions. Figure

1 summarizes the predicted direction of the outcome according to each goal type, assuming each goal was considered in isolation. We construct our argument using three studies that successively reveal the outcomes of goal balancing and the reasons that may underlie it. In study 1 (the Lunch study) we test the goal-balancing hypothesis at its most basic level: Does group context influence individual choices, and, if so, what is the revealed choice pattern? In study 2 (the Beer study) we seek more direct evidence that goal balancing entails a trade-off between goals, including loss aversion and the taste satisfaction goal. Finally, study 3 (the Wine study) examines the importance of the information and identity goal types in goal balancing.

STUDY 1: THE LUNCH STUDY

The principal aim of study 1 was to ascertain whether goal balancing imposes meaningful constraints on choice by examining the group-level outcome of sequential decisions in a group context. The outcome pattern would also serve as an indirect indication of which goal types were being traded off. A null effect of group context would imply that the goal of satisfying one's taste (an individual-alone goal) trumps all other concerns and suggests that the constraints imposed by goal balancing are insignificant. An outcome of choice uniformity at the group level would provide some evidence supporting regret minimization and loss aversion and possibly self-presentation in the form of conformity as the primary goals that individuals consider when making choices in a group context. In contrast, a pattern of group variety seeking would hint that satisfaction of taste and loss aversion are traded off in favor of information gathering and uniqueness as a form of positive self-presentation.

To test for the influence of group context on individual decisions in a natural setting, we collected lunch order slips from a popular Chinese restaurant in Durham, North Carolina. The data were gathered over a period of six weeks, in collaboration with a restaurant manager who was blind to the hypothesis. We analyzed the order codes of all tables of two or more diners. Lunch orders were of uniform size and price, and, unlike the usual custom in Chinese restaurants, were served as individual portions and not shared. The restaurant offered a total of 25 lunch selections, not including soups and appetizers.

There are two possible benchmarks for comparison that may be considered in a one-cell study of a group's effect on individual choice. The first is the pattern of selections of customers lunching alone. We did not choose this benchmark due to the possibility of a selection confound: people who dine alone may somehow have different preferences than those who dine in groups. Instead, we constructed "nominal groups," as is common in group problem-solving research (see, e.g., Baron, Kerr, and Miller 1992; Diehl and Stroebe 1991; Laughlin, VanderStoep, and Hollingshead 1991). That is, we randomly aggregated the orders of individuals from the real groups into tables of the same size and compared the variety in those simulated groups to the variety of selections at real tables.

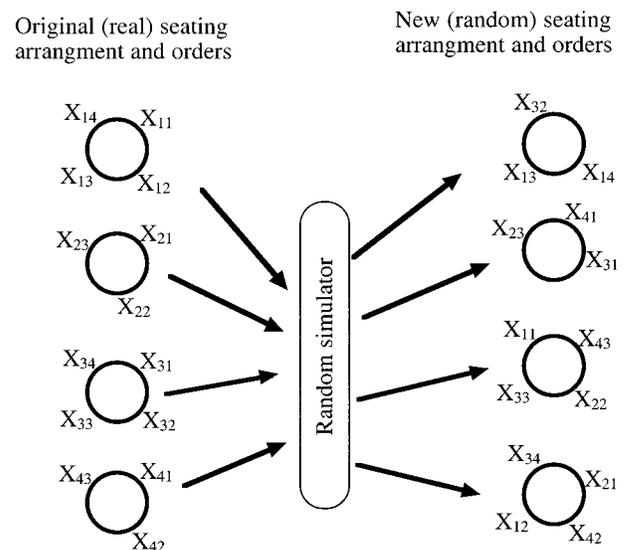
Method

Eight hundred and fourteen lunch order slips were collected over the course of six weeks, representing a total of 2,202 diners. As discussed above, the choice variability within these tables cannot be meaningfully interpreted without a comparison to a reference population that was not subject to the group contingency. To overcome this problem we created a simulation program designed to generate such nominal groups as a control. The simulation was programmed to take the entire set of individual choices (2,202 dinners across 814 tables) and randomly reassign individuals to tables (for an illustration, see Fig. 2). The constraint imposed on these nominal groups was such that they had the same distribution of table sizes as the original set. In effect, this created a comparison group that reproduced the same overall (i.e., sample) variety in dish choices and table sizes, but without any table-specific interorder dependencies. In order to achieve stability in our measure of the reference group's variety, we repeated this process 100 times and used the generated tables (groups) from all these runs as our reference class.

