

The Curse of Competitiveness: How Advice from Experienced Colleagues and Training Can Hurt Marketing Profitability

The literature suggests that managers are overly competitive and overemphasize competitors' payoffs in making decisions. The authors demonstrate how two seemingly innocuous but common decision inputs that mid- and entry-level managers use—(1) advice from colleagues and (2) training—could propagate this bias. The authors conduct an experiment in which one generation of participants plays a noncooperative game and then passes on advice on how to play the same game to the second generation. The authors find that the second generation is more likely to accept decisions that negatively impact the competitor's profits, even when those decisions result in lower payoffs. The results suggest that the advice of the first generation causes the second generation to be more sensitive to relative performance. In a second experiment, the authors show that training films that create negative feelings toward competitors can have adverse effects on managers' decisions. The training increases the willingness of managers to sacrifice own profits to reduce competitor profitability. These findings have important implications for managers in competitive markets. This research suggests that standard training materials that emphasize beating competitors should be carefully assessed for their unintentional but potentially damaging effects. In particular, training designed to evoke affective responses toward competitors must be used judiciously. Firms that give junior managers more autonomy and responsibility should also be cognizant that the advice these managers get and the information they share may propagate a competitive bias. To mitigate this problem, an option is to devote resources to better understand the content and nature of advice that managers share with one another.

Keywords: corporate training, planning process, knowledge transfer, dynamic games, noncooperative games, competition

The effectiveness of marketing spending often falls short of expectations (Santucci 2004). Much of the lack of effectiveness has been attributed to poor decision making caused by "too many things to think about," "not having the right information," and/or an inability to recognize what Grove (1996) calls "strategic inflection points" (see also Wind and Crook 2005). To date, the focus has been primarily on decisions and errors that organizational leaders, company presidents, and top executives make. However, the decisions of regional brand managers, trade marketers, and key account managers within a company receive little attention from academics and the popular press. Such employees may not be high profile, but their combined impact on the effectiveness of marketing is high. Typically, mid- and entry-level managers' major decisions include the allocation of promotional budgets, regional pricing, and setting sales force incentive schemes.

Several explanations have been put forth in the academic literature to account for poor decision making by managers, such as insufficient information to make decisions

carefully (e.g., Christen, Boulding, and Staelin 2004) and bounded rationality (e.g., Simon and Kaplan 1989). Behavioral decision theory also provides a further explanation for biases that belie managerial rational decision making (e.g., Boulding, Morgan, and Staelin 1997; Chakravarti, Mitchell, and Staelin 1981). The specific bias we investigate is managers' tendency to derive utility not only from their own profits but also from negative payoffs to competitors.

Managers' tendency to select strategies that are overly competitive is widely documented and has its origins in early studies of the "prisoner's-dilemma" game (Axelrod 1984). In identifying strategies that lead to the highest outcome in two-player repeated prisoner's-dilemma tournaments, Axelrod's (1984) work demonstrates that tit-for-tat yields the highest outcomes. Fader and Hauser (1988) extend this work to tournaments with three players and continuous decisions. These studies show that managers do not naturally gravitate to strategies that maximize outcomes. Griffith and Rust (1997) extend these ideas by demonstrating that managers place a high value on performance relative to competitors (and not absolute profits), even when they are explicitly instructed to maximize own profits and are compensated on the basis of their own profit performance. In a survey of existing evidence, Armstrong and Green (2007) emphasize the danger of competitor-oriented objectives. The recent behavior of John Mackey, chief executive officer (CEO) of Whole Foods, who, over several

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years, posted numerous messages on Yahoo Finance praising Whole Foods and disparaging competitors, such as archrival Wild Oats, further underscores the prevalence of excessively competitive behavior (*The Wall Street Journal* 2007).

Because the overemphasis of competitive payoffs in decision making has potentially detrimental effects for the firms and shareholders, identifying the genesis of this bias and factors that engender it is of theoretical and substantive interest. Several factors, such as education before employment, cultural backgrounds, and personality, can potentially account for why managers are prone to this competitive bias. However, Armstrong and Collopy (1996) find that the bias exists in 43 experimental replications across several samples tested in different countries. Because the bias appears to be fairly widespread, we examine the inputs managers use to make decisions as possible causes of this predilection.

Prior literature has essentially viewed these inputs as either data or decision rules (e.g., Chakravarti, Mitchell, and Staelin 1981). Because decision-making inputs do not explain why managers accentuate competitors' profits, we identify other inputs that are salient and have a significant effect in the decision-making context of the junior manager. The objective of this article is to demonstrate how two seemingly innocuous but common decision inputs—advice from colleagues and training—could propagate this bias.

To understand how advice from colleagues and training constitute a possible genesis of this bias, we examine the context in which entry-level managers make decisions. A first characteristic of this environment is the time pressure that managers face to learn (and understand) a business and to make decisions. A study conducted by Accenture indicates that the average time it takes a company to create and launch a marketing campaign is 2.5 months. Moreover, 58% of the executives surveyed stated that they have attempted to shorten this time (*Business Wire* 2001).

A second characteristic that affects decision making is the level and quality of information that managers have to make decisions. Surveys indicate that marketing managers do not have access to the information they need to make effective decisions. According to the Accenture study, obtaining accurate and up-to-date data to make decisions is a critical need for 68% of managers (*Business Wire* 2001). Procter & Gamble's chief marketing officer, Jim Stengel, stresses this issue by commenting that "[m]arketing is a \$450 billion industry, and we are making decisions with less data and discipline than we apply to \$100,000 decisions in other aspects of our business" (VanBoskirk 2005, p. 2). Even if research is available, for several reasons, managers perceive the information as lacking insight relevant to decision making (e.g., Hellebusch 2004; Mittal 2004). The problems associated with conducting and using marketing research are also well documented (e.g., Andreasen 1985).

A third characteristic that affects marketing decisions is that the relationship between marketing decisions and marketing outcomes is not well established (e.g., Rust et al. 2004). The key implication of these characteristics is that managers may not have adequate information or conduct sufficient analysis to develop effective marketing plans. As a

result, managers use other information and approaches to make decisions.

One source of information that junior managers use is advice or guidance from their peers or colleagues in similar positions (e.g., Schotter and Sopher 2007). Unlike CEOs, midlevel managers have easy access to many colleagues with the requisite experience who are often in adjacent offices. The benefit of advice from colleagues is that these people have made similar decisions in the past. Seeking advice or information from others is common across many domains.¹ Indeed, both in and outside the workplace, it is natural for people to receive guidance from others, even when they do not actively seek it.

A second source of guidance for decision making is cues from the environment. A cue that is most relevant for junior managers is the "rules of action" learned from the training new and midlevel employees receive early in their tenure with a company. This cue is salient for mid- and entry-level managers but not for senior executives; the majority of training within firms is directed toward junior managers. Training often reflects the beliefs and culture of a company and provides concrete information as to how to make decisions.

A natural question is to ask how these sources of guidance affect decision making. In particular, is there a link between the overcompetitiveness of managerial decisions and the sources of guidance mid- and entry-level managers use to make decisions? Both advice from colleagues and training seem useful for transmitting marketing knowledge and expertise to managers who are new. Our objective is to understand these sources of guidance and highlight their unintentional but potentially pernicious effects. Using an experimental approach, we examine the decision making of participants who use these two sources of guidance.

