

## Competitive dynamics research: An insider's odyssey

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**Abstract** This paper introduces competitive dynamics research, a body of work that has emerged in the strategic management field over the last two decades. I will focus on my scholarly pursuit—both the substance and the process—during the early years of my faculty career. I will use my twelve core publications written during this period to outline the entire research program, highlight the makeup of each of the four sub-streams of the program, and show how these streams are linked. I will also share my personal learning in the process of building this research program. The paper aims to convey some firsthand experience for researchers and scholars, especially those starting in their careers and international scholars who are interested in publishing in major U.S.-based journals, so they can construct their own research programs and cope with the manifold process challenges in research and publishing.

**Keywords** Competitive dynamics · Research · Strategic management · U.S.-based journal · Publishing

### Introduction

In a recent professional development workshop, hosted by the Asia Academy of Management, at the 2007 Academy of Management National Conference in Philadelphia, I posed the following questions to provoke participants' interest and imagination: If you have observed a company pursuing a strategy of being number 11,

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This paper is dedicated to Donald C. Hambrick, a mentor, friend, and colleague who recruited me to join Columbia Business School, where my early competitive dynamics work was produced. I would like to thank John Michel, Ken Smith, Hao-Chieh Lin, and Sheng-Tsung Hou for their valuable comments on an earlier draft of this paper. Financial support from the Darden Foundation, University of Virginia, is acknowledged.

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as I have in China, what research question(s) would you ask? How would you design a study to explore this phenomenon? How would you develop a research program?

This paper introduces competitive dynamics research, a body of work that has emerged in the strategic management field over the last two decades (Smith et al., 2001). I will focus on my own scholarly pursuit—both the substance and the process—during the early years of my career. In addition to presenting the research program itself, I will also share my personal learning in the process of developing my research and building the program.

The paper aims to articulate this emerging line of inquiry from a programmatic viewpoint. It intends to convey some firsthand knowledge and experience for scholars who are interested in this topic. In addition, I also hope to share my experience in building the research process with researchers and scholars—especially those in the early stages of their careers and international scholars interested in publishing in major U.S.-based management journals. My hope is that this paper will help them construct their own research programs and pipelines, and in doing so they will be assisted in coping with the manifold challenges of the process that can arise in researching and publishing.

### The research program

Competition is a central element of strategy. Yet, little research has been done to move beyond a simple and static characterization of competition—much work relies on approaches such as industry-structure analysis—toward a detailed analysis of competitive-behavioral patterns. My research has addressed such fundamental strategic questions as: How do firms compete? Why do they compete in certain ways? How do their competitive behaviors relate to organizational performance?

In contrast to the approaches traditionally taken to study these issues, my research approach is rooted in the competitive actions of a firm.<sup>1</sup> The intellectual seeds of this approach, though I was unaware of them when I first began my research, can be traced to the idea of Schumpeter (1950) of creative destruction, which is used to explain the dynamic market process by which firms act and react in the pursuit of market opportunities. Creative destruction is hence defined as the eventual—and inevitable—decline of firms through the process of competitive action and reaction. Similarly, the Austrian School (Mises, 1949; Jacobson, 1992) considered competition as a dynamic market process rather than a static market condition. Entrepreneurial discovery, according to this school of thought, is the action of successfully directing the flow of resources toward fulfillment of customer needs when opportunities arise. The conceptualization of Caves (1984) of competitive advantage provided recent treatment of this subject.

In the strategic management field, early interest in this topic includes such work as MacMillan et al. (1985) small-sample study of responses to a banking innovation,

<sup>1</sup> Parallel to my own research, a group of researchers at my alma mater, the University of Maryland, led by my dissertation supervisor Ken Smith, also developed a series of studies on competitive dynamics during this time, including Smith et al. (1992), Smith et al. (1997), and Ferrier (2001). The competitive-dynamics research that has emerged over the last two decades is the result of our collective efforts.

and Bettis and Weeks' (1987) case study of competitive interactions between Polaroid and Kodak.

Using the individual competitive move as the basic unit of analysis, I have integrated ideas and theories from an array of disciplines to develop new theories, variables, and measures at this level. Starting with my doctoral dissertation on predicting competitive responses (Chen, 1988), my research in the early years of my career (1989–1997) explored four distinct cohesive-research themes, each of which has contributed to my understanding of strategy and the behavioral dynamics of competition. These themes are: (1) the action/response dyad; (2) firm- (business-) level competition; (3) theoretical and methodological concerns; and (4) corporate-level competition. Table 1 lists the 12 core publications that form the basis of my discussion in this paper. Figure 1 outlines the whole research program, highlights the makeup of each theme or research stream, and shows how these four streams are linked.

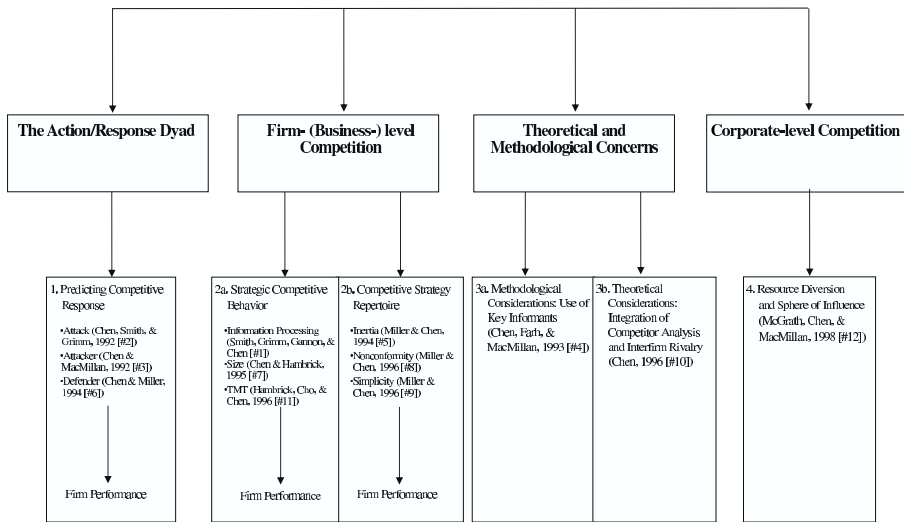
### The action/response dyad

Using the action/response dyad as the unit of analysis, my research began by highlighting the importance of response in competitive dynamics and by examining

