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Competitive Reactions and Modes of Competitive Reasoning: Downplaying the Unpredictable?

Joel E. Urbany, David B. Montgomery, and Marian Moore

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Understanding and anticipating interdependent competitor reactions is critical to firm performance. However, the literature suggests that decision makers often do not effectively conjecture about competitors' future behavior and that firms know far less about competitor behavior than economic theory assumes.

In this report, authors Urbany, Montgomery, and Moore focus on how and under what circumstances managers incorporate predictions of future competitor reactions into their decision making. They first identify three general modes of competitive conjecture: (1) ignoring the competition, (2) extrapolating a competitor's past behavior, and (3) anticipating a competitor's reactions to the firm's moves. They examine the incidence of the third mode—strategic competitive reasoning—in two studies that examine the factors driving decisions by approximately 150 responding managers. They found that strategic competitive thinking was quite rare, but was more common for pricing than for market entry, new product, and advertising budgeting decisions.

A third study asked nearly 100 executives (including MSI Trustees at a trustees' meeting) to suggest why the results of the first two studies found such a paucity of consideration of competitor reactions. Their responses explaining the results showed substantially greater weighting given to more certain, measurable, justifiable internal factors than to uncertain competitor behavior. Surprisingly, the dominant explanations indicate that managers do not see the value of competitor analysis, rather than that they find it too costly in terms of time, cognitive effort, and money.

This latter result suggests that if firms would like to enhance their managers' willingness to consider potential competitor reactions, they can probably get maximum leverage by focusing on ways to enhance the perception of the value of competitor reaction analysis. Efforts to increase senior management attention to competitive analysis and manager training in the tools, methods, and results of competitive analysis should help address this issue. Of course, efforts to reduce the cost of competitor intelligence collection and analysis are also in order.

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Introduction

Literature in management and marketing, beginning with the work of Zajac and Bazerman (1991), has made a strong conceptual case that decision makers often do not effectively conjecture about competitors' future behavior, particularly rivals' reactions to the decision maker's own moves (see Deshpandé and Gatignon 1994; Hutchinson and Meyer 1994; Moore and Urbany 1994; Reibstein and Chussil 1997; Urbany and Montgomery 1998). The literature in marketing suggests that firms know far less about competitor behavior than economic theory assumes they know (cf. Day and Nedungadi 1994; Jaworski and Wee 1993), yet there is little systematic evidence regarding whether and how managers account for competitor behavior in their decision making.

A substantial literature exists that examines competitive interaction by seeking to explain competitive reactions post hoc. This literature generally characterizes the likelihood of competitive reactions to a firm's action as a function of (a) the characteristics of the firm taking the action (e.g., market size, reputation; Bowman and Gatignon 1995; Venkataraman, Chen, and MacMillan 1997), (b) the characteristics of the action (e.g., scale of entry, market responsiveness, visibility; Chen, Smith, and Grimm 1992; Chen and Miller 1994; Chen 1996; Dickson and Urbany 1994; Leeflang and Wittink 1992), (c) the characteristics of the rival (e.g., size, performance, desired reputation, organizational responsiveness; Clark and Montgomery 1999; Smith, Grimm, Chen, and Gannon 1989; Gatignon and Reibstein 1997), and (d) environmental characteristics (e.g., turbulence, market growth, concentration; Ramaswamy, Gatignon, and Reibstein 1994; Robinson 1988; see also Ailawadi, Lehmann, and Neslin 2001). While this body of literature illustrates that competitive reactions can be explained post hoc, it provides no insight into how managers think about competitors during their decision-making process. In the many contexts where competitor choices do affect firm outcomes (e.g., Srinivasan and Bass 2001), not considering competitors' actions ex ante is likely to lead to less optimal decisions and poorer outcomes. In this paper we examine the extent to which managers incorporate competitor behavior, particularly the prediction of future competitor reactions to their own moves, into their own decision making.

The paper proceeds as follows. We first characterize three general modes of strategic reasoning about competitors. We then describe two studies that, taken together, examine the incidence of competitor reasoning and sources of its variation. We conclude with a discussion of the implications for both managers and researchers.

Modes of Competitive Reasoning

We define competitive reasoning as a manager's assessment and consideration of competitors' future behavior that serves as an input into firm decision making. To make the discussion concrete, we present the three postulated modes of competitive reasoning in the context of a manager considering cutting price in order to increase sales for a particular product.

Type I Reasoning: Thinking Like a Monopolist

A manager might simply ignore the competition, behaving strictly as a monopolist, and deciding whether to cut price under the assumption that success or failure is dependent only upon consumer response and internal company costs. In the classic model of the monopolist, the utility of a price cut would be a function primarily of elasticity of demand and unit cost:

$$\textit{Value of a price cut in period } t = f(\textit{elasticity of demand, unit cost}) \qquad (1)$$

where unit sales are determined by elasticity and margin is determined by unit cost.

Type II Reasoning: Thinking Like a Cournot/Bertrand Competitor

The second characterization of competitive reasoning adds a straightforward prediction of future competitor behavior to the monopolist's model:

$$\textit{Value of a price cut in } t = f(\textit{elasticity of demand, unit cost, rival's period } t \textit{ price}) \qquad (2)$$

With Type II reasoning, the decision maker makes no effort to predict how the rival will react to recent competitive moves or other events; the only prediction is how the rival will act in the next period. The classic Cournot/Bertrand conjecture, i.e., that the rival will repeat the most recent move (Kreps 1990; Scherer and Ross 1990), is the simplest example of Type II reasoning.[1] Raju and Roy (1997) similarly describe this as "independent" or Nash behavior (see also Putsis and Dhar 1998).

Other approaches to making simple forecasts may be possible (e.g., a momentum model which would predict the rival's behavior to be a function of past behavior qualified by recent trends in that behavior), but the distinct dimension of our definition of Type II (Cournot/Bertrand) thinking is that it does not take into account expected reactions of the competitor to other competitors' moves.

Type III Reasoning: Thinking Like a Strategic Competitor

Type III (strategic) competitive thinking captures game theoretic reasoning, which prompts the manager to step into the shoes of his or her competitors and consider the competitor's likely reactions to their own price cut (see Brandenburger and Nalebuff 1996; Kreps 1990; Pindyck and Rubinfeld 1989; Scherer and Ross 1990). The classic Stackelberg leader plays this way—anticipating precisely how its

naive Cournot rival will set quantity once it (the leader) has determined quantity. Similarly, the Kinked Demand Curve theory assumes that rivals envision a demand curve that implicitly accounts for rival reactions to price changes, anticipating that the competitor will follow a price cut but will not follow a price increase (see Dickson and Urbany 1994; Primeaux and Bomball 1974; Sweezy 1939). Assuming that the rival's price in period *t* is set simultaneously with our period *t* price (such that the rival's period *t* price could not reflect a reaction to our period *t* price), Type III (strategic) thinking adds to Type II (Cournot/Bertrand) thinking by incorporating the manager's consideration of how his or her period *t* decision will influence rival's behavior in period *t+1*:

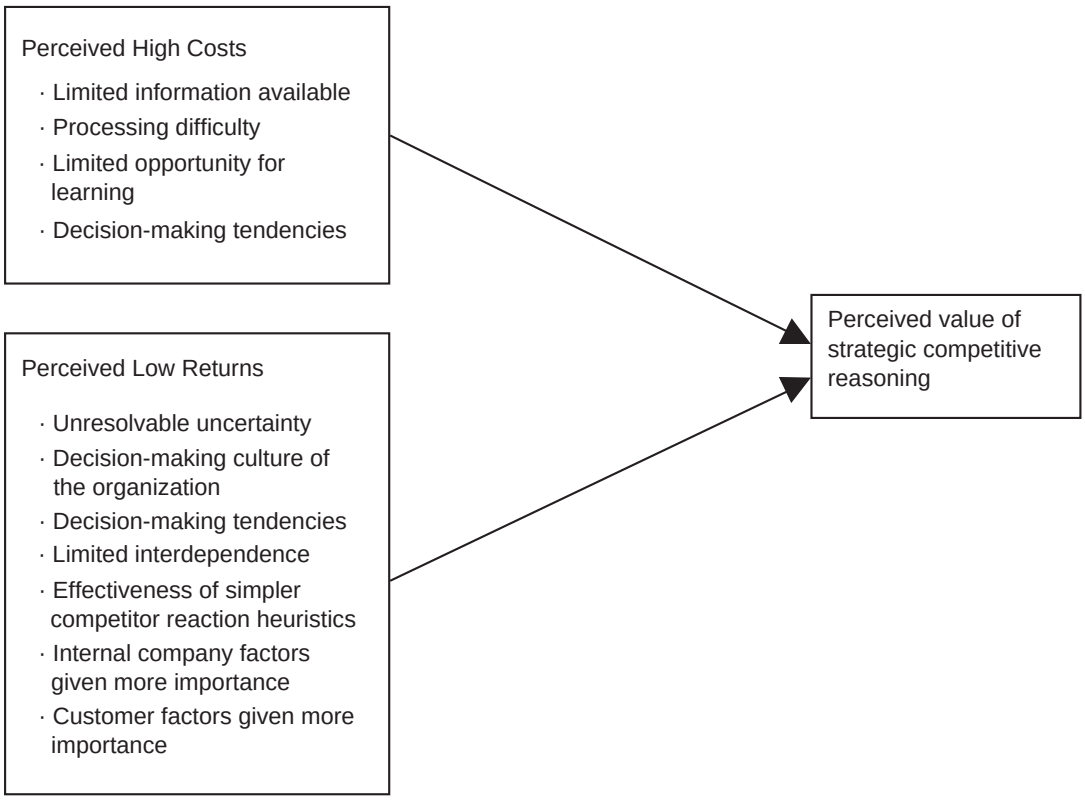
Value of a price cut in period t = f (elasticity of demand, unit cost, rival's period t price, rival's t+1 price reaction) (3)

While Type III (strategic) competitive reasoning could incorporate models that allow for conjectural variations (Scherer and Ross 1990; Kamien and Schwartz 1983), and could allow for reactions in areas other than price, strategic competitive reasoning is distinguished more generally from Cournot/Bertrand thinking simply by the notion that the manager now incorporates consideration of the rival's *t+1 reactions* into her or his decision making.