Based on both the original and created tables, we computed a Variety Index, or V , that was calculated as shown in Equation 1. This definition bounded the Variety Index between 0 and 1. The index was designed to equal 0 when all the dishes in a table are identical and 1 when all the dishes in a table are different. For example, if there are three diners at a table, and all three choose different items, V will equal $(2/2 = 1)$; if two of the diners choose the same item, V will equal $(1/2 = .5)$; finally, if all three diners choose the same item, V will equal $(0/2 = 0)$. Goal balancing

FIGURE 2

AN ILLUSTRATION OF THE RANDOMIZING SIMULATION



would be supported if the group context was shown to significantly influence V levels; a higher or lower V in the real groups would indicate that the outcome of such a balancing process is group variety seeking or group uniformity, respectively.

$$\text{Variety Index (V)} = \frac{\text{number of different options chosen within a table} - 1}{\text{table size} - 1}$$

Results and Discussion

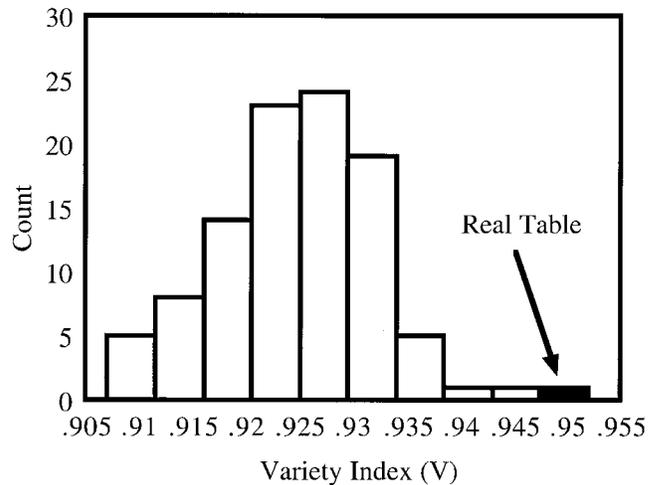
The analysis of the Lunch study consisted of comparing the Variety Index across the real and simulated tables. Two important results emerge. First, a comparison between the V for the real sample and the distribution of V's obtained through the simulation (see Fig. 3) indicates that the group context has a strong and significant influence on individual decision making. We interpret this to mean that individual-group goals constrain choice such that fulfillment of taste satisfaction is limited. Second, the results suggest that the outcome of the group contingency is to increase variety in choices at the group level. In fact, all the tables produced by our simulation displayed a lower Variety Index measure than the original tables (i.e., there was no overlap with the simulated distribution)!

In addition to this overall analysis, we also tested the data separately for each table size (see Table 1). The difference in the variety index was in the same direction for all five table sizes in aggregate, although it was significant only for four of the five comparisons separately (all but table size 3). From these findings we deduce that certain group contexts (e.g., dining in a Chinese restaurant) create a preference contingency that prompts individuals to tend toward selections that increase variety at the group level.

It is worthwhile noting that we obtained these results despite a couple of factors that would exert a bias against group-level variety seeking and limit our power to detect them statistically. First, because the restaurant we selected was a popular establishment, customers would be more likely to have favorite dishes, therefore displaying stickiness in their selections irrespective of the group's choices. Second, the overall levels of V may seem high. Recall that there were 25 possible options on the menu, making it quite difficult to find anything but highly varied choices, even without the group context (i.e., through randomly generated groups). For instance, if the group contingency were non-existent and the prior odds of selecting any dish were equal, 1 in 25, the probability that both people at a table would choose option 1 would equal $(1/25) * (1/25) = .0016$. The probability that both would choose option 2 is also $(1/25) * (1/25)$, and so on for all 25 options. With 25 ways that a pair of diners might agree, the probability of agreement = $25 * [(1/25) * (1/25)] = 1/25 = .04$, and the probability of finding variety under these conditions is there-

FIGURE 3

A HISTOGRAM OF THE VARIETY INDEX (V) FOR THE 100 SIMULATED TABLE SETS AND THE ONE REAL TABLE SET



fore $1 - .04 = .96$. For two-person groups, when both members agree, V takes on its minimum value, $V(\text{min}) = 0$, and when they differ, V takes on its maximum value, $V(\text{max}) = 1.0$. With the aforementioned probabilities of agreement and disagreement, the expected value of $V = (.04 * 0) + (.96 * 1.0) = .96$. The group effect that we find, though small, is therefore impressive in light of the odds of randomly generating a similar effect. In conclusion, the Lunch study is consistent with the idea that group context can induce individuals to make choices that produce greater variety at the group level.