**Table 1** List of core papers.

1. "Organizational information—processing, competitive responses and performance in the U.S. domestic airline industry" (Smith, Grimm, Gannon, & Chen, 1991, *Academy of Management Journal*) [82 SSCI citations]
2. "Action characteristics as predictors of competitive responses" (Chen et al., 1992, *Management Science*) [70 SSCI citations]
3. "Nonresponse and delayed response to competitive moves: The roles of competitor dependence and action irreversibility" (Chen & MacMillan, 1992, *Academy of Management Journal*) [68 SSCI citations]
4. "An exploration of the 'expertness' of outside informants" (Chen et al., 1993, *Academy of Management Journal* Special Research Forum on Methodology) [29 SSCI citations]
5. "Sources and consequences of competitive inertia: A study of the U.S. airline industry" (Miller & Chen, 1994, *Administrative Science Quarterly*) [117 SSCI citations]
6. "Competitive attack, retaliation and performance: An expectancy–valence framework" (Chen & Miller, 1994, *Strategic Management Journal*) [55 SSCI citations]
7. "Speed, stealth, and selective attack: How small firms differ from large firms in competitive behavior" (Chen & Hambrick, 1995, *Academy of Management Journal*) [80 SSCI citations]
8. "Nonconformity in competitive repertoires: A sociological view of markets" (Miller & Chen, 1996b, *Social Forces*; 1995 *Academy Best Papers Proceedings*) [12 SSCI citations]
9. "The simplicity of competitive repertoires: An empirical analysis" (Miller & Chen, 1996a, *Strategic Management Journal*; The 1993 Glueck Best Paper Award and 1993 *Academy Best Papers Proceedings*) [40 SSCI citations]
10. "Competitor analysis and inter-firm rivalry: Toward a theoretical integration" (Chen, 1996, *Academy of Management Review*; 1996 *Academy of Management Review* Best Paper Award; 1995 Glueck Best Paper Award; 1995 *Academy Best Papers Proceedings*) [103 SSCI citations]
11. "The influence of top management team heterogeneity on competitive moves" (Hambrick et al., 1996, *Administrative Science Quarterly*; 1994 *Academy Best Papers Proceedings*) [143 SSCI citations]
12. "Multimarket maneuvering in uncertain spheres of influence: Resource diversion strategies" (McGrath et al., 1998, *Academy of Management Review*) [21 SSCI citations]

Social Science Citation Index (SSCI) count, up to 2007, for each paper is in brackets.



**Figure 1** Competitive dynamics research program

the predictors of response. This focus is of theoretical consequence because it is at this level that competitive engagement occurs. Before this pioneering work, the action/response dyad level had not been used in strategy and organizational studies as a focal point for analysis. The study of competition has been at the level of firm (Dess & Beard, 1984), strategic group (Cool & Schendel, 1987), industry (Porter, 1980), and community or population (Freeman et al., 1983).

*Predicting competitive response* Working with a number of colleagues, including Ken Smith and Ian MacMillan, I have completed four studies on this topic, including publications in *Academy of Management Journal* (AMJ—Chen & MacMillan, 1992 [#3]), *Management Science* (MS—Chen et al., 1992 [#2]), and *Strategic Management Journal* (SMJ—Chen & Miller, 1994 [#6]). This work has contributed to the development of a coherent theory of predicting response in competitive dynamics.

Using a diverse set of theoretical perspectives (e.g., expectancy-valence theory and game theory), we first directed our efforts toward conceptualizing and measuring key attributes of competitive response: the likelihood, the number, and the speed of responses, and the extent to which the response matches the initial action. We then showed empirically that these attributes of response are functions of three different types of characteristics: (a) the attributes of the attack (e.g., visibility or the degree of industry attention and implementation difficulty or the amount of effort and time required for execution, per Chen et al., 1992 [#2] and Chen & Miller, 1994 [#6]); (b) the characteristics of the attacker (e.g., the degree of organizational commitment to the attack, contributing to its irreversibility, per Chen & MacMillan, 1992 [#3]); and (c) the characteristics of the defender (e.g., competitor dependence or the defender's stake in the market under attack, per Chen & MacMillan, 1992 [#3]). The research also demonstrates the performance implications of competitive interactions (per Chen & MacMillan, 1992 [#3] and Chen & Miller, 1994 [#6]).

These studies have shown, for instance, that strategic (as opposed to tactical) actions, as well as those that require lengthy execution time and those that are less visible, tend to reduce the number (Chen et al., 1992 [#2] and Chen & Miller, 1994 [#6]) and speed of rivals' responses (Chen & MacMillan, 1992 [#3]). Second, both competitor dependence and action irreversibility are significant predictors of response, and they also interact in affecting response (Chen & MacMillan, 1992 [#3]). When attacked in their key markets, competitors in general tend to act decisively (i.e., high likelihood of response, per Chen & MacMillan, 1992 [#3]) but slowly to signal their willingness to defend their stake and, at the same time, show their desire to avoid escalation. If an attacker makes an irreversible move against a defender's key markets, however, the defender is likely to react both decisively and swiftly, to signal toughness and to defend its reputation. Third, competitive interactions have direct implications for performance, as evidenced by market-share gains by attackers and early responders (Chen & MacMillan, 1992 [#3]). There also appears to be a real incentive to minimize competitors' retaliation, given its negative association with performance (Chen & Miller, 1994 [#6]).

#### Firm- (business-) level competition

Unlike the first research stream outlined above, the focus here is on firm-level examination, although both streams share the common thread of using the individual competitive move as the building block of competition. All the data used in this second stream of research were aggregated and derived from arrays of competitive moves that firms undertake in engaging their rivals over time. The overall theme is the investigation of organizational and external factors affecting a firm's strategic competitive behaviors and competitive strategy repertoires as well as the ensuing performance outcomes.