Conceptual Development

A natural question arises as to why managers and firms promote a culture that focuses on inflicting damage on competitors. There are several possible explanations. First, there are situations, such as a zero-sum game, in which decreasing the competitors' profits is entirely rational. In addition, when competitors interact with each other in a repetitive sense, inflicting harm on "the competitors" may be profit reducing in the short run but profit maximizing in the long run. This can be the case when the short-term profit-reducing action is part of a tit-for-tat strategy that allows players to sustain a cooperative outcome in a dynamic game (Kreps et al. 1982). Alternatively, inflicting harm on the competitor may maximize profit in the long run if the competitor is ultimately eliminated (Parks, Pharr, and Lokeman 1994). Nevertheless, it seems reasonable to argue that most

¹Such behavior is frequently encouraged through explicit statements of corporate values. For example, Hewlett-Packard, through its "HP Way" statement of corporate values (and, subsequently, through its "Rules of the Garage"), strongly encourages employees to adopt an open-door policy to discuss business conduct and to share "tools and ideas" (see the "HP E-Services.Solutions" Case EC-16 of the Graduate School of Business, Stanford University, May 2000).

market situations are not really zero-sum games; in general, increased competition results in lower profits for firms and more benefits for customers (Boynton, Blake, and Uhl 1983; Brodie, Bonfrer, and Cutler 1996; Leeflang and Wittink 1996). In addition, firms are rarely successful in eliminating their key competitors.

Second, there is a body of research demonstrating that coordination is an important factor in a collective setting to achieve desired outcomes (Grandori and Soda 2000; Schmitt, Swope, and Walker 2000). Because demonizing the competition provides managers with a common message and a common set of values, it may be useful to improve coordination within a firm. To the best of our knowledge, there is no empirical study that directly measures the impact of culture on effectiveness. Nevertheless, Hofstede (1980), Schein (1985), and Weick (1987) propose and find evidence that culture coordinates collective action taking.

Third, it may be easier to describe the set of actions that harm a competitor than to describe actions that increase profit. As Armstrong and Collopy (1996) note, competitor-oriented objectives may be useful because a competitor's performance can serve as a benchmark. In this context, instilling a culture that emphasizes the importance of hurting the competition will assist managers in identifying the relevant information and the most effective action. Brown and Starkey (1994) suggest that a key effect of organizational culture is to specify what information is important and thus assist in focusing a manager's attention.

Fourth, it may be easier to convince managers to take action that inflicts harm on a competitor than action that improves profit. Research shows that people are distributed along a continuum with highly competitive (or individualist) personalities at one end and highly cooperative personalities at the other (Chatman and Barsade 1995; Kelley and Stahelski 1970). People close to the highly competitive end of the continuum derive significant benefit from competition and beating an opponent. There is evidence that salespeople who score high on the competitiveness trait set higher goals and realize superior performance (Brown, Cron, and Slocum 1998). Because the competitive trait positively affects performance, it is plausible that actions that enhance these tendencies also lead to superior results. This perspective of personality provides an explanation for the popularity of boxing and World Wrestling Entertainment; a major component of these sports is the demise of artificial villains (Baldwin and Flaherty 1999). If people drawn to careers in marketing and sales are strong on competitive traits, it may be easier to motivate them by focusing on actions that equate competitors to a common foe. There is evidence that the fit between personality type and organizational culture is a key determinant of behavior (Chatman and Barsade 1995).

Finally, research on contests has demonstrated that merely participating in a contest provides utility for the players (e.g., O'Keefe, Viscusi, and Zeckhauser 1984). Because sales contests can be effective to motivate employees by having them compete with each other (e.g., Kalra and Shi 2001), managers may frame the competitive nature of business as a contest. As the English essayist Charles

Lamb (1823) succinctly put, "Man is a gaming animal. He must always be trying to get the better in something or other."

Both advice from colleagues and training are important and useful sources of information that junior managers use to make marketing decisions. We believe that these sources of information also lead managers to make decisions that place a high weight on harming competitors. As a result, the ability of marketing spending to generate returns in terms of profit is adversely affected. Next, we discuss these two sources of guidance.

Advice

A source of guidance for new managers is knowledge obtained from more experienced colleagues (e.g., Schotter and Sopher 2003). As Day and Nedungadi (1994) note, managers' decisions are subject to psychological processes learned through experience and shared as industry conventional wisdom. Managers also use informal tools (proverbs, procedures, and perspectives) to convey wisdom that exists within the organization (Klayman, Larrick, and Heath 2000). This is particularly true of managers who pass on advice to colleagues or subordinates who inherit their responsibilities over time. The evidence from experimental economics shows that "word-of-mouth" social learning between successive generations of managers is an important force in the creation of social conventions (Schotter and Sopher 2007).

Our purpose is to understand how managers are affected by advice from other managers who have experience in making marketing decisions. As we noted previously, managers across many backgrounds are prone to use competitors' negative payoffs in their decision making (Armstrong and Collopy 1996; Griffith and Rust 1997). Unlike perceptual and psychological biases, this bias seems to be propagated within the firm. In particular, the process of advice giving suggests that a first generation of managers may have a detrimental effect on a second generation of managers who are placed in an identical decision situation. If the behavioral tendencies of the first generation are amplified in the second generation, a rationale for why this bias spreads and endures over time is provided. Therefore, we predict the following:

H₁: Advice from a previous generation of experienced players is more likely to lead to decisions that create negative payoffs for competitors.

H₂: Advice from a previous generation of experienced players is more likely to lead to emphasis on relative payoffs than on absolute payoffs.

Training

Another path of knowledge transfer is the training and socialization processes that junior managers undergo. Some of the major objectives of training are skill development, enhancement of organizational commitment, and team or coalition building (e.g., Tannenbaum and Yukl 1992). The content of training and motivational programs that firms use often includes material that evokes affective responses toward competitors. For example, one firm gives a "shoot-

'em-up" computer game to employees, in which the objective is to destroy targets that are identified by competitors' names and logos. Another training film simulates a war between the firm and its major competitor. In addition, senior management reinforces an enemy-like portrayal of competitors. The computer chip maker Cyrix is known to have placed Intel's tombstone in its lobby atrium, and the CEO of Cabletron allegedly concluded his pep talks to sales recruits by plunging a knife into a beach ball inscribed with a competitor's name (Fierman and Barlyn 1995). Similarly, the CEO of PepBoys used videotapes of burning and burying baseball caps inscribed with competitor logos. We argue that such training processes evoke changes in both the cognitive and the affective components of attitudes managers have toward their competitors.

Bruch and Ghoshal (2003, p. 46) argue that emotions play a key role in how firms operate. They categorize organizations in terms of energy zones, one of which is the aggression zone. They propose that competitors in the aggression zone operate on "internal tensions founded on strong negative emotions." There is accumulating evidence that emotions are important in an organizational setting (e.g., Diefendorff and Richard 2003; Fisher and Ashkanasy 2000), though the evidence on whether they have a positive or negative impact is mixed (e.g., Morris and Feldman 1997).

In consumer behavior, the affective state, particularly feelings, has been demonstrated to influence the processing of information, evaluations, and judgments (e.g., Garg, Inman, and Mittal 2005; Lee and Sternthal 1999). Our analysis of training films indicates that many of them portray competitors as enemies. These stimuli may evoke negative affect toward the competitors, which in turn affects the managers' decision processes. Specifically, this may lead to a decision process in which increased importance is placed on creating negative payoffs for competitors.