STUDY 2: THE BEER STUDY

The Beer study was designed to achieve three objectives. The first was to replicate our previous findings using a setup that would allow more experimental control. The second, and more important, objective was to examine more directly the idea that individual choice in a group context reflects trade-offs (or sacrifices) of different goals. Specifically, we wanted to examine whether goals other than individual taste satisfaction—an individual-alone goal—could determine choices made in a group setting. Last, we wanted to rule out the alternative explanation that the group-level variety we found in study 1 is due to positive affect stimulated by the occasion of dining out. Kahn and Isen (1993) have shown that positive affect induces variety seeking in individuals, perhaps by prompting more inclusive categorization structures. Conceivably, if the group dining context created positive affect, consumers might be led to categorize more inclusively and to consider a broader variety of options than they would as individuals. If so, the same collective variety-

seeking behavior should manifest when people in consumption groups are asked to choose individually.

In the Lunch study, we find evidence hinting that personal taste satisfaction may be sacrificed in favor of other goals, yielding variety seeking at the group level. A key implication of this conjecture is that satisfaction should depend on the individual's location in the choice sequence. The hypothesis for the "sequential order effect" is derived from the notion that the first consumer in the sequence is free to fully satisfy his/her taste because others have yet to create the group contingency by expressing their choices. However, the remaining consumers are faced with this contingency, which constrains their choices to those alternatives that increase group-level variety. We consequently expect satisfaction with consumption to be higher for the first person than for the second through *n*th persons in the sequence.

Method

A local microbrewery permitted us to pose as regular restaurant waiters and offer their patrons a free sample of beer. One hundred tables of two or more (of age) diners (mean table size = 2.7 persons) were approached by one of us and told that the brewery was conducting a special promotion, whereby free 4 fluid ounce sample glasses of house beer were being offered to interested customers. We next described the different beers (see Fig. 4) and asked them to make their selection.

The essence of the Beer study involved the introduction of two types of selection processes that were manipulated between tables (subjects). Tables were randomly assigned to one of two conditions (50 tables in each condition), the Collective condition and the Independent condition. In the Collective condition, subjects were read the descriptions of the beers and offered special promotion menus to peruse. They then were asked to make a selection one by one, indicating to the waiter which beer they would like to taste, as they would in a normal ordering situation. In the Independent condition, subjects were read the descriptions of the beers, offered the same promotion menus to peruse, but were told that a "special rule for this promotion" required them to make their selection without looking at or consulting other members of the table. These customers simply marked their choice on an individual menu. (None of the subjects in the Independent condition resisted the idea of submitting

FIGURE 4

AN ILLUSTRATION OF THE BEER SAMPLE MENU AND THE DESCRIPTION OF THE FOUR BEERS USED IN THE BEER STUDY

Free Sampler Menu

- **Copperline amber ale:** A medium bodied red ale with a well balanced hop and malt character with traditional ale fruitiness

- **Franklin street lager:** A bohemian pilsner style golden lager brewed with a soft maltiness and a crisp hoppy finish

- **India pale ale:** A well hopped robust ale originally brewed to withstand the long ocean journey from England, around the cape of Africa to India. It is dry hopped with cascade hops for a fragrant floral finish

- **Summer wheat:** This Bavarian style ale is brewed with 50% wheat for a light spritzzy refreshing summer drink. It is gently hopped and has a unique aroma reminiscent of banana and clove from authentic German yeast strain



confidential forms, and in general were rather amused by the notion.) The different beer selections were recorded for the two experimental groups, including the order of choice for the Collective condition.

Customers in both conditions then received their beer sample together with a short, three-question satisfaction survey to fill out as part of "the brewery's desire to find out what people think about its beer." The first question asked customers to rate how much they liked the beer that they had just sampled. This rating was done on a 0–10 scale, where 0 represented "didn't like it at all" and 10 represented "liked it very much." A second question asked subjects if they wished that they had ordered a different sample of beer.

TABLE 1

MEAN VARIETY INDEX (V) IN THE LUNCH STUDY, FOR NATURAL TABLES AND RANDOMLY ASSIGNED TABLES

Table size	Occurrence	V in real tables	V in simulated tables	Difference	t-value	p-value
All	814	.952	.925	.027	4.46	< .001
2 diners	428	.965	.942	.023	2.57	= .010
3 diners	227	.918	.914	.004	.28	= .782
4 diners	134	.968	.892	.076	8.72	< .001
5 diners	21	.988	.866	.122	9.90	< .001
6 diners	4	1.00	.859	.141	18.7	< .001

The response for this question was a simple yes or no answer. Third, customers were asked to estimate how many times they planned to visit the microbrewery in the next month.¹ The rationale underlying the first two questions was to assess both satisfaction and regret in the Collective and Independent conditions in order to test whether choices made in a group setting are constrained and whether they reflect a sacrifice of certain goals. Although the Lunch study provided evidence of the group-level choice pattern and hinted that it comes at the expense of taste satisfaction, the Beer study allows for a more direct test of the sacrifice of taste satisfaction and the consequent choice pattern. We expected to replicate the group variety-seeking pattern from the first study, and predicted that it would come at the cost of taste satisfaction.