*Strategic competitive behaviors: Antecedents and outcomes* This line of work, which resulted in two *AMJ* papers (Smith et al., 1991 [#1]; Chen & Hambrick, 1995 [#7]) and one *Administrative Science Quarterly (ASQ)* paper (Hambrick et al., 1996 [#11]), attempted to capture strategic behaviors directly from a systematic analysis of the attributes characterizing firms' actual competitive actions and responses. Through this lens, important behavioral properties of the firm such as propensity for action, responsiveness, action (or response) execution speed, and action (or response) visibility have been brought—for the first time in the management literature—sharply into focus. Drawing on multiple theoretical perspectives (e.g., upper-echelons theory, information-processing theory, and institutional theory), the research empirically demonstrated the significance of firm size (Chen & Hambrick, 1995 [#7]), the firm's information-processing capacity (Smith et al., 1991 [#1]), and the firm's top-management-team (TMT) characteristics (Hambrick et al., 1996 [#11]) in explaining the competitive behaviors of the firm, which, in turn, have important implications for performance.

As an example, in an *AMJ* paper (Chen & Hambrick, 1995 [#7]), Donald Hambrick and I tested for the first time an array of long-held suppositions about the distinctive behaviors of small firms in an industry. The study found that small firms differ significantly from large firms in their competitive behaviors: First, small firms

tend to initiate more attacks and are relatively fast in execution, yet remain low-profile in their attacks (approximating guerrilla behavior). Second, small firms when under attack are less likely to respond and are slower in execution. Third, firms perform well to the extent that their competitive behaviors adhere to the typical behaviors for firms in their size group: Deviations from size-group patterns (e.g., a small airline behaving like a large airline) tend to impair performance.

*Competitive strategy repertoire* A set of three papers, published with Danny Miller in *SMJ* (Miller & Chen, 1996a [#9]), *ASQ* (Miller & Chen, 1994 [#5]), and *Social Forces* (*SF*—Miller & Chen, 1996b [#8]), conceptualized competitive strategy as a repertoire of microcompetitive behaviors. A firm's competitive repertoire is made up of the entire range of its competitive moves (e.g., new market entries, major price initiatives). This conceptualization differs fundamentally from approaches previously adopted by most strategy researchers, including Porter's well-known generic strategies of low-cost/differentiation focus. It is, however, in line with a long-held view of strategy as a consistent pattern of decisions (Mintzberg et al., 1976).

Certain vital firm attributes thus can be teased out from the study of competitive repertoires: overall activity level (or inertia, per Miller & Chen, 1994 [#5]), diversity of the types of moves (or simplicity, per Miller & Chen, 1996a [#9]), and degree of departure from industry norms (or nonconformity, per Miller & Chen, 1996b [#8]). By using the repertoire approach, the research offers new conceptualization of these three critical theoretical constructs, which have traditionally fallen within the realm of organization theorists and sociologists but which also have great promise for strategy and organizational studies. It integrates market-level variables (e.g., diversity and growth) with firm-level variables (e.g., size and age) in explaining these three key constructs, which, in turn, are shown to have important performance implications. As an example, the *ASQ* paper (Miller & Chen, 1994 [#5]) studied competitive inertia, defined as a firm's level of overall competitive activity and found that poor past performance is followed by low levels of inertia in tactical actions (but not in strategic ones), suggesting that poor performance may induce tactical changes, as these are easier to make.

## Theoretical and methodological concerns<sup>2</sup>

*Theoretical considerations: Integration of competitor analysis and interfirm rivalry* Competitor analysis has been an important subject in strategy and organizational studies. But previous research has tended to focus on static strategic profiles or firm capability through analyses such as SWOT (strength–weakness–opportunity–threat), which often have little bearing on actual competitive behaviors. To address this concern, my *Academy of Management Review* (*AMR*) paper (Chen, 1996 [#10]) proposed two firm-specific, theory-derived constructs: market commonality, developed from the literature on multiple-point competition (Kamani & Wernerfelt, 1985), and resource similarity, derived from the resource-based theory of the firm (Barney, 1991).

<sup>2</sup> To show the evolution of the core papers, Exhibit 2 first lists “Methodological Considerations” (3a) and then “Theoretical Considerations” (3b), when presenting the theme of “Theoretical and Methodological Concerns.”

The premise is that each firm has a unique market profile and strategic-resource endowment and that a pair-wise comparison with a given competitor along these two dimensions helps to illuminate the tension between the two firms and predict how they might interact in the market.

The joint consideration of these two constructs points to three essential antecedents that affect a firm's competitive activity: its awareness of the other firm's move, its motivation to act (or respond), and its capability to act (or respond). For example, it is proposed that the greater a rival's market commonality with a focal firm, the less motivated that rival will be to initiate an attack against the firm for fear of retaliation across multiple markets, and the greater a rival's resource similarity with an attacking firm, the greater its capability of responding to that firm's attack.

The integrated consideration also illustrates the complementarity of the two prominent but contrasting strategy theories and suggests a set of propositions that link market commonality and resource similarity to interfirm rivalry or the likelihood of action (and response). This theory also advances the idea of competitive asymmetry, which holds that two firms facing exactly the same market conditions may view each other and their competitive relationships differently.

Applying the seminal work of Tversky (1977) on the features of similarity, which argues that the commonly accepted symmetry axiom underlying the metric distance function is not valid in capturing the concept of similarity—that is,  $d(a,b) \neq d(b,a)$ —Chen (1996 [#10]) further proposes that the competitive relationship between firms (either market commonality or resource similarity) is not symmetrical. The concept of competitive asymmetry is likely to explain behavioral and performance variations in sequences of competitive exchanges and suggests ways of going beyond assumptions of homogeneity and smooth flows of information in explaining competitive dynamics.

The paper also represents an important theoretical corrective. The resource-based view of the firm, which focuses inwardly on the firm's unique endowments, has within a very short period of time risen to become a prominent approach in the field of strategic management, in much the same way that Porter's paradigm, which focused on external market forces, influenced the field during the 1980s. This study integrates both firm and market perspectives, the internal and the external, in a timely reminder that maintaining a balanced focus is the ultimate challenge of strategic-management research.

