

**UNFOLDING COMPETITIVE ACTION PATTERNS:
TOWARD AN INTEGRATION OF COMPETITIVE DYNAMICS,
ORGANIZATIONAL LEARNING, AND INSTITUTIONAL
PERSPECTIVES***

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Abstract

Competitive dynamics, organizational learning and institutional theory are used to predict the evolution of competitive action patterns. We develop hypotheses pertaining to the preservation and introduction of competitive actions into firms' competitive repertoires and the performance effects of such changes. Additionally, the performance effects of action patterns conforming to institutional norms are assessed. We use a data set from the US retail industry to test our model. Our findings suggest that firms preserve actions that were performing well in the past, and they preserve and introduce actions that are highly legitimate. Converging action patterns have negative implications for performance, and conforming to institutional norms affects firm-performance in a U-shaped manner.

INTRODUCTION

Strategy can be defined in many different ways (Mintzberg, 1987, MacCrimmon, 1993). One option is to define strategy as a “pattern in a stream of actions” (Mintzberg, 1987: 935, Mintzberg, 1978). This definition contrasts with others on several accounts. First, it does not convey any prior theoretical assumptions about strategy content, since scholars and practitioners may choose what patterns to look for in actions. Second, it indicates a desire to understand strategy dynamically. Third, it accounts for the need to adapt strategy to environmental and organizational contingencies as these arise during implementation (Mintzberg & Waters, 1985; Bresser & Bishop, 1983; Zajac et al., 2000). Thus this conceptualization focuses on realized competitive actions, rather than intentions or perceptions, when assessing strategy. Yet, strategy research that explores patterns in competitive actions has been rare, even though strategy scholars stress its importance (Van de Ven, 1992; Araujo & Easton, 1996).

A firm's pattern of competitive actions comprises all internally and externally oriented actions that are undertaken within a given time period. Many competitive actions are pursued simultaneously others sequentially by firms. Action patterns evolve as current actions are deleted from repertoires and/or actions of a new type are introduced.

Many research traditions within the field of strategy have implicitly considered actions patterns. For instance, theories about strategic groups (Caves & Porter, 1977; Cool & Schendel, 1987; Peteraf, 1993) predict that some companies' strategic behavior will be more alike than others (Fiegenbaum & Thomas, 1995, Porac et al., 1995). Research into multipoint competition (Karnani & Wernerfelt, 1985; Gimeno & Woo, 1996) has shown that competitive actions taken at one point can trigger or thwart subsequent actions at another point, thus linking actions into patterns that reach across markets (Bulow et al., 1985; Gimeno, 1999). The literature on dynamic capabilities treats routines as complicated processes of interrelated actions, i.e., action patterns (Teece et al., 1997; Eisenhardt & Martin, 2000; Winter, 2003). Also, game theoretic research typically defines strategy as sequential action patterns of rational actors (Weigelt & MacMillan, 1988; Camerer, 1991; Saloner, 1991).

Three research traditions are particularly important for this paper because they provide propositions as to how action patterns of competing firms evolve without limiting their applicability by restrictive rationality assumptions typical of game theory. These traditions include institutional theory, organizational learning theory, and competitive dynamics research. The

new organizational institutionalism (Powell & DiMaggio, 1991; Suchman, 1994) measures legitimacy by comparing the realized action patterns of organizations to a reference pattern laid out by relevant institutions and considers the implications for performance (Deephouse, 1996; Haveman, 1993). The organizational learning literature (Levitt & March, 1988; Huber, 1991; Crossan et al., 1999) posits that organizations adapt their actions in light of the performance consequences of past actions. Consequently, action patterns should converge toward higher-performance actions over time (Hayward, 2002; Henderson & Cool, 2003). The competitive dynamics approach (Smith et al., 1991; Miller & Chen, 1996) analyzes action patterns stemming from the dynamic interaction of rivals (Ferrier et al., 1999; Ferrier, 2001).

Strategic management could benefit from a better understanding of how and why action patterns unfold over time. However, to date action pattern research has been scarce, and findings often have been insignificant and contradictory. These inconclusive results are not surprising because different theoretical lenses have led to inconsistent and contradictory propositions. This paper attempts to develop a comprehensive and integrated model to explain how and why action patterns evolve over time and what performance consequences can be expected from different kinds of action pattern adaptation. To this end, the paper identifies and seeks to resolve inconsistencies between institutional, organizational learning, and competitive dynamics perspectives on action pattern evolution, and thereby advances both these underlying theories and an action pattern perspective to strategy. The empirical test of our integrated model is set in the U.S. retail industry.

The paper begins with an introduction into action patterns as a unit of analysis for strategy research. This conceptual introduction provides a structure for reviewing the three theoretical approaches and helps to identify inconsistencies. In the following section, we resolve the inconsistencies and derive seven hypotheses about action pattern evolution and performance. The research design section introduces the sample, defines the variables, and presents the statistical procedures for hypothesis testing. The subsequent sections present and discuss the empirical results.

LITERATURE REVIEW

Strategy as action patterns

A key concern in Mintzberg's (1978, 1987, 1994; Mintzberg & Waters, 1985) strategy discussion is that most companies cannot fully realize their strategic intentions because of un-

foreseen internal or external contingencies. Some intended actions may have to be delayed or abandoned altogether, while additional (i.e., previously unintended) actions may have to be developed and implemented in a timely manner to head off rival moves or adverse market developments. As a consequence, realized streams of actions are different from intended ones. It is this realized stream of actions, however, that leads to strategic outcomes like market position, organizational effectiveness, and financial performance. Since these strategic outcomes are of paramount importance to top management and equity owners, top managers tend to construct and communicate consistent strategic intentions subsequent to strategy realization, even if there were none in the first place, in order to uphold their claim to qualified agency (Abrahamson & Park, 1994; Zajac, 1990). Aside from such attempts at retroactive sense-making (Weick, 1979), competitive actions also may go uncommented for some time in order to obscure true intentions and not to jeopardize success in the marketplace (Mintzberg, 1987; Miller & Chen, 1996). Whatever the intentions of or explanations for the realized stream of actions, strategic outcomes are affected by them and hence, strategy should be identified from them.

Yet, strategy is more than an effective and timely adaptation to competitive and organizational contingencies. It includes intentional choices of whether, when and how to respond to challenges (Child, 1972; Boyd & Bresser, 2003). It is exactly this choice of which actions to pursue against all odds, which actions to abstain from, and where to incorporate supporting actions that give the strongest evidence of a firm's real strategic intentions that may remain obscured in managerial accounts of strategy. Thus, strategy is revealed by managerial choices and becomes manifest as patterns in the streams of these choices. Patterns will reveal strategic priorities, imputed cause-effect relationships (mental models), and the breadth of available strategic options. Consistent patterns, i.e., repeated choices with a common logic, can be interpreted as an underlying strategy, while the lack of consistency might imply either the absence of strategy (MacCrimmon, 1993; Inkpen & Choudhury, 1995), or a concealed strategy.

Clearly, the pattern revealed from any particular stream of actions depends on the perspective of the investigator, and complementary information at his disposal. Consider a company that introduces a promising new product with strong marketing support, but then cuts back marketing to virtually zero before demand has actually picked up. Against the backdrop of established life cycle models, one observer might interpret these actions as a product intro-

duction failure. Another observer might be aware of the company's operating problems, and interpret the observed reduction in marketing spending not so much as an indicator of product introduction success or failure, but as evidence of production setbacks. A third observer, who has witnessed several earlier phased product introductions in that industry might find this sequence of actions quite ordinary, and expect another surge of marketing spending toward the end of the next quarter.

These examples show that different frames of references (Starbuck, 1982; Dunbar, Garud, & Raghuram, 1996) determine the interpretation of observed action patterns. At a general level, two kinds of reference are useful for studying action patterns: First, the action patterns observed at one company can be compared to the patterns of other companies at the same time (and in the same environment) in order to identify distinctive behavior. As discussed above, strategic choice (Child, 1972, 2002) will be revealed in those actions that are pursued against the odds and thus distinguish a firm from its competitors. Van de Ven (1992) refers to such divergence of observed action patterns as between-unit variation. Second, action patterns observed at one time may be compared to a company's earlier patterns in order to identify changes in strategy. Changes from a firm's action pattern to the next can be termed within-unit variation (Van de Ven, 1992). A theory of strategic action patterns should explain both kinds of variation: variation with reference to a company's own past actions, and variation with reference to the action patterns adopted by other companies. As a first step at building such a theory, we will review ideas derived from theories of competitive dynamics, new organizational institutionalism, and organizational learning research as they apply to action patterns.