Results and Discussion

The results were consistent with the notion of goal balancing. First, we found that variety seeking (V) was significantly higher in the Collective condition ($M = .843$) than in the Independent condition ($M = .46$), $t_{98} = 5.69$, $p < .001$, thus replicating the results of the Lunch study. In addition to the Variety Index measures, the aim of the Beer study was to test the impact of increased variety within a table on the satisfaction and regret of the individuals who composed these tables. Our hypothesis was that “taking the road less traveled” would prompt customers to sacrifice choosing their preferred beer in favor of a lesser-liked beer because of a desire to satisfy other goals, leading to increased group-level variety. The results of the postconsumption questionnaire support this conjecture (see Table 2). Subjects indicated significantly higher satisfaction with their beer choice in the Independent condition ($M = 7.75$) than in the Collective condition ($M = 6.80$), $t_{98} = 3.12$, $p < .005$. Responses to the regret question (the “yes/no” question on the survey) were, as expected, highly correlated with the satisfaction ratings ($r = .677$). Subjects in the Collective condition were significantly more likely to regret their choice (38.4 percent) than subjects in the Independent condition (12.4 percent), Mann-Whitney $U = 6707$, $p < .001$. Furthermore, these findings reject the notion that informational social influence is driving our results in the sense that information from others was not used to better satisfy one’s taste.

The sequential-order hypothesis stipulates that satisfaction in the Collective condition should also depend on the individual’s location in the choice sequence. In order to test this idea, we recorded the order in which people in the Collective condition voiced their choices. As the waiters, we asked customers for their orders in a randomly predetermined sequence, so that this way customers could not self-select into the ordering. Recall that the first consumer in the sequence was free to satisfy his/her tastes fully because the group contingency (and need for goal balancing)

¹This question did not convey any useful information and will not be discussed further.

TABLE 2
LIKING FOR THE DIFFERENT BEERS IN THE COLLECTIVE AND INDEPENDENT CONDITIONS

	Independent		Collective	
	Mean liking	SD	Mean liking	SD
Amber ale	8.19	1.50	7.19	2.15
Lager	7.68	2.15	7.44	2.02
Pale ale	7.10	2.30	6.40	2.56
Summer wheat	7.68	2.32	6.17	2.80
Grand total	7.75	2.09	6.80	2.47

had yet to be created. Our data confirmed this prediction: mean satisfaction ratings in the Collective condition for the first customer in the sequence ($M = 7.26$) were significantly higher than the mean ratings for the rest of the group members ($M = 6.48$), $F(1, 49) = 4.97$, $p = .03$. Follow-up tests showed that the first customer in the Collective condition was as happy with his/her beer ($M = 7.26$) as the average customer in the Independent condition ($M = 7.75$), $t_{49} = 1.23$, $p > .2$. However, patrons not choosing first in the Collective condition were significantly less happy with their beer ($M = 6.37$) than the consumers in the Independent condition ($M = 7.75$), $t_{49} = 4.15$, $p < .001$.

Responses to the regret question revealed an identical pattern: overall reported regret was significantly higher in the Collective condition (38.4 percent) than in the Independent condition (12.4 percent), $U = 6707$, $p < .001$. In addition, the first customer in the Collective condition was significantly less likely to report regret (24 percent) than the remaining members of his table (48 percent), $U = 3205$, $p < .05$. The latter were also significantly more likely to regret their choices (48 percent) relative to customers in the Independent condition (12.4 percent), $U = 3502$, $p < .001$. This set of findings also rules out the interpretation of our Lunch study results in terms of a group setting effect on affect, categorization, and consequent variety seeking.

Several conclusions can be drawn from the results discussed thus far. First, personal taste satisfaction cannot account for the data obtained because average satisfaction in the Collective condition was actually lower than that of individuals choosing independently. Second, the group-level outcome of variety seeking is consistent with the notion that individuals within a group context balance their individual-alone goals against the constraints introduced by individual-group goals. Finally, the robust finding of variety seeking allows us to reject regret and self-presentation in the form of conformity as the principal goals fulfilled by our participants.