H_3 : Training that increases negative affect toward competitors is more likely to lead to decisions that create negative payoffs for competitors, even at a cost to own profitability.

Experiment 1

The purpose of Experiment 1 is to investigate the effect of advice from experienced colleagues on new managers who are in a situation of making marketing decisions. In situa-

tions in which learning processes are important in explaining how actors behave over time, experiments with successive generations are useful to understand and predict the behavior of markets (Lucas 1986). Our goal is to examine the decision-making performance of successive generations of managers who face similar scenarios in a competitive, noncooperative context. We adopt a modified version of Merlo and Schotter's (1999, 2003) experimental approach.

Participants were asked to play a noncooperative game with four alternative strategies. The payoffs were based on simultaneous decisions made by the player and the opponent (the payoff matrix appears in Figure 1). The standard prisoner's-dilemma experiment entails two choices for the players such that the dominant strategy leads to a pareto-inferior outcome for both players. To understand situations in which the complexity of coordination is higher, games with more than two choices are used experimentally (Cooper et al. 1990; Holt 1985).

On completing the experimental procedure, each participant was asked to provide advice on how to play the game. They were told that this advice would be passed to the "next manager" of the firm (i.e., the next generation of participants). The second-generation participants played the same game, the only difference being that they were provided with additional information in the form of written advice from the previous generation.² The participants were compensated on the basis of their performance in the simulation; however, those in the first generation were also compensated on the basis of the performance of the next manager. We compare the decisions of the two generations of players.

To simulate many real markets, the opponent was designed to be cooperative some of the time, but not always. The objective of the experiment was to observe how the first-generation managers responded to their experience. Given the design of the incentive structure, a profit-maximizing "rational" approach would suggest that the first generation would recommend strategies that maximize profits. The first generation shared in the profits of the second generation, so it was in the best interest of the first gen-

²This approach is similar to that which Schotter and Sopher (2001, 2003) employ to study the role of advice on behavior in a context of nonoverlapping generations of decision makers.

FIGURE 1
The Payoff Matrix

		Competitor's Decision			
		Low	Medium	High	Max
Your Decision	Low	20, 20	10, 20	0, 20	-40, 10
	Medium	20, 10	30, 30	10, 20	-20, 10
	High	20, 0	20, 10	20, 20	-10, 0
	Max	10, -40	10, -20	0, -10	0, 0

Notes: The number on the left in each cell represents the participant's payoff, and the number on the right represents the competitor's payoff.

eration to provide advice to improve the performance of the second generation.

Procedure

Sixty-four students participated in the experiment for extra course credit and monetary payments based on performance in the experiment. Each session consisted of six to eight participants. At the beginning of the task, the participants were instructed to take the role of a marketing manager making advertising decisions. They were told that their firm was competing against another firm managed by another participant. They were also told that they would not be able to identify their competitor. Participants were given the task of deciding between alternative sizes of advertising budgets for each quarter. The advertising budget was described as “low,” “medium,” “high,” or “maximum” (max), indicating higher amounts of dollars spent. Participants were informed that the competitor would simultaneously make the same decision. The payoffs were based on the combination of advertising budgets chosen. The participants were then provided the payoff information of Figure 1. They were told that their competitors’ payoffs were identical. The procedure and lab were structured so that the participants could not communicate with one another. To retain the guise that participants were playing against others, the game was programmed to move to the next decision simultaneously for all participants after each decision.

After each round, the screen displayed information on the participant’s decision, the competitor’s decision, the results, and cumulative payoffs for both players. The payoff matrix was displayed before each round. The participants played two practice rounds, after which they played eight rounds. To avoid endgame effects, they were not told how many rounds they would play. The game took approximately 30 minutes. After all decisions were made, the participants were asked to assume that they had been moved to another position but needed to give advice to their successor. To ensure that the advice task was taken seriously, each participant was told that his or her payoff (in real money) would be partially based on the performance of the successor as well as his or her own performance. The participants were paid \$.05 for each unit of profit earned. Participants in the first generation were paid their earnings as well as the amount their successors made (the payoff of the second generation was based only on own performance).

There were 35 participants in the first generation and 29 in the second generation. Because of technical problems, we did not obtain complete data for 2 participants in the first generation and 1 participant in the second generation. Therefore, we do not use the data for these participants in the analysis. The only difference in the procedure between the first- and the second-generation participants was that the second generation received a hard copy of advice from a manager in the first generation, whereas the first generation received no advice.

The opponent was computerized and preprogrammed to make quasi-random choices as a function of the choices made by the participant. From the perspective of the participant, the opponent’s choices appeared to be made simultaneously. The distribution of choices was made according to

the probability distributions shown in Figure 2. We used a preprogrammed, computerized opponent for three reasons. First, because each participant faced an identical opponent, the comparison of behavior across participants is facilitated. Second, the random decision rule the computerized opponent employed ensured that participants could not quickly determine the decision process of the opponent. Third, the probability distribution reflects an opponent that is not oriented toward cooperation (the opponent deviates from the cooperative outcome of medium–medium).

Game Structure

The game was presented to the participants as a game of simultaneous decision making in which the number of possible actions was fixed at four. As we discussed previously, a game with more than two strategies is useful when the researcher wants to add complexity beyond the typical 2×2 decision task used to analyze the repeated prisoner’s dilemma (Iyengar and Schotter 2008; Merlo and Schotter 1999, 2003).

Given the payoff matrix of Figure 1, the optimal action for the participant in terms of profit maximization is a function of the action the opponent takes. At the beginning of the game, we assumed that the participant was unsure of how the opponent would play. As a result, we considered three possible bases a participant might use to make decisions. Each basis is a function of the beliefs the participant might have about how the opponent makes decisions.

1. The participant believes that the opponent is rational.

From Figure 1, it is straightforward that the pareto-optimal outcome in the game is (medium–medium). This is the strategy combination in which each manager earns 30 units. If both managers play medium, neither has an incentive to deviate because this is the highest payoff that can be earned.

FIGURE 2
The Programmed Responses of the Computerized Opponent

Participant’s Choice	Randomized Competitor’s Response
Low	33% Low 33% Medium 34% High 0% Max
Medium	0% Low 33% Medium 33% High 34% Max
High	0% Low 33% Medium 33% High 34% Max
Max	34% Low 0% Medium 33% High 33% Max

Note that all symmetric strategies are Nash equilibria; however, in a repeated game with rational players, (medium–medium) would be expected to be the long-term expected outcome. Thus, there is a strong rationale to play “medium” in anticipation that the opponent will cooperate.

2. The participant believes that the opponent is random.

Because the opponent plays stochastically, a participant may infer that the opponent plays in a completely random way. In this case, the expected payoff for the participant is based on the opponent choosing each advertising level with a probability of 25%. We can calculate the expected payoff of strategy i as follows:

$$\prod_i = \sum_{j=L, M, H, X} \frac{1}{4} \pi(s_j|i).$$

The expected payoffs for low, medium, high, and max are –2.5, 10, 12.5, and 5, respectively. This implies that the optimal response to a competitor playing randomly is “high.”