*Methodological considerations: Use of key informants* An important issue in my research involves use of industry and executive informants in measuring attributes used to capture firm behavior at the level of individual competitive move. I explored this issue in a paper published in *AMJ's* Special Research Forum on Methodological Issues in Management Research (Chen et al., 1993 [#4]). This paper empirically examined the expertness of several groups of outside informants (those not employed in the firm being studied) in assessing the characteristics of actual competitive moves taken by firms, in terms of interrater reliability and the accuracy of ratings compared to those provided by inside senior executives. The results I found were that security analysts were the most accurate and highly reliable, and informed academics were highly reliable and as accurate as consultants and stakeholders (e.g., suppliers and regulators). This research is quite significant to

empirical researchers, as outside informants have been used extensively in organizational research, yet the degree of their expertise has rarely been assessed.

### Corporate-level competition

My second *AMR* paper (McGrath et al., 1998 [#12]) extended the above paradigm, which applies mainly to the business level, to theorize corporate-level competition. The paper proposed that a firm's resource allocations can divert rivals' resource allocations, thus enhancing the firm's own sphere of influence without precipitating an all-out competitive war.

McGrath et al. (1998 [#12]) puts forth the idea that firms competing in multiple markets find equilibrium through spheres of influence and mutual forbearance, but imperfect competitive information may give one firm an incentive to influence rivals' behaviors and uncover information. In this case, the allocation of resources across different lines of business and industries may be used in place of destructive head-to-head competition. The paper defined and conceptualized the stratagems *thrust*, *feint*, and *gambit* and concluded that corporate strategy decisions can only be imperfectly understood if competitive interaction is not taken into account. As an example, the gambit occurs when Firm A withdraws resources from Y (an arena of importance to Firm B) in order to divert B's resources to this arena. By purposefully and visibly retreating from its position in Y, A is seeking to entice B to divert resources that B could otherwise devote to A's target arena X. The organization and market factors are used to predict the likelihood when each of these three stratagems can be used.

### Contributions to the field of strategic management

In the rapidly evolving field of strategic management during this era (Hambrick & Chen, 2008), I have made an effort to put my own and others' ideas to the empirical test and ultimately to develop new concepts and build a coherent theory of competitive dynamics and rivalry to facilitate further empirical investigation. In a field that stands at the confluence of numerous other disciplines (Nag et al., 2007), I have striven to be both a boundary spanner and a bridge builder by drawing from fields as diverse as organizational theory and behavior, sociology, industrial organization economics, and game theory—without losing sight of strategic management's unique emphasis on the perspective of the general manager. The ideas I have developed provide essential links between the field's past emphasis on industry-level constructs (such as market structure) and firm-level constructs (such as inertia). Specifically, I believe that the four strains in my work summarized below are central to the development of the field.

#### Transient competitive advantage

My approach has been to examine competition on the basis of firm-specific, path-dependent, managerially relevant variables, using the action/response dyad as the nexus of analysis. This approach has fundamentally influenced the way the field of



strategy conceives of competitive advantage. I have worked to move the field from a model of static, sustainable competitive advantage to a conceptualization of advantage as temporary and punctuated by moves and countermoves. My work presents empirical evidence, through a wide range of studies using a large-scale database, for the notion of Schumpeter (1950) of creative destruction, where firms act and react to pursue market opportunities, and their actions and reactions determine their long-term survival and performance. It also provides empirical support for the Austrian School that considers competition a dynamic market process rather than a static market condition and a process by which the market moves toward and away from equilibrium, rather than equilibrium per se (Jacobson, 1992).

Today, in many industries, especially global ones, competition changes the parameters too quickly for traditional oligopolistic strategies to generate substantial rent streams, and any competitive advantage gained must be regarded as transient. Within increasingly competitive environments, we need to begin to understand competition on the basis of the nature of the move, who makes it, how it is perceived, etc. The key point is that it is moves and countermoves and not fortified competitive positions that shape a firm's idiosyncratic performance outcomes. The basic premises taken in my research have been adopted and popularized by such scholars as D'Aveni (1994, 2001), Baum and Korn (1996), Gimeno (1999), and Ferrier (2001).

### Irreversibility

My research has drawn explicit attention to the issue of irreversibility. My *AMJ* paper (Chen & MacMillan, 1992 [#3]) was one of the early studies to argue that irreversibility extends well beyond those tangible economic investments and capital assets emphasized in previous research (Ghemawat, 1991), to include more broad organizational, psychological, and socio-economic sources. We expanded the conceptualization and introduced seminal work in organization theory (such as the escalation of commitment by Staw 1981) into the study of interfirm rivalry and competition. This expansion is in direct contrast to the previous approach, which tends to consider irreversibility as a unitary construct. In a companion study (Chen et al., 2002), we identified two kinds of irreversibility: internal (e.g., the amount of interdepartmental coordination required for execution) and external (e.g., the degree of top management's public endorsement for the move), and we found that the former tends to escalate competition, while the latter tends to have exactly the opposite effect.

More important, almost all the key constructs highlighted in the studies of strategic competitive behavior in varying degrees represent manifestations of irreversibility. Firm heritage, such as size (Chen & Hambrick, 1995 [#7]), structure (Smith et al., 1991 [#1]), top management characteristics (Hambrick et al., 1996 [#11]), as well as firm repertoire (inertia (Miller & Chen, 1994 [#5]), nonconformity (Miller & Chen, 1996b [#8]), and simplicity (Miller & Chen, 1996a [#9])) may all influence the path-dependence of a firm. Each strategic action undertaken by a firm is constrained by prior moves and, in turn, delimits future moves. Past investment and commitment will constrain a firm's range of strategic options in the future, as

well as shape its capability and performance in creating and adding value. The main implication of much of my work is that competition is not frictionless, nor is it commenced *de novo* in any new situation, and history imprints itself on all competitive actions.

### Predictive theory of microcompetitive behavior

In an emerging field such as strategy, the empirical testing of theories is not only an end unto itself but also a way of further building the theories that will guide the field's future development. The unifying direction of my work, as shown in my first *AMR* paper (Chen, 1996 [#10]), is toward the building of a predictive theory of microcompetitive behavior. Past strategic theories have helped elucidate, in a general way, the dynamics of a given industry. My work attempts to go beyond these theories to predict, in a given competitive context, which actions are likely to occur, which are likely to lead to successful results, and what impact managerial choice may have on such firm performance.