STUDY 3: THE WINE STUDY

The data supporting the existence of a group contingency (studies 1 and 2) suggest that personal taste satisfaction and regret minimization are sacrificed for the sake of group-level variety (study 2). Our goal-balancing framework in-

icates that satisfaction of other goals—information gathering and self-presentation (in the form of uniqueness)—might offset the disutility that arises from this forfeiture. Information gathering is essentially a rational view that implicates consumers' desire to learn their preferences as a motive for variety seeking (Scitovsky 1976). If this explanation is correct, then eliminating the need to obtain information from other group members should obviate the need to seek variety. The Variety Index for groups with a diminished need for information should therefore be lower than the V for groups with a higher need for information. Second, the self-presentation goal is a social signaling explanation by which consumers seek group-level variety in order to convey an image of individuality and uniqueness to themselves and others (Hsee 1999). If this explanation is accurate, then a measure of need for uniqueness (NFU; Snyder and Fromkin 1977) should be positively correlated with the tendency to seek variety. The Wine study is designed to identify whether each of these explanations is a significant factor in goal balancing.

Method

Forty-five groups of business students from the daytime and global executive master's program at Duke University were approached under the aegis of a "marketing study on wines" and asked to sample a few wines. Groups ranged in size from two to six members ($M = 4.3$), and were randomly assigned to one of two conditions: Information and No Information. Two lists of wines were prepared, each containing four different wines (set 1 and set 2). In the Information condition, participants first sampled 1 fluid ounce of each of four different types of wines from one set and were provided with a list that contained the name, year, and a brief description of each wine. Next they were asked to choose one of the four wines from the same set for the purpose of receiving a full, 4 fluid ounce glass. Since the initial tasting was done in the same group context, any possible information about the wines had already been acquired or transmitted prior to the second phase because the latter involved previously tested wines. In contrast, subjects in the No Information condition received a new list of wines in the second phase, allowing for learning and information sharing to take place during both the first and second phases. Participants in the No Information condition sampled 1 fluid ounce of each of four different types of wines from one of the sets, but were asked to choose one of the four wines from the other set for the purposes of receiving their full, 4 fluid ounce glass (groups who received set 1 in stage 1 received set 2 in stage 2, and groups who received set 2 in stage 1 received set 1 in stage 2). The two wine sets were counterbalanced between groups. Thus, the manipulation kept the process of wine consumption identical between the two groups and changed only the level of information available for the second set of wines.

After sampling their selection in the second phase, subjects in both conditions completed a satisfaction questionnaire regarding their chosen wine (the 4 fluid ounce glass).

The satisfaction survey consisted of four questions. The first question asked participants to rate how much they liked the wine they had just sampled using a 0–10 scale, where 0 represented "didn't like it at all" and 10 represented "liked it very much." The second question asked participants if they wished that they had ordered a different sample of wine. The response for this question was a simple yes or no answer. The third question asked participants to estimate how many glasses of wine they had consumed in the last month, and the fourth question asked them to rate their level of knowledge about wine. The latter was done on a scale from 0 to 10, with 0 meaning not knowledgeable at all and 10 meaning very knowledgeable.² After responding to these four questions, subjects were asked to complete the need-for-uniqueness scale (Snyder and Fromkin 1977).

Results and Discussion

In the first step of our analysis we calculated the Variety Index for all groups of respondents in order to test the hypothesis that the group creates a contingency for individual choice. Note that in both conditions subjects made their selections out loud, or "collectively." In order to test for the group contingency, we used the same procedure as in the Lunch study to create a benchmark null hypothesis level of variety seeking (see Fig. 2). Once again, we ran the simulation 100 times to obtain stable results. We find that the mean V from the simulated groups ($M = .554$) was lower than the mean V from the real groups ($M = .658$), $t_{44} = 5.38$, $p < .001$. Responses from the wine satisfaction question also replicated the Beer study's result: the satisfaction for the first person in each group ($M = 6.69$) was significantly higher than the satisfaction with the wine for the remaining people in the group ($M = 5.6$), $t_{193} = 3.05$, $p < .01$. The regret question showed an identical pattern, with reported regret for the first person in each group (20 percent) lower than the regret indicated by the rest of the people in the group (37 percent), a marginally significant difference, $U = 2790$, $p = .078$. Thus, the results from the Wine study replicated those from the previous experiments, indicating that a group context causes increased group-level variety at the cost of personal consumption dissatisfaction and regret.