Theory and the Incidence of Strategic Competitive Reasoning

As with any type of thinking, strategic competitive reasoning (Type III) can be characterized as an activity that requires a certain degree of cognitive effort. Although we do not expect that managers make a formal assessment of the costs of and returns from strategic competitive reasoning prior to engaging in it (or not), we do believe that there are a number of naturally occurring costs and returns that may explain the circumstances under which strategic competitive reasoning is likely to occur. Figure 1 presents a summary of these factors and provides the framework for the following discussion of several potential explanations for limited Type III thinking. Note that these factors could also apply to Type II (Cournot/ Bertrand) competitive reasoning, but the effect would likely be much less dramatic than with Type III, the focus of our interest.

Figure 1. Potential Explanations of Limited Strategic Competitive Reasoning



Costs of Strategic Competitive Thinking

We first describe a number of factors that we suggest will increase managers' perceived costs of strategic competitive thinking.

Limited Information Availability/Processing Difficulty. It is clear that strategic competitive reasoning requires a significant amount of information about competitors and, to the extent that such information is neither readily accessible nor routinely collected, subsequent development of the required mental reaction function will be difficult. The significant barriers organizations encounter in gathering and sharing information effectively have been widely discussed and well documented (Adams, Day, and Dougherty 1998; Moorman and Miner 1997; Moorman, Zaltman, and Deshpandé 1992) and such costs appear to be especially relevant in the case of competitive intelligence. In Jaworksi and Wee's (1993) survey of firms in the pharmaceutical, packaged good, and telecommunications industries, about one-third or fewer of the respondents in each industry agreed that their SBU "does a lot of competitor research." Only 10-15 percent of the organizations examined had a formal competitive intelligence unit.

Limited Opportunity for Learning. As noted earlier, anticipation of competitors' responses requires that the manager has learned a stimulus-response function over time. There are several reasons why this may be difficult to do. First, the manager must be aware of competitors' moves and countermoves (and likewise, the competitor must be aware of the manager's moves). However, even if information about a competitor's actions is available to the manager, there may still be the problem of appropriate attribution of motives behind the moves and accurate recognition of when the competitor's moves is a reaction to their own move (Moore and Urbany 1994; Clark and Montgomery 1996). This may be due in part to delays between action and response, as well as to the fact that managers typically deal with many decision variables and competitors may respond with any of a number of variables (Ailawadi, Lehmann, and Neslin 2001; Leeflang and Wittink 1992). Second, managers may simply have limited opportunity to observe repeated move-countermove sequences over time, particularly in industries where managerial tenures tend to be short and organizational memory is inadequate (cf. Adams, Day, and Dougherty 1998; Day 1991; Huber 1991). Third, competitors may not always respond in the same manner to a particular move, which inhibits learning and inference about the competitors' reaction function. Finally, within organizations, feedback from decisions may often not be immediately available or may be suppressed in some fashion (Huber 1982; Cyert and March 1992; Weiss 1980). In short, much as with consumer decision making (cf. Hoch and Deighton 1989), experience and outcomes in managerial decision making may not always be informative.

Decision-making Tendencies. A number of individual decision biases have been discussed in the literature in the context of how they may influence managerial decision making, including limited perspective-taking skills, failure in dynamic thinking, over-reliance on reference points, projection, and risk aversion (Deshpandé and Gatignon 1994; Fiske and Taylor 1991; Hutchinson and Meyer 1994; Meyer and Banks 1997; Moore and Urbany 1994; Zajac and Bazerman 1991). Such tendencies

potentially raise the costs of strategic competitive reasoning (i.e., by making strategic thinking more difficult).[2] Given the perceived low returns from competitive reasoning, which we discuss next, we believe risk aversion tendencies will contribute greatly to the perception of high costs of strategic competitive reasoning.

Low Returns from Strategic Competitive Reasoning

We also identify several factors that suggest low returns from Type III reasoning.

Unresolvable Uncertainty about Competitor Behavior. Particularly if search costs are high and managers do not have all the information they would like regarding competitors, uncertainty about likely competitive behavior will be high. Yet, even given information about past competitive behavior, a large degree of uncertainty may still exist about future competitor behavior and reactions. In the reasonably extensive literature examining competitive reactions cited above (see Gatignon and Reibstein 1997; Venkataraman, Chen, and MacMillan 1997 for reviews), variances explained are generally low by forecasting standards. For example, Chen, Smith, and Grimm (1992) explain just 15 percent of the variance in competitive reactions in the airline industry. Similarly, Smith, Grimm, Gannon, and Chen (1991) are able to explain 19-23 percent of the variance in competitive response imitation, likelihood, lag, and order. Although reasonable by academic standards that value the significance of relationships, with few exceptions[3] models of competitive reactions have explained a relatively low amount of variance. To the extent that cues like future competitive behavior can be assessed only with substantial uncertainty, other, even perhaps less truly diagnostic, cues may take on greater importance in a decision. March (1994), for instance, notes that information that is not perceived as potentially worthwhile is not likely to be gathered. Thus, managers may perceive that there are better uses of limited resources than trying to resolve uncertainty about competitors' future behavior, especially their potential reactions, resulting in a devaluation of strategic competitive reasoning.

Culture of the Firm. Recent research has found that firms vary in their decision-making orientation: some are more customer-focused, others are more internally focused, and still others are more competitor-driven (Day and Nedungadi 1994; Gatignon and Xuereb 1997; Narver and Slater 1990; see also Oxenfeldt and Moore 1978). Such orientations drive the information search and decision making of the firm. Day and Nedungadi (1994) found just 13 percent of the firms they surveyed could be classified as competitor-centered, although another 16 percent were classified as "market-driven" and appeared to have some degree of competitor focus (e.g., reported competitors' prices as a basis for pricing decisions, reported above average knowledge of competitors' costs and capabilities). In the other 71 percent of the firms, however, resources (time, money, and managerial attention) are allocated to other elements of the environment. Companies dominated by cultures that place less value on competitive concerns in decision making will be unlikely to be aggressive gatherers/processors of competitor intelligence nor active Type III thinkers. In addition, it has been proposed that organizational cultures may effectively bias or constrain information seeking and decision making, leading to a path dependency in which competitive information is devalued (Urbany and Montgomery 1998; see also Cohen and Levinthal 1990; Huber 1991).

Decision-making Tendencies. Individual as well as organizational decision-making characteristics may limit the perceived returns to Type III competitive reasoning (see Zajac and Bazerman 1991; Moore and Urbany 1994). For example, to the extent that decision makers are confident in their ability to control decision outcomes, they may effectively ignore complexity introduced by competitors' future reactions (which can only be predicted with uncertainty, anyway). In addition, social psychologists have identified a tendency for people to be overly optimistic regarding their own prospects (cf. Tyler and Hastie 1991) and to perceive more control over the decision environment than actually exists (Langer 1975; Presson and Benassi 1996). As a result, managers may tend to focus on the decision factors or criteria over which they believe they exercise greater influence or control (e.g., customer reactions, internal factors).

Limited Interdependence. Empirical research suggests that even in reasonably concentrated industries firms may have limited interdependence, either in actuality or as perceived by decision makers. In a study of 58 package good categories and several different marketing tools, for example, Putsis and Dhar (1998) find that fully 25 percent of the markets examined reflect Nash behavior (i.e., independent behavior where there are no apparent competitive reactions to moves). Raju and Roy (1997), in fact, note that in the empirical literature characterizing the competitive structure of markets, Nash behavior is assumed to be the norm. Leeflang and Wittink (1992) examine competitive interactions in a frequently purchased nonfood consumer product category in which 7 large brands account for 70 percent of the market. They find that, of 673 potential manufacturer-dominated reaction effects examined, only 80 are significantly different from zero (the ratio was 47/664 for retailer-dominated effects). In short, in even apparently competitive environments, rivals may not actively respond to each other's actions. Further, the information availability and processing problems discussed above may lead managers to perceive limited interdependence due to their defining competition more narrowly than truly exists (Chen 1996; Gripsrud and Gronhaug 1985; Porac and Thomas 1990; Porac, Thomas, and Baden-Fuller 1989). Low interdependence among rivals (either actual or perceived) reduces the returns from strategic competitive reasoning.

Effectiveness of Simpler Competitor Prediction Heuristics. The returns from Type III reasoning may in certain circumstances be quite low, depending upon the strategy played by the rival. In describing outcomes from his classic prisoner's dilemma tournaments in which the simplest rule—"tit-for-tat" (defect in period $t+1$ when the rival defects in period t, otherwise, cooperate)—consistently outperformed more sophisticated rules, Axelrod (1984) explains why the more complex rivals often performed more poorly:

> A common problem with these rules is that they used complex methods of making inferences about the other player—and these inferences were wrong. Part of the problem was that a trial defection by the other player was often taken to imply that the other player could not be enticed into cooperation. (p. 120)

In short, some of the decision rules entered into the tournaments were so complex that they outsmarted themselves, either because they did not send clear signals to the other player regarding intent, or because they did not think in Type III terms (i.e., they did not consider how their choices would affect the rival's choices). Meyer and Banks (1997) argue that the success of a strategic player is limited by the "inability of opponents to learn and read signals" (p. 169). As such, a naive rival playing a simple strategy can actually come out ahead of a strategic player trying to shape the game. Meyer and Banks (1997), in fact, find in an innovation game experiment that rivals each playing via intuitive rules of thumb actually produce joint "supra-optimal" outcomes. In sum, if simpler decision heuristics are found to be effective over time, the need for Type III (strategic competitive) thinking is obviated.