The *AMR* paper (Chen, 1996 [#10]) provides a critical theoretical framework for integrating a wide range of empirical studies that explain competitive behaviors and predict rivalry between firms. This paper has stimulated a number of theoretical and empirical studies, including the dyadic examination of dynamic competition by Baum and Korn (1996), the extension of the competitor-analysis framework to include customers by Peteraf and Bergen (2003), the investigation of interfirm rivalry in human resources by Gardner (2005), the study of asymmetrical rivalry between strategic groups by Mas-Ruiz et al. (2005), the empirical verification of the existence of competitive asymmetry using consumer-survey data by DeSarbo et al. (2006), the study of market and resource antecedents of rivalry among MNCs by Yu and Cannella (2007), and the theorization of factor-market rivalry by Markman et al. (2008). The three antecedents of competitive behaviors advanced in this paper have been integrated and formalized into the awareness–motivation–capability (AMC) perspective (Chen et al., 2007; Yu & Cannella, 2007).

### Methodology and measurement

The methodology used in this research represents, in itself, a unique contribution to the field—a feature that has earned recognition for the creativity and rigor of this research stream. As a researcher who is committed to putting theory to the empirical test, I have been concerned with the methodological and measurement issues in studying competition. My work is distinctive in that all the research, including the two theory papers (Chen, 1996 [#10] and McGrath et al., 1998 [#12]), is amenable to operationalization, measurement, and empirical examination. This distinction renders contributions of this line of work valuable and interesting. The innovative contributions and rigorous standards have also set a benchmark in the field, changing expectations about research on this subject. Thus, in addition to their substantive contributions, all the papers may serve as important methodological guides. More important, the findings of my prior empirical studies all contribute toward building a coherent theory of competitive dynamics and interfirm rivalry, as evident in the two theoretical papers.

To accomplish demanding empirical objectives, an extensive database, incorporating all major competitive moves made in the airline industry over an eight-year period, was painstakingly created through detailed content analysis of the industry's most thorough and well-respected publication. Serious efforts were also made to verify the comprehensiveness and reliability of the data source, as well as to explore such questions as the attributes of competitive moves (see methodological details in Chen & Hambrick, 1995 [#7]). The field of strategic management had historically been held back by a lack of large-scale, reliable data and by the shortage of appropriate methodologies for studying the dynamics or interactive nature of competition. The research has surmounted these problems. The selection of the concrete, specific competitive move as the linchpin of my research represents in itself a methodological breakthrough. It is at this analytical level where the study of competitive dynamics becomes most fruitful, where strategic competitive behavior is most reliably captured, and where the analysis of competitors becomes most pertinent. Subsequent scholars (e.g., Baum & Kom, 1996; Gimeno, 1999; Ferrier, 2001) have directed their attention to the action/response and/or individual-action level and delved deeply into the study of, for instance, market entry/exit.

### Some tangible outcomes

Collectively, my core competitive-dynamics work has produced some encouraging results. My dissertation (Chen, 1988) is regarded as the starting point for taking a dynamic (or interactive) approach to studying competition in the strategic-management literature, and over the years, this line of research has generated more than 30 publications in leading management journals and examined over 40 industries (Smith et al., 2001). My work during this period has twice received the Glueck Best Paper Award (1993, 1995), the highest research distinction given by the Academy of Management's Business Policy and Strategy Division, as well as one *AMR* Best Paper Award (1997). Early drafts of four of these core papers have been included in the Academy's *Best Paper Proceedings*.

Table 1 also provides the Social Science Citation Index (SSCI) count of each of the 12 core papers. These papers have been cited a total of 822 times. The number of citations is evenly distributed with eight papers having been cited 50 or more times. My first *AMR* paper (Chen, 1996 [#10]) and the two papers on the well-researched topics of top-management teams (Hambrick et al., 1996 [# 11]) and inertia (Miller & Chen, 1994 [# 5]) have been cited more than 100 times.

Appendix 1 shows a partial report compiled by Arizona State University (led by William Glick) in the late 1990s, tracking scholars' publications in nine macro- and micromanagement journals. My 11 publications from the core set earned me a top-five ranking between 1990 and 1999 among all management scholars.

Chen (1996 [#10]) was recognized in 1997 with the *AMR* Best Paper Award (the 1995 version received the Glueck Best Paper Award). As shown in the Appendix 2, the *AMR* review committee commented: "This article merges two streams of research in strategy in a very imaginative way.... The article could change the way we see the competitive process.... It has all the ingredients of a major contribution. A unique contribution is its apparently paradoxical result. The author has found that the world of strategy is not symmetrical, and it takes insight and courage to pose

such a hypothesis. He/she is able to integrate the two major and, until now, competing paradigms in strategy. Either of these accomplishments would have made an outstanding contribution. Both in the same paper produce the award.”

Two widely used strategy textbooks (Hitt et al., 2007; Peng, 2006) draw heavily on the core ideas of my work. MBA and executive teaching sessions and programs, and cases and notes have been developed based on this stream of research. My research program was also used to design an advanced MBA seminar on competitive dynamics (see Figure 2 for the course design), and in these seminars, leading consulting firms have continued to use my work on competitor analysis and competitive dynamics.