A similar analysis was conducted for each of the two experimental conditions. In the No Information condition, V in the real groups ($M = .734$) was significantly higher than V in the simulated groups ($M = .577$), $t_{19} = 3.91$, $p < .001$. Likewise, in the Information condition, V in the real groups ($M = .645$) was higher than the V in the simulated groups ($M = .541$), $t_{24} = 3.74$, $p = .001$. These results further support the hypothesis that variety seeking is higher in real groups than in randomly formed groups. In addition, each condition also displayed the same pattern of higher first-choice satisfaction with the wine (sequential or-

²Aside from a significant correlation of wine knowledge with NFU ($r = .213$, $p < .005$), the two wine knowledge questions did not show any significant effect and will not be discussed further.

der effect). Subjects choosing first in the Information condition indicated a higher satisfaction rating ($M = 6.56$) than the rest of the members of their group ($M = 5.51$), $t_{109} = 2.3, p < .05$. Similarly, the first respondents in the No Information condition rated their wine ($M = 6.85$) higher than group members who followed ($M = 5.73$), $t_{82} = 1.98, p = .05$. No significant differences were detected in the satisfaction ratings of the first, $t_{43} = .52, p = .6$, or second through last subjects, $t_{148} = .61, p = .53$, across both conditions.

Next, we compared the Variety Indexes across the two conditions in order to test the relative importance of the information-gathering goal. Although only marginally significant,³ the direction of the results supports the importance of the information goal: the mean V was higher in the No Information condition ($M = .734$) than in the Information condition ($M = .645$), $t_{43} = 1.89, p = .066$. It appears that information gathering plays a role in goal balancing, yielding a choice pattern of group-level variety when an opportunity for knowledge acquisition is present. However, note that the simulation results indicate that even when the need to acquire information from others is obviated (i.e., the Information condition), there remains a tendency to seek variety at the group level (V in the Information condition was higher than the V for the simulated groups).

One additional factor that might account for the tendency to seek variety is self-presentation in the form of uniqueness. Our analysis relies on responses to the need-for-uniqueness (NFU) scale and its relation to group variety seeking. In order to ascertain the importance of impression management for our respondents, we conducted three regression analyses using the group V as a criterion and the average NFU for each group as a predictor. The first regression included data from the entire sample, and found that NFU was a significant predictor of variety seeking, $F(1, 37) = 10.11, R^2 = .22, p < .005$. The coefficient for the NFU was positive (.396) and statistically significant, $t = 3.18, p < .005$. We repeated the same analysis separately for the two experimental groups and obtained the same pattern of results. For the No Information condition, the overall model was statistically significant, $F(1, 13) = 5.03, R^2 = .28, p < .05$, and NFU was positive (.552) and statistically significant, $t = 2.24, p < .05$. For the Information condition, too, the overall model approached significance, $F(1, 22) = 3.92, R^2 = .15, p = .06$, and the NFU coefficient was both positive (.290) and marginally significant, $t = 1.98, p = .06$.

While the relationship between the Variety Index and need for uniqueness supports the identity explanation, it is not an individual-level test. Since our Variety Index can be calculated only at a group level, all individuals within a group are afforded the same level of V. This is a problem, however, because NFU is measured at the individual level. In order to calculate an individual-level measure of variety seeking, we created an index called Sequential Variety. It was calculated using the sequence of choices made by the members

of each group such that when an alternative had been previously selected, that subject's choice was marked "0"; otherwise the choice was marked "1." Since the first subject in each group was necessarily a "1," we dropped all the choices made by the first respondent from this measure.

To test the significance of need for uniqueness on an individual level, we employed a logistic regression that predicted sequential variety from NFU scores and a dummy variable for each individual's order in the sequence. We included the order variable because as the number of preceding orders increases, it becomes more difficult to select an alternative that had not been previously chosen. The results showed a statistically significant log likelihood ratio, implying that NFU was a reliable predictor of sequential variety in our total sample, $\chi^2 = 4.848, p = .028$. Order of choice was also significant, $\chi^2 = 12.561, p < .001$, such that variety decreased as the position in the ordering sequence increased. We repeated the same analysis for each of the two experimental conditions separately and obtained a mixed overall result. In the Information condition, both NFU, $\chi^2 = 4.461, p = .034$, and the order variable, $\chi^2 = 6.891, p < .009$, were significant. However, in the No Information condition, only order achieved significance, $\chi^2 = 5.61, p < .02$. The discrepancy in the results might hint at a compensatory relationship between NFU and information gathering: when the opportunity for information gathering is reduced, NFU explains variety in choice; when information cannot easily be obtained, information gathering explains variety in choice.

Next, in order to compare directly the relative effect of the two explanations, we included all terms in a single model. Using logistic regression, we tested the significance of NFU scores, order in the sequence, and a dummy variable for the two experimental conditions (Information and No Information) as predictors of Sequential Variety. The results showed a significant effect for NFU, $\chi^2 = 4.67, p = .03$, and order, $\chi^2 = 12.56, p < .001$, but not for the experimental manipulation, $\chi^2 = .49, p = .82$. These results might imply that NFU has a relatively stronger effect on sequential variety than information gathering.