3. The participant believes that the opponent behaves according to the quasi-random decision rule in Figure 2.

It is unlikely, but conceivable, that after a few rounds, the participant correctly infers the quasi-random decision rule of the opponent. This would first entail the participant realizing that the opponent’s decision is not made simultaneously to his or hers. The participant would then need to realize that the opponent’s decision depends on his or her decision. Given the number of rounds played in the experiment, it is unlikely that the participant would make these realizations. Nevertheless, this basis constitutes an important benchmark against which participants’ actual decisions can be compared. Using the conditional probabilities of Figure 2, we calculate the expected outcome for each participant’s strategy choices using the following formula:

$$\prod_i = \sum_{j=L, M, H, X} p(s_j|i) \pi(s_j|i).$$

The expected payoffs for low, medium, high, and max are 10, 6.66, 10, and 3.33, respectively. This implies that the optimal response to a quasi-random competitor who makes decisions according to Figure 2 is either low or high. The worst response a participant can make given these beliefs is max.

This discussion demonstrates that the optimal action for the participant depends entirely on his or her beliefs about the opponent’s next decision. The game is constructed so that learning creates a natural migration in the beliefs of the participant. Over the course of several decisions, a rational participant might migrate from the first basis to the second basis and from the second basis to the third basis. Depending on a participant’s belief, an argument can be made for choosing low, medium, or high. A critical characteristic of the game is that only the belief that the opponent will play max with 100% probability provides a profit-maximizing justification for a participant to choose max. This belief is unlikely to be sustained, given that we observed a string of

more than four successive decisions of max (by the opponent) only once in 640 rounds of the experiment.³

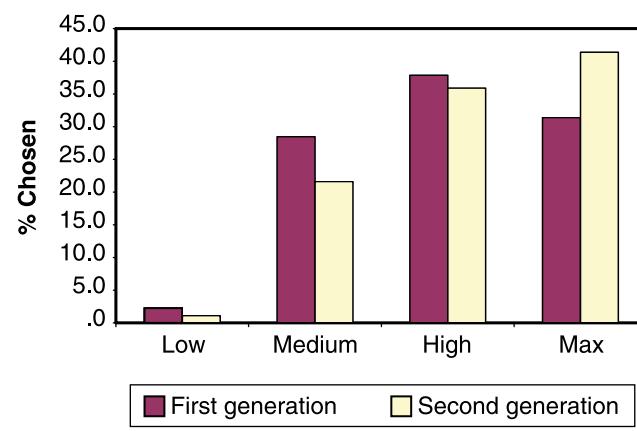
The practice of including a dominated strategic choice with unique characteristics (e.g., max) in an experimental setting is not new. For example, Abdalla and colleagues (1989) include an additional strategy in each player’s strategy set in the context of trying to understand the tendency of players to act cooperatively (i.e., altruistically), even when such action can be costly. The additional strategy had the property of being payoff dominated, but it also led to the highest joint payoff if both players chose it. In contrast, our objective is to evaluate the tendency of players to act aggressively, even when such action leads to inferior outcomes. The max strategy is a strategy that has the property of being payoff dominated, but it also leads to the lowest performance for the competitor, independent of (the competitor’s) strategy.

Results

We present the distribution of decisions for the first and second generations in Figure 3. The striking difference between the two generations is that the frequency of the max decision is much higher in the second generation. Recall that there is no profit-based rationale for choosing max, given the payoffs to the participants. The figures also demonstrate that the participants focus their decisions on the top three levels of advertising. Although a decision of low has the potential to generate higher profits, it appears that participants were reluctant to choose it because of its potential to deliver minimum payoffs (–40). Overall, the results suggest that the second-generation managers were affected by the advice of the first-generation managers. Their advice appears to stimulate profit-reducing choices on the part of the second generation.

³Given the preprogrammed strategy of the competitor, the maximum probability of a string of n max’s is $.33^n$. In the 640 decisions that competitors made in the experiment, only 1 string of 5 max decisions was observed, and only 2 strings of 4 were observed. All other strings of consecutive max decisions were 3 or less.

FIGURE 3
Distribution of Choices by Generation



H_1 predicts that advice will lead to decisions that emphasize more negative payoffs for competitors. To test the hypothesis, we first examine whether the overall frequency of choices made is significantly different across the two generations. The results indicate that the frequency of choices is significantly different ($\chi^2_1 = 8.02, p < .05$). Next, we consider two alternative measures of the participants' decisions. We define max or high as "aggressive" decisions and medium or low as "nonaggressive" decisions.

With an aggressive decision, the participant reduces the likelihood that the opponent will choose an advertising level that is higher (that beats the participant). More important, an aggressive action reduces the expected payoffs for the competitor. The distribution of decisions according to this metric appears in Table 1. The results indicate that the second generation made significantly more aggressive decisions than the first generation ($\chi^2_1 = 4.75, p < .05$). Thus, we reject the hypothesis that the number of aggressive choices made in the two generations is identical.

We also consider another measure of the nature of decisions that reflects participants' tendency to act aggressively even when it almost certainly results in lower profits. We define an advertising decision of max as being "very aggressive." With a very aggressive decision, a participant eliminates the likelihood that the opponent will choose an advertising level that is higher. In addition, a decision of max guarantees that the opponent's profits cannot exceed zero.

Again, the results (Table 1) indicate that the second generation made a significantly higher proportion of very aggressive decisions than the first generation ($\chi^2_1 = 5.62, p < .05$). Overall, the results support H_1 ; that is, the second generation, who received advice, behaved differently from the first generation. In particular, second-generation participants were more likely to make decisions that negatively affected the competitor's profits, even when those decisions resulted in lower payoffs for themselves. Next, we analyze the data to obtain insights into the decision processes of the first- and second-generation decision makers.

Decision Process

H_2 predicts that the second generation of managers will be more attentive than the first generation to the competitors' profit performance. In particular, strong competitor perfor-

mance should provide an incentive for the participant to take more aggressive or very aggressive actions in the second generation.

To test H_2 , we examine the proneness to make an aggressive or a very aggressive decision as a function of two independent measures of the outcome of the previous decision: own payoffs and the competitor's payoffs (Payoff_{t-1} represents the participant's payoff lagged by one period, and Competitor payoff_{t-1} is the competitor's payoff lagged by one period). We examine the main effects and interaction effects with Gen, a dummy variable that reflects the generation (1 for the first generation and 0 for the second generation). The significance of the interaction parameters provides an indication of the degree to which the second-generation managers are more sensitive to their own profit performance and that of the competitor. In summary, the second generation should be more likely to consider competitors' payoffs and make more aggressive choices if the competitors' payoffs were higher in the previous period. Thus, we estimate the probability of making an aggressive (very aggressive) decision with a binary logit model; we show the attractiveness of the decision in Equation 1:

$$(1) V_{it} = \exp(\beta_0 + \beta_1 \text{Payoff}_{t-1} + \beta_2 \text{Competitor payoff}_{t-1} \\ + \beta_3 \text{Gen} + \beta_4 \text{Payoff}_{t-1} \times \text{Gen} \\ + \beta_5 \text{Competitor payoff}_{t-1} \times \text{Gen} + \varepsilon_{it}),$$

where V_{it} is the attractiveness of an aggressive (very aggressive) choice by participant i at time t and ε_{it} is a random error term that follows the extreme value distribution.