### Reflections on the research process

Measurable and tangible results are certainly rewarding. I believe, however, that the most important and interesting advancements occur during the process leading to the outcome. I believe deeply in—and value most—the primacy of the process, and I derive the greatest joy from the challenges experienced in achieving the outcome. I have shared this important knowledge with strategy and management scholars throughout my career, and I continue to do so with the newest generation of researchers. Below are highlights of my learning during the process of developing these core papers.<sup>3</sup>

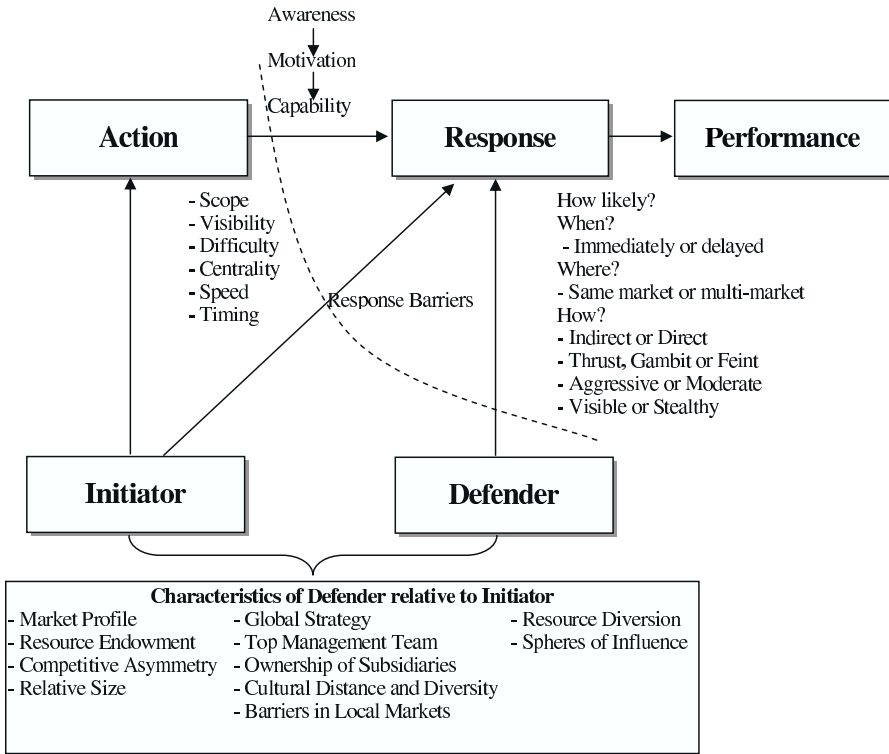
#### Conducting programmatic research

The first section of this paper and Figure 1 outline the research program. There are certainly practical reasons why one may want to conduct programmatic research: to stay focused, to maximize synergy and efficiency among various research projects, and to establish quickly one’s identity (and reputation) in the academic community, among other reasons. Let me add a few thoughts and reflections. Research breeds research: Like strategy, some research outcomes are intended, and others are realized (Mintzberg & Waters, 1985). Often the realized one is more rewarding. Second, one should consider each opportunity in light of the overall research program and avoid pursuing studies haphazardly, by constantly reexamining the relationship between one’s work and the development of the field. Conformity is not required—and perhaps it is better not to conform—but one should be aware of broad trends and of the center ground and how to contribute.

A coherent research program requires elaborating for depth and extending for breadth, as evident in Figure 1 by the lines that cut across the exhibit and by the arrows going down. To develop a research program, one needs to push simultaneously on both the breadth and depth fronts. One needs to think not only of the whole “forest” but also about the individual “trees.” With this breadth–depth

<sup>3</sup> Please see Chen (2008a, 2008b) for a detailed discussion of reflections and key lessons I have gained from the process of developing this research program.

**Competition: A dynamic and relative concept**  
*Dynamics: The exchange of moves and countermoves in an Action/Response Dyad*  
*Relativity: The pair wise comparison between a focal firm and a given rival*



**Beyond Competition: Competition-Cooperation Paradox**



**Self – Other Integration**

Customers, investors, partners, etc. are all different forms of “others”

**Note:** The above diagram provides one perspective and shows one link in the chain of the complex, fluid and iterative process of competitive dynamics.

**Figure 2** Competitive dynamics course design framework

or forest-tree consideration in mind, the core ideas and basic premises of this program have laid the ground for some recent extensions, including formal modeling (Hsu & Chen, 2007; as an expansion of 3a in Figure 1), competitive perception (Chen et al., 2007; Lin & Chen, 2008; as an integration of 3a and 3b), rivalry among multinational firms (Chen & Stucker, 1997; as a new substream in 4), and competition/cooperation (Chen, 2002, 2008a, 2008b; as an entirely new stream).

Among these extensions, Lin and Chen (2008) formalizes the construct of competitive readiness, the extent to which a firm is likely to engage with its rivals and to act (or react) swiftly in its engagements. Building on my *ASQ* paper (Hambrick et al., 1996 [#11]), Lin and Chen (2008) examines how competitive response mediates the effects of CEO decision power and TMT socio-behavioral integration on firm performance. Using data from surveys of more than 200 TMTs in Taiwan, it provides critical insights into the complex interplay among senior executives and highlights implications of key TMT process concerns regarding competitive behavior. This line of extension is particularly significant in the Asian context where powerful CEO leadership and collegial TMT social dynamics are both essential for organizational operation and success (Chuang & Lin, 2008; Chung, 2006; Westwood, 1997).

### Asking naïve questions

Table 2 highlights the core ideas that motivate each of the 12 papers. For example, in the competitive-strategy-repertoire stream (2b in the exhibit), we originally posed a very simple question: Can we conceptualize firm strategy as a repertoire of competitive moves? Based on that conceptualization, we raised another question: What are some attributes of competitive repertoire? From there, it led naturally into the study of competitive inertia (Miller & Chen, 1994 [# 5]), nonconformity (Miller & Chen, 1996b [# 8]), and simplicity (Miller & Chen, 1996a [# 9]), and with each of the corresponding questions shown in the exhibit.