Competitive dynamics

The competitive dynamics approach to strategy focuses on rivalry (Smith et al., 1992, 2001; Chen, 1996), as evident in the individual competitive moves that rivals engage in. Proponents adopt the competitive action as their unit of analysis. They derive *action* characteristics from a broad range of economic, organizational, and behavioral approaches to strategy research. Action characteristics include an action's visibility, scope, complexity, and centrality (Chen et al., 1992; Chen & Miller, 1994; Chen & Hambrick, 1995). Similar characteristics are used to describe and discuss the competitive *reactions* to a competitive move initiated by a rival. There are two sides to this analysis. One is concerned with the design of actions to shape rival

responses so that they are to the actor's advantage. The other is concerned with effective response designs that will allow responders to counteract the competitive moves made by rivals.

Underlying competitive dynamics research focusing on actions (as opposed to responses) is the assumption that rival response behavior can be manipulated by action design. However, before manipulating response behavior, actors must know what kinds of responses will improve their performance. So far, it has proven difficult to determine an advantageous, let alone optimal, response behavior from the actor's point of view. Two assertions are usually made, even if empirical support is weak. First, actors want to reduce the number of responses to their actions, because each individual response is assumed to impair actor performance (Miller & Chen, 1994). Second, actors want to delay those reactions that they cannot prevent in order to prolong their monopoly rents and to trigger first-mover market dynamics (Smith et al., 1991; Lee et al., 2000; Boyd & Bresser, 2003). Starting from these premises, competitive dynamics research proposes that those actions which are highly visible in the media, targeted at few prominent competitors, pervasive in competitive threat, and easy to imitate will result in many and fast responses (Smith et al., 1992; Chen et al., 1992; Chen & Miller, 1994), and, therefore, are to be avoided. For example, a nationally advertised 50 per cent hotel rate cut at five locations where only two particular competitors maintain alternative lodging premises, will more likely result in two quick responses than an unadvertised complimentary 5 per cent rebate for every 5th customer at all hotels nationwide.

Designing effective responses has turned out to be an even more complex issue for competitive dynamics scholars than action design. Given the actors' attempts at obscuring their actions, the foremost duty of responders is to build a sufficiently alert and flexible organization (Smith et al., 1991; Bettis & Hitt, 1995; Volberda 1996) to be able to detect and react to competitive threats in a timely manner. The delay of responses has been the key issue for studying response design, but there is little evidence that an optimum response delay exists (Smith et al., 1991; Chen & Hambrick, 1995; Chen & MacMillan, 1992; Boyd & Bresser, 2003). The relevance of other response characteristics, e.g., likelihood or matching, also could not be established.

In an effort to gain a deeper insight into competitive behavior, competitive dynamics scholars have turned to investigating competitive actions and responses in relation to preceding

and subsequent competitive moves. Thus, the focus has shifted to patterns. Underlying this quest is the realization that engaging in a fifth consecutive market expansion is a different competitive threat than making a price cut for the first time in five years. Only few papers have been published on action patterns so far, and many of them are concerned with structural rather than dynamic considerations. For example, Miller & Chen (1996) found that broader patterns, i.e., patterns with many different types of competitive moves (price cuts, product introductions, entry into new geographical markets, etc.), lead to higher performance. However, research conducted by Ferrier (2000) produced evidence to the contrary. As a first step toward a more dynamic appraisal of action patterns, Miller & Chen (1996) observed that successful firms tended to reduce the breadth of their action patterns, thus putting their current performance at peril, rather than keeping successful patterns unchanged. This startling finding triggered further research into the evolution of action patterns by Ferrier (2000; 2001; Ferrier et al., 1999). Starting from the assumption that successful moves should be difficult to observe and imitate, Ferrier argues (1) that companies should vary the types of action that they use over time, so as to render their behavior unpredictable and, therefore, more difficult to observe (within-unit variation), and (2) that they should use actions that are different in type from those of their competitors, in order to obtain unique competitive positions (between-unit variation). So far, neither proposition has been statistically confirmed.

The above arguments are important for understanding how action patterns might evolve because they point to two mechanisms for achieving superior performance that are well established in strategic management thinking: One mechanism is surprise. Companies should surprise their competitors by acting in an unpredictable manner. Porter (1980) suggested surprise was an important element of competitive strategy and more recently D'Aveni (1994) described surprise as one of his seven S's for successful maneuvering in hypercompetitive environments. The second mechanism refers to the establishment of some kind of distinctiveness. Many authors highlight distinctiveness as a source of competitive advantage (Porter, 1980; Grant, 1991; Prahalad & Hamel, 1990; Ghemawat, 1986). While distinctiveness does not guarantee superior performance, low performance should result from a lack of distinctiveness (Baum & Singh, 1994).

In sum, the competitive dynamics approach argues that higher performance is achieved through higher levels of between-unit variation (that lead to distinctiveness), and higher levels of within-unit variation of competitive actions (that result in surprise). The difficulty with

these propositions is that high variation can be achieved in so many different ways, and it is quite reasonable to assume that some variations will prove more successful than others. Without proposing more specific directions for variation, these propositions are of little strategic use. What is needed is theory that provides information on *how* rather than *whether* to change competitive moves.

Organizational learning

Organizational learning is a dynamic process in which the members of a firm engage in experiences that allow them to store and adapt knowledge for their firm in the form of routines, procedures, or norms (Levitt & March, 1988; Hayward, 2002). For instance, managers decide and act according to some implicit assumptions about organizational and environmental conditions and their interrelationships. The sum of these perceived conditions and relationships constitutes a mental model of the real world (Miller, 2002; Barr et al., 1992). When managers observe changes in their environment, they draw inferences from these experiences using their mental models, and they evaluate change as either an opportunity, a threat, or as irrelevant. Reactions to change are determined based on the same mental models, as are proactive strategies intended to induce beneficial change. Mental models form over years and are strongly affected by organizational socialization processes (March, 1991). However, mental models need to be adapted over time, as unsuccessful actions may indicate flawed assumptions (Levinthal & March, 1993; McGill & Slocum, 1994). The process of adapting mental models is called learning and it has been shown to vary widely across firms in terms of speed and quality (Huber, 1991; Halebian & Finkelstein, 1999). Some assumptions about reality are taken for granted and almost impossible to change while others may be easily abandoned.

As individual managers learn, they create valuable knowledge for their organizations. In some cases, this knowledge can be readily communicated, verified, and implemented, and stored for future use. In the absence of political or bureaucratic challenges, such learning will result in prompt behavioral adaptation. In other cases, learning may be more tacit, more controversial, or more intricate so as to induce rapid behavioral changes (Argyris, 1985). For example, Crossan et al. (1999) propose a four-step process and a tolerant organizational environment to enable learning to diffuse through an organization, and eventually change organizational behavior.

For the discussion of competitive actions, learning that can be readily communicated and verified is of greatest interest because it should lead to rapid behavioral changes. This is single-loop learning (Argyris & Schön, 1978) in the sense that managers observe the consequences of their actions in order to better estimate the performance of future actions and improve action designs. The importance of single-loop, experience-based learning has been established for several types of recurrent strategic decisions, e.g., for the acquisition behavior of U.S. firms (Hayward, 2002), for the naming strategies of multiunit chains of service organizations (Chuang & Baum, 2003), and for capacity expansion decisions in the worldwide petrochemical industry (Henderson & Cool, 2003). These studies indicate that previous experiences, especially failures, tend to shape future behavior. They also show that insights gained from competitive actions do not shape behavior for long periods of time, because the inferences drawn from a particular observation loses validity as the competitive environment evolves. In Hayward's (2002) study, for instance, experience had lost its validity after about one year. Also, these studies show that short-term organizational learning occurs primarily based on the firm's own experiences, whereas firms appear to learn little from the successes and failures of others (Henderson & Cool, 2003; Chuang & Baum, 2003).

These results have implications for action pattern evolution: Within-unit variation, when measured from one time period to the next, should reveal a convergence toward higher performing actions. Convergence to higher performing actions, in turn, can be expected to result in higher overall performance. In contrast, between-unit variation of competitive moves will not display any discernable patterns because individual learning is proprietary to the organizations in which it accrues, it typically is not shared with outsiders, and it prompts a focal firm to engage in new competitive moves even before outsiders can realize that a firm may have gone through a specific learning process.