Equations 2 and 3 are the estimated models, and $p(\text{agg}_{it})$ and $p(\text{veryagg}_{it})$ are the probabilities that participant i makes an aggressive or very aggressive choice in period t , respectively:

$$(2) p(\text{agg}_{it}) = \frac{1}{1 + V_{it}}, \text{ and}$$

$$(3) p(\text{veryagg}_{it}) = \frac{1}{1 + V_{it}}.$$

We summarize the results in Table 2, Panels A and B. The results for the aggressive decision estimation reveal one significant main effect. Participants' decisions were positively affected by the size of their own payoffs in the previ-

TABLE 1
Distribution of Choices Across Generations

		First Generation	Second Generation	Total
Decision	Nonaggressive	95 (30.7%)	62 (22.7%)	157 26.7%
	Aggressive	214 (69.3%)	211 (77.3%)	425 73.0%
	Total	309	273	582 (100%)
Decision	Not very aggressive	212 (68.6%)	160 (58.6%)	372 63.9%
	Very aggressive	97 (31.4%)	113 (41.4%)	210 36.1%
	Total	309	273	582 (100%)

TABLE 2
Experiment 1: Using Prior Payoffs as Explanatory Variables

A: Estimates for Aggressive Decisions			
Parameter	Estimate	SE	χ^2
Intercept β_0	-2.3073	.3124	54.56**
Payoff _{t-1} β_1	.0767	.0201	14.49**
Competitor payoff _{t-1} β_2	.0171	.0120	2.03
Gen β_3	.2520	.4017	.39
Payoff _{t-1} \times Gen β_4	-.0563	.0254	4.92*
Competitor payoff _{t-1} \times Gen β_5	.0530	.0212	6.24*

B: Estimates for Very Aggressive Decisions			
Parameter	Estimate	SE	χ^2
Intercept β_0	-.0146	.1570	.01
Payoff _{t-1} β_1	.0464	.0116	15.91**
Competitor payoff _{t-1} β_2	.0041	.0076	.29
Gen β_3	.2924	.2150	1.85
Payoff \times Gen β_4	-.0065	.0160	.16
Competitor payoff \times Gen β_5	.0283	.0107	6.93**

* $p < .05$.

** $p < .01$.

ous period ($p < .001$), indicating that they were more likely to choose an aggressive decision if they realized strong performance in the previous period. This result affirms that participants were strategic in their decision making in terms of balancing own profits and minimizing competitor profits; they were more likely to engage in lowering the competitor's payoffs after accumulating their own profits. Note from Figure 1 that aggressive decisions could also imply a risk-averse posture in the trade-off between lowering losses and attempting large gains. The main effect of generation in the model for aggressive decisions is nonsignificant.

The most germane findings in the aggressive estimation are the significant interaction effects between generation and own/competitor payoffs in the previous period (for both estimated parameters, $p < .05$). First, the interaction effect with own payoffs in the previous period is negative. This implies that the decisions of participants in the second generation were less sensitive to their own payoffs; the sum of β_2 and β_4 represents the combined effect of own payoffs on making an aggressive decision for the second generation. Although the combined effect remains positive, it is lower in magnitude for the second generation. Second, and more important, participants in the second generation were more likely to make aggressive decisions when the competitor realized good performance in the previous period. Overall, the aggressive estimation suggests that the second generation was less focused on its own performance and more focused on lowering the competitor's profit performance than the first generation.

The story in the very aggressive estimation is somewhat different but corroborates the dynamic suggested in the aggressive estimation. Similar to the results of the aggressive decision, participants were significantly more likely to choose a very aggressive decision when their own payoffs were higher in the previous period ($p < .001$). Most impor-

tant, the interaction term between generation and competitor payoffs is both positive and significant ($p < .05$). This implies that participants in the second generation were significantly more likely to choose a strategy that guaranteed poor competitor profits when the competitor recently performed well. A distinguishing feature of a very aggressive choice is that it guarantees poor profits for the competitor. In contrast, a choice of high (one of the two possible choices that define an aggressive decision) allows for the possibility of good profits for the competitor (the competitor can earn 20 if he or she also chooses high). In summary, the very aggressive estimation shows that the second generation is significantly more interested in limiting the competitor's performance.

Together, the results of the two models support H₂; that is, the second generation is less affected by own prior performance but more affected by the desire to drive the profits of the competitor downward. We now specifically test whether the second generation focuses to a greater extent on performance relative to the competitor than on absolute performance. To evaluate this, we estimate a model based on the difference in profits between the participant and the competitor in the previous period: Relative payoff_{t-1} = Payoff_{t-1} - Competitor payoff_{t-1}. Again, we estimate the probability of making an aggressive (very aggressive) decision with a binary logit model; the attractiveness of choosing an aggressive (very aggressive) decision is as follows:

$$(4) \quad V_{it} = \exp(\beta_0 + \beta_1 \delta_{t-1} + \beta_2 \text{Gen} + \beta_3 \delta_{t-1} \times \text{Gen} + \varepsilon_{it}).$$

The results for $p(\text{agg}_{it})$ and $p(\text{veryagg}_{it})$ appear in Table 3, Panels A and B. Both models reveal that the difference in profits has an effect on the probability that participants in the second generation will choose aggressive ($p < .10$) and very aggressive ($p < .05$) decisions, respectively. When the difference in profits is lower in the previous period, partici-

TABLE 3
Experiment 1: Using Relative Prior Payoff as an Explanatory Variable

A: Estimates for Aggressive Decisions			
Parameter	Estimate	SE	χ^2
Intercept β_0	-1.4131	.1781	62.95***
Relative payoff _{t-1} β_1	-.0025	.0086	.08
Gen β_2	.3136	.2304	1.85
Relative payoff _{t-1} × Gen β_3	-.0219	.0124	3.11*

B: Estimates for Very Aggressive Decisions			
Parameter	Estimate	SE	χ^2
Intercept β_0	.2008	.1424	1.99
Relative payoff _{t-1} β_1	.0086	.0069	1.52
Gen β_2	.4280	.1951	4.82**
Relative payoff _{t-1} × Gen β_3	-.0221	.0096	5.36**

* $p < .10$.

** $p < .05$.

*** $p < .01$.

pants in the second generation are more likely to choose aggressive and significantly more likely to make more very aggressive decisions.

To explore the impact of advice on performance, we compare the average profits of the first and second generation. The average profit earned by the first generation was 7.72 (14.08) units per round, whereas the second generation earned only 6.23 (13.91) units per round. This represents a drop of more than 19%, which is marginally significant ($p < .10$). The performance of the computerized competitor across generations is also notable. In the first generation, the competitor earned 4.10 (20.27) units per round, and in the second generation, it earned 1.39 (20.01) units per round. This represents a drop of more than 65%, which is significant ($p < .05$). These findings show that the second generation reduced the performance of the competitor effectively but did so at a significant cost to own performance. Thus, the advice seems to cause the second generation to be significantly more sensitive to relative performance and, in particular, to focus on driving the competitor's profits lower.⁴

Nature of Advice

To examine the nature of the advice and its impact on the second generation in greater depth, we conducted a protocol analysis. We developed a coding scheme after examining the first set of advice. The advice was categorized into six main categories: cooperative, hard-line (aggressive and hostile), derogatory, adaptive, and reactive. First, we coded advice that recommended cooperating with the competitor to maximize profits mutually as "cooperative advice." Second, we coded advice that recommended aggressive behav-

ior (e.g., using only max or max/high decisions) as "hard-line advice." Third, we coded the subset of hard-line advice that advocated aggressive behavior without explicitly stating that it should only be in response to competitors' decisions as "aggressive advice." We coded another subset of hard-line advice that recommended specifically to outsmart/minimize competitors' payoffs as "hostile advice." Fourth, we coded advice that made derogatory or negative comments about the competitor as "derogatory comments." Fifth, we coded advice as "adaptive advice" if it encouraged the successor to respond to the competitors' decisions. Sixth, we coded advice as "reactive" if it counseled that the competitor decisions would react to decisions made by the successor.