In fact, my whole research program was initiated by one naïve question: What is competition? Economists and organizational theorists have asked this question for a

**Table 2** Asking a simple core question.

- 
1. Predicting competitive response
    - Can we predict competitive response (e.g., likelihood and speed) using characteristics of competitive action or attack (e.g., visibility and implementation difficulty)? (PhD dissertation and #2, *MS*, 1992)
    - Can we predict non-response (and delayed response) using attributes of the attacker (e.g., irreversibility) and defender (e.g., competitor dependence)? (#3, *AMJ*, 1992)
    - Can we predict competitive response using attributes of the attack and attacker? (#6, *SMJ*, 1994)
  - 2a. Firm/business-level competition
    - Can we predict defender's response using its organizational attributes? (#1, *AMJ*, 1991)
    - Can we explain differences between large and small firms in their competitive behaviors (actions and responses)? (#7, *AMJ*, 1995)
    - Can we explain a firm's competitive behaviors (actions and responses) using its top management team characteristics (e.g., heterogeneity)? (#11, *ASQ*, 1996)
  - 2b. Competitive strategy repertoire
    - Can we predict competitive inertia and its performance implications? (#5, *ASQ*, 1994)
    - Can we predict competitive nonconformity and its performance implications? (#8, *SF*, 1996)
    - Can we predict competitive simplicity and its performance implications? (#9, *SMJ*, 1996)
  3. Theoretical and methodological considerations
    - How can we compare expertise of different groups of outside informants in their evaluations of competitive moves? (#4, *AMJ*, 1993)
    - How can we re-conceptualize competitor analysis so it can be used to predict competitive dynamics? (#10, *AMR*, 1996)
  4. Corporate-level competition
    - How can we conceptualize rivalry between two multi-business corporations? (#12, *AMR*, 1998)
-

long time—in the case of the former, perhaps for more than 200 years. To answer this question, I conceptualized competition as the exchange of competitive actions and responses. Although this conceptualization is clear and simple, from a research viewpoint at that time it was a most challenging task. So the question becomes: What is competitive action, and what is competitive response? And methodologically, how can we identify a competitive response? In fact, I began this entire line of work with the study of competitive response. In my data collection, I traced from the response backward to the action. This set of considerations leads logically to the question: How can we characterize competitive action and response? From there, I raised a core question: What is the relationship between competitive action and response? This was the central issue of my dissertation and the focus of Chen et al., 1992 [#2] as well.

Similarly, the origin of my first *AMR* paper (Chen, 1996 [#10]) came from a critique I offered at a closely held, elite workshop at the New Jersey Shore, organized by Wharton in the fall of 1989, when I first joined the Columbia faculty. I was asked to critique the then-popular strategic group literature, which in that year alone produced 33 PhD dissertations (!). I posed a simple and naïve question to guide my analysis and critique: How useful is the strategic group approach for competitor analysis? My conclusion was that it is not that useful because it cannot predict actual competitor behaviors—the ultimate purpose of such an analysis. The feedback was harsh—“unkind,” even “mean,” in the words of one sympathetic host. This naïve question, however, planted the seed of a paper, which eventually followed a long path from its initial idea generation in 1989 until its submission to—and first-run acceptance by—*AMR* in 1995. The experience was indeed invaluable and momentous in shaping who I am as a researcher.

In summary, the research and publication process takes a long time, acceptance in premier journals is low, and the revision process is lengthy and challenging. But, it is my belief that the process can and should be managed. The way one manages the process will have significant implications for the paper and for one's learning, career, and most importantly, scholarship and humanity. The process is rewarding even (or perhaps especially) during the rejection and constant revision processes on the road to publication.

## Epilogue

To return to the discussion at the Asia Academy of Management's workshop, I would like to mention the following questions I posed to its participants.

1. Is China an emerging economy? Can we consider China an emerging market given that in nine out of ten centuries before 1800, China had at least 33% of global GDP adjusted by purchasing price parity, which is more than what the United States has today?
2. Should Chinese society be considered a collective culture, a classification that has been used widely (Hofstede, 1991, 2007)? As we all know, entrepreneurship has been central to Chinese history, and Chinese entrepreneurs have been dominant throughout Southeast Asian countries and now across the African

- continent. Yet entrepreneurship, by definition, is individualistic. How can we resolve this apparent paradox?
3. Can *guanxi* (the Chinese notion of connection and relationship) be built? Quite a few studies in the management literature have investigated this construct (Xin & Pearce, 1996; Farh et al., 1998; Peng & Luo, 2000; Park & Luo, 2001), yet very few have noted the striking differences it has with the Western concept of network. Given the “mindless” nature of this idea in its authentic sense (Chen, 2001), would it be more appropriate to use such terms as foster or nurture—instead of build or develop—to refer to this idea?
  4. Can we equate family business to business family? What’s the difference between the two? In Asia, what we have observed is perhaps the latter. So can we directly apply theories and findings developed from the former to explain the phenomena of the latter?

All these questions are simple and perhaps even naïve. But they are also fundamental and suggest some possibly profound implications for doing research in Asia. Each of them is researchable and amenable for program building, like my own competitive dynamics research. Indeed, we have interesting challenges ahead of us.

The experience I had in building a competitive dynamics research program reminded me of the two words my advisor in Taiwan, Professor C. K. Jiang (who was most instrumental in my decision to study in the United States), shared with me before I came to the United States: *determination* and *persistence*. I have taken these two words to heart.

In summary, my experience and learning journey in developing competitive-dynamics research can be captured in a personal credo I have shared over the years with future scholars and managers in various career-development workshops and programs: “Put yourself into the process (research, publication, job, career, and life), and the process will carry you through.”

## Appendix 1

**Table 3** Ranking by number of publications in premier management journals between 1990 and 1999.

Last name	First name	AMJ	AMR	ASO	JAP	MSC	OBHDP	OS	ROB	SMJ	Total
Zajac	Edward	2	1	6	0	1	1	1	0	4	18
Lubatkin	Michael	3	1	0	0	0	0	3	0	8	15
Hitt	Michael H.	4	2	0	0	0	0	1	0	7	14
Hambrick	Donald C.	3	2	3	0	2	0	0	1	3	14
Dalton	Dan R.	4	0	1	2	0	0	0	0	5	12
Ghoshal	Sumantra	1	5	0	0	1	0	0	0	5	12
Chatterjee	Sayan	4	1	0	0	1	0	1	0	5	12
Hoskisson	Robert E.	4	2	0	0	0	0	1	0	5	12
Baum	Joel	3	0	4	0	1	0	1	0	2	11
Glick	William H.	5	2	0	0	0	0	2	0	2	11
Heath	F. R. (Chip)	0	1	0	1	0	6	0	2	1	11
Boeker	Warren	5	0	3	0	0	0	1	0	2	11
Levinthal	Daniel A.	1	1	2	0	3	0	2	0	2	11