While single-loop learning is a convincing concept for explaining short-term adaptation at the level of competitive actions, it has undesirable long run implications (March, 1991; Miller et al., 1996). Consider an organization, whose action pattern consists of five types of actions, and which applies single-loop learning sessions every year to remove those action types that have proven unprofitable over the past year. After four revisions, each of which has led to the removal of one action type, the organization will be left with only a single type of action to choose from. It goes without saying, that such a narrow action pattern does not have sufficient options to compete effectively (Ashby, 1952). Single-loop learning alone leads to a nar-

row or simple repertoire of actions, and in turn, to lower competitiveness and performance. To avoid such a downward spiral, firms need to engage in exploratory learning (March, 1991; McGrath, 2001). Exploration requires managers not only to observe the consequences of their actions, but to intentionally engage in new, unconventional actions with uncertain and potentially negative consequences. These autonomous strategic actions (Burgelman, 2002) involve opportunity-seeking behaviors and they broaden the experience base for the next round of single-loop learning. Given that the validity of single-loop learning decays quickly (Hayward, 2002), exploration may even include actions that were removed in the previous years.

Thus, from an organizational learning perspective, action pattern evolution processes have to be reconsidered if exploratory learning is included as an option. The study of within-unit variation based on past action performance must be restricted to those actions that were indeed observed during the previous period. For all other actions, no information is available. Nevertheless, some introductions into an organization's action pattern must be expected, and the choice of which general types of actions to introduce will likely not be consistent across the industry. Since exploratory actions are chosen without reliable information on their probable performance, they cannot be expected to result in higher organizational performance in the short run.

In sum, organizational learning provides several substantive insights into action pattern evolution. Within-unit variation should distinguish two cases: For those actions that were included in the action pattern during the previous year, single-loop learning implies a higher level of within-unit variation (i.e., a larger number of deletions) if the performance of specific action types was weak. A convergence to higher-performing actions will result in higher organizational performance. For those types of actions that were not included, some degree of within-unit variation (i.e., several inclusions) is desirable, but will not result in higher performance in the short run because not all exploration will be successful. In contrast, single-loop organizational learning has no implications for between-unit variation. At any given point in time, between-unit variation of competitive actions is not likely to follow any particular pattern because experience-based learning varies across firms and so will exploratory actions. Likewise, between-unit variation at a particular point in time does not relate to systematic performance differences because it carries no benchmark information on past experiences from which to extrapolate performance effects.

Institutional legitimacy

Institutional theory analyzes a firm and its actions in the context of surrounding social actors like the government, the financial community, the media, or the firm's customers. Such institutional actors are assumed to exert a powerful influence on a company's competitive success and survival (Powell & DiMaggio, 1991; Scott, 1995; Suchman, 1995; Bresser & Millonig, 2003). Institutional influences can arise as coercive pressures force a company to change its behavior. Examples include Hoechst's decision not to introduce the abortion pill RU 486 in the German market (Millonig, 2002), and Royal Dutch Shell towing away their North Sea oil drilling platform Brent Spar (Jordan, 1998). Coercive institutional behavior occurs when competitive behavior is misaligned with expectations of institutionally appropriate behavior. However, coerced actions are a rare event, because misalignment must be substantial (Suchman, 1995), and few companies actively challenge their institutional environment. By keeping their behavior within the boundaries of institutional expectations, companies gain legitimacy and may still find sufficient room for competitive maneuvers (Oliver, 1991, 1997; Suchman, 1995).

Institutional theory also proposes that institutional assistance materializes for companies that display highly legitimate behavior. Social assistance results in preferential access to resources and markets, and should, therefore, create higher performance (Aldrich & Fiol, 1994; Pfeffer & Salancik, 1978). For example, Dunbar and colleagues (2003) report that strong media support helped Steinway & Sons to attain a virtual monopoly in the concert piano industry. It is important to note that social actors' granting assistance give no evidence of altruistic behavior. Seeing that assistance will come at some cost to themselves, assistance is granted to signal endorsement to other, less legitimate companies, and to provide some incentive for them to imitate the endorsed company and, thereby, behave more legitimately.

Such a signal is necessary, because ambiguity and uncertainty about institutional expectations make it difficult for companies to actually behave in a highly legitimate fashion (Scott, 1995). Ambiguity and uncertainty stem from three sources. First, at any point in time, companies are confronted with a multitude of institutional expectations from several social actors that typically are not aligned. Second, the most immediate and pervasive institutional influence stems from private decentralized social actors like customers or the media, who do not codify their expectations (Heckathorn, 1990; Nee & Ingram, 1998). Third, institutional ex-

pectations are subject to change, and such change is often poorly understood (Ingram & Clay, 2000; Simons & Ingram, 1997). This last point implies that ambiguity and uncertainty prevail even for those companies that have achieved higher levels of legitimacy.

Social assistance must also provide sufficient rewards to highly legitimate companies in order to motivate their imitation by less legitimate companies. Strong and sustained incentives are often necessary because what social actors may find most appropriate typically will not square with what individual firms consider most efficient. Only if social assistance for highly legitimate behavior is sufficiently large, companies will abandon their efforts at gaining efficiency, and vie for legitimacy instead. However, because providing social assistance comes at a cost to social actors, only a few companies enjoy social assistance at any one point in time. For instance, when low-fat food products were first introduced, a large group of customers was willing to pay premium prices. This eventually led other food producers to offer similar products, and social assistance eroded. As with single-loop learning, in the long run this competition for social assistance will create ever more legitimate and isomorphic behavior within an industry (Deephouse, 1996).

In sum, institutional research provides several substantive insights into action pattern evolution. According to this stream of research, within-unit variation is driven primarily by a quest for legitimacy. Firms are willing to sacrifice efficient actions in favor of legitimate ones if they expect strong assistance from social actors. As social assistance depends on legitimacy relative to other companies in an industry, performance implications can be generated for between-unit variation only. Only those companies that attain relatively high levels of legitimacy, a between-unit consideration, will enjoy higher performance. However, due to isomorphic tendencies, i.e., competition for social assistance, between-unit variation in competitive action patterns will be low.

TOWARD AN INTEGRATED THEORY OF ACTION PATTERN EVOLUTION AND PERFORMANCE

When the three theoretical approaches reviewed are compared with respect to what they imply for action pattern evolution and performance, some inconsistencies become apparent. Yet managers must consider learning within their organizations, institutional pressures from the institutional environment, and competitive dynamics in the marketplace to generate strategies, i.e., action patterns for their organizations. To this end, managers must resolve inconsis-

tent advice that might result from the three perspectives. In this section we examine these inconsistencies in depth and propose an integrated theory of action pattern evolution and performance. We use Van de Ven's (1992) categorization of within-unit variation and between-unit variation of action patterns as a structure for theory development.

Within-unit variation of competitive action patterns

Within-unit variation of competitive action patterns is concerned with same-company changes in strategy over time. The most explicit propositions have been provided by organizational learning research on the advantages and shortfalls of single-loop learning. Two complementary mechanisms enable companies to focus their efforts and compete on the basis of their most advantageous action types without losing too many strategic options in the long run. The first mechanism, which we term *convergence*, will result in a shift from low-performance to high-performance action types from one year to the next. Those action types that resulted in relatively low performance effects in the past year will be deleted, or at least used less frequently than before, and those action types which resulted in relatively strong performance effects will be favored. According to organizational learning theory, stronger convergence will lead to higher overall performance in the short run. The second mechanism, which we call *divergence*, is indicative of exploratory learning. This mechanism leads to the inclusion of action types that were not included in the action pattern of the previous period. As opposed to convergence, divergence has no directly predictable performance consequences.

Competitive dynamics findings differ from organizational learning in that they do not propose any particular mechanism for action patterns to evolve over time. However, they provide a link between variation and performance. In competitive dynamics thinking, companies vary their action patterns from one period to the next in order to confuse their rivals and hamper rivals' attempts to forecast their future competitive moves. If successful at confusing their rivals, companies enjoy higher performance (Chen & Miller, 1994; Ferrier et al., 1999). Since divergence is almost impossible to predict, it should result in higher performance. Thus, competitive dynamics research does not have the same reservations as organizational learning on the performance implications of divergence. In contrast, positive performance effects are proposed to result from divergent actions simply by virtue of such actions being surprises. With respect to convergence, organizational learning and competitive dynamics

perspectives are aligned. Since organizational learning is incidental and proprietary, convergence will be as difficult to predict by rivals as divergence.