GENERAL DISCUSSION

The preference-construction literature has focused primarily on the characteristics of the actual object or question at hand (Feldman and Lynch 1988; Fischhoff, Slovic, and Lichtenstein 1980; Payne, Bettman, and Johnson 1993; Slovic 1995). Preferences are said to be labile and subject to cognitive biases and simplifying heuristics. Knowledge acquired through this research has sensitized market researchers to the crucial importance of questionnaire framing, complexity, display, and so on. In this article we demonstrate that, in addition to the typically cited context effects, there are also contingencies created by group contexts. A distinctive aspect of the group contingency is its interpersonal nature: it is not a property of the task (e.g., a frame) or the character of the individual, but rather a consequence of the social context of the task. Our investigation also shows that

³Note, however, that this is a conservative statement because we make a directional prediction, but use a two-tailed test.

the social context affects choices of group members, as well as the satisfaction with the outcome of their choices.

We believe that the origin of our group contingency is in the creation of goals introduced by the group context. The existence of the group forces consumers to grapple with goals belonging to two general classes: goals whose attainment depends only on the action of the individual (individual-alone), and goals whose attainment depends on both the individual and the group (individual-group). Concurrent fulfillment of these two goal classes is sometimes impossible because each can require the choice of a distinct alternative. We have suggested that choices made under the constraints that the goal classes impose reflect a process of goal balancing, wherein consumers tend to alter their selection in order to try to account for both sets of goals. All three experiments are consistent with this formulation by demonstrating that choices made in group contexts yield a systematically different pattern than those made individually or where nominal (simulated) groups are formed. The Lunch and Wine studies used a computer simulation to show that real groups exhibit a higher level of variety seeking than artificially formed, or nominal, groups. In the Beer study we replicated this finding by comparing the choice patterns of real groups and groups where each member made a selection independently (silently).

We specified four consumption-relevant goal types that fall under each goal class: satisfying one's taste (individual-alone), regret minimization and avoiding losses (individual-group), information gathering (individual-group), and self-presentation (individual-group). These goal types are useful because their fulfillment predicts whether the group-level choice pattern will be unchanged, relatively uniform, or relatively varied compared to the outcome of choices made without a meaningful group contingency. Each prediction implies that its associated goal (or goals) was weighted more heavily in the trade-off process that defines goal balancing. In particular, no effect of group context is hypothesized when the goal of individual taste satisfaction is completely fulfilled. Group uniformity is anticipated when minimizing regret is emphasized. Group variety seeking is expected when information gathering is considered paramount. Either pattern of results can emerge when consumers attend to the goal of self-presentation, depending on social norms.

All three studies suggest that people take the road less traveled and point to group variety seeking as a consistent and stable outcome when individuals order food and drinks in group settings. The Beer study demonstrates that this choice outcome comes—in accordance with our framework—at the expense of personal (taste) satisfaction and regret minimization. The Wine study supports our suggestion that variety-seeking outcomes are partially due to the heightened importance afforded to two other goal types: information gathering and self-presentation.

The evidence most consistent with the goal-balancing account is the result obtained in the analysis of the “sequential order” hypothesis. Recall that two types of subjects in the Beer study selected beers while unencumbered by the group

contingency: customers assigned to the Independent condition, and the first customer in each table assigned to the Collective condition (and in both conditions of the Wine study). In essence, these subjects had no goals to balance—they were free to fulfill the goal of satisfying their taste because we experimentally eliminated the individual-group goal class. Across the two conditions, their reported satisfaction with consumption was equal, but higher than the satisfaction of customers whose choices were constrained by the presence of goals associated with another goal class (i.e., individual-group). The relationship among order, variety in choice, and satisfaction hints at a dynamic decision process and suggests that the rest of the group members shifted their choices based on the selections voiced such that they were eventually less happy with their own selections. The Wine study indicates that this shift was due to the (implicit) trade-off favoring the information and self-presentation goals.

ALTERNATIVE EXPLANATIONS AND FUTURE RESEARCH

The factors influencing variety-seeking behavior have been studied by various consumer researchers (see Kahn [1995] and McAlister and Pessemier [1982] for comprehensive reviews). Our findings accord with the notion that individuals making choices within a group context try to balance different goals such that they choose options that have not been selected previously (variety seeking). We believe, however, that there may be additional factors contributing to this effect.