**Table 3** (continued)

Last name	First name	AMJ	AMR	ASQ	JAP	MSC	OBHDP	OS	ROB	SMJ	Total
Eisenhardt	Kathleen M.	0	2	5	0	0	0	2	1	1	11
Tushman	M. L.	2	0	2	0	2	0	1	3	1	11
Chen	Ming-Jer	4	2	2	0	1	0	0	0	2	11
Venkatraman	N.	2	0	0	0	4	0	0	0	5	11
Hill	Charles W.	2	2	0	0	0	0	2	0	5	11
Westphal	J. D.	2	0	7	0	0	0	0	0	1	10
Bromiley	Philip	4	0	0	0	1	0	1	0	4	10
Brett	Jeanne M.	4	0	0	3	0	1	0	1	1	10
Harrison	David A.	1	0	0	6	0	1	1	0	1	10
Ashford	Susan	4	1	1	1	0	2	0	0	1	10
Kogut	Bruce	0	0	0	0	3	0	5	0	2	10
Huber	George P.	3	1	0	0	0	0	4	0	2	10
Thomas	Howard	0	1	1	2	0	0	0	0	6	10
Raheer	Srilata	1	2	0	0	2	0	1	0	3	9
Finkelstein	Sydney	4	0	1	0	0	0	1	0	3	9
Smith	Ken G.	3	0	1	0	1	1	0	0	3	9
Goodstein	Jerry	6	0	0	0	0	0	1	0	2	9
Miner	Anne S.	1	1	3	0	0	0	2	1	1	9
Dean	J. W., Jr.	1	1	3	0	0	0	2	1	1	9
MacMillan	Ian C.	2	1	1	0	1	0	0	0	4	9
Van De Ven	Andrew H.	0	2	0	0	0	0	4	0	3	9
Miller	Danny	2	1	1	0	2	0	0	0	3	9
Nayyar	Praveen	3	1	0	0	0	0	0	0	5	9
Daily	Catherine M.	3	0	0	0	0	0	0	0	5	8
Liebeskind	Julia	0	2	0	0	0	0	2	0	4	8
Dutton	Jane E.	2	1	3	0	0	0	0	1	1	8
Gomez-Mejia	L. R.	5	1	0	0	0	0	0	0	2	8
Snell	Scott A.	5	2	0	0	0	0	0	0	1	8
Wright	Patrick M.	1	1	0	3	0	2	0	0	1	8
Brockner	Joel	2	1	2	0	0	1	0	0	2	8
Mitchell	William H.	0	0	1	0	0	0	0	0	7	8
Banker	R. D.	1	0	0	0	5	0	0	0	1	7
Miller	C. Chet	3	0	0	0	0	0	2	0	2	7
Wiersema	Margarethe	2	0	0	0	0	0	1	0	4	7
Kotha	Suresh	1	1	0	0	0	0	0	0	5	7
Bettis	Richard	0	1	0	0	0	0	1	0	5	7
Kim	W. Chan	1	0	0	0	1	0	1	0	4	7
Zaheer	Akbar	0	1	0	0	2	0	1	0	2	6
Mitchell	Will	0	0	1	0	1	0	1	0	3	6
Ingram	Paul	0	0	3	0	2	0	0	0	1	6
Ketchen	David	3	0	0	0	0	0	0	0	3	6
Greve	H.	0	0	4	0	0	0	0	0	2	6
MacGrath	Rita	0	3	0	0	1	0	0	0	2	6
Miller	Kent	2	0	0	0	0	0	0	0	4	6
Hennart	Jean	0	0	0	0	2	0	1	0	3	6
Sutcliffe	Kathleen	1	1	0	0	0	0	1	1	2	6
Park	Seung Ho	3	0	0	0	1	0	0	0	2	6
Swaminatha	Anand	1	0	3	0	1	0	0	0	1	6
Tyler	Beverly	0	0	0	0	0	0	1	0	5	6
Williamson	Oliver	1	1	1	1	0	0	0	0	3	6

AMJ Academy of Management Journal, AMR Academy of Management Review, ASQ Administrative Science Quarterly, JAP Journal of Applied Psychology, MSC Management Science, OBHDP Organizational Behavior and Human Decision Processes, OS Organizational Science, ROB Research Organizational Behavior, SMJ Strategic Management Journal

## Appendix 2

1996 *Academy of Management Review* Best Paper committee comments

The Best Paper for the *Academy of Management Review* was selected from 30 papers accepted by Susan Jackson and published in 1996. The selection committee included: Chris Earley (London Business School), Marc J. Dollinger (Indiana University), Herminia Ibarra (Harvard Business School), Duane Ireland (Baylor University), Dev Jennings (University of British Columbia), Martin Kilduff (The Pennsylvania State University), Scott Poole (Texas A & M University), Anat Rafaeli (The University of Michigan), and Dean Tjosvold (Simon Fraser University). Tom Jones (University of Washington) was the chair.

The article merges two streams of research in the strategy field in a very imaginative way. It also employs an innovative analytical tool to gain insights into the competitive process, helping to explain why competing firms don't always view their rivalry in the same way and may, therefore, employ highly dissimilar strategies. The article could change the way we see the competitive process. ...It has all the ingredients of a major contribution.

A unique contribution for its apparently paradoxical result. The author has found that the world of strategy is not symmetrical and it takes insight and courage to pose such hypotheses. He/she is able to integrate the two major and until now competing paradigms in strategy. Either one of these accomplishments would have made an outstanding contribution. Both in the same paper produce the award.

The author combined two sets of theories that are central to our understanding of the strategic behavior and with them he generates testable predictions and measures about organizational action. Besides the usefulness of the article, what stood out, was clarity and logical flow of the writing.

By introducing and then explicating in a theoretically rigorous manner the idea of competitive asymmetry, the paper yields significant insights regarding the argument that competitors may not pose the same degree of threat to each other. The breadth, depth, eloquence, and rigor of the analysis demonstrate clearly the difference between competitive behaviors and cooperative behaviors.

The 1996 *AMR* Best Paper award winner is titled "Competitor analysis and interfirm rivalry: Toward a theoretical integration." The author is Ming-Jer Chen from the Wharton School, University of Pennsylvania.

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