Two judges who were blind to the objective of the study put each sentence of the advice into one of these six categories. Then, the advice was coded as 1 if it contained at least one sentence that fit any of the categories and 0 if it did not. The interjudge reliability was 88%, and we resolved all disagreements.

The results show that only 14.29% of the participants suggested cooperative behavior, whereas 60.71% recommended hard-line behavior. Furthermore, 39.29% of the participants advised their successors to be aggressive, regardless of competitor decisions. Only 10.71% of the participants made specific derogatory or negative comments about their competitors, though 21.43% suggested that the competitor should be outsmarted. Finally, 46.43% of the advice recommended that the game be played adaptively on the basis of the competitors' decisions, and 21.43% provided guidance that competitors would react to the successor's decisions.

We then examined whether specific advice received by the second-generation managers affected their decisions. The distribution of aggressive and very aggressive decisions made by those who received aggressive advice and those who did not appears in Table 4. The results show that the nature of advice significantly affects decision making. Par-

⁴As we noted previously, maximizing relative performance is identical to maximizing absolute performance in a zero-sum game. However, in most marketing situations, maximizing relative performance invariably implies diminished absolute performance.

TABLE 4
Distribution of Choices in Second Generation

		Nonaggressive Advice	Aggressive Advice	Total
Decision	Nonaggressive	44 (28.21%)	18 (15.38%)	62 22.71%
	Aggressive	112 (71.79%)	99 (84.62%)	211 77.29%
	Total	156	117	273 (100%)
Decision	Not very aggressive	104 (66.67%)	56 (47.86%)	160 58.61%
	Very aggressive	52 (33.33%)	61 (52.14%)	113 41.39%
	Total	156	117	273 (100%)

ticipants in the second generation who were advised to be aggressive made significantly more aggressive decisions ($\chi^2 = 6.26, p < .05$) than those who did not get such advice, and they also made significantly more very aggressive decisions ($\chi^2 = 9.74, p < .01$).

The proportion of hard-line advice is partially reflective of the first-generation managers' negative attitudes toward the competitors. We speculate that the inherent competitive bias is compounded by the competitors' actions. The negative outcomes for the first generation are caused by the interplay between the inherent competitive bias and the deviations from the equilibrium medium–medium decision by the computerized opponent. The saliency bias suggests that negative events are noticed and overweighted more (e.g., Ito et al. 1998). The negativity of the first generation results in advice directed at creating a negative attitude toward the competitors. In addition, some of the advice explicitly advocated taking preemptive aggressive actions. This is consistent with previous research that demonstrates how emotions can affect judgments (Johnson and Tversky 1983; Wright and Bower 1992).

Experiment 2

The purpose of Experiment 2 is to investigate the effects of training on new managers who are in a pressurized situation to make marketing decisions. We exposed participants to stimuli that are similar to the materials used to train managers at sales meetings and annual conferences. The stimuli were designed to manipulate the affective component of attitudes toward a competitor. We then asked participants to make a series of marketing decisions.

The participants were 57 managers who were in an executive program. They were asked to participate in a "marketing decision" study after completing the marketing module of the program. Their average work experience was 7.5 years, their average age was 32 years, and 30% were women.

Participants were asked to assume that they had been hired by Molson brewery to manage the Coors Light brand in Canada. They were told that they would make marketing decisions after undergoing a training program conducted by the firm. As part of the training program, they were given

background material about the market and viewed a short training film. In the background information, participants were provided information about the market structure, firm performance, and excerpts from fictitious interviews given by the CEOs of two firms. They were told that there were four major players in the market and that the firms competed through advertising, merchandising, and major event sponsorships rather than price. They were also informed that Molson's major competitor was Labatt. The performance of Molson in the last year was described as poor, and it was noted that the profits had been below expectations. After reading the materials and seeing the film, participants made a series of marketing decisions for Molson. After participants made their decisions, we performed a manipulation check on their feelings. Finally, we collected demographic information.

Manipulations

The factor we manipulated was attitude toward competitors (either neutral or negative). The experimental design was a between-subjects, single-factor design with two levels. Feelings toward the key competitor were manipulated with two elements: the content of the background information and the training film. First, part of the background information consisted of excerpts from a *Wall Street Journal* article in which both the chairman of Molson and the chairman of Labatt (Molson's chief competitor) were interviewed. In the neutral condition, the chairman of Molson stated that he was "cautious but optimistic" about next year. The chairman of Labatt commented that "we have worked extremely hard this year and were tremendously helped by our dedicated employees. He hoped that the results next year would also be very good." In the negative-affect condition, the chairman of Molson stopped short of allegations but criticized Labatt for "not playing by the rules." The chairman of Labatt stated that "we followed a very aggressive strategy this year and have done better than our competitors. They (our competitors) are not very good and behind the times—we plan to beat them this year by a wide margin. I promise that they'll have a lot to complain about next year."

The second component of the manipulation was in the content of the training film. In the neutral condition, partici-

pants viewed a film in which the sports marketing plan of the Coors brand was discussed. The film highlighted plans to promote the brand by organizing innovative baseball, skiing, and golf events that would potentially increase market penetration by creating brand excitement. The role of each event was discussed. In the negative-affect condition, the training film showed employees of Molson dressed in army gear attacking Labatt. In three short vignettes, the Molson team blow up the competitor's products, destroy a Labatt supply truck, and finally dynamite the Labatt headquarters. Both films were edited versions of training films actually used by Molson to motivate its sales teams.

We tested the two training videos with a similar sample of 88 participants to ensure that they were equivalent with respect to (1) the overall reaction to the training video and (2) the objective of aiding in training-related motivation (e.g., Mathieu, Tannebaum, and Salas 1992; Noe 1986). In addition, because a major objective in marketing training films is to enhance employees' affective judgments toward their employer, we also measured attitudes toward the firm. Participants' reactions to training assessed both the affective reaction—"What is your overall reaction to the training video?" (anchored by "strongly negative" and "strongly positive")—and the perceived relevance of the video to the job—"How valuable was the content of the training video to the marketing job at Coors/Molson?" (Cronbach's $\alpha = .75$). We measured attitudes toward the firm by asking participants to assess three statements on seven-point Likert scales: "The video makes me feel good about being a marketing manager at Molson/Coors," "The video makes me feel that Molson/Coors is a good place to work," and "The characters in the video convey a friendly image of what it is like to work at Molson/Coors" (Cronbach's $\alpha = .81$). We measured participants' training-related motivation by asking them to rate two statement on seven-point Likert scales: "The types of actions I am expected to take to make my business successful are made clearer by a video like this," and "This video will result in me performing higher quality work at Molson/Coors" (Cronbach's $\alpha = .81$).