Consumers have a natural bias to engage in variety seeking, sometimes called naive diversification (Read and Loewenstein 1995; Thaler 1998). A number of animal studies, for instance, reveal that there is a “hard-wired” tendency to seek variety (Hebb 1955; Scitovsky 1976). Rats that are given a maze task for thousands of trials appear to change their behavior just for the fun of it (i.e., after the first few hundred trials, when there is no new information to acquire). Lesions to particular brain structures seem to inhibit and even eliminate this tendency (Fiske and Maddi 1961). Such natural tendencies to seek variety (or sensation seeking; see Zuckerman 1976) can be a very useful and valid behavioral heuristic because of the inherent statistical advantage of hedging. At times, like many heuristics, it can be an overgeneralized strategy that yields less than ideal results, as we found in our experiments, and as we imply by our title. For example, in her study of charitable giving, Strahilevitz (1999) finds that people donate money anonymously to several different charities in spite of their claim that they derive the most utility from giving to a specific one (see also Ratner, Kahn, and Kahneman 1999).

Naive diversification in a group setting may be moderated by Campbell's (1958) notion of entitativity, which refers to the tendency of members to view their group as an individual entity. Recently, Hamilton and Sherman (1996) expand on Campbell's concept by arguing that cognitive processes re-

garding judgments of the group will mimic those that regard individuals. This suggests that group members apply the same heuristics (e.g., naive diversification) they would use for themselves even when the choice is made in a group setting (and presumably the heuristic may not be useful). So, in the same manner that individuals tend to choose variety when deciding their own consumption, they may make choices in a group context such that variety will result at the group level. An interesting avenue for future research would involve testing whether the sense of entitativity determines the tendency to seek variety at the group level. If entitativity is low, for instance, will individuals disregard others' choices when making their own selections?

Second, if we assume that the goal of satisfying one's taste is perceived as temporally distant when placing an order, while the group-dependent goals are often immediate (e.g., self-presentation), then time discounting (Loewenstein and Prelec 1992) and preference misprediction (Kahneman 1994) may have contributed to the data we obtained. Recall that the scenarios we investigated imposed a lag between the time of ordering and the time of consumption. Individuals might consequently underweigh their satisfaction with the order in favor of placing greater weight on the satisfaction of group-related goals. In situations where there is no time lag between the choice and its outcome, the effect of group-related goals might exercise a weaker influence. Future research might test a model of the influence exerted by other group members through time, from the decision period to consumption and postconsumption—a sort of time discounting of the utility derived from group concerns. It is possible to imagine a result indicating that the group contingency is important at decision time and at postconsumption—the two instances where there is a collective element to the consumption process (e.g., when discussing what to order and in the postmeal “review process” of the experience)—but not during consumption itself.

Several factors may serve as boundary conditions for group variety seeking. In our setup, table size may have been a determining factor. All of our studies involved small to medium table sizes. It is possible that group structure in larger tables changes such that the contingency actually acts on subgroups within the table. Alternatively, variety in larger tables might be a simple consequence of natural heterogeneity, obviating the need for individuals to seek it actively. A second moderating factor involves ambiguity of preferences. Information is likely to gain importance as uncertainty increases, which would place emphasis on information gathering in the goal-balancing process. Product familiarity might therefore be crucial as a determinant of the choice pattern that emerges from decisions in a group setting. A final boundary condition relates to the different categories in which consumers might seek variety or uniformity. While we believe that this goal exists in many situations, its particular instantiation as uniqueness might not. In some situations consumers may actually want to portray themselves as similar to their group, a possibility we alluded to when we first described the self-presentation goal type. For in-

stance, it is unlikely for diners within a group to choose items that are very disparate in price. Similarly, it is rare for one person to order only a small salad if other group members order entrées. Variety seeking in dish selection, then, ordinarily would be coupled with uniformity in dish type and money spent. Self-presentation might help explain this choice uniformity in the same way that it explains variety seeking. After all, nobody enjoys being considered miserly. Indeed, the variety seeking we find might be the outcome of a strong normative social influence that governs behavior in dish selection situations. Even though our experiments reveal information gathering and self-presentation as important factors, it is possible that these are actually the antecedents of a variety-seeking norm (see Ratner and Kahn [1999] for a discussion of consumption norms).

There are many decisions that individuals make in a sequential group context. We offer two lessons for individuals in such settings to maximize their consumption utility. First, consumers are more likely to maximize enjoyment from consumption if they hold fast to their initial decision without being swayed by other group members. In light of our findings on individual-group goals, however, this might be a difficult strategy to execute. A different approach relies on avoiding individual-group goals altogether: always order first. But this raises the specter of another kind of goal balancing: the desire to satisfy one's tastes versus the need to be polite. We leave this question for future research.

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