Institutional theory has little to say about performance implications of within–unit variation, because social assistance, and hence higher performance, stems from legitimacy advantages over other companies at a given point in time, and not from legitimacy increases over time. However, institutional theory provides an alternative mechanism for within–unit variation. Institutional signals and incentives such as good or bad media coverage, or strong demand spikes will be evident for all companies in an industry in real time. Companies will adapt their strategies accordingly to include action types into their action patterns that have received particularly strong institutional endorsement. Institutional expectations are, therefore, assumed to govern divergence, and to interfere with convergence.

When considering divergence, the choice of which previously ignored action types to include into the current action pattern on the basis of institutional signals, adds an interesting twist to the exploration discussion within the organizational learning literature. To the extent that exploration is governed by institutional signals, managers can be said to be learning in real time by accepting legitimacy as a surrogate predictor for performance in order to compensate for their lack of valid past experiences. However, if divergence is actually based on institutional signals that are visible, the choice of which action types are introduced into an action pattern is not a surprise. The removal of the surprise element in divergence also removes any foundation for higher performance from a competitive dynamics perspective. Hence, there is no motivation to consistently follow institutional signals in competitive dynamics theory.

With respect to convergence, a reverse picture emerges on the alignment among the three theoretical lenses. Since an action type's legitimacy cannot be expected to correspond to its past financial performance, institutional and organizational learning approaches to strategy imply alternative choices for managers. Action patterns that adapt to institutional expectations are at odds with action patterns that converge to high–performance actions. However, there is no reason to believe that managers cannot make both choices simultaneously. Deleting only those action types that led to weak performance and that are not required to satisfy influential social actors would be a conservative strategy. Such a strategy would still build on experience and market insight generated during the past year, and apply real time insights

into social assistance opportunities. Another strategy option is to converge only to those high-performing action types that enjoy strong institutional endorsement. Given the multitude of strategy choices at any given point in time, rivals will find it difficult to predict which action types will and will not remain in an action pattern. Thus, even from a competitive dynamics perspective, convergence should lead to higher performance.

Several hypotheses follow for convergence and divergence, the two mechanisms of within-unit variation of action patterns. Convergence refers to those action types included in a firm's current action pattern that were also included in the firm's previous action pattern and have proven to be successful. We predict the following antecedent conditions for convergence to occur:

Hypothesis 1a: The higher the average performance effect of a particular action type in the past year, the more likely its preservation in the current action pattern.

Alternatively, action types may also be kept for legitimacy considerations, thus

Hypothesis 1b: The more legitimate a particular action type in the current year, the more likely its preservation in the current action pattern.

However, managers may only keep those actions that have proven successful in the past and that increase overall legitimacy for their company at the same time. This suggests

Hypothesis 1c: The higher the average performance effect of a particular action type in the past year and the more legitimate that action type in the current year, the more likely its preservation in the current action pattern.

Divergence refers to those action types that were not included in the previous action pattern. Hence, no past performance would have been observed by a focal firm. However, social assistance can be observed in real time, and action patterns likely to be adapted accordingly. Thus, action legitimacy is an antecedent condition that leads to

Hypothesis 2: The more legitimate a particular action type in the current year, the more likely it will be introduced into the current action pattern.

Underlying these hypotheses is the assumption that legitimacy, or social endorsement, does not correspond to economic performance. If the two concepts did correspond, there would be

no difference between the consequences of organizational learning and institutional theory for action pattern evolution except for the pace at which learning occurs. Consequently, Hypotheses 1a through 2 would offer no alternative explanations but restate each other in different words. Given the importance of this assumption for our model and its relevance to institutional research, we introduce it as a

Working hypothesis: The legitimacy of an action type is not related to its average performance effect.

Our three theoretical lenses suggest performance consequences for converging and diverging action patterns. We derive our proposition for convergence from organizational learning theory as it is in line with competitive dynamics thinking. With respect to divergence, we sustain organizational learning reservations that exploration will not improve performance in the short run, especially when exploration is guided by perceived legitimacy. Therefore,

Hypothesis 3a: Convergence on action types with higher average performance effects in the past year will result in higher performance in the current year.

Hypothesis 3b: Divergence will be unrelated to performance in the current year.

Between-unit variation of competitive action patterns

Between-unit variation of competitive action patterns is concerned with differences in firm strategies at a given point in time. As has been shown, only competitive dynamics and institutional research have derived propositions on the performance consequences of between-unit variation of action patterns. At first sight, these propositions seem contradictory. Competitive dynamics research suggests that distinctiveness generates superior performance. For a company to be considered distinctive in its action pattern, it must employ and emphasize those action types that its rivals fail to master. For example, being the only company to offer its products online and cut out intermediaries might create substantial advantages that become evident in higher sales and profits. In contrast, institutional theory assumes that social actors push the companies within an industry toward ever more similar behavior. Social assistance and hence superior performance obtains only for those companies that manage to align themselves with institutionalized behavioral expectations most closely. The alignment with institutional norms is referred to as conformity, and conformity is usually associated with similarity

(Deephouse, 1996; Spender, 1989). Hence, greater similarity will result in higher performance.

In our view, these two approaches are not in fact inconsistent but complementary with respect to conformity, though not with respect to similarity. Similarity must be distinguished from conformity because, as was shown in our review of competitive dynamics research, similarity does not inform about any theoretically substantive direction of action patterns. Whereas conformity refers to the alignment of an organization's action pattern with institutional expectations, similarity refers to its alignment with what the other companies do, i.e., with the average pattern of actions in the industry that may or may not accurately reflect institutional expectations. Even though we have described that isomorphic processes occur within industries, and that the average action pattern can be used to estimate relative (not absolute) institutional legitimacy, we have also highlighted that companies often fail to align their strategies closely enough to gain social assistance. This implies that only a few companies actually achieve high levels of legitimacy for their strategies from what must be conceptualized as a trial and error process in search for legitimacy, much like exploratory learning. High legitimacy, then, is a distinctive feature of an action pattern and cannot stem from maximum similarity, because the average action pattern in an industry includes all the errors committed during the competition for legitimacy.

At this point, Suchman's (1995) distinction between legitimacy to prevent coercive social action and legitimacy to gain social assistance becomes instrumental in merging competitive dynamics thinking and institutional theory. Competition for legitimacy occurs to gain social assistance. A company's strategy may, however, be sufficiently legitimate to prevent coercive action, even if distinctive industry positions are sought that do not square with the institutional norm. Such a strategy may be attractive for companies that can perform unique actions to obtain economic rents. Still, it will demonstrate little conformity because it actively emphasizes those action types that are seldom observed within the industry, resulting in low levels of perceived institutional legitimacy for the individual actions in the pattern. In sum, a distinctive emphasis on these actions creates low levels of conformity but this conformity level may still be high enough to avoid social coercion.

To make our reasoning more transparent, we compare it to an alternative attempt at reconciling competitive (dynamics) and institutional approaches to strategy, namely Deephouse's

strategic balance proposition (Deephouse, 1999; McNamara et al., 2003). An illustration of the two models is provided in Figure 1. In Deephouse's model (left-hand side), legitimacy considerations (dashed line) and competitive considerations (dotted line) both imply a linear but inversely related relationship between similarity and performance. Both relationships limit the performance of a company under consideration. Hence, an inversely U-shaped relationship between similarity and performance obtains. In our model (right-hand side), both legitimacy (dashed line) and competitive considerations (dotted line) have no bearing on the relationship between conformity and performance for most levels of conformity. Only for very high levels of conformity, i.e., for particularly legitimate action patterns, social assistance will be strong enough to improve performance. For very low levels of conformity, distinctive strategies can tap economic rents. Social assistance and economic rents are conceptualized as adding to a company's baseline performance, hence, a U-shaped relationship between conformity and performance obtains.

<Figure 1 about here>

Our model improves Deephouse's strategic balance proposition in that it provides a better representation of adaptation to institutional expectations by replacing similarity with conformity. As described in our review of competitive dynamics research, similarity has relatively weak discriminating power. Second, the relationships pertaining to legitimacy and competitive considerations better represent the theoretical argument that only very few companies will be able to gain social assistance or reap economic rents. Especially the linear relationship between legitimacy and performance leading to the strategic balance proposition is problematic given Suchman's (1995) distinction between legitimacy to prevent social coercion versus legitimacy to obtain social assistance. Third, by conceptualizing social assistance and economic rents as supra-normal performance, we focus on opportunities to create superior strategies. In contrast, superior performance in the strategic balance proposition is achieved through evading the threats from social coercion and competitive rivalry. The reasoning presented by the strategic balance proposition suggests that companies should follow an intermediate-level strategy that will, however, run the risk of keeping them stuck in the middle (Porter, 1980), rather than allow them to outperform their rivals.

We suggest that an integration of competitive dynamics and institutional propositions on the performance consequences of between-unit variation of competitive action patterns is

possible, if the arguments are developed on the basis of conformity rather than similarity. An integrated hypothesis relating firm performance to between–unit variation of action patterns can be derived as

Hypothesis 4: Firm performance of the current year will be related in a U-shaped manner to conformity.

RESEACH DESIGN

Sample

We test our hypotheses in a sample of the 17 largest companies in the U.S. general merchandise retail industry whose action patterns were observed from 1994 to 2000, resulting in 119 company–years¹. We chose this research setting for three reasons. First, retail is prone to strong competitive pressures because entry barriers into the industry are low and customer loyalty is notoriously weak (Cox & Brittain, 2000; Berman & Evans, 1998). Second, during the time period under study, the retail industry was characterized by numerous opportunities for organizational learning from frequent innovation and the rise of internet–based retailing (McKinsey Global Institute, 2001; Evans & Wurster, 2000). Third, retail is subject to strong institutional pressures due to its size and everyday visibility (Berman & Evans, 1998; Ghosh, 1990). These characteristics make large retail firms an ideal sample for testing hypotheses exploring the intersection of competitive dynamics, organizational learning and institutional approaches to strategy. Our sample includes the largest publicly traded retail companies in the US as listed in Appendix 1. Size and equity ownership restrictions were necessary for a valid identification of action patterns and past action performance respectively, as laid out below.

Identification of competitive actions

Competitive actions were identified through structured content analysis of press articles (Boyatzis, 1998; Weber, 1990). We built on established competitive dynamics methods to create a coding scheme for scanning the *factiva* press database, a joint venture of Dow Jones and Reuters that covers close to 8,000 publications. The coding scheme defines different kinds of actions and provides keywords for database requests. Our coding scheme includes

nine externally oriented action types of which six have already been used in competitive dynamics research: pricing, marketing, service, geographic growth, mergers and acquisitions (M&A), and legal actions (cf. Ferrier et al., 1999). We also included two industry-specific action types, range and format, to capture all relevant retail actions (Cox & Brittain, 2000). Another action type involves internet-based actions, which have not yet been considered in competitive dynamics studies, and that are grouped with catalog operations and telesales efforts to represent direct channel actions. The coding scheme was validated by comparing a full list of articles mentioning the sample companies with a list of articles filtered by the coding scheme for three randomly chosen months during our study period. No relevant actions were missed by the coding scheme. Nevertheless, two keywords were added to our coding scheme to increase the number of hits in filtered requests. One keyword was removed because it identified actions that it was not intended to code. The keywords and sample headlines are shown in Appendix 2. The final database request returned 4,914 articles.

Action identification based on structured content analysis of press articles required an exclusion of small retailers from the sample that may not be so well covered by the media, and required a stringent process to ensure action data validity. The data validation process required two independent two-step reviews of the 4,914 articles by the first author and a strategy Ph.D. student. In the first step, both reviewers received only titles and first paragraphs of the 4,914 articles and excluded those articles that were obviously not relevant for our research. In the second step, they received only those articles in full text that were considered potentially relevant by at least one reviewer in the first review. From these full-text articles, actions were identified, and action dates and types were assigned. After the second step, actions identified independently by each reviewer were compared and were found to correspond to one another in 97.5% of the actions. An inter-rater reliability of $\kappa = 0.87$ ($p < .001$) confirmed the quality of our coding scheme and validation process. Disagreement on the remaining 2.5% actions was discussed and either resolved or the questionable action was excluded from the action data set. The final action data set included 370 actions.

A firm's action pattern included all actions of a company within a given year. In order to align action patterns with yearly performance data, we considered a year to span from Febru-

¹) The fiscal year for most retail companies ends on January 31. We therefore extended our sample period to 2001/1/31, in order to align action patterns with fiscal years. Moreover, since our analysis tests a dynamic theory of action pattern evo-

ary 1 to the following January 31 in line with most retailers' fiscal year. Some action patterns were empty and therefore erased from the data set leaving a final data set that included 85 non-empty action patterns. Since we had to lag several variables for dynamic analysis, year 1994 action patterns were not considered for dependent variables, reducing the dynamic data set to 74 year-on-year observations.

Estimation of individual action performance effects

Tracing performance back to individual actions is complicated because of the many other potentially confounding factors that can affect performance. We observed stock market reactions to individual actions to estimate their performance effects. Performance effects were modeled as abnormal stock returns based on a financial event study methodology (Campbell et al., 1997; McWilliams & Siegel, 1997).

Abnormal stock returns were calculated from daily stock return data provided by *Commodity Services, Inc.* via their Yahoo!Financials web portal. Observed stock returns were compared with hypothetical returns calculated from a CAPM market model in a two-day event window around the identified action. The market model was dynamically estimated for each action using the acting company's returns and S&P 500 index returns of the 120 days before the event window (MacKinlay, 1997). Event windows spanned from the day before the press release about an action to the day of the press release itself. The day prior to the press release was included because information may have already reached the market during that day's trading (Campbell et al., 1997). Thus, we constructed a focused event window in response to McWilliams & Siegel's (1997) critique about unjustifiably long event windows in management research. Differences between observed and hypothetical stock returns during the event window were attributed to the action. We excluded all those actions from a calculation of abnormal stock effects that coincided with other relevant press releases, e.g., about quarterly results or dividend announcements, because such information might have created conflicting stock reactions during the event window and invalidated our estimates for action performance effects. Finally, we standardized the stock return differences according to the procedure proposed by Dodd and Warner (1983) in order to make them comparable across companies and time. These standardized stock return differences were labeled abnormal stock returns, in line

with established methodology (Campbell et al., 1997; McWilliams & Siegel, 1997). Abnormal stock returns could be calculated for 326 actions.

Variables

Dependent Variables. *ACTION TYPE PRESERVATION* is a binary variable at the action type–company–year level. It can only be observed for those action types that were included in the company’s action pattern during the previous year. It is coded as a 1 if the relevant action type is again observed in the action pattern of the company in the current year, and as a 0 if not. Since a reference to the previous year was required, no preservation data could be gathered for 1994. There are 162 action–type–company–year combinations representing action type preservation.

ACTION TYPE INTRODUCTION is a binary variable at the action type–company–year level, and can only be observed for those action types that were not included in the company’s action pattern in the previous year. It is coded as a 1 if an action type is introduced into the company’s action pattern in the current year, and as a 0 if not. Like in the case of action type preservation, 1994 action patterns were only used as a reference. Altogether, action type introduction could be observed in 756 action type–company–year combinations².

FIRM PERFORMANCE was measured at the company–year level. We used return on sales (*ROS*) and return on assets (*ROA*) as alternative proxies for firm performance. *ROS* and *ROA* are well established in strategic management research and are a popular choice because they control for size. Annual financial data were obtained from *Moody’s Company Database*.

Independent Variables. *AVERAGE PERFORMANCE EFFECTS (IN PRIOR YEARS)* were calculated at the level of action types for every company–year whose action pattern included the action type of interest. There were 198 non–empty action type–company–year combinations. Average action performance effects were calculated by determining the arithmetic mean value of the abnormal stock effects of those actions that were of the type, company and year under consideration. Since abnormal stock returns could not be determined for all actions in the sample due to overlapping press releases, only 191 average action performance effects could be calculated. These effects were lagged for analysis so that the average per-

²) When added, the 162 observations of action type preservation and the 756 observations of action type introduction equal all possible action type–company–year combinations: $9 \times 17 \times 6 = 918 = 162 + 756$.

formance effects of 1994 were related to action patterns of 1995. This procedure led to the exclusion of year 2000 data, leaving 159 average action performance effects for analysis.

In addition, average action performance effects were calculated at the action type–year level to test the working hypothesis. In this case, no lagging was required, and year 2000 data could be used. We applied the same algorithm as above, and calculated 52 annual average action performance effects.

ACTION PATTERN CONVERGENCE builds on action type preservation and was calculated at the company–year level according to the following formula:

$$CONVERGENCE_{jt} = \sum_i \eta_{ij(t-1)} \times f_{ijt}$$

where $\eta_{ij(t-1)}$ represents the average performance effect of action type i at company j in period $(t-1)$, i.e., in the previous year, and where f_{ijt} represents the relative frequency of action type i at company j in the current year t . $\eta_{ij(t-1)}$ was set to zero for those action type–company–year combinations for which no average action type performance effect could be calculated. This procedure ensured that calculation of convergence relied only on those actions that had indeed been preserved, because a non-zero average performance effect in the prior year for a particular action type implies that that action type had been present in the prior year, and because a non-zero frequency in the current year means that it has been preserved. The frequency weighting procedure was chosen to reflect the relative importance of preservation in an action pattern, and to reflect the extent of organizational learning by weighing the relative frequencies of the individual action types with their average performance effect in the previous year. Our procedure results in high values of convergence for those action patterns that shifted from low-performing action types to high-performing action types. Patterns that emphasized action types with negative average performance effects in the previous year achieve a negative value for convergence.

ACTION PATTERN DIVERGENCE complements convergence in that it reflects the relative importance of introductions in an action pattern as the sum of the relative frequencies of introduced (as opposed to preserved) action types, as shown in the following formula:

$$DIVERGENCE_{jt} = \sum_i I_{ijt} \times f_{ijt}$$

where I_{ijt} represents an indicator variable that turns to 1 if action type i is introduced into company j 's action pattern in period t , in accordance with the definition of action type introduction given above. However, it is coded as a 0 in all other cases, although action type introduction is not defined when action types had already been part of a company's action pattern in the previous year. Again, f_{ijt} represents the relative frequency of action type i at company j in the current year t . Hence, divergence measures exactly that part of a company's actions that are new, and so offer future learning opportunities. This procedure results in high values of divergence for those action patterns that are dominated by newly introduced action types. Patterns that emphasized action type preservation achieve only low values of divergence.

Institutional *LEGITIMACY* was observed at the action type–year level. We relied on established methodology from institutional research (Suchman, 1994; Deephouse, 1999) to estimate relative legitimacy of individual action types. This estimate was derived from the overall action pattern in our sample. As described in the theory section, isomorphic behavior reveals action types of higher legitimacy (Deephouse, 1996). The relative frequency of an action type in the collective action pattern of all companies during a given year is used as a proxy of its institutional legitimacy. Since not all action types were observed in every year during the study period, institutional legitimacy could only be assessed in this way for 53 action type–years.

ACTION PATTERN CONFORMITY was calculated at the company–year level according to the following formula:

$$CONFORMITY_{jt} = \sum_i L_{it} \times f_{ijt}$$

where L_{it} represents the institutional legitimacy of action type i in period t as described above, and where f_{ijt} represents the relative frequency of action type i at company j in the current year t . This procedure to calculate conformity indicates the extent to which a company takes highly legitimate actions. High values for conformity result from an emphasis on action types with high levels of legitimacy, i.e., by skewing one's own action pattern distribution. An action pattern that exactly mirrors the average action pattern will only display an interme-

diate level of conformity. Low conformity occurs when firms choose action types that are seldom observed in the industry.

Control variable. *ACTIVITY* is a comprehensive pattern variable that serves as a control because our important predictors are variables of action pattern evolution, namely convergence, divergence, and conformity. Activity is calculated at the company–year level and refers to the number of actions implemented by a company within a given year. Competitive dynamics research has established that more active companies exhibit more varied competitive behaviors and, therefore, have more opportunities for organizational learning. They can be expected to introduce new action types more often than less active competitors (Ferrier et al., 1999). Thus, controlling for activity in action pattern research corresponds to controlling for size as is customary in organizational research.

Analysis

We applied logistic regression analysis (Menard, 1995) to test Hypotheses 1 and 2 regarding action type preservation and introduction, because the dependent variables *PRESERVATION* and *INTRODUCTION* are binary choice variables. Logistic regression transforms the dependent variable into its logit and applies maximum likelihood estimation to derive coefficient estimates for the effects of independent variables on the likelihood of making the dependent binary choice. We use hierarchical logistic regression to validate explanatory variables against a base model with only a constant likelihood and a control for activity.

The full model for the preservation of an action type is:

$$\begin{aligned} \text{logit}[PRESERVATION_{ijt}] = & \beta_0 + \beta_1 \eta_{ij(t-1)} + \beta_2 L_{it} + \beta_3 (\eta_{ij(t-1)} \times L_{it}) \\ & + \beta_4 ACTIVITY_{ijt} + \varepsilon \end{aligned}$$

where $\eta_{ij(t-1)}$ refers to the action type's average performance effect in the previous year (H1a), L_{it} represents action type legitimacy (H1b), and where $(\eta_{ij(t-1)} \times L_{it})$ represents the interaction term of average past performance effect and legitimacy (H1c). We did not standardize $\eta_{ij(t-1)}$ or L_{it} prior to constructing the interaction term because the event study methodology we applied returns values from a standard normal distribution under the null hypothesis (Campbell et al, 1997), and because standardizing legitimacy estimates would have created negative values implying coercion rather than support.

The full model for the introduction of an action type (H2) is:

$$\text{logit}[INTRODUCTION_{ijt}] = \beta_0 + \beta_1 L_{it} + \beta_2 ACTIVITY_{ijt} + \varepsilon.$$

To test Hypotheses 3 and 4, we applied linear regression analysis. The U-shaped relationship suggested in Hypothesis 4 was modeled by adding a squared term. We applied general least squares estimation because Durbin–Watson statistics from initial ordinary least squares results of 1.01 (*ROS*) and 1.19 (*ROA*) suggested autocorrelation. The models for firm performance are:

$$\begin{aligned} ROS_{jt} (ROA_{jt}) = & \beta_0 + \beta_1 CONVERGENCE_{jt} + \beta_2 DIVERGENCE_{jt} + \beta_3 CONFORMITY_{jt} \\ & + \beta_4 SQUARED CONFORMITY_{jt} + \varepsilon \end{aligned}$$

EMPIRICAL RESULTS

Descriptive statistics

Table 1 presents the summary statistics for the logistic regression variables. All variables show substantial variation. On average, about half of the actions that were used in a company's action pattern during the previous year were preserved. In contrast, only one in seven action types was a new action in the sense that it had not been used during the previous year.

Association between the binary dependent variables and continuous independent variables was measured as Pearson contingency. Significant contingency for activity with preservation and introduction affirms the choice of activity as control variable: Competitively more active firms have higher levels of action preservation and introduction. The independent variables are not significantly correlated except for legitimacy and activity in the introduction data. However, correlation between the two is too low to pose a threat from multicollinearity.

<Table 1 about here>

Table 2 presents the summary statistics for the linear regression variables. As above, the variables show a sufficient level of variation. No significant correlation among the independent variables can be observed.

<Table 2 about here>

One additional correlation must be reported to test the working hypothesis. The Pearson correlation between legitimacy and average performance effect of an action type in the same year amounts to $\rho = -.148$ ($p > .10$), and the Spearman (rank) correlation amounts to $r = -.092$ ($p > .10$). These statistics confirm the working hypothesis that the legitimacy of an action type is unrelated to its average performance effect.

Logistic regression

Table 3 presents the results from hierarchical logistic regression analysis. The base models, including only the constant term and the control variable, confirmed a significant and positive relationship between activity and action type preservation and introduction. The *tau-p* and G_M values, which compare to R^2 and F values in linear regression analysis respectively, show that the base models already provide a strong source of explanation confirming activity as an important control. In the case of preservation, we first added average performance effect in the previous year and legitimacy. A statistically significant change in G_M ($\Delta G_M = 6.148$; $p < .05$) confirmed that the two variables offer additional sources of explanation for action type preservation. However, upon inspection of coefficient estimates, only the effect of legitimacy was found significant. In a last step, we added the interaction term to the model. Again, statistically significant changes in G_M ($\Delta G_M = 11.536$; $p < .01$ and $\Delta G_M = 5.388$; $p < .05$) confirmed the validity of the interaction model. Inclusion of the interaction term resulted in statistically significant coefficient estimates for the direct effects of average performance effect in the previous year ($\beta = .921$; $p < .05$) and of legitimacy ($\beta = 5.720$; $p < .05$), as well as the interaction effect between these two variables ($\beta = -5.980$; $p < .05$). Coefficient estimates confirmed a positive influence on the likelihood of action type preservation for both direct effects as suggested in Hypotheses 1a and 1b. However, results contradicted the positive moderation Hypothesis 1c in that the coefficient for the interaction term was negative.

<Table 3 about here>

In the case of introduction, only one variable was added to the full model: legitimacy. The inclusion of legitimacy led to a considerable increase in G_M ($\Delta G_M = 55.755$; $p < .001$). Clearly, legitimacy explains a substantial portion of introduction choice over and above a company's general tendency to introduce action types. The coefficient estimate for legitimacy was highly significant ($\beta = 10.403$; $p < .001$), thereby confirming Hypothesis 2.

Linear regression

Table 4 presents the results from linear regression analysis. Both models provide statistically significant sources of explanation ($F_{ROS} = 3.45; p < .05; F_{ROA} = 3.51; p < .05$). Results for the two models were consistent and statistically significant with respect to the direction and size of the coefficients. The statistically significant intercept allows us to claim that action taking by firms may explain why their profitability is different from underlying industry profitability.

<Table 4 about here>

Turning to the individual results, we find that convergence had a significant effect on performance, but opposite in direction to Hypothesis 3a ($\beta_{ROS} = - .011; p < .05$ and $\beta_{ROA} = - .020; p < .05$). With respect to divergence, no significant effect was reported, confirming Hypothesis 3b. The coefficients for conformity ($\beta_{ROS} = - .516; p < .05$ and $\beta_{ROA} = - 1.062; p < .05$) and squared conformity ($\beta_{ROS} = 1.292; p < .05$ and $\beta_{ROA} = 2.792; p < .05$) were significant and confirmed the U-shaped relationship described in Hypothesis 4.

DISCUSSION

Our study confirms the importance of an action pattern perspective to strategy (Mintzberg, 1978, 1987). We show that different theoretical approaches to strategic management can be contrasted and integrated to explain the evolution of action patterns. We find that these approaches offer alternative rather than exclusive explanations for successful competitive behavior. We test our theory in the U.S. retail industry and find empirical support for six out of eight hypotheses.

We argue that two considerations guide strategic decision makers in modifying their competitive action patterns over time. One is the intelligent application of past experiences to design promising actions for the future. We observe that companies do converge on those action types that have performed better in the recent past as suggested by organizational learning research (H1a). However, this convergence results not in higher but lower performance, contrary to what organizational learning would suggest (H3a). This finding sheds doubt on those approaches to strategy that heavily rely on learning from performance feedback for continued

strategic success (Quinn, 1978). In contrast, it may be that convergence to behaviors that were successful in the past is a sign of strategic inertia and environmental insensitivity (Hedberg et al., 1976; Greve, 2003). Thus, in line with competitive dynamics thinking, this finding suggests that high performance may not materialize if competitors can forecast a company's actions with sufficient accuracy to prepare successful responses. Since information on competitive moves is highly publicized and readily available to all companies in the retail industry, one might assume that some competitors are capable of predicting rival action patterns so as to preempt rivals rather than learning from their experience. Competitive intelligence of this sort would exhibit higher-order learning. However, we cannot evaluate the quality of competitive intelligence in the U.S. retail industry from our data.

The second consideration relevant to action pattern evolution is a quest for legitimacy. In our sample, we identify legitimacy as a strong predictor for the inclusion of action types into a company's action pattern, regardless of whether this inclusion results from preservation or introduction (H1b and H2). We also confirm that a particularly strong emphasis on the most legitimate action types leads to superior performance. But social support is not the only source of superior performance in the U.S. retail industry. In line with Hypothesis 4, an emphasis on rare competitive moves can also be a road to financial success. These findings suggest that both institutional and competitive dynamics thinking is needed to predict variance in successful action patterns (between-unit variation). Indeed, in our theory section, we show how these theoretical approaches offer complementary rather than conflicting explanations of superior performance.

The negative coefficient estimate for the interaction term in the logistic regression on action type preservation is unexpected (H1c). The average performance of an action type in the previous year and its legitimacy are found to increase the likelihood of preserving an action type. However, highly legitimate actions are preserved even if their past performance has been low, and actions with high past performance effects are preserved even if they show lower levels of legitimacy. The first situation may obtain if firms attempt to gain social assistance, whereas the second case may indicate that firms wish to tap economic rents by preserving lucrative action types even if they are not highly legitimate. Yet it is difficult to understand why an action type with positive performance effects in the past year would be more likely to be abandoned if it is highly legitimate than if it is not. One possible explanation could be that in some cases, these action types had been rare in the past and their success has attracted imi-

tators and shaped social expectations. An innovative company might prefer to move on to the next competitive opportunity than try to attain social assistance. Quite different resources and capabilities might be required to compete for competitive leadership than to compete for social assistance. Further research on this issue is warranted.

Contributions

Apart from their relevance to predicting action pattern evolution and associated performance effects, our findings contribute to the three strategic management research streams underlying our theory building. We contribute to competitive dynamics research by linking it to institutional and organizational learning theory. This link has been called for by Smith, Ferrier and Ndofor (2001) in their review of competitive dynamics research. Also, as has been argued by Burgelman (1994), we show that the introduction of more substantive theory into the competitive dynamics approach helps in developing a truly dynamic theory of strategy. Our results also confirm Miller and Chen's (1996) finding of a general tendency toward narrower action patterns over time, as revealed by the statistically significant negative constants in all logistic regression models.

We contribute to organizational learning research by confirming the existence of single-loop learning behavior to exploit past successes (March, 1991). The unexpected negative link between convergence and short-term performance, however, supports Schön's recent call for research on higher-order learning processes (Crossan, 2003). Such research also seems warranted to better understand the relationship between exploration and performance. We show that exploration takes place in the U.S. retail industry, but does not affect performance in the short run (H3b). Additionally, we find that exploration is guided by institutional expectations (H2).

We contribute to institutional strategy research in that we confirm the positive effect of social assistance on performance and the role of legitimacy in determining competitive behavior. Of particular importance is the confirmation of our working hypothesis that legitimacy is unrelated to action-specific market performance, because only when legitimate behavior does not equal economically superior behavior does institutional theory add to other strategic management research streams. Also, we complement Deephouse's (1999; McNamara et al., 2003) strategic balance research by disentangling different levels of legitimacy, and by focusing on conformity to the institutional norm rather than similarity.

On a more methodological note, we propose and validate two new measures that might advance organizational learning and institutional research. First, the estimation of past action type performance as a proxy for the quality of past experiences in an organizational learning context offers a basis for large-scale research on single-loop learning concerned with exploitation. Second, the design of a conformity measure and our discussion of its relationship with similarity may be useful for future institutional strategy research. The methodological advantage of our conformity variable over a similarity measure is that it provides a substantive direction while similarity, much like the concept of variation in competitive dynamics research, offers no indication of direction.

Limitations and future research

Our empirical results draw from a seven-year observation of a single national industry. The extent to which our results can be extrapolated to other settings must be examined in data sets from other industries, other time frames and other national environments. Also, due to data constraints, we considered only publicly-traded companies. The validity of our results for other equity ownership types remains to be assessed.

This paper develops basic propositions for a dynamic theory of action pattern evolution. However, our study is just a beginning, and strategic action pattern research needs to be advanced on several additional fronts. One caveat is that we use externally oriented competitive actions only to study action patterns. Future studies should include internally oriented actions as well. Including internally oriented actions requires methodological advances so as to reliably identify those actions and their performance consequences. Also, further conceptual development is warranted that relates action patterns more clearly to the many strategic management traditions that have used the action pattern construct at least implicitly. To this end, longitudinal case studies on competitive firm behavior and the evolution of action patterns might lead to better and more varied constructs and propositions. An improved action pattern methodology will facilitate larger and possibly cross-industry studies.

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FIGURE 1

Comparison of two models reconciling competitive (dynamics) and institutional propositions for performance consequences of between-unit variation

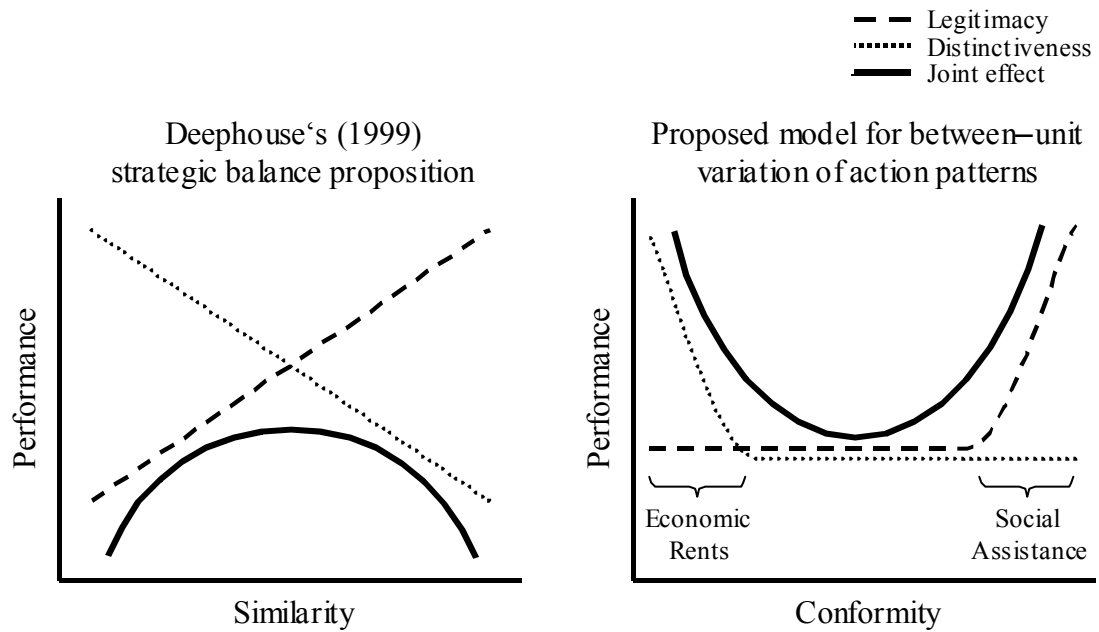


TABLE 1

Descriptive statistics for logistic regression variables

<i>N</i> = 159	Mean	S.D.	Pearson C Pearson Correlations			
			1	2	3	4
1 <i>PRESERVATION</i>	.516	.501	1.000			
2 <i>AVERAGE PERFORMANCE EFFECT IN PRIOR YEAR</i>	.072	.971	.707	1.000		
3 <i>LEGITIMACY</i>	.155	.093	.479	-.066	1.000	
4 <i>ACTIVITY</i>	5.371	4.000	.422**	.115	.039	1.000
<i>N</i> = 756						
1 <i>INTRODUCTION</i>	.144	.352	1.000			
2 <i>LEGITIMACY</i>	.103	.082	.322**	1.000		
3 <i>ACTIVITY</i>	2.759	3.452	.382**	-.092*	1.000	

Pearson C refers to Pearson Contingency.

* $p < .05$ ** $p < .01$ (approximate)

TABLE 2
Descriptive statistics for linear regression variables

<i>N</i> = 74	Mean	S.D.	Pearson Correlations					
			1	2	3	4	5	
1 <i>ROS</i>	.025	.022	1.000					
2 <i>ROA</i>	.044	.045	.875**	1.000				
3 <i>CONVERGENCE</i>	.001	.630	-.249*	-.240*	1.000			
4 <i>DIVERGENCE</i>	.590	.407	-.171	.194	.001	1.000		
5 <i>CONFORMITY</i>	.163	.051	-.090	-.042	-.175	-.008	1.000	

* $p < .05$ ** $p < .01$ (2-tailed)

TABLE 3
Hierarchical logistic regression estimates

	Dependent: <i>PRESERVATION</i>			Dependent: <i>INTRODUCTION</i>								
	B	Wald	Sig.	B	Wald	Sig.						
Constant	-1.248*** (.313)	15.857	.000	-2.048*** (.494)	17.173	.000	-2.713*** (.168)	259.528	.000	-4.200*** (.168)	181.930	.000
<i>AVERAGE PERFORMANCE EFFECT IN PRIOR YEAR</i>												
	.165 (.190)	.758	.381	.921* (.391)	5.511	.020						
<i>LEGITIMACY</i>												
	5.168* (2.391)	4.671	.031	5.720* (2.515)	5.173	.023						
<i>LEGITIMACY × AVERAGE PERFORMANCE EFFECT IN PRIOR YEAR</i>												
				-5.980* (2.566)	5.431	.020						
<i>ACTIVITY</i>												
	.253*** (.053)	23.195	.000	.254*** (.054)	22.298	.000	.248*** (.028)	80.402	.000	.303*** (.032)	91.274	.000
N	159			159			159			756		
<i>tau-p (Sig.)</i>	.345 (.000)			.408 (.000)			.421 (.000)			.523 (.000)		
<i>GM (Sig.)</i>	30.173 (.000)			36.322 (.000)			41.709 (.000)			143.675 (.000)		
Changes in <i>GM (Sig.)</i>	↳			6.148 (.046)			11.536 (.003)		↳	55.755 (.000)		
				↳			5.388 (.020)					

S.E. in parentheses; calculation of *tau-p*, *GM*, changes in *GM*, and associated significance levels according to Menard (1995).
* p < .05 *** p < .001 (2-tailed)

TABLE 4
Linear regression estimates

<i>N</i> = 74	Dependent: <i>ROS</i>		Dependent: <i>ROA</i>	
	B	S.E.	B	S.E.
Intercept	.068**	.020	.125**	.039
<i>CONVERGENCE</i>	-.011*	.004	-.020*	.008
<i>DIVERGENCE</i>	.008	.006	.017	.012
<i>CONFORMITY</i>	-.516*	.215	-1.062*	.431
<i>SQUARED CONFORMITY</i>	1.292*	.592	2.792*	1.187
<i>F</i> (Sig.)	3.45 (.013)		3.51 (.011)	

*R*² is not reported because we applied general least squares analysis.

* *p* < .05 ** *p* < .01 (2-tailed)

APPENDIX 1

Sample Firms

Company	Examples of Store Brands*
Ames Department Stores	Ames
Big Lots, Inc. (<i>formerly Consolidated Stores</i>)	Big Lots, Odd Lots, MacFrugal's, Pic'N'Save, K-B Toys, All For One, iTZADEAL!
Costco Wholesale Corp.	Costco
Dillard's Inc.	Dillard's
Dollar General Corp.	Dollar General
Family Dollar Stores, Inc.	Family Dollar
Federated Dept. Stores, Inc.	Macy's, Bloomingdale's, Bon Marche, Rich's, Burdines, Lazarus, Goldsmith's
JC Penney Co., Inc.	JC Penney
Kmart Corp.	Kmart, Bluelight.com
Kohl's Corp.	Kohl's
May Department Stores Co.	Lord & Taylor, Foley's, Filene's, Hecht's, Strawbridge's, Payless, David's Bridal
NeimanMarcus Group, Inc.	NeimanMarcus, Galleries of NeimanMarcus, Bergdorf Goodman, Contempo Casuals
Saks, Inc.	Saks Fifth Avenue, Off 5 th , Parisian, Carson Pirie Scott, MacRae's, Younkers, Herberger's
Sears Roebuck & Co.	Sears, Parts America, HomeLife Furniture
ShopKo Stores, Inc.	ShopKo
Target Corp. (<i>formerly Dayton Hudson</i>)	Target, Dayton's, Hudson's, Marshall Field's, Mervyn's
Wal-Mart Stores	Wal-Mart, Sam's Club

* Do not necessarily cover the entire period of 1994 – 2000.

Source: SEC, Company 10-Ks 1994 – 2000

APPENDIX 2

Coding Scheme

Action Type	Keywords	Examples of Headlines
Pricing	cut(s)/lower(s)/slash(es)/reduce(s)... price(s), tag, cheap(er), rebate(s)	Sears will slash prices on some apparel
Marketing	spot(s), logo, marketing campaign, ad(vertising) campaign, ads	JCPenney launches new ad campaign to revive brand
Service	financing, delivery, card, membership, service, ATM(s), warranty; not: online	Wal-Mart introduces home shopping and delivery service
Range	introduce(s), feature(s), line, label, collection, shop; not: online	Arnold Palmer Sportswear line launched by Federated
Format	format, concept, design, station(s), space, display, boutiques, prototype	Kmart to introduce new Super format
Geographic growth	open(s)/new/first...outlet/store(s)/market, enter(s), opening	Kohl's to enter Tennessee market
Direct channels	.com, online, virtual, web, internet, catalog, mail order, launch(es)	Wal-Mart goes online
M&A	acquire(s), acquisition, merge(s), merger, buy(s)	May to buy Strawbridge in \$480 million deal
Legal	litigate(s), sue(s), suing	Sears suing Value City for trademark infringement