The results indicate that the overall reactions to both the training videos were not significantly different ($\bar{X}_{\text{Neutral}} = 4.36$ versus $\bar{X}_{\text{Negative Affect}} = 4.30$; $F_{1, 87} = .05$, n.s.). Furthermore, both the training videos were perceived as equivalent to training-related motivation ($\bar{X}_{\text{Neutral}} = 4.92$ versus $\bar{X}_{\text{Negative Affect}} = 4.74$; $F_{1, 87} = .51$, $p < .48$). Finally, as we expected, the negative-affect training video increased positive attitudes toward the employer firm compared with the neutral video ($\bar{X}_{\text{Neutral}} = 4.46$ versus $\bar{X}_{\text{Negative Affect}} = 5.02$; $F_{1, 87} = 4.04$, $p < .05$). Overall, the results suggest that the two training videos were similarly relevant to the marketing job and were perceived as equally motivating.

Dependent Variables

Participants were given three marketing scenarios and were asked to make a decision in each. The three scenarios required the participants to select an advertising campaign, a merchandising program, and an event sponsorship. In each scenario, they were given four alternatives and were asked to rank order their preferred options. For each scenario, participants were provided with the expected out-

comes for their own firm and for their three main competitors: Carling, Labatt, and Pacific Western. The key outcomes are for the focal firm, Molson, and the major competitor, Labatt. The stimuli appear in Table 5. In all scenarios, the outcomes were constructed such that one alternative was "maximize own and main competitor outcome," in which both Molson and Labatt made the maximum possible profits. In all scenarios, this option is Alternative A. For example, in Scenario 1, which is the advertising expenditures decision, Alternative A provides both Molson and Labatt \$70 million—the maximum profit both firms can earn among the four alternatives. Similarly, in Scenario 2, Alternative A provides both Molson and Labatt the maximum impact scores of 29.6 and 26.5, respectively. The second alternative is classified as "maximize own outcome/hurt competitor." In this alternative, which is Alternative B in all scenarios, the outcome for the own firm, Molson, is as high as the first alternative, but the outcome for the main competitor, Labatt, is lower than the first alternative. To illustrate, in Scenario 2 (merchandizing display), Alternative A provides the maximum impact for Molson (29.6) and for Labatt (26.5). In Alternative B, Molson continues to get the maximum impact of 29.6, but the impact for Labatt is reduced from 26.5 to 14.5. The third alternative "sacrifice profit/attack competitor," which is Alternative C in all scenarios, is constructed such that the profits for the own firm, Molson, decrease slightly from the maximums of Alternatives A and B, but the profits for the competitor firm decrease sharply. For example, in Scenario 3, the impact score for Molson decreases from the maximum of 8 to 7.5 if Alternative C is selected. However, the impact scores for Labatt drop to 1 versus 7 or 6 if Alternative A or B is selected, respectively. The fourth alternative, Alternative D, is a "dummy choice" in which all other options dominate. We included the dummy choice to check whether the participants were carefully evaluating the alternatives. To avoid order effects, we rotated the position of various options across participants' marketing decisions.

Manipulation Check

After participants completed the marketing decisions for the three scenarios, we measured feelings toward the main competitor using six five-point scales that asked participants to state how they felt about Labatt. Given the objective of the study, we measured only negative feelings. We selected the items from the negative feelings scale that Edell and Burke (1987) developed. The six items were critical, angry, disgusted, defiant, offended, and suspicious. We asked participants to indicate the extent to which they felt each of the items on a scale ranging from 1 ("not at all strongly") to 5 ("very strongly"). We formed an index of feelings by averaging the scores for these items (Cronbach's $\alpha = .80$). The results indicate that the manipulation was successful. Participants in the negative-affect condition had significantly greater negative feelings toward the competitor ($\bar{X}_{\text{Negative Affect}} = 3.01$) than those in the neutral condition ($\bar{X}_{\text{Neutral}} = 2.45$; $F_{1, 56} = 3.71$, $p < .05$). Although significantly different, the feelings in the negative-affect condition were not high on the absolute scale. This is not surprising, because negative feelings toward an entity are usually

TABLE 5
Experiment 2 Stimuli

A: Scenario 1: Advertising Expenditures				
Beer Companies	Campaign A	Campaign B	Campaign C	Campaign D
Your profit (Molson)	\$70	\$70	\$68	\$60
Carling	\$50	\$30	\$65	\$55
Labatt	\$70	\$50	\$10	\$60
Pacific Western	\$30	\$50	\$65	\$45

B: Scenario 2: Merchandising (Displays in Retailers) Impact Scores				
Beer Companies	Canada Day Displays (A)	Victoria Day (B)	Sounds of Summer Displays (C)	Christmas/New Year Displays (D)
Your impact score (Molson)	29.6	29.6	29.1	27.9
Carling	22.0	20.0	28.7	22.0
Labatt	26.5	26.1	14.5	26.1
Pacific Western	23.0	21.9	27.7	22.0

C: Scenario 3: Major Event Sponsorships				
Beer Companies	Rodeo Sponsorship (A)	Snowmobiling Sponsorship (B)	Fishing Sponsorship (C)	Horse-Racing Sponsorship (D)
Your impact score (Molson)	8	8	7.5	6
Carling	5	6	4	5
Labatt	7	6	1	6
Pacific Western	2	3	4	3

evoked by experience rather than by short-term role playing.

Results

H_3 predicts that managers exposed to training material that creates negative affect are more likely to sacrifice own profits to create negative payoffs for competitors. To test H_3 , we conducted a logit analysis using the condition and the demographics of years of experience and sex. The percentage of participants selecting each choice in the advertising decisions appears in Table 6. We created two dependent measures. The first dependent measure is the proportion of times the sacrifice profit/attack competitor choice was selected as the first or second preference. This is useful as a dependent measure to quantify the fraction of non-profit-maximizing behavior by each participant. Recall that in each scenario, there are two choices available that equally

maximize profit for the decision maker. The implication of the sacrifice profit/attack competitor choice being selected first or second is that the participants preferred the sacrifice profit option to one or both of the profit-maximizing decisions. Therefore, this measure is an indicator of the level of utility the managers obtain from lower profits accruing to the competitor. The results of the logit analysis appear in Table 7, Panel A. We find strong support for H_3 . The analysis shows that manipulating the training materials had a significant impact on the decision. In all three scenarios, there was a significant difference in the proportion of participants who elected to sacrifice their own profits to reduce their competitor's profitability (for Scenarios 1 and 2, $p < .05$, and for Scenario 3, $p < .10$).

Not surprisingly, the most popular first choice was the maximize own profits/hurt competitor option. This choice allowed the participant to maximize profit and inflict harm

TABLE 6
Results of Experiment 2

	Scenario 1		Scenario 2		Scenario 3	
	Neutral	Negative Affect	Neutral	Negative Affect	Neutral	Negative Affect
Maximize own and main competitor outcome	20.00%	.03%	23.33%	11.11%	26.67%	29.63%
Maximize own outcome/hurt competitor	66.67%	60.00%	60.00%	40.74%	33.33%	22.22%
Sacrifice profit/attack competitor	13.33%	26.67%	16.66%	48.15%	36.67%	44.44%
Dummy	.00%	.00%	.00%	.00%	3.33%	3.70%

Notes: Numbers indicate proportion of participants' first preference.