Other Factors Are Given More Importance. Competition is one of a complex array of factors managers must consider in decision making. They must also be wary of how the decision under consideration would influence customer behavior, the firm's capacity, the firm's costs, the firm's other products, and the firm's distributors, and so forth. Note, however, that these factors vary considerably in terms of the certainty with which each can be estimated, which may affect the attention they receive in decision making. Adams, Day, and Dougherty (1998) observed that new product development team members tended to focus on technology design aspects of the process and to assume that certain "hard" numbers (e.g., general market size) were all that were necessary to define consumer behavior. They tended to ignore more ambiguous information regarding user needs (Adams, Day, and Dougherty 1998, p. 410; see also Cyert and March 1992, p. 167). A tendency to avoid ambiguity has been observed widely in experimental contexts (cf. Curley, Yates, and Abrams 1986; Einhorn and Hogarth 1985) and such a tendency suggests that the weighting of particular decision factors may depend upon the certainty with which they can be evaluated. One indication of this is that information usage appears to be strongly related to information accessibility (Culnan 1983; Day and Wensley 1988; O'Reilly 1982). That is, decision makers may tend to allocate more attention to decision factors for which information is available and less uncertain, even if not diagnostic, and downplay factors that are unpredictable.

Hypotheses

The explanations above are not mutually exclusive and together they provide a compelling basis for hypothesizing that strategic competitive reasoning (Type III) may be substantially limited. They suggest that managers' expectations about competitor behavior (1) may often be unpredictable due to limited opportunity to learn and limited information (which is, therefore, discounted in decision making), (2) may reflect only one of many determinants in the decision process, and (3) may be under-weighted relative to other, more vivid considerations. We propose the following hypothesis:

> H_1: In a sample of competitive decisions made by managers, Type III competitive reasoning (strategic competitive reasoning) will occur with a lower frequency than will Type I (monopolist) and Type II (Cournot/Bertrand) competitive reasoning.

A conceptual thread running through the discussion above is that strategic competitive reasoning is more likely to occur the more visible or available both the firm's and the rival's behavior are and the more opportunities the players have to observe moves and countermoves. Drawing upon the extensive literature on competitive reactions, we suggest that actions that are more likely to evoke competitive reactions are, similarly, more likely to evoke Type III conjectures from the actors considering such actions. The simple distinction between pricing and non-pricing moves has emerged as the single most important factor (Venkataraman, Chen, and MacMillan 1997). Pricing decisions tend to be (1) more visible (i.e., more easily observed) than most other decisions, (2) more frequently undertaken (due to lower costs of changing the decision; cf. Leeflang and Wittink 1992), and (3) easier to link to sales and profit outcomes. Our general expectation is that when managers are considering moves that they have learned over time generate more (and more aggressive) competitive reactions, they will be more likely to incorporate Type III expectations in their decision making. That is, managers should be more likely to demonstrate strategic competitive reasoning for pricing decisions than for non-pricing decisions in the domain of strategically interdependent decisions. This leads to our second hypothesis:

> H_2: Type III competitive reasoning (strategic competitive reasoning) will occur with greater frequency for pricing decisions than for non-pricing strategic decisions.

The two-part study that follows tests these hypotheses using practicing managers, reflecting on their own decisions and projecting future decisions, as respondents. A second study addresses the validity of the results of Study 1.

Study 1: The Relative Incidence of Types of Competitive Reasoning

Study 1A Method

The first part of Study 1 was exploratory. The goals were to find out whether managers who were asked to describe factors that were important in past and prospective decisions would spontaneously mention considering any type of competitor behavior and whether their descriptions would allow us to differentiate among Type I, Type II, and Type III (monopolistic, Cournot/Bertrand, and strategic competitive) reasoning sufficiently to test our hypotheses.

Design and Respondents. One hundred and seven interviews were conducted by MBA students (approximately half were executive MBA students and half were daytime MBA students) at two national universities as part of a class assignment. The students identified the respondents—managers who were involved in either a decision to change price for their product/service or the development and introduction of a new product during the previous year. The objective of the interview was to obtain insight into the factors that drove decision making regarding each move. The students submitted a one-page write-up of their interpretation of the interview for class discussion, along with an appendix with the verbatim (or near-verbatim) account of the respondent's answers. Complete information was obtained for 101 respondents. Of these, 44 were new product development decisions, and 57 involved pricing decisions.[4] The student interviewers were blind to the purpose of the study.

The firms represented by respondents ranged from small local businesses to major package goods firms. Seventy-nine percent described their firms as either market leaders or major players. On average, respondents reported 3.36 serious competitors in their markets. Forty-four percent described their market's reaction patterns as "swift," while roughly the same proportion (40 percent) indicated that competitors tended to "wait and see" before reacting. (Fourteen percent indicated that competitive reactions were often minimal.) These background factors had no moderating effects on the answers discussed below.

Procedure. The interviews were exploratory in nature, with the students instructed to ask questions about the timing of the price change/product introduction and to obtain a retrospective account of the key considerations in the decision. Specifically, once the interviewer and interviewee had identified a particular decision made in a specific line of business and segment, the following questions were asked:

Q_1: Thinking back to the time when this particular decision was made, what were the key considerations in the decision? That is, what issues did you consider specifically before you made the final decision?

Q_2: Let's say that you were considering a similar move in this same market today. What questions would you ask yourself as you are deciding to make the move?

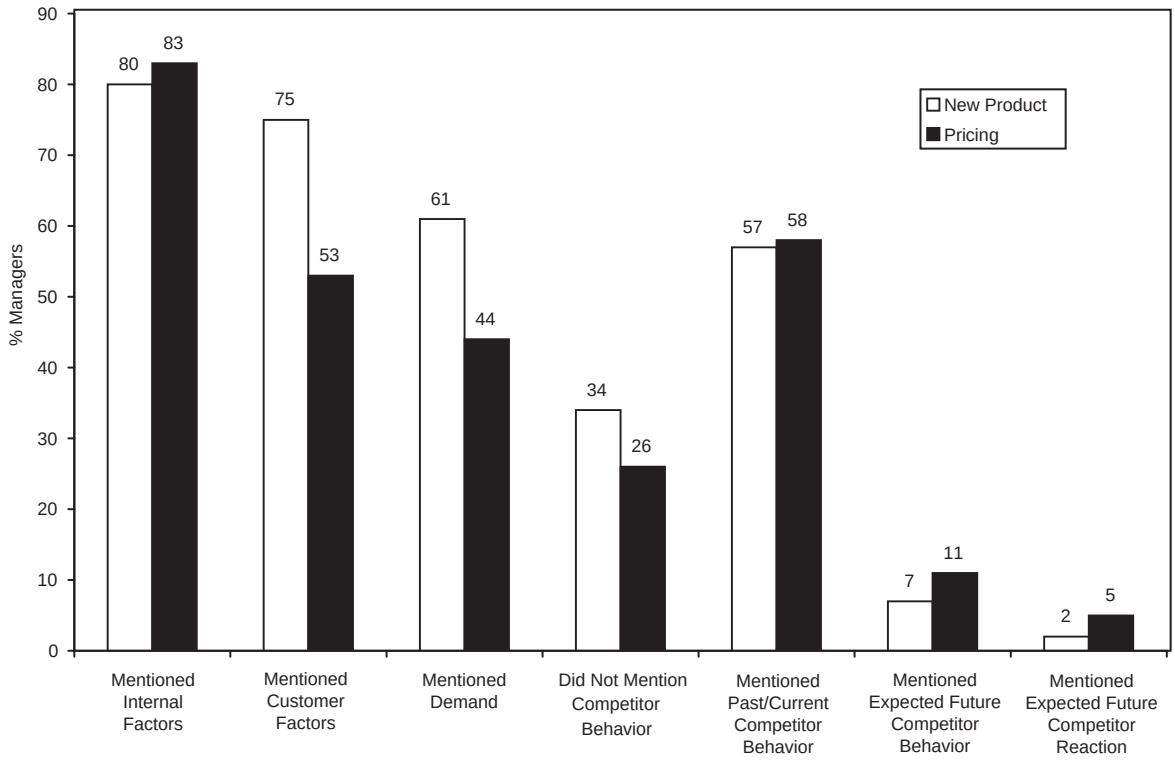
In addition, a series of questions were asked for descriptive purposes regarding the number of competitors in the market, the company's relative position (e.g., market leader, major player, minor player) and, finally, how they would characterize the way competitors in the market react to each others' moves.

Coding. The following coding scheme for competitive considerations in the reports was developed and refined by the authors over several rounds of evaluating the cases: (1) no mention of competitor behavior, (2) mentioned competitors' past or current behavior, (3) mentioned competitors' expected future behavior, and (4) mentioned competitors' expected future reaction to the firm's decision. In addition, the following "non-competitor" factors emerged as considerations in the managers' decision making: customer factors (needs, preferences, elasticities), distributor factors (needs, preferences, elasticities), demand (overall market size, potential, primary demand, firms sales/revenue/share targets), internal factors (e.g., financial goals, capacity, capabilities), and "other" factors (e.g., regulatory considerations).

In the analysis below, we categorize mentions of both past/current competitor behavior and expected future behavior as Type II, Cournot/Bertrand reasoning. Even though mentions of past/current competitor behavior do not focus on projected competitor behavior, we assume that respondents were implicitly considering that past or current competitor behavior would be continuing into the near term.

Two coders were trained on a separate sample of 18 interviews. They then coded each interview using these categories, coding separately the *retrospective* account of the decision (the respondents' answers to Q_1 above) and the *prospective* account (Q_2). The coders each coded the cases separately and then together resolved any discrepancies. On the categorization of mentions of decision factors (with seven categories, one for each factor type; e.g., customer, demand, internal factors, past or current competitor behavior, expected future competitor behavior, expected future competitor reactions), codes for the retrospective and prospective accounts of the decisions produced average coder agreement of 77 and 78 percent, respectively. Inter-coder reliability (Perreault and Leigh 1989) was .86 for both scenarios.

Figure 2a. Frequency: Decision Factors Mentioned
Study1A: Retrospective Decision Account

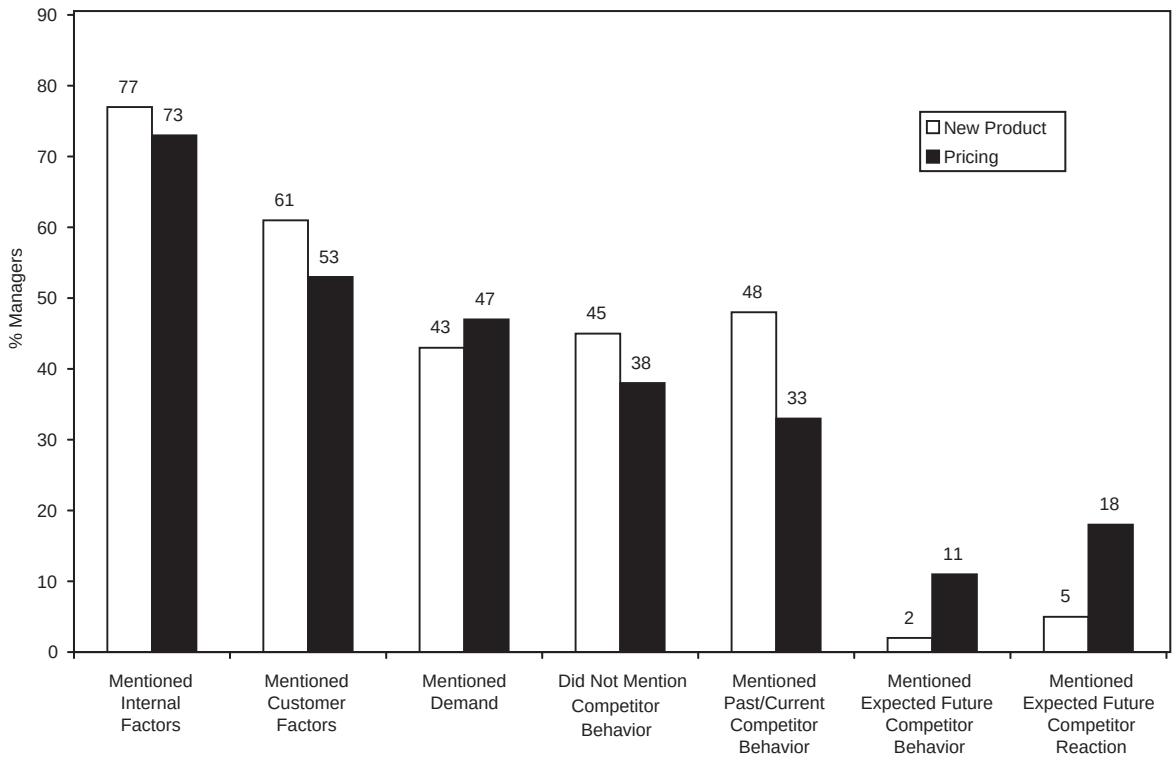


Study 1A Results

The results support both H_1 and H_2, the latter partially. Figures 2a and 2b present the percent of managers who mentioned each of the specific factors. Figure 2a reports the frequencies for the actual decisions the managers made (Q_1). Figure 2b reports the percent of managers who mentioned each factor when asked how they would make the decision in the future (Q_2).

Hypothesis 1. Figure 2a indicates that considerations of competitors' future reactions receive only minimal attention in the retrospective accounts of the decisions (2 percent for new product decisions and 5 percent for pricing decisions), consistent with the H_1 prediction of a low incidence of Type III competitive reasoning. Figure 2b shows that the incidence of Type I thinking ("did not mention") increases when going from the retrospective to the prospective decision accounts. This is consistent with the literature on prospective reasoning which suggests that people provide greater depth of explanation in describing events that have already occurred (or when prompted to imagine they have already occurred) than when describing events which are yet to take place (cf. Mitchell, Russo, and Pennington 1989).

Figure 2b. Frequency: Decision Factors Mentioned
Study 1B: Prospective Decision Account



Hypothesis 2. Consistent with our earlier discussion of the uncertainty and accessibility of information about different factors in decision making, we find that internal considerations (e.g., costs, profit goals, capacity constraints, human resources) dominate both new product decisions and pricing decisions. As might be expected, customer and demand considerations are mentioned with a lower frequency in the pricing decision than in the new product decision. Most other factors remain relatively constant across the two decision types, including expected future competitor behavior and expected future competitor reactions (the slight increases are not significant; both Zs < 1). As such, the retrospective accounts do not support H_2. However, we find a fairly substantial increase in the mentions of expected future competitor reactions for the prospective pricing decision accounts, where the incidence of Type III thinking jumped to 18 percent (versus 5 percent in the retrospective scenarios, $Z = 2.83$[5]). A similar jump did not occur for new product decisions ($P_{\text{Strategic Competitive Reasoning}} = .02$ and .05 for the retrospective and prospective questions, respectively, $Z = 1.43$).

Summary. In sum, Study 1A provides strong support for our contention that expected competitor reactions would be less likely to enter into managers' decision making than other kinds of competitive conjecture. The results suggest a dominance of internal and customer-related concerns. At the same time, the study is limited by the use of multiple interviewers, limited control over interview transcripts, and

some sources of uncontrolled respondent heterogeneity. Study 1B applies the coding scheme developed in the Study 1A in a more controlled environment.

Study 1B Method

In Study 1B, we determine whether the Study 1A results generalize to another, very different setting in which executives are asked to describe prospective decision making in three familiar and personally relevant scenarios. Industry differences are held constant, as respondents are asked to focus on decision making in a common, simulated environment, Markstrat3. Importantly, we know that a firm's outcomes are affected by its competitors' actions in this simulation, removing a source of variability that may have been present in Study 1A.

Design and Respondents. Respondents were 47 executives participating in the Sloan executive program at a major university. The executives in the Sloan program are hand-picked fast-risers in their organizations. For this study their average age was 36.2 years old with a range of 30-52 years old. Forty-two percent were from the U.S. and 85 percent were male. These managers, who were participating in the competitive simulation Markstrat3 during one of their course modules, were presented with three separate decision scenarios and asked to articulate the factors that would be considered by the team in making three kinds of decisions. The scenarios included deciding: (a) which of several market segments to focus on with the team's next product (market selection), (b) whether to increase advertising budget, and (c) whether to cut price. All respondents provided responses to all three scenarios, which were counterbalanced across the questionnaires.

Procedure. The Sloan executives were presented with a questionnaire booklet following period 3 of their Markstrat3 competition. This booklet contained questions about the three types of decisions these executives would be exposed to during the simulation. To illustrate, the advertising scenario was presented as follows:

> You're a member of a Markstrat team that is making a decision about whether to increase the advertising budget for an existing Sonite brand. Faced with uncertainty, your team plans to sort through several issues and factors which will influence the success or failure of the target advertising decision. What are the factors that you would consider in making this advertising increase decision?

Following each scenario, respondents were asked to provide a list of the factors they would typically consider in evaluating such a prospect in the Markstrat3 context. In addition, they were asked to provide a quantitative weighting of the relative importance of three different orientations which the firm might take on (competitor-, customer-, or technology-orientation; cf. Gatignon and Xuereb 1997). Following the three scenarios, a series of measures assessing beliefs about competitive strategy and inquiring about different forms of competitive analysis the respondent's team was using were taken.

Coding. The prospective decision protocols were coded by two coders who were different from the coders used in Study 1A. The same coding framework was used. Across the market entry, advertising, and pricing scenarios, inter-coder agreement was .87, .89, and .85, respectively, leading to reliabilities of .92, .94, and .91.

Study 1B Results

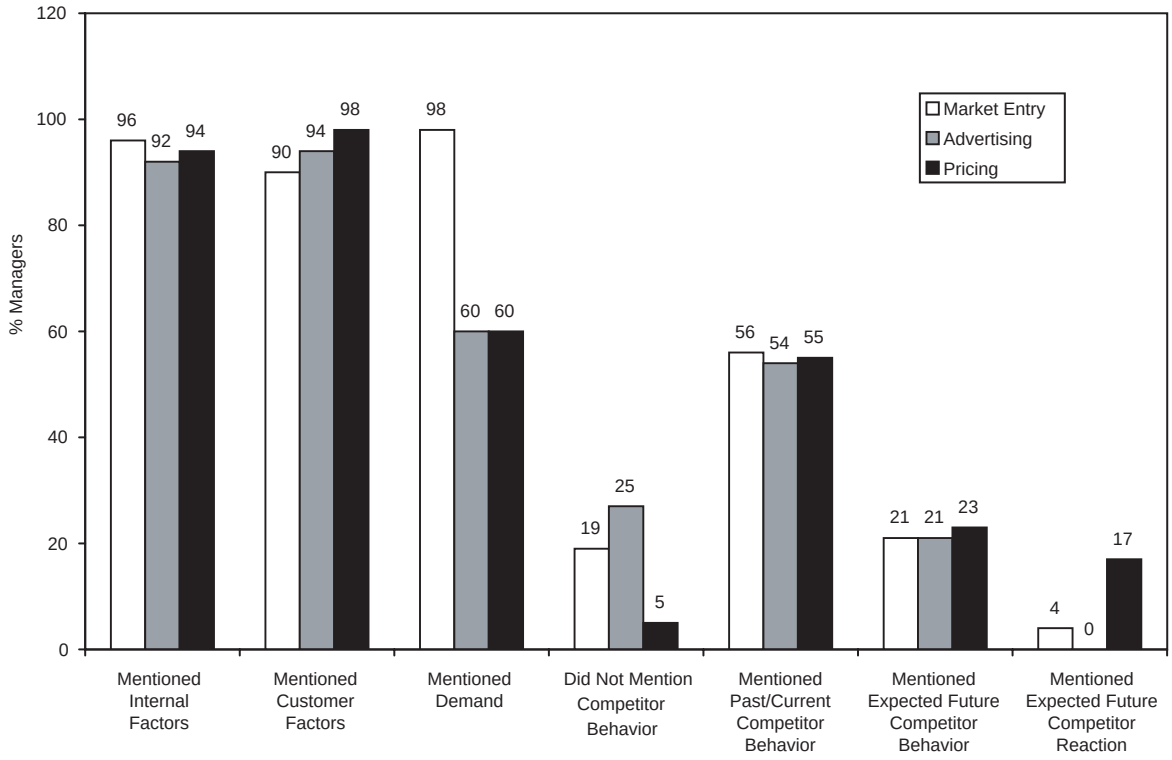
Hypothesis 1. Figure 3 presents the frequency distributions for Type I, II, and III (monopolistic, Cournot/Bertrand, and strategic) competitive reasoning for each of the three scenarios. Very similar to Study 1A, we find that, in general, Cournot/Bertrand thinking occurs most frequently and strategic competitive thinking occurs least frequently. Relative to the results of Study 1A, we observe less monopolistic reasoning. Cournot/Bertrand reasoning accounts for much of the gains, as three-quarters of the respondents (in each scenario) discuss past, current, or expected future competitor behavior. Strategic competitive reasoning is still quite infrequent, with proportions very similar to those observed in Study 1A.

Hypothesis 2. Figure 3 also illustrates that pricing decisions do produce a larger measure of strategic competitive reasoning in comparison to the market entry and advertising decision scenarios (Zs = 2.09 and 2.62, both $p < .05$). This is consistent with H_2. Figure 3 also provides insight into the relative attention to particular decision factors. The results are quite similar to those in Study 1A: a heavy emphasis on internal and customer factors (somewhat more on customer than in Study 1A) and substantial attention to demand in the more strategic market-entry decision and declining attention in the more tactical pricing and advertising decisions. About 60 percent of respondents engage in Type II (Cournot/Bertrand) competitive thinking with a focus strictly on past or current competitive behavior (much greater than the proportion discussing expected future behavior) and, again, a minimal proportion consider competitors' expected future reactions—yet significantly more do so for the pricing decision scenario than other scenarios.

Study 1 Summary

We observe strong consistency in results across Study 1A and Study 1B, which examined very different decision environments with different research approaches. The evidence thus far supports the expectation that managers attend far less to expected future competitive reactions in their decision making than might be expected based upon conventional economic theory. In fact, these results are so contrary to such theory, that one might worry that methodological concerns account for the results. In fact, we believe the similar results across these two quite diverse studies provide greater confidence in the conclusions that emerge. For further insight regarding why so little conjecture about competitive reactions is observed, we turn to Study 2, in which experienced managers assess the results of Study 1.

Figure 3. Frequency: Decision Factors Mentioned
Study 1B: Markstrat3



Study 2: Considering the Plausibility of the Results of Study 1

In Study 2, we follow an approach similar to that used by Blinder (1991) in a study of price rigidity. Blinder's (1991) work was motivated by the observation that economists had developed an embarrassingly large number of theories to explain price stickiness with little ability to discriminate which provided the most plausible explanations. Blinder assessed alternative accounts of price stickiness by developing simple descriptions of 13 different theoretical accounts and presenting them to executives in personal interviews. The executives were asked to assess the plausibility of each explanation. Rather than present respondents our hypotheses directly, however, we present our aggregate Study 1 results to three different samples of executives—two sets of experts and one set of generalists. From these groups, we obtain assessments of the validity of the Study 1 results, and insights into deeper explanations of the results.

Study 2 Method

Design and Respondents. In this study, 96 experienced managers responded to a survey that presented a summary of the combined results from the earlier studies described above. The expert sample included an e-mail sample of 14 executives in research, corporate intelligence, and consulting functions, and 16 Marketing Science Institute Trustees. The generalist sample consists of 66 executive MBA students at a top 10 MBA program, with an average 11.5 years of work experience. The students represented a wide range of industries, including telecommunications, financial services, automotive, photographic, high tech, food/grocery, and industrial products; and a wide range of functions within their organizations, e.g., marketing, finance, human resources, engineering, product development, legal services, and so forth.

After a preliminary series of open-ended interviews with four executives to pilot-test our approach for collecting the Study 2 data, we developed two versions of a short questionnaire. The first was an e-mail questionnaire that was administered to the first sample of 14 executives. This sample was identified primarily with the assistance of a competitive intelligence professional actively involved with the Society of Competitive Intelligence Professionals (SCIP). The sample included executives who were among the leaders in the field of competitive research nationally. Nearly all of these respondents were currently or had been chief competitive intelligence (CI) professionals in their organizations. Several worked for very large organizations with well-established CI functions or were consultants in CI. The second two groups were presented a paper and pencil version of the e-mail survey;

the MBA group in a classroom setting and the MSI Trustees at a semi-annual board of trustees meeting.

As noted, respondents were presented with either a questionnaire booklet or an e-mail survey. (Those receiving the e-mail survey were first contacted by telephone.) The survey first discussed the general objectives of the research (i.e., "We are interested in examining what factors managers tend to focus on in decision making and why") and then presented results for the overall ranking of the decision factors based upon the first two studies. Each factor was defined in detail, and the following aggregate percentages from studies 1A and 1B were provided to respondents: internal factors (89 percent), customer factors (82 percent), demand (65 percent), past or current competitor behavior (56 percent), expected future competitor behavior (16 percent), and expected future competitor reactions (6 percent). The primary objective was to determine whether respondents found the relative emphasis on these factors (reflected in the frequency of mention) to be consistent with their own experience. While our particular interest is in the low incidence of considerations of future competitive reactions, we chose not to focus our respondents exclusively on that particular aspect of our results.

Measures. Respondents were asked to assess the Study 1 results using three 10-point bi-polar scales anchored with the labels "unexpected-expected," "surprising-unsurprising," and "inconsistent with my experience-consistent with my experience." Following this, they answered three open-ended questions that asked them to (1) explain their ratings on the three items, (2) provide an explanation for the rank order results (if they had one), and (3) provide an explanation of why competitive reactions receive greater mention in pricing decisions than in other decisions (again if they had one).

Coding. Responses to the executives' open-ended explanations of their ratings and the Study 1 rank-order of the decision factors were content-analyzed by two coders. The coding framework was developed based on the explanations of limited Type III thinking enumerated in Figure 1, with some sub-categories included based on the authors' reading of the responses. The definitions of the categories are presented in Table 1.

The rate of coder agreement varied across the categories, from 65-100 percent (mostly due to sub-category disagreement). Across categories, average agreement was over 90 percent and overall reliability was .956. All disagreements were resolved through discussion.

Study 2 Results

Plausibility Ratings. The three items used to measure respondents' assessment of the rank-order results presented in the survey had an alpha of .84 and were averaged to form an overall plausibility scale. There were no significant differences in the mean ratings of the three sub-samples ($F_{2,95} = .92$, $p = .40$), so results are aggregated across the groups. The overall mean was 7.30 (*standard deviation* = 1.94), with median 7.67 and mode 8.33. The mean response is significantly greater than the scale midpoint of 5.5 ($Z = 9.18$, $p < .01$) which indicates that the respondents were, on aver-

age, significantly positive in their plausibility ratings. Seventy-one percent of the sample averaged ratings of 7 or above (48 percent averaged 8 or above).

Explanations. Table 2 presents the results of the coding, indicating how often the various factors were offered as explanations for the pattern of results observed in

Table 1. Coding Categories: Study 2

Category	Definition
Perceived High Costs	
Limited information availability	Any mention of how easy or difficult it is to get relevant information
Processing difficulty	Any mention of how difficult it is to analyze competitor information
Limited opportunity for learning	Any mention of how difficult it is to learn about competitors due to limited interactions, delay between action and effect, lack of time, and so forth
Decision-making tendencies	Comments related to manager's risk aversion or loss aversion with respect to gathering/analyzing competitor information
Perceived Low Returns	
Unresolvable uncertainty	Comments related to the impossibility of resolving uncertainty about competitors
Decision-making culture of the firm	Any mention of firm rules, processes, norms, or style that discourage competitor analysis
Decision-making tendencies	Any mention of managers' need to be in control or a tendency to be overly optimistic or overly confident with regard to competition
Limited interdependence	Any mention regarding competitors' not having much effect on each other or the firm's not having any competition
Effectiveness of simpler competitor reaction heuristics	Comments related to there being simpler, more effective ways to make decisions than trying to predict competitor behavior
Internal factors given more importance	Any mention of internal, company-related factors being more important considerations than competitor-related factors
Customer factors given more importance	Any mention of customer-related factors being more important considerations than competitor-oriented factors

Study 1. The number indicates how many of the respondents mentioned the factor, either as an explanation for their reactions to the overall rank order or as an explanation for the results of Study 1. The responses of the experts (MSI Trustees and competitive intelligence professionals) are distinguished from responses of the generalists (the executive MBA students). Although the overall results are quite consistent between these two groups, some insight can be gained, particularly in the case of "high perceived costs," by also examining the two groups separately. We present the results in Table 2 following the order in Figure 1, i.e., with the items mentioned partitioned as high perceived costs of strategic competitive reasoning and low perceived returns to strategic competitive reasoning.

Table 2. Explanations Offered for Study 2 Results (# and % of Respondents Mentioning)

Category	MSI/CI N = 30		EMBA N = 66		TOTAL N = 96	
	#	%	#	%	#	%
High Perceived Costs						
Information not easily available	6	20.0	5	7.8	11	11.5
Processing difficulty	7	23.3	5	7.8	12	12.5
Limited opportunity to learn	5	16.7	5	7.8	11	11.5
Decision-making tendency: Risk aversion	7	23.3	3	4.5	10	10.4
Low Perceived Returns						
Unresolveable uncertainty	25	83.3	31	46.9	56	58.3
Decision-making culture of the firm	23	76.6	55	83.3	78	81.3
Decision-making tendencies	7	23.3	19	28.8	26	27.1
Limited interdependence	2	6.7	0	0	2	2.1
Simpler heuristics effective	5	16.7	13	19.7	18	18.8
Internal factors given more importance	27	90.0	59	89.4	86	89.6
Customer factors given more importance	16	53.3	35	53.0	51	53.1

The results for the two groups are very consistent. The correlation between the experts and the generalists for the percent mentioning each of the 11 items of explanation in Table 2 is .92 with $p < 0.000$. The Spearman rank order correlation between the two groups for the 11 explanations is .81 with $p < .001$ and the Kendall Tau-B rank order correlation is .66 with $p < .003$. Thus analysis across the

11 subcategories strongly supports the consistency across the two different groups of executives.[6] In the remainder of this section we include a number of verbatim statements from our respondents which provide in-depth insight into their explanations of the results.

Study 2 Discussion

High Perceived Costs. Reflecting earlier discussion of limited competitive intelligence generation, respondents frequently mentioned the difficulty of obtaining competitive information. Two predominant dimensions of the costs of competitive analysis emerged. The first is related to the accessibility of information about competitor behavior and was mentioned by 11.5 percent of all respondents. For example:

> . . . availability of data (know much more about your own stuff, less about your customers, and in some industries very little about your competitors). There is the immediacy of data that is internal—it is here and now and you often have to wait for data about your competitors.
>
> —*Director, market research firm*

The second dimension addressed the difficulty of competitive analysis even if competitive information were available (mentioned by 12.5 percent):

> People do what is expedient . . . the most difficult analyses are at the bottom of the list[7] . . . this kind of analysis takes time and thought—(in contrast) emphasis in management is the opposite (speed and action).
>
> —*President, competitive intelligence consulting firm*

> The last items require looking ahead—drawing inferences from understanding of the past and present. This is difficult work—requires real thinking time and a bit of discipline.
>
> —*Vice president market research, consumer products firm*

The data suggest two reasons why the costs of gathering and analyzing competitor information, especially that required for Type III (strategic) reasoning, may be perceived to be high. The first is the limited opportunity to actually learn about competitors, which was mentioned by 11.5 percent of the respondents. This limitation may be due to infrequent observations, the delay between an action and its reaction, or the time pressure associated with the decision. For example,

> . . . competitive reaction and behavior can be anticipated, but the "lag" does not usually correspond with managers' measured objectives.
>
> —*Vice president, regional bank*

The second reason that emerges is risk aversion, which was mentioned by 10.4 percent of the respondents. An example:

> Anticipating future external events and possible competitor actions and acting on it, ahead of the crisis, are more difficult and risky [than internal information]. I could lose my job if I go out on a limb and am wrong.
>
> —*Market research manager, health care products*

Two striking observations emerge. One, factors associated with high perceived costs of competitor reasoning were mentioned much less often than factors associated with low returns-associated factors; and two, the experts mentioned cost-related factors at two to four times the rate the generalists did. Our interpretation is that the experts, given their positions in their firms, were much more likely to have experienced the effort and financial costs of assembling and analyzing competitor information, perhaps even having fought (unsuccessful) budget battles to support such efforts. The verbatim comments suggest that the uncertainty associated with competitor behavior, which we address next, makes the perceived costs high relative to the expected returns. We conjecture that the generalists may have mentioned cost-related factors less often because they have not considered, or do not formally consider, the costs. Rather, the notion that not much can be gained from attempts to anticipate competitor behavior may have been institutionalized to the extent that a cost-benefit analysis is no longer deemed necessary.

Low Perceived Returns from Competitive Reasoning. The most-often-mentioned factors associated with the perception of low returns from competitive reasoning are unresolvable uncertainty, the greater importance of internal factors and customer factors, and the decision-making culture of the firm.

Unresolvable Uncertainty. This category bears special consideration, as it is an outgrowth of the high perceived costs of gathering and analyzing competitor information. In circumstances in which firms have limited information about competitors, we would expect there to be significant uncertainty about competitor behavior, both past and present. Yet, even when information is available, there may be uncertainty in dealing with likely competitor reactions. Uncertainty and ambiguity may have many sources (Einhorn and Hogarth 1985, p. 442), and it is generally human nature to avoid it, as reflected in our respondents' comments:

> Data at the lower end of the list [competitor-related data; see Note 6] is more probabilistic—humans are not wired to deal well with probabilities.
>
> —*Global services manager, high tech*

> Expected competitor reactions are least subject to accurate estimation a priori, so it is ignored or under-represented in business decisions.
>
> —*Consumer insights, financial services*

Apparently, some of our respondents (18.8 percent) believe that simple heuristics might be adequate to deal with the uncertainty faced with respect to competitors' future behavior. This could be true because the approximation is "good enough." Firms might also simply "copy" or follow a competitor, perhaps to minimize effort

due to human, financial, or time constraints. Tit-for-tat strategies, which are often found to work well, would seem to be consistent with this, for example:

> The easiest thing to do is to assume that competitors won't have a response to your moves other than price.
>
> —*Engineer, conglomerate*

Other Factors Are More Important. In the face of unresolvable uncertainty about competitors' future actions and reactions, our respondents appear to make an implicit trade-off that favors more certain inputs in their decision-making. One of the dominant themes in the verbatim comments was that factors that could be assessed with greater certainty—typically internal factors—tended to receive more weight in decisions. This was true for both the experts (90.0 percent) and the generalists (89.6 percent) Some examples:

> Focus on the concrete and known at expense of variable/ambiguous.
>
> —*Product development executive, automotive*

> Anticipating competitive reactions is much riskier and less predictable than staying in the safe haven of internal numbers.
>
> —*Vice president, consumer promotions, consulting*

> In corporate group consensus decision making, hard numbers nearly always carry the day, regardless of relevance. This is particularly true if the finance department is involved: "If you can't count it, it must not be important." Intangibles are very difficult to incorporate in a group decision process, as is it difficult to reach consensus on what "will be."
>
> —*Marketing strategy manager, automotive*

> Internal factors can be quantified with greater certainty and reliability than external factors. They also have a clearer impact on standard performance metrics in the short term.
>
> —*Product development engineer, telecommunications*

Customer factors, while not as certain or easy to measure as internal factors, were mentioned as "more important" by 53 percent of both the expert and the generalist groups.

Culture of the Firm. The detailed responses provided three underlying explanations for the dominance of internal factors. All three are associated with the organizational culture that provides the context for competitive decision making (mentioned by 81.3 percent of the total sample: 76.6 percent of the experts, and 83.3 percent of the generalists): the firm's focus on the short run, the greater appeal of factors that one can control, and the need to justify one's decisions. While we were not surprised by the emergence of firm culture as an influencing factor, we were surprised by its importance.

The most-often-mentioned organizational factor was the short-run focus of firms, particularly the focus on short-term return on investment. Some respondents noted that managers' compensation is more likely to be related to short-term, measurable outcomes such as ROI:

> . . . more and more compensation packages are measurement-based, but almost exclusively based on internal measures and influences (i.e., get the costs down x percent). I don't know of any major corporation that routinely uses any competitive measures, past or present, let alone future predictions in its compensation calculations.
>
> *—President, competitive intelligence consulting firm*

> Internal factors almost always dominate external factors, usually because the rewards are based on what you get done internally (develop a product, introduce a new brand, implement a plan) and not necessarily on long-term market effectiveness (next year's market share or next year's profits attributable to your decision one or two years before).
>
> *—Manager market research, utilities*

> Executive compensation is based on internal factors and often short-term focused.
>
> *—Anonymous*

Internal factors, especially those that are easily measured, are seen as more under the control of managers, which may explain why they are mentioned so much more than other factors. We coded for individual decision-making tendencies. The most-often-mentioned, the illusion of control, was mentioned by 20.1 percent of the respondents. (Four respondents alluded to over-optimism and two respondents mentioned overconfidence.) Examples of the statements that indicated managers are more likely to consider factors they can control are:

> Internal factors are the most direct. . . . They are also the items over which we have most control. Competitor reactions are much less predictable, less controllable, and hence, marketers spend less time on them overall.
>
> *—Market research manager, health care products*

> In my experience, most managers will first think about doing something they understand well and have some direct control over—competitors are at the opposite end of that "stick."
>
> *—President, competitive intelligence consulting firm*

Third, the literatures on accountability and reason-based choice (cf. Tetlock 1985; Simonson 1989) suggest that decision making may essentially reflect a search for an acceptable option given known criteria on which decisions are typically justified. Seven Study 2 respondents (five of them experts) felt the influence of internal factors was largely due to the fact that decisions defended based upon quantifiable criteria were most justifiable within the organization.

> More often than not the decision variables that are easiest to quantify also tend to be the easiest to justify (particularly to the board or executive level staff).
>
> *—Product manager, high tech*

> Justifying your behavior. People do what they can do—not what they need to do, especially in the larger corporations where you have to justify what you are doing.
>
> *—President, competitive intelligence consulting firm*

> Most managers in any position of authority have been around a while and don't want to do anything that can't be supported internally.
>
> *—Regional sales manager, construction equipment*

Pricing versus Other Decisions. The explanations described above are answers to the first two questions our respondents were asked, i.e., to describe their reactions to the overall results of Study 1. We deliberately did not direct their attention toward the low incidence of competitive reasoning found in Study 1 until the third question, which asked respondents why they thought the incidence of anticipating competitor reactions was greater for pricing decisions than for market entry, advertising budgeting, or new product decisions. We felt, and the data support, that (1) competitor interdependence would be more obvious in the pricing arena, (2) competitor information about pricing would be easier to gather, (3) competitor information about pricing would be easier to analyze, and (4) the firm would feel the impact of a competitor's reaction to pricing more quickly than in other areas. These distinctions between pricing and other marketing decision variables make it easier to anticipate competitor reactions to pricing, increasing the chances that Type III competitor reasoning will occur.

Table 3 presents the results of coding respondents' reactions on those four dimensions. Each reason was mentioned by 34-46 percent of the total set of respondents. In Study 1B the executives were also asked to allocate 100 points to the three areas of customer, company, and competitors for each of the decisions of pricing, market entry, and advertising. The executive respondents placed moderately greater emphasis on competitors for pricing. The resulting competitor weight in decisions was significant (t = 1.88, one-tailed) for pricing versus market entry, marginally significant (t = 1.54, one-tailed) for pricing versus advertising, and insignificant (as expected) for advertising versus market entry (t = .36, two-tailed). So the results from both Study 1B and Study 2 provide some support for the notion that pricing is a decision area for which competitor analysis is relatively more emphasized.

Table 3. Explanations Regarding Why Anticipating Competitor Reactions Would Occur More Often for Pricing Decisions (# mentions, % of sample mentioning)

	MSI/CI		EMBA		TOTAL	
	#	%	#	%	#	%
Greater dependence	13	43.0	21	31.8	44	45.8
Information easier to gather	9	30.0	24	36.4	33	34.4
Easier to analyze	12	40.0	31	47.0	43	44.8
Quicker impact	17	56.7	25	37.8	42	43.8

Results Summary

To summarize this research, we note that studies 1A and 1B examined reported considerations for executives relating to both retrospective and prospective decisions in situations of pricing, new products, market entry, and advertising. Study 1A entailed data from a wide variety of actual situations in companies, thereby giving sample breadth. Study 1B was obtained for executives all operating in the same simulated market environment of Markstrat3. In this simulated market environment we know for certain that competitor activities and reactions reflect crucially in company performance. The results for these contrasting samples were substantially consistent and indicate that strategic competitive reasoning (Type III) is a relatively rare occurrence. Two additional groups of executives, one more expert and one more generalist, were asked to react to studies 1A and 1B and offered reasons they felt might explain these results. Overall, these executive were significantly inclined to believe the results hold true in the "real" world and overwhelmingly felt (somewhat surprisingly) that explanations associated with low perceived returns to competitor thinking were more powerful than perceptions of the high costs associated with competitor thinking. As anticipated, decisions in the pricing arena were found to have relatively greater incidence of strategic competitive reasoning (Type III) than were the other decision areas.

Discussion

We began with the goal of explaining why managers often seem less inclined to consider competitive reactions in decision making than is prescribed by classic oligopoly theory (i.e., why managers are less "strategic" than economic models tend to assume). A simple answer is suggested by the studies reported above: there is a general tendency to weight more heavily (or rely on more strongly) decision inputs that can be assessed more easily, predicted with greater confidence, are felt to be more controllable, and provide a stronger basis for justifying decisions within the organization (see Cyert and March 1992; Adams, Day, and Dougherty 1998). In this section, we acknowledge that such behavior might be adaptive (even optimal) under certain conditions. However, we also explore when omitting strategic competitive reasoning from the decision-making process may be harmful, despite its inherent uncertainty.

Uncertainty Reduction

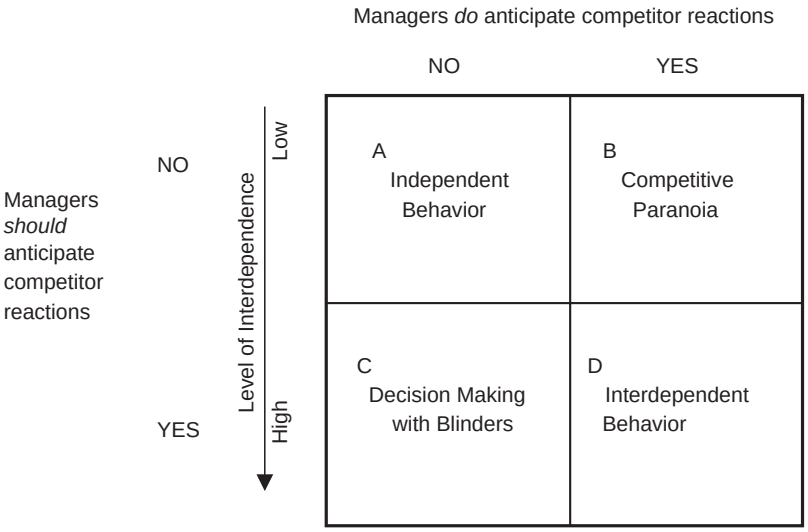
The most significant reasons why expectations regarding competitive reactions (and other more qualitative considerations) may not be accounted for in decision making is that such predictions are, by their nature, uncertain and ambiguous. While the perils of being inward-focused have been discussed for some time (cf. Bonoma 1981; Hamel and Prahalad 1994), there has been little or no discussion of (1) how people may limit the "set" of attributes or criteria on which they evaluate decisions, nor (2) how a tendency to favor more quantifiable, less ambiguous decision criteria may blind the management team to particularly diagnostic information. To the extent that such processes represent natural adaptations to a complex environment (which under many circumstances they might), it is conceivable that they reflect rational adaptive behavior. What is needed is consideration of the conditions under which such behavior is detrimental.

What Harm?

Figure 4 presents a two-by-two table that suggests when failures in conjecture may or may not harm the firm. The dimensions of the table are (1) normative (i.e., representing situations when managers should consider competitive reactions), and (2) descriptive (i.e., representing situations when managers actually do consider competitive reactions in their decision making).

Cells A and D each define appropriate or rational behavior. A manager in Cell A—who is in a market with little competitive interdependence and who is ignoring competitor reactions—is behaving appropriately by shaping his or her actions independent of competitors (cf. Nash behavior). Managers in Cell D, who are in interdependent situations and are conjecturing about competitor reactions, are behaving as the classic oligopolist, attending carefully to competitors and anticipating their actions and reactions.

Figure 4. Competitive Decision Making and Interdependence



The most intriguing cells are B and C, which we label "competitive paranoia" (cf. Clark and Montgomery 1996) and "decision making with blinders" (cf. Moore and Urbany 1994). In Cell B, managers are focusing on competitor reactions when there is no need to do so, wasting considerable time and effort. Managers experiencing "competitive paranoia" overzealously watch their rivals and perhaps attribute more competitive intent to the rivals' actions than is truly intended. (Interestingly, Clark and Montgomery's [1996] evidence suggests that "competitively paranoid" firms may outperform less "paranoid" firms.

In a study of data from some 400 consumer product categories utilizing Dutch data, Dekimpe, Hanssens, Nijs, and Steenkamp (2001) find that the most common form of competitive response is actually no response (or passivity), which is consistent with the results of the present study which found little consideration of competitor reaction. Srinivasan and Bass (2001) also find that for consumer goods the immediate competitive response to competitor promotion is predominantly no response. Further, Dekimpe et al. (2001) suggest that short-run passivity may not necessarily be myopic, especially for advertising which was found to have virtually nonexistent long-run effects. So managers may often be justified in ignoring potential competitor reaction. However, among regularly advertised brands, they found relatively strong advertising retaliation, perhaps in reaction to a "better safe than sorry" approach to potential long-term effects of competitors' advertising actions. The cell of special of interest here, however, is Cell C, which defines a potential problem area for the firm. If managers are not anticipating competitor reactions and should be, the possibility of their being blindsided by a competitor's reaction to a decision that was (otherwise) a good decision looms large. Some particular problems relating to blinders emerge from the current research and are elaborated upon below.

Decision Making with Blinders

We suggest here that uncertainty about competitors may manifest itself in three tendencies that can lead to poorer outcomes for the firm. These include limited search for information about competitors, and the discounting of both (a) insights or information about competitor behavior and (b) the weight placed on "competitor actions" in the firm's decision calculus.

The Limited Search Effect. Limited search for information about competitors (due to the high perceived costs of information or the difficulty of analysis; cf. Day and Nedungadi 1994; Jaworski and Wee 1993) restricts a firm's ability to anticipate competitive actions and reactions. What is more significant, however, is that such limited search (which has been observed widely in a consumer behavior context; cf. Moorthy, Ratchford, and Talukdar 1997; Urbany, Dickson, and Wilkie 1989) may be endemic and enduring in the competitor analysis context (cf. Cohen and Levinthal 1990; Urbany and Montgomery 1998). This inertia results in historically valued information dominating decisions while information that has not been valued gets "locked out" of the decision process. Due to limited consideration of competitor reactions in decision making in the past, firms may fail to gather or consider competitive information, making it very unlikely that competitive reactions will ever enter the company's decision calculus. The persistent nature of this problem was reflected in the concerns of a research director from a well-known (and sophisticated) consumer products firm:

> . . . it's a lesson which keeps slapping us in the face all the time. We see an attractive category where we believe we can knock their socks off and then we get burned (by competitive reactions).

This manager expressed amazement at how the firm failed to recognize and anticipate competitive reactions when they themselves would always respond forcefully when attacked by a rival in an important market.

The Discounting Effect: Information. When information is available for a decision, it is well known that prior beliefs or experiences have significant effects on interpretation of new information (Hoch and Deighton 1989). Our contention here is that this tendency is exacerbated by uncertainty. To the extent that there exists uncertainty in information about (or a prediction of) a decision factor, more latitude exists for self-serving interpretations of new information about that decision factor. One 20-year competitive intelligence professional in a major firm provided a case in point:

> A true (horror) story: three years ago, there was overwhelming (and fairly hard) evidence that a major Japanese competitor was gearing up to take a major part of a business in the U.S., using price, advertising and a hugely enhanced salesforce (i.e., short-term pain for long-term gain). . . . The evidence included things like:

- ❒ The competitor was building a factory in the U.S.

- ❒ Evidence from past behavior showed that making a profit out of that factory was not a priority in the short term.
- ❒ A number of fiery speeches from the competitor's top management (including "having been a distant runner in the race, we can now see the numbers on their backs").
- ❒ Many salespeople from the target company and other competitors were rushing to join this competitor.
- ❒ The gain (by the competitor) of one of the target's largest customers, using price.

This was presented to management at several levels of the company, in what the CI team thought was an easy-to-grasp form (short, pithy, etc.). While the CEO and some others "got it," the business unit manager concerned flatly refused to believe it, citing a quote from a newspaper by a lower level U.S. employee of the competitor that they were not going to use price as a weapon. And because of his strong personality, his underlings dared not accept the findings either. I can't say it was very satisfying for the CI unit to be right in this type of example. That manager is no longer there.

The Discounting Effect: Decision Weights. Managerial decisions can be conceptualized in a manner consistent with classic expectancy value models of decision making, e.g., in which alternatives are assessed either explicitly or implicitly on several decision factors or attributes. Specifically, such models portray the utility of a decision alternative to be a function of its ratings on several factors and the importance of those factors. We suggest that even if information about a decision factor is available and predictions are made, it is still possible that decision makers may distort or discount the importance weight placed on that factor due to uncertainty. The consistent pattern observed in our studies was that the decision factors assessed with greater certainty (particularly those categorized as internal factors) received substantially greater weight in decision making. So, even given the availability of information about competitor behavior, and general agreement on the odds of a competitor reaction, the possibility still exists that competitor reactions will be underweighted in decision making relative to factors that are measured and estimated with greater precision.

Implications

One obvious managerial implication of the research is that many firms may be able to improve decision performance by enhancing the value or reducing the costs of competitive intelligence. It is important to note that the value of competitive research may often become self-evident when firms finally do take steps to incorporate it into decisions. Two of the expert respondents stated:

> Most North American executives are not very competitor-oriented or competitive intelligence "savvy." However, after appropriate intelligence education/orientation they quickly adjust to competitive issues and the use of business intelligence and, in my experience, become more sensitive to the competitive dimension of their own business decisions and actions.
>
> *—President, marketing consulting*

> . . . it is also my experience that once decision makers are exposed to good CI and the impact it can have on improving the quality of the decisions one makes about the business, they will use and value CI.
>
> *—Head of competitive intelligence, petroleum*

While the high perceived cost issue is not unimportant, our results suggest that operating on low perceived value may have greater payoff potential. Ideas for improving perceived CI value include:

1. *Increase "top-down" attention to competitive analysis.* One anecdote has it that at GE, a regular Friday afternoon conference call on competitive intelligence in each business gathered hundreds of managers to discuss competitive developments. How does one gather so many busy managers at such a regular interval? CEO Jack Welch was there on every conference call. Such a top-down commitment raises significant attention to competitive information gathering and sharing. We doubt that the CEO needs to be involved so directly and so regularly for such efforts to be effective. Merely adding "competitors" to the list of items that are regularly discussed may make a difference. Adding "anticipated competitor reaction" to the list of items to be considered as decisions are evaluated will certainly make the issue salient.

2. *Provide training in competitor analysis with examples for executive teams.* Anecdotes such as the two above could be used to raise the consciousness and shared vision of an executive team regarding the role of and payoff for anticipating competitor reactions. Exercises and experience in "walking in the competitor's shoes" (Moore and Urbany 1994) can also help. For example, the knowledge that the great Brazilian soccer star Pele used to practice as a goalie in order to better understand his immediate competitor can serve as inspiration to executives to walk this competitor walk. Further, Reibstein and Chussil (1997) relate how a Mexican pharmaceutical company correctly anticipated a U.S. company's market entry and preempted that competitor's best entry strategy via having role-played that competitor in an executive seminar.

3. *Reduce the costs of gathering and analyzing competitive information*. Competitive intelligence is often difficult and time-consuming to gather. Hiring experienced research analysts can substitute for the manager's time and effort. Alternatively, assembling teams (e.g., each focused on a particular competitor) to gather, analyze, and report likely competitive moves and reactions can spread the costs across people (Montgomery and Weinberg 1979). A systematic approach should ultimately help to make this easier. We know of one high tech company

that keeps a roster of everyone in the company who has requested information about a particular competitor. This list then becomes a prime source for future task forces developed to make a more in-depth assessment of that competitor. This information greatly reduces the time and financial costs of special competitor analyses.

4. *Reduce the cost of analysis*. Even with competitive information in hand, it may be difficult to predict competitive moves and to decide what to do given those likely moves. Again, experienced professionals can assist here. One obvious response could be to develop more quantitative metrics of competitive and customer behavior and link them to firm performance measures. This will certainly facilitate the inclusion of competitors in executive decision making. Unlike customer value (which has proved to be quantifiable) and estimates of market demand (uncertain, but quantifiable), however, very often "likely competitive moves" are not subject to particular metrics, as such forecasts are often subject to differences of opinion. Yet one starting point would be to undertake an historical analysis for particular markets, to map out the series of past moves it has undertaken, to identify the responses of the competition (which may exist on several levels, including timing, reaction context, and degree; Venkataraman, Chen, and MacMillan 1997), and evaluate if and how those responses influenced the firm's outcomes.

We know of one retailer in the 1970s that developed performance metrics relative to competitors. If the firm did well, but competitors did even better, managers would receive lower performance ratings and bonuses. Similarly, if the firm did less badly in contrast to competitors during a down economy, executives would be rewarded accordingly (Montgomery and Weinberg 1979).

Research Directions

In the sections above we have specified three critical research issues regarding information search and decision making: how uncertainty influences (1) individual and organizational information search, (2) the discounting of conclusions reached from information obtained, and (3) the weight placed on uncertain decision factors relative to other decision factors that are assessed with greater certainty. More generally, research is needed on the conditions under which competitor anticipation is important and when competitor reactions can be safely ignored. Further, we need to identify and calibrate the antecedents and consequences of competitive paranoia and being blindsided. A wide variety of industry, firm, and individual factors may influence the extent to which managers attend too much or too little to competitive behavior. Further, in our globalizing economies, research into similarities and differences in competitor response between different countries, cultures, and regions will increasingly become important, both to theory and managerial practice. Finally, we need to develop and implement strategies and methodologies to counterbalance the managerial tendencies suggested in this study, particularly in conditions where it is most dangerous to ignore competitive response.

Tremendous opportunities exist to address a general problem that plagues many firms today—how do you get the right information to the right people at the right

time (and get them to use it)? Our discussions with executives in this study suggest that developing a greater understanding of competitive reactions is paramount and can have a significant impact on firm decision making. What is needed is further exploration into how to remove the blinders.

We would also like to second Laurent's (2000) appeal to devote a part of the future marketing science research portfolio to enhancing the external validity of marketing models. We hope that the research presented here might modestly contribute to that objective, as it has provided insight into the genesis of recent empirical analyses suggesting limited competitive response (Dekimpe et al. 2001 and Srinivasan and Bass 2001).

Notes

1. Although the Cournot model is a staple for basic economic textbooks, it has received much criticism over the years, primarily about its apparent naivete regarding zero conjectural variation (i.e., competitive response functions with slope zero reflecting no response). Kamien and Schwartz (1983, pp. 193-4) summarize these criticisms as follows: (1) firms in a Cournot game should begin to recognize over time that their output decisions do influence rivals' output decisions (for an early view, see Fisher 1898); (2) there is a logical inconsistency in that firms should conclude by looking at their own response functions that it is optimal to respond to rivals' actions, yet assume rivals will not react to their actions; (3) zero conjectures leads to an equilibrium where profits can be increased via cooperation; (4) the assumption of zero conjectures leads to different conclusions depending upon whether price or quantity is the decision variable; and (5) empirical studies have shown that some industries exist in which conjectural variations are non-zero. At the same time, the Cournot model continues to provide the foundation for discussion of oligopolistic competition. We later consider why the model continues to have merit, at least descriptively.

2. We classify this general category under "costs from Type III thinking" for this reason. We acknowledge, however, that such biases may lower the returns from Type III thinking as they prevent managers from recognizing the value of thinking more strategically.

3. MacMillan, McCaffery, and Van Wijk (1985) produce an R^2 of .67 in explaining response lag to easily imitated new products, although their results are an anomaly in this literature. The 1985 research was a first-of-its kind study in which the independent variables were estimated after the fact by an industry expert (one of the authors) who was familiar with the products on the market. It may have been difficult for this expert to separate his knowledge of the industry from his knowledge of response lags. Correlations between the dependent variable (lag time) and the independent variables were extremely high, ranging in absolute value from .33 to .75. Interestingly, the reason that the authors could not obtain ratings of the independent variables from product managers is that "product managers had difficulty in rating products other than their own" (p. 79), which ironically suggests that managers would be unable to predict competitive reactions using MacMillan, McCaffery, and Van Wijk's framework.

4. In several of the interviews, respondents discussed the pricing of a new product. When pricing received the predominance of discussion, these cases were categorized as pricing decisions.

5. This *Z*-test determines whether the proportion of respondents who did not mention EFR (expected future reactions of competitors) in the retrospective

question but did later mention EFR in the retrospective (13 percent) is significantly different from 0.

6. For just the seven subcategories under the title "Low Perceived Returns" the Pearson correlation is .90 with $p < .005$, the Spearman rank order correlation is .89 with $p < .003$, and the Kendall Tau-B rank order correlation is .81 with $p < .005$.

7. The list shown to Study 2 executive respondents was, from top to bottom—in descending order of their occurrence in studies 1A and 1B—internal company factors, customer factors, demand, past or current competitor behavior, expected future competitor behavior, and expected competitor reactions.

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