TABLE 7
Dependent Variable

A: First Choice: Sacrifice Profits/Attack Competitor						
	Scenario 1		Scenario 2		Scenario 3	
	Estimate	F	Estimate	F	Estimate	F
Intercept	-2.42 (1.46)	2.76	-2.45 (1.39)	2.98	.09 (1.28)	
Sex ^a	.43 (.65)	.44	.52 (.63)	.68	-.58 (.60)	.88
Experience ^b	.06 (.11)	.32	.16 (.11)	2.07	.03 (.10)	.10
Condition ^c	1.58 (.60)	6.80***	.98	3.99**	.72 (.56)	1.63*

B: First or Second Choice: Sacrifice Profits/Attack Competitor						
	Scenario 1		Scenario 2		Scenario 3	
	Estimate	F	Estimate	F	Estimate	F
Intercept	-2.58 (2.09)	1.51	-2.40 (1.40)	2.98*	.09 (1.28)	.01
Sex	-.65 (.86)	.56	.52 (.63)	.68	-.58 (.60)	.93
Experience	.05 (.17)	.11	.16 (.11)	2.07	.03 (.10)	.10
Condition	1.88 (1.12)	2.83**	1.17 (.58)	3.98**	.72 (.56)	1.64*

* $p < .10$.

** $p < .05$.

*** $p < .01$.

^aSex is coded as 1 for males and 0 for females.

^bExperience is in number of years.

^cCondition is coded as 1 for negative affect and 0 for neutral.

simultaneously on the competitor. Nevertheless, in none of the scenarios was this option selected first by more than 67% of the participants. As a result, a second measure of the relative preference for sacrificing profit to inflict harm on the competitor is the frequency that sacrifice profit/attack competitor was selected first.

Using sacrifice profit/attack competitor as a first choice as the measure of how willing participants were to sacrifice profit to harm the competitor, we present the results from the logit analysis in Table 7, Panel B. Again, the results support our hypothesis. In both Scenarios 1 ($p < .05$) and 2 ($p < .05$), the manipulation led participants to place increased weight on the competitor's profits in making their decisions. In Scenario 3, the manipulation did not create significant results in terms of whether the option to sacrifice profit was selected as the first choice.

Discussion

Overall, the results of Experiment 2 support the notion that training can have adverse effects on the quality of mid- and entry-level managers' decisions. Using actual training films, the experiment demonstrates that training can evoke negative feelings toward competitors. The negative feelings increase managers' willingness to sacrifice own profits to reduce competitor profitability.

The experiment has several limitations worth noting. First, despite the use of real training films, it is difficult to

achieve a replication of how training affects the decisions of managers over the long run. The manipulation of feelings created in an experiment are unlikely to be strongly held or to have an impact on decision making compared with feelings created through training that occurs repetitively over several years. Second, the stimuli were designed to evoke only negative-affective reactions. We did not examine cognitions or nonnegative arousal, such as excitement from rivalry.⁵ Third, in contrast to Experiment 1, there were no monetary payoffs provided to participants. The use of managers participating in an executive program as participants poses several potential problems. For example, manipulation biases could be introduced by an instructor who precedes the experiment. We minimized the potential for this bias because the marketing module was taught after the experiment. In addition, sample biases are likely to occur if participants are not representative of the managerial population (Gordon, Slade, and Schmitt 1987). We acknowledge this limitation but believe that it poses a low threat to external validity because the sample consisted of managers drawn from 11 countries across different industries. In addition, Ashton and Kramer (1980) find similarity between students and nonstudents in studies of decision making.

⁵We thank an anonymous reviewer for this point.

Conclusion

The literature has primarily considered nonoptimal decision making the result of a lack of information or the decision rules that managers use. These factors are important across many decision situations. Operational decisions by midlevel managers, such as promotional allocation and regional pricing, are made under considerable informational and time constraints. We add to the literature by examining two additional inputs these managers rely on in their decision making: advice from colleagues and employee training. We show how both sources of guidance lead managers to place emphasis on relative (and not absolute) performance. In particular, we demonstrate how advice and corporate training exacerbate a problem that is well documented; namely, managers place excessive importance on the ability of strategies to generate negative outcomes for competitors. Firms need to condition mid- and entry-level managers to compete effectively. The problem is that the actions of the firm condition mid- and entry-level managers to compete excessively. Our study also underscores how the decision environment of junior managers is important for understanding why the tendency to focus on competitor payoffs is ingrained in firms.

In theory, advice from experienced colleagues to help make decisions under pressure appears both reasonable and judicious. In Experiment 1, we evaluate the effect of this process and find support that advice from colleagues contributes to the persistence and amplification of the competitor payoff bias (Armstrong and Collopy 1996; Griffith and Rust 1997). A protocol analysis of the advice reveals a negative attitude toward the competitors. Our intuition is that a general saliency bias, in which negative events are overweighted, causes this attitude. Prior literature has suggested that negative events receive more attention and that people often exaggerate the frequencies of negative events. As a result, the advice counsels an aggressive approach, largely justified by the negative emotion the first generation develops toward the competitor. In addition, in Experiment 1 (and likely in practice), deviations from cooperative equilibrium may cause a negative affect that also provokes negative feedback.

We believe that this dynamic may be amplified by organizational inertia. Some midlevel managers remain in their positions for a long time. Given their experience, these managers are often sought by colleagues for advice. It is possible that experienced midlevel managers contribute most to the effects discussed herein.

The second source of information we consider is training. Junior managers are exposed to significant training and cultural inculcation (particularly after joining) to facilitate integration into the company. Frequently, training places high importance on the value of beating competitors. This orientation for training is the logical response of companies to conventional wisdom about how salespeople should be trained. For example, a study of more than 500,000 sales-

people conducted by Gallup concludes that a key characteristic of great salespeople is that they are people who “want to beat colleagues or the competition” (Brewer 1994, pp. 83–84).

Experiment 2 demonstrates that some elements of training programs overemphasize the importance of reducing the performance of competitors by creating negative affect toward competitors. Although engineering employee emotions can have several beneficial aspects, the results of our study show that firms should be cognizant of the potential drawbacks of using such content.

Our research suggests that the competitive focus of training materials needs to be reassessed. Managers join firms with a range of mind-sets (from cooperative to competitive) that may be inherent or driven by experience. Firm-specific experience, including word-of-mouth advice and training, can accentuate or attenuate these tendencies. Further research should examine the differential effectiveness of such learning or unlearning processes. A potential avenue is to examine whether training that focuses on evoking cognitive rather than affective reactions is more effective.

The design of the payoff structure in the advice experiment was motivated by the standard S-shaped advertising response function. Thus, we assume that there is an optimal level of expenditures for both firms after which increasing advertising leads to decreasing returns. Further research should explore alternative payoff structures in which there are no pareto-optimal outcomes. We assumed that the payoff structure is consistent with the participants' prior beliefs. Because the participants in Experiment 1 were students, prior beliefs were not a major concern. In further research with managers, payoff structures could be constructed that match their domain of experience. Such procedures can be used to ensure that managers do not need to unlearn their prior beliefs. It would also be useful to investigate the moderating effect of specific real-world experience and prior beliefs about payoff structures on the nature of actions taken and the advice.⁶

The insights from our study are most relevant to the context of mid- and entry-level marketing managers. As such, they should be of particular concern to companies with large marketing departments. In addition, there is a growing trend among traditionally centralized firms, such as Sara Lee and Coca-Cola, to decentralize and give local managers more autonomy and responsibility (*The Economist* 2000). This implies that junior managers make more marketing decisions than in the past. Given that useful information is also shared by mid- and entry-level managers, it is unclear how this process can be improved. Conversely, this article demonstrates that the general orientation of many training materials may cause decision making that is not in the best interest of the firm.

⁶We thank an anonymous reviewer for this